

INFORMATION HANDOUT

WATER QUALITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION

PERMITS

UNITED STATES ARMY CORPS OF ENGINEERS

AGREEMENTS

STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME

MATERIALS INFORMATION

UNDERGROUND CLASSIFICATION
C217-045-08T

GEOTECHNICAL RECOMMENDATION
Dated February 9, 2011

GEOTECHNICAL RECOMMENDATION
Dated February 14, 2011

ROUTE: 01-Men-128, PM Var

WATER QUALITY

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION**



ERNEST G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

North Coast Regional Water Quality Control Board

May 29, 2013

In the Matter of
Water Quality Certification
for the
California Department of Transportation
Highway 128 PM 14.30—49.28 Culvert Rehab 55 Culverts in Mendocino County
Project
WDID No. 1B13026WNME
Caltrans EA No.: 01-378161

APPLICANT: California Department of Transportation
RECEIVING WATERS: Navarro River and Dry, Rancheria, and Anderson Creeks
HYDROLOGIC UNITS: Mendocino Coast Hydrologic Area 113.00 and Russian River Hydrologic Area 114.00
COUNTY: Mendocino
FILE NAME: CDOT Highway 128 PM 14.30-49.28 Culvert Rehab 55 Culverts in Mendocino County

BY THE EXECUTIVE OFFICER:

1. On February 19, 2013, the North Coast Regional Water Quality Control Board (Regional Water Board) received an application from the California Department of Transportation (Caltrans) requesting Federal Clean Water Act (CWA) section 401, Water Quality Certification (certification) for activities related to the California Department of Transportation (Caltrans) State Route (SR) 128 Culvert Rehabilitation Project, Phase 2 of 2 (Project).
2. **Hydrologic Units:** The proposed project would cause disturbances to waters of the United States (U.S.) and waters of the State associated with the Mendocino Coast and Russian River Hydrologic Units (Nos. 113 and 114, respectively). Affected hydrologic sub-areas include Navarro River (113.50), Warm Springs (114.24), Ukiah (114.31), and Geyserville (114.25).

DAVID M. NIESEN, CHAIR | MATTHIAS ST. JOHN, EXECUTIVE OFFICER

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3. **Public Notice:** The Regional Water Board provided public notice of the application pursuant to title 23, California Code of Regulations, section 3858 on May 6, 2013, and posted information describing the Project on the Regional Water Board's website. No comments were received.
4. **Project Purpose:** The purpose of the Project is to prevent highway damage due to potential culvert failure and to maintain overall roadway safety.
5. **Project Description:** The proposed Project is located along SR 128 near the towns of Navarro, Boonville, and Yorkville in Mendocino County between post-miles 14.30 and 49.28. The Project would rehabilitate or replace deteriorated drainage systems at 55 locations within jurisdictional waters and wetlands. The existing drainage systems are deteriorating due to corrosion, resulting in scour, transport of sediment, and pavement damage. Additionally, some of the culverts are too short, lack outlet energy dissipation or walls, or are under-sized. Project activities consist primarily of culvert replacements, downdrain installations, placement of concrete slurry and soil backfill, placement of riprap energy dissipation, new outlet and inlet structures, and headwall construction.

Culverts at 50 of the 55 locations would be installed using conventional cut-and-cover construction. Culverts at post-miles 18.28, 21.80, and 30.97 would be installed using a jacking method.
6. **Related Projects:** This Project is the second portion of the second phase of an overarching project. The first phase was certified by the Regional Water Board on August 29, 2011, and the first portion of phase 1 was certified on February 22, 2012.
7. **Construction Schedule:** Project implementation is expected to last 120 days between June 15, 2013, and October 1, 2014.
8. **Special-Status Species:** Project activities within potential listed steelhead and or coho-bearing streams would occur in Clow Creek (post-mile 21.80), Graveyard Creek (post-mile 27.54), Lost Creek (post-mile 36.63), and John Hiatt Creek (post-mile 39.88). Caltrans shall provide retrofit of culverts for fish passage improvements at all of the above locations.
9. **Permanent Impacts:** Permanent impacts would occur due to the installation of new structures such as culvert extensions, headwalls, wing-walls, flared-end sections, and riprap energy dissipation within jurisdictional waters and wetlands. Caltrans has determined that the proposed Project would result in approximately 0.005 acres of permanent impacts to jurisdictional wetlands and approximately 0.163 acres of permanent impacts (1,001 linear feet) of impacts to jurisdictional waters.

10. Temporary Impacts: Temporary impacts would result from stream diversion and dewatering, construction access, staging activities, and in-kind replacement of drainage systems. Caltrans has determined that the proposed Project would result in approximately 0.333 acres of temporary impacts to jurisdictional wetlands and approximately 0.558 acres (6,479 linear feet) of temporary impacts to jurisdictional waters. Because the exact extent of temporary impacts will not be known until construction begins, Caltrans has conservatively over-estimated temporary impacts to encompass the maximum potential temporary impact.

11. Mitigation for Permanent Impacts to Jurisdictional Waters: To mitigate for 0.163 acres of permanent impacts to jurisdictional waters, Caltrans shall provide riparian and wetland restoration at three off-site locations:

a. Robinson Creek Restoration Phase 3 Project

Caltrans has already provided 1.03 acres of riparian restoration on private properties along Robinson Creek in cooperation with the Mendocino County Resource Conservation District. 0.42 acres of this mitigation was used as mitigation for impacts associated with previously-certified SR 128 culvert rehabilitation activities (certifications issued August 29, 2011 and February 22, 2012).

Since issuance of the February 22, 2012, certification, it has come to the attention of Regional Water Board staff that the Robinson Creek mitigation parcels lack legal agreements to protect the mitigation resources long-term (e.g., conservation easements, deed restrictions). Due to the uncertainty of unprotected mitigation on private properties, this certification does not accept compensatory mitigation from Robinson Creek at the 3:1 mitigation ratios accepted in the previously issued certifications. The entire remaining surplus of 0.61 acres in addition to items b and c, below, shall be required as compensatory mitigation for 0.163 acres of permanent impacts to jurisdictional waters.

b. Anderson Valley Elementary School

The Anderson Valley Elementary School is located on Conn Creek in the town of Boonville. Creek enhancement at this location involves 0.482 acres of full riparian revegetation and 0.077 acres of riparian revegetation at a "30% level." Revegetation work at this location involves removal of invasive species over a five year period and planting of approximately eighty native trees and shrubs.

Mitigation at Anderson Valley Elementary School has been proposed as compensation for a 0.766-acre mitigation shortfall in the original Robinson Creek Restoration proposal (approximately 1.8 acres of riparian revegetation was proposed at Robinson Creek). This site also does not have a long-term

resource protection mechanism; however, the mitigation work will be done on public land which leaves a greater likelihood the site would not be disturbed in the future. This certification includes a requirement for compensatory mitigation in the event that mitigation from the Robinson Creek Project or Anderson Valley Elementary School is destroyed (see condition no. 13).

c. *10 Mile Dunes at MacKerricher State Park*

Caltrans shall provide 0.16 acres of out-of-kind wetland restoration mitigation at Inglenook Fen in the Ten Mile Dunes Natural Preserve within MacKerricher State Park in Fort Bragg.

12. **Mitigation for Permanent Impacts to Jurisdictional Wetlands:** To mitigate for 0.005 acres of permanent impacts to jurisdictional wetlands, Caltrans shall provide 0.020 acres of wetland restoration mitigation at Inglenook Fen in the Ten Mile Dunes Natural Preserve within MacKerricher State Park in Fort Bragg.
13. **Mitigation for Temporary Impacts:** To mitigate for approximately 0.333 acres of temporary impacts to jurisdictional wetlands and approximately 0.558 acres (6,479 linear feet) of temporary impacts to jurisdictional waters, Caltrans shall re-vegetate all temporarily disturbed areas using native vegetation.
14. **Avoidance and Minimization:** To minimize impacts to aquatic resources, Caltrans shall work in State waters only during the dry season (June to October), work from the roadway whenever feasible, minimize vegetation disturbance to the greatest degree possible, and implement construction-stage pollution prevention best management practices (BMPs).
15. **Post-Construction Stormwater Treatment:** Project implementation would not result in an increase in impervious surface area or more than 5,000 square feet of impervious area replacement. Post-construction stormwater treatment is not required for the Project.
16. **Utility Relocations:** Utility relocations are not needed for this project.
17. **Other Agency Actions:** Caltrans received a Regional General Permit (File Number 2009-00447N) from the U.S. Army Corps of Engineers to implement the Project pursuant to Clean Water Act, section 404. Caltrans filed for a 1602 Streambed Alteration Agreement with the California Department of Fish and Wildlife in February 2013. Caltrans received a Biological Opinion (AFWO-10B0003-10F0090) from the National Marine Fisheries Service (NMFS) on January 4, 2005, that determined the Project is not likely to adversely affect listed salmonids.

18. **CEQA Compliance:** On June 14, 2005, Caltrans certified a Negative Declaration (State Clearinghouse No. 2005042089) for the Project in order to comply with the California Environmental Quality Act (CEQA). The Regional Water Board has considered the environmental documentation, including any proposed changes, and incorporates any avoidance, minimization, and mitigation measures into the project as a condition of approval to avoid significant affects to the environment.

19. **TMDLs.** The Navarro River watershed is listed on the Clean Water Act Section 303(d) list as impaired for sediment and temperature. In December 2000, the U.S. EPA established sediment and temperature Total Maximum Daily Loads (TMDLs) for the Navarro River watershed. The Russian River watershed is also listed on the State of California Clean Water Act Section 303(d) list as impaired for sediment and temperature.

Roads are a significant source of sediment in watersheds (directly, from surface erosion, or indirectly by destabilizing hillsides). In addition, activities that impact stream beds, banks, and floodplains and reduce riparian vegetation are identified as contributors to increased stream temperatures. Such projects may involve removal of vegetation and/or channel alteration and have the potential to increase sediment loads. Measures to reduce sediment discharges from roads to surface waters as well as measures to avoid, minimize, and mitigate impacts on riparian zones is essential for achieving TMDL compliance. Accordingly, this Order is consistent with, and implements portions of the Navarro and Russian River TMDLs.

20. Pursuant to Regional Water Board Resolution R1-2004-0087, *Total Maximum Daily Load Implementation Policy Statement for Sediment-Impaired Receiving Waters within the North Coast Region* (Sediment TMDL Implementation Policy), the Executive Officer is directed to "rely on the use of all available authorities, including existing regulatory standards, and permitting and enforcement tools to more effectively and efficaciously pursue compliance with sediment-related standards by all dischargers of sediment waste."

21. Pursuant to Regional Water Board Resolution R1-2012-0013, *Implementation of the Water Quality Objective for Temperature in the North Coast Region* (Temperature Implementation Policy), Regional Water Board staff is directed to address factors that contribute to elevated water temperatures when issuing 401 certifications or WDRs (permits) for individual projects. Any permit should be consistent with the assumptions and requirements of temperature shade load allocations in areas subject to existing temperature TMDLs, including EPA established temperature TMDLs, as appropriate. If applicable, any permit or order should implement similar shade controls in areas listed as impaired for temperature but lacking a TMDL and region-wide as appropriate and necessary to prevent future impairments and to comply with the intrastate temperature objective.

- 22. Antidegradation Policy:** The federal antidegradation policy requires that State water quality standards include an antidegradation policy consistent with federal policy. The State Water Resources Control Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements and incorporates by reference, both the State and federal antidegradation policies. This certification is consistent with applicable federal and State antidegradation policies, as it does not authorize the discharge of increased concentrations of pollutants or increased volumes of treated wastewater, and does not otherwise authorize degradation of the waters affected by this Project.
23. This discharge is also regulated under State Water Resources Control Board Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification," which requires compliance with all conditions of this certification.

Receiving Waters:	Wetlands and intermittent, ephemeral and perennial streams Dry Creek, Rancheria Creek, Anderson Creek, and Navarro River Russian River Hydrologic Unit No. 114.00 Ukiah Hydrologic Sub-Area 114.31 Geyserville Hydrologic Sub-Area 114.25 Mendocino Coast Hydrologic Unit No. 113.00 Navarro River Hydrologic Area 113.50	
Filled and/or Excavated Areas:	Permanent – State waters	1,001 linear feet (0.163 acres)
	Permanent – wetlands	0.005 acres
	Temporary – State waters	6,479 linear feet (0.558 acres)
	Temporary – wetlands	0.333 acres
Dredge Volume:	none	
Fill Volume:	Permanent – 1,561 cubic yards	
Mitigation proposed:	<p>On-site:</p> <ul style="list-style-type: none"> - Fish passage improvements at four culvert locations; and - Re-vegetation of all disturbed areas. <p>Off-site:</p> <ul style="list-style-type: none"> - 0.61 acres of riparian revegetation on Robinson Creek; - 0.482 acres of riparian revegetation on Conn Creek; - 0.077 acres partial riparian revegetation on Conn Creek; and - 0.18 acres of wetland restoration at MacKerricher State Park. 	
Latitude/Longitude:	~ 38.0068 / -123.4435	

Accordingly, based on its independent review of the record, the Regional Water Board certifies that the Highway 128 Post Miles 14.30—49.28 55 Culverts Rehabilitation Project, as described in the application received February 19, 2013, will comply with sections 301, 302, 303, 306 and 307 of the Clean Water Act, and with applicable provisions of state law, provided that the Caltrans complies with the following terms and conditions:

All conditions of this certification apply to Caltrans (and all its employees) and all contractors (and their employees), sub-contractors (and their employees), and any other entity or agency that performs activities or work on the project (including the off-site mitigation lands) as related to this Water Quality Certification.

**Monitoring and Reporting Conditions for
Work at Post-Miles 21.80, 27.54, 36.63, and 39.88**

1. In order to demonstrate compliance with receiving water limitations and water quality objectives surface water monitoring shall be conducted. When conducting surface water monitoring Caltrans shall establish discharge, upstream (background) and downstream monitoring locations to demonstrate compliance with applicable water quality objectives. The downstream location shall be no more than 100 feet from the discharge location to State waters.
 - A. Surface water monitoring shall be conducted whenever a project activity is conducted within waters of the State (e.g. including but not limited to the installation, use or removal of stream diversions, pile installations, and cofferdams). Measurements and observations shall be collected from each sampling location four times daily.
 - B. Surface water monitoring shall be conducted immediately when any project activity has mobilized sediment or other pollutants resulting in a discharge and/or has the potential to alter background conditions within waters of the State (including but not limited to storm water runoff, concrete discharges, leaks, and spills.). The continuing frequency is contingent upon results of field measurements and applicable water quality objectives.

Surface water monitoring field measurements shall be taken for pH and turbidity. In addition, visual observations of each location shall be documented daily for each established monitoring location and monitoring event and include the estimate of flow, appearance of the discharge including color, floating or suspended matter or debris, appearance of the receiving water at the point of discharge (occurrence of erosion and scouring, turbidity, solids deposition, unusual aquatic growth, etc), and observations about the receiving water, such as the presence of aquatic life. If a project activity has reached a steady state and is stable, then Caltrans may request a temporary reprieve from this condition from the Regional Water Board until an activity or discharge triggers the monitoring again.

2. Whenever, as a result of project activities (in-stream work or a discharge to receiving waters), downstream measurements exceed any water quality objective 100 feet downstream of the source(s) all necessary steps shall be taken to install, repair, and/or modify BMPs to control the source(s). The frequency of surface water

**Monitoring and Reporting Conditions for
Work at Post-Miles 21.80, 27.54, 36.63, and 39.88 (continued)**

monitoring shall increase to hourly and shall continue until measurements demonstrate compliance with water quality objectives for each parameter listed below and measured levels are no longer increasing as a result of project activities. In addition, the overall distance from the source(s) to the downstream extent of the exceedence of water quality objectives shall be measured.

Monitoring results shall be reported to appropriate Regional Water Board staff person by telephone within 24 hours of taking any measurements that exceed the limits detailed below (only report turbidity if it is higher than 20 NTU).

pH	<6.5 or >8.5 (any changes >0.5 units)
turbidity	20% above natural background

Monitoring results and upstream and downstream pictures within the working and/or disturbed area and discharge location shall be taken and submitted to the appropriate Regional Water Board staff within 24 hours of the incident. All other monitoring data documenting compliance with water quality objectives shall be reported on a monthly basis and is due to the Regional Water Board by the 15th of the following month.

3. Post Storm Event Reports:

- Once the Project has begun ground-disturbing activities, and subsequent to a qualifying rain event that exceeds 0.5-inches of precipitation, Caltrans shall inspect the project within 24 hours and take photos of all discharge locations, and disturbed areas, including all excess materials disposal areas, in order to demonstrate that erosion control and revegetation measures are present and have been installed appropriately and are functioning effectively. A brief report containing these photos, corrective actions (if necessary), and any surface water monitoring results collected pursuant to this Order or the Construction General Permit (SWRCB Order 2009-009 DWQ) shall be submitted to the Regional Water Board within 10 days after the end of the qualifying rain event. Inspections are required daily during extended rain events. Once the project site is stable, in a steady state (channel- ground- or vegetation-disturbing activities have ceased), and has demonstrated sufficient and effective erosion and sediment control, Caltrans may request a reprieve from this condition from the Regional Water Board. At least one post-construction inspection is required to demonstrate sufficient and effective erosion and sediment control and compliance with the Basin Plan.
- Rain events are periods of precipitation that that are separated by more than 48-hours of dry weather. Rainfall amounts may be taken from on-site rain gauges, from the nearest California Data Exchange Center station (<http://cdec.water.ca.gov>), or by a custom method or station approved by Regional Water Board staff.

Project-Specific Conditions Requiring Reports

4. Caltrans shall submit, subject to review and concurrence by Regional Water Board staff, a dewatering and/or diversion plan that appropriately describes the dewatered or diverted areas and how those areas will be handled during construction. The diversion/dewatering plans shall be submitted no later than 30 days prior to conducting the proposed activity. Information submitted shall include the area or work to be diverted or dewatered and method of the proposed activity. All diversion or dewatering activities shall be designed to minimize the impact to waters of the State and maintain natural flows upstream and downstream. All dewatering or diversion structures shall be installed in a manner that does not cause sedimentation, siltation or erosion upstream or downstream. All dewatering or diversion structures shall be removed immediately upon completion of Project activities.
5. Prior to Project construction, Caltrans shall submit a riparian revegetation mitigation plan for work at Anderson Valley Elementary School (AVES Plan). The AVES Plan shall include a planting plan, planting palette, success and monitoring criteria, invasive species control plan, and a proposal for submittal of annual reports to the Regional Water Board. The AVES Plan shall be first found acceptable to Regional Water Board staff before Project construction may commence.
6. Caltrans shall perform off-site mitigation as proposed in the Caltrans-prepared *Seaside Beach Roadside Repair (EA 47490) Anchor Bay Drainage Repair (EA 44650) and SR 128/253 Culvert Rehabilitation (EA 37812, 37813, 37814, 37816, 37817) and Men 20 Left Turn and Shoulder Widening (EA 29200) Off-Site Wetland Mitigation at California State Parks Inglebrook Fen – Ten Mile Dunes Natural Preserve, Mitigation and Monitoring Plan*, dated April 2013.
7. Caltrans shall submit an on-site re-vegetation plan (Plan) to address on-site mitigation measures for permanent and temporary Project impacts to jurisdictional waters and riparian vegetation. The Plan shall be submitted not later than September 1, 2013.
8. The Regional Water Board shall be notified in writing (e-mail is acceptable) at least five working days prior to commencement of:
 - i) Ground disturbing activities for each construction season; and
 - ii) Water diversion installations.

Project-Specific Conditions

9. The jacking method shall be used to install culverts only at post-mile locations 18.28, 21.80, and 30.97.
10. Caltrans shall implement the mitigation described above in finding numbers 11, 12, and 13 (pages 3 and 4). Off-site mitigation shall be completed prior to Project completion. On-site re-vegetation shall be completed no later than during the first wet

Project-Specific Conditions (continued)

season following the completion of construction within the respective impacted area.

11. Caltrans shall provide fish passage improvements at the four locations listed in certification finding number 8 (page 2).
12. In-stream work, including removal of stream diversion structures, and work on the banks of perennial anadromous fish-bearing streams shall only be conducted between June 15 and October 15; extensions shall not be considered except in emergency situations.
13. Caltrans shall propose compensatory mitigation to the Water Board in the event that any portion of the riparian revegetation mitigation at Robinson Creek or the Anderson Valley Elementary School is destroyed. The compensatory mitigation proposal shall be subject to the review and acceptance of the Executive Officer. The mitigation shall include a long-term resource protection mechanism. Because the mitigation would be protected long-term, the level of mitigation required may be less in acreage than that destroyed at Robinson Creek and/or Anderson Valley Elementary School.
14. Gravel bags used within State waters shall meet the gravel specifications described below in condition number 15. Gravel bag fabric shall be non-woven polypropylene geotextile (or comparable polymer) and shall conform to the following requirements:
 - i) Mass per unit area, grams per square meter, min ASTM Designation: D 5261 — 270;
 - ii) Grab tensile strength (25-mm grip), kilonewtons, min. ASTM Designation: D4632* 0.89;
 - iii) Ultraviolet stability, percent tensile strength retained after 500 hours, ASTM designation: D4355, xenon arc lamp method 70 or appropriate test method for specific polymer;
 - iv) Gravel bags shall be between 600 mm and 800 mm in length and between 400 mm and 500 mm in width; and
 - v) Yarn used in construction of the gravel bags shall be as recommended by the manufacturer or bag supplier and shall be of a contrasting color. The opening of gravel-filled bags shall be secured to prevent gravel from escaping. Gravel-filled bags shall be between 13 kg and 22 kg in mass.

Caltrans shall first request approval from the Regional Water Board if an exception from this requirement is needed for a specific location.

15. Gravel used in State waters shall:
 - i) Consist of mechanically-rounded and washed, and/or river run gravel obtained from a river or creek bed;

Project-Specific Conditions (continued)

- ii) Be clean, hard, sound, durable, uniform in quality, and free of disintegrated material, organic matter, and deleterious substances;
- iii) Be composed entirely of particles that have no more than one fractured face;
- iv) Have a cleanliness value of at least 85, using the Cleanliness Value Test Method for California Test No. 227; and
- v) Have a diameter no less than 0.75 inches in diameter, and no greater than four inches in diameter.

Standard Conditions

- 16. Herbicides and pesticides shall not be used within the Project. If Caltrans has a compelling case as to why herbicides and pesticides should be used, they may submit a request along with a BMP plan to Regional Water Board staff for review, consideration, and concurrence.
- 17. All activities and best management practices (BMPs) shall be implemented according to the submitted application materials (dated February 2013) and the findings and conditions of this certification.
- 18. All conditions required by this Order shall be included in the Contract Documents prepared by Caltrans for the contractor. In addition, Caltrans shall require compliance with all conditions included in this Order in the bid contract for this Project.
- 19. This Order does not authorize drafting of surface waters.
- 20. Construction BMPs shall be implemented in accordance with the Caltrans Construction Site Best Management Practice Manual (CCSBMPM) and all contractors and subcontractors shall comply with the CCSBMPM. All BMPs shall be installed and used in accordance with the manufacturer's specifications. If Caltrans elects to install alternative BMPs for use on the Project, then Caltrans shall first submit a proposal to Regional Water Board staff for review and acceptance.
- 21. Caltrans is prohibited from discharging waste to waters of the State, unless explicitly authorized by this certification. For example, no debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or concrete washings, welding slag, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature, other than that authorized by this certification or the Caltrans statewide stormwater permit (99-06-DWQ), shall not be allowed to enter into waters of the State.

Except for temporary stockpiling of waste generated during demolition operations

Standard Conditions (continued)

- (“temporary” in this instance means generated and removed during the same working day), waste materials shall not be placed within 150 linear feet of waters of the State or where the materials may be washed by rainfall into waters of the State. Exceptions to the 150-foot limit may be granted on a case-by-case basis provided Caltrans first submits a proposal in writing that is found acceptable by Regional Water Board staff.
22. All project-generated waste shall be handled, transported, and disposed in strict compliance with all applicable State and Federal laws and regulations. When operations are complete, any excess material or debris shall be removed from the work area and disposed of properly and in accordance with the Special Provisions for the Project and/or the 2006 Standard Specification 7-1.13, *Disposal of Material Outside the Highway Right of Way*. Within 30 days of disposing of materials off-site Caltrans shall submit to the Regional Water Board the satisfactory evidence provided to the Caltrans Engineer by the Contractor referenced in Standard Specification 7-1.13. In accordance with State and Federal laws and regulations, Caltrans is liable and responsible for the proper disposal of waste generated by their Project.
 23. Asphalt-concrete grindings shall not be placed in any location where it may, at any time, be directly exposed to storm or ground waters, except asphalt-concrete grinding may be re-used and incorporated into impervious asphalt mixes.
 24. Fueling, lubrication, maintenance, storage and staging of vehicles and equipment shall not result in a discharge or a threatened discharge to any waters of the State. At no time shall Caltrans use any vehicle or equipment which leaks any substance that may impact water quality.
 25. Caltrans shall prioritize the use of wildlife-friendly biodegradable (not photo-degradable) erosion control products wherever feasible. Caltrans shall not use or allow the use of erosion control products that contain synthetic netting for permanent erosion control (i.e. erosion control materials to be left in place for two years or after the completion date of the project). If Caltrans finds that erosion control netting or products have entrapped or harmed wildlife, personnel shall remove the netting or product and replace it with wildlife-friendly biodegradable products.
 26. Work in flowing or standing surface waters, unless otherwise proposed in the project description and approved by the Regional Water Board, is prohibited. If construction dewatering of groundwater is necessary, then Caltrans shall use a method of water disposal other than disposal to surface waters, such as land disposal. Groundwater disposed of to land shall not enter State waters. Alternatively, Caltrans may apply for coverage under the Low Threat Discharge Permit or an individual National Pollutant Discharge Elimination System (NPDES) Permit. If Caltrans applies for coverage under

Standard Conditions (continued)

either of these permits, then discharge is prohibited until Caltrans has received notification of coverage under the respective permit.

27. Fueling, lubrication, maintenance, storage and staging of vehicles and equipment shall be prohibited within waters of the State. Fueling of individual equipment types within waters of the State may be authorized if Caltrans first prepares a fueling plan that:
- i) Identifies the specific piece of machinery that may require fueling within waters of the State;
 - ii) Provides justification for the need to refuel within State waters. The justification shall describe why fueling outside of jurisdictional waters is infeasible; and
 - iii) Includes a narrative of specific BMPs that shall be employed to prevent and capture fuel releases.

Fueling of equipment within waters of the State shall be prohibited until the fueling plan has been approved by Regional Water Board staff. The fueling plan may be submitted individually, included in the project Storm Water Pollution Prevention Plan (SWPPP), or submitted as a SWPPP amendment. If the fueling plan is included in the Notice of Intent package for coverage under the statewide construction general stormwater permit, then acceptance of the NOI does not constitute Regional Water Board staff acceptance of the fueling plan.

28. Caltrans shall provide a copy of this certification and State Water Resources Control Board (SWRCB) Order No. 2003-0017-DWQ (web link referenced below) to the contractor and all subcontractors conducting the work, and require that copies remain in their possession at the work site. Caltrans shall be responsible for work conducted by its contractor or subcontractors.
29. The Resident Engineer (or appropriately authorized agent) shall hold water quality permit compliance meetings (similar to tailgate safety meetings) to discuss permit compliance, including instructions on violation avoidance and violation reporting procedures. Meetings shall be held on-site unless an on-site meeting is impracticable and not needed to effectively communicate the details of permit compliance. The meetings shall be held at least every other week, before forecasted storm events, and when a new contractor or subcontractor arrives to begin work at the site. The contractors, subcontractors and their employees, as well as any inspectors or monitors assigned to the project, shall be present at the meetings. Caltrans shall maintain dated sign-in sheets for attendees at these meetings, and shall make them available to the Regional Water Board on request.
30. Caltrans shall implement appropriate BMPs to prevent the discharge of equipment

Standard Conditions (continued)

fluids to the stream channel. The minimum requirements shall include: storing hazardous materials at least 150 linear feet outside of the stream banks; checking equipment for leaks and not using equipment with leaks; and pressure washing or steam cleaning equipment to remove fluid residue on any of its surfaces prior to its entering any stream channel. Fluids and waste by-products generated by equipment washing and cleaning shall not enter State waters.

31. If an unauthorized discharge to surface waters (including wetlands, rivers or streams) occurs, or any other threat to water quality arises as a result of Project implementation, the associated Project activities shall cease immediately until the threat to water quality is otherwise abated. If there is a discharge to State waters, the Regional Water Board shall be notified no more than 24 hours after the discharge occurs.
32. Caltrans and their contractor are not authorized to discharge wastewater (e.g., water that has contacted uncured concrete or cement, or asphalt) to surface waters, ground waters, or land. Wastewater may only be disposed of to a sanitary waste water collection system/facility (with authorization from the facility's owner or operator) or a properly-licensed disposal or reuse facility. If Caltrans or their contractor proposes an alternate disposal method, Caltrans or their contractor shall request authorization from the Regional Water Board. Plans to reuse or recycle wastewater require written approval from Regional Water Board staff.
33. Concrete shall be excluded from surface water for a period of 30-days after it is poured/sprayed. During that time the concrete shall be kept moist and runoff from the concrete shall not be allowed to enter any water body. Commercial sealants may be applied to the concrete surface where difficulty in excluding flow for a long period may occur. If sealant is used, water shall be excluded from the site until the sealant is cured. If groundwater comes into contact with fresh concrete, it shall be prevented from flowing towards surface water.
34. All imported fill material shall be clean and free of pollutants. All fill material shall be imported from a source that has the appropriate environmental clearances and permits. The reuse of low-level contaminated solids as fill on-site shall be performed in accordance with all State and Federal policies and established guidelines and must be submitted to the Regional Water Board for review and concurrence.
35. The validity this certification is conditioned upon total payment of any fee required under title 23, California Code of Regulations, section 3833, and owed by the applicant. The Regional Water Board received \$40,000 from Caltrans on February 19, 2013.
36. This certification action is not intended and shall not be construed to apply to any

Standard Conditions (continued)

discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to title 23, California Code of Regulations, section 3855, subdivision (b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

37. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification. In response to a suspected violation of any condition of this certification, the State Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In response to any violation of the conditions of this certification, the Regional Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.
38. This certification action is subject to modification or revocation upon administrative or judicial review; including review and amendment pursuant to Water Code section 13330 and title 23, California Code of Regulations, section 3867.
39. This certification is not transferable. In the event of any change in control of ownership of land presently owned or controlled by the Applicant, the Applicant shall notify the successor-in-interest of the existence of this certification by letter and shall forward a copy of the letter to the Regional Water Board. The successor-in-interest must send to the Regional Water Board Executive Officer a written request for transfer of this certification to discharge dredged or fill material under this Order. The request must contain the following:
 - i) requesting entity's full legal name;
 - ii) the state of incorporation, if a corporation;
 - iii) address and phone number of contact person; and
 - iv) a description of any changes to the project or confirmation that the successor-in-interest intends to implement the project as described in this Order.
40. Except as may be modified by any preceding conditions, all certification actions are

Standard Conditions (continued)

contingent on: a) the discharge being limited, and all proposed revegetation, avoidance, minimization, and mitigation measures being completed, in strict compliance with Caltrans' project description and CEQA documentation, as approved herein, b) Caltrans shall construct the project in accordance with the project described in the application and the findings above, and c) compliance with all applicable water quality requirements and water quality control plans including the requirements of the Water Quality Control Plan for the North Coast Region (Basin Plan), and amendments thereto. Any change in the design or implementation of the project that would have a significant or material effect on the findings, conclusions, or conditions of this Order must be submitted to the Executive Officer of the Regional Water Board for prior review, consideration, and written concurrence. If the Regional Water Board is not notified of a significant alteration to the project, it will be considered a violation of this Order, and Caltrans may be subject to Regional Water Board enforcement actions.

41. The authorization of this certification for any dredge and fill activities expires on November 5, 2017. Conditions and monitoring requirements outlined in this Order are not subject to the expiration date outlined above, and remain in full effect and are enforceable.

Conditions 4—8 of this certification include requirements for information and reports. Any requirement for a report made as a condition to this action is a formal requirement pursuant to CWC section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in California Water Code, Section 13268.

The Regional Water Board may add to or modify the conditions of this Order, as appropriate, to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

Please contact our staff Environmental Specialist / Caltrans liaison, Brendan Thompson at (707) 576-2699, or via e-mail, at Brendan.Thompson@waterboards.ca.gov, if you have any questions.

Original Signed By David Leland For

Matthias St. John
Executive Officer

130529_CDOT_Hwy128_CulvertRehabPhase2of2_401Cert

Web link: State Water Resources Control Board Order No. 2003-0017 -DWQ, General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification can be found at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0017.pdf

Original to: Mr. Sebastian Cohen, Caltrans, District 1, 1656 Union St., Eureka, CA 95501

Copy to: Mr. Jim McIntosh, Caltrans, District 1, 1656 Union St., Eureka, CA 95501

Electronic
Copies to: U.S. Army Corps of Engineers, Regulatory Functions - San Francisco District

California Department of Fish and Game, Bay Delta Region

State Water Resources Control Board

Environmental Protection Agency, Region IX

PERMITS

UNITED STATES ARMY CORPS OF ENGINEERS



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

NOV - 5 2012

Regulatory Division

SUBJECT: File Number 2009-00447N

Ms. Sharon Stacey
California Department of Transportation (Caltrans), District 1
North Region Environmental Planning
1031 Butte Street, MS 30
Redding, California 96001

Dear Ms. Stacey:

Enclosed is your signed copy of a Department of the Army (DA) Regional General Permit (RGP) to rehabilitate and/or replace approximately deteriorated culverts in Mendocino County, California.

Should you have any questions regarding this matter, please call Paula Gill of our Regulatory Division at 415-503-6776 or by email at Paula.C.Gill@usace.army.mil. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

John M. Baker

John Baker, P.E.
Lieutenant Colonel, U.S. Army
Commander and District Engineer

Enclosure

Copies Furnished (w/encl 1 only):

US EPA, San Francisco, CA
US FWS, Arcata, CA
US NMFS, Arcata, CA
CA CC, Eureka, CA

CA DFG, Redding, CA
CA RWQCB, Santa Rosa, CA

**DEPARTMENT OF THE ARMY REGIONAL GENERAL PERMIT 16
FOR THE REHABILITATION OR REPLACEMENT OF CULVERTS
IN MENDOCINO COUNTY**

PERMITTEE: Ms. Sharon Stacey, California Department of Transportation (Caltrans)

PERMIT NO.: 2009-00447N

ISSUING OFFICE: San Francisco District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate District or Division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below:

PROJECT DESCRIPTION:

This Regional General Permit (RGP) authorizes the rehabilitation and/or replacement of deteriorated culverts and installation of standard drainage inlet and outlet structures located in Mendocino County. Culvert sizes will range from 18" to 6' by 12' box culverts. Some drainage work will be completed at inlets and outlets, and minor vegetation removal may be performed to improve water flow. Minor grading may also be performed at various locations when deemed necessary to prevent water buildup at inlets and/or outlets. Either half-width construction or jacking construction methods will be utilized. Some specific designs may call for modifying the ends of the culvert with a headwall, a flared end section, an inlet structure, or a downdrain. Rock slope protection, rock energy dissipaters, and rock weirs may also be commonly required. Temporary flow diversions on perennial streams would also be required. Authorization also includes off-pavement work pads for construction at inlets and outlets that cannot be reached with equipment from the road. Typically, work shall be completed in accordance with the plans and drawings titled, "USACE File #2009-00447N, State Routes 128 and 253 Culvert Replacement, March 28, 2012, Figures 1 to 4."

Impacts to wetlands and waters of the U.S. associated with each culvert replacement will vary depending on specific site conditions associated with each culvert replacement. The maximum authorized discharge of fill material into wetlands and waters of the U.S. is 0.05 acre or 50 linear feet of permanent fill (i.e. placement of hardscape material beyond the existing culvert) for an individual culvert replacement. Over the 5-year authorization period, no more than 1.0 acre of permanent impact to wetlands and waters of the U.S. associated with culvert replacements will be authorized. Activities required for culvert replacement that would not constitute placement of fill or a permanent impact (e.g. dewatering, culvert replacement) will be limited to 300 linear feet of work within a water of the U.S., this includes the length of the culvert and additional upstream and downstream associated work.

PROJECT LOCATION: Mendocino County, California

PERMIT CONDITIONS:

GENERAL CONDITIONS:

1. The time limit for completing the work authorized ends on June 15, 2017.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.
6. You understand and agree that, if future operations by the United States require the removal, relocation or other alteration of the structure or work authorized herein, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, you will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

SPECIAL CONDITIONS:

1. Two annual reports are required. The first annual report (advanced notice) will contain a work plan for the coming year. This report shall be submitted prior to April 15 of each year. Along with other information this advanced notice will include work locations, any proposed off-pavement work pad locations and size, estimates of impact to jurisdictional wetlands and/or to other Waters of the U.S. (in mapped format), construction methods, and proposed work timeframes. Specific project drawings for each culvert replacement including any required rock slope protection, any culvert modifications, or grading plans shall be provided. Additionally, a Wetland Delineation Report prepared in accordance with the Corps of Engineers' 1987 Wetland Delineation Manual and the appropriate Regional Supplement for the project study area for proposed culvert repair locations shall be provided. The proposed compensatory mitigation plan for impacts associated with the upcoming year shall be provided with the advanced notice completed in accordance with "*Compensatory Mitigation for Losses of Aquatic Resources; Final Rule*," 33 C.F.R. pt. 332, published on April 10, 2008.

Included with the advanced notice, Caltrans shall demonstrate compliance with Section 7 of the Endangered Species Act (ESA) of 1973 as amended, 16 U.S.C. §§ 1531-1544, and Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation, Management Act (EFH), 16 U.S.C. § 1855(b)(4)(B), and Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, 16 U.S.C. §§ 470-470. Caltrans shall provide all relevant documentation summarizing any previous consultation efforts, as it pertains to the Corps Regulatory permit area (for Section 7 and EFH compliance) and the Corps Regulatory area of potential effect (for Section 106 compliance). Additionally, copy of the Regional Water Quality Control Board (RWQCB) 401 Certification and the California Coastal Commission (CCC) Consistency Determination for the proposed culvert replacements shall also be provided, if available.

The second annual report would summarize work completed in the previous year and will provide a running summary of mitigation efforts, including post-construction monitoring outlined in special condition 13. The second annual report shall be submitted prior to December 1 of each year.

2. After review of the Advanced Notice the Corps will provide specific written authorization of rehabilitation and/or replacement of deteriorated culverts. Within this written authorization the Corps will also approve the proposed compensatory mitigation plan. Approval of the Advanced Notice shall be contingent on appropriately proposed compensation for anticipated impacts, demonstration of successful implementation and reporting in accordance with any previously approved mitigation plan, and compliance with all federal and state regulatory requirements (ESA, EFH, NHPA, RWQCB, and CCC).

3. Compensatory mitigation for unavoidable impacts to wetlands and Waters of the U.S. shall occur through creation, restoration, riparian planting, or enhancement of the appropriate tributaries and/or wetlands within the watershed where impacts are proposed to occur. Compensatory mitigation may also be provided through the purchase of credits at a Corps approved mitigation bank. Your responsibility to complete the required compensatory mitigation upon approval of Advanced Notice and associated compensatory mitigation plans will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the U.S. Army Corps of Engineers.
4. You shall not begin work on any individual culvert replacement until specific written authorization is provided by USACE upon review of the advanced notice.
5. No activity is authorized under this RGP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any RGP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. The Corps will review the documentation provided demonstrating compliance with the Section 7 consultation and determine whether it is sufficient to address ESA compliance for the RGP activity, or whether additional ESA consultation is necessary. Authorization of an activity by this RGP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., a Biological Opinion with "incidental take" provisions, etc.) from the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS). Upon approval of the advanced notice Caltrans shall comply with the mandatory terms and conditions associated with incidental take. Failure to comply with the terms and conditions for incidental take, where a 'take' of a federally-listed species occurs, would constitute an unauthorized take and non-compliance with the RGP authorization. The USFWS and or NMFS are, however, the authoritative federal agency for determining compliance with the incidental take statement and for initiating appropriate enforcement actions or penalties under the ESA.
6. If the USFWS and/or NMFS concurred with the determination that the project was not likely to adversely affect listed species and designated critical premised on project work restrictions then these work restrictions shall be implemented to ensure unauthorized incidental take of species and loss of critical habitat does not occur.
7. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or Study River (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
8. Work will be conducted during the dry season (June 15 to October 15) to minimize potential impacts to any wet or running watercourses, when feasible. If work is occurring in a perennial creek or outside of the dry season then the waterway shall be de-watered.
9. Off-pavement work pads shall also be located outside of USACE jurisdictional wetlands and waters of the U.S.
10. Prior to any culvert rehabilitation a Section 401 water quality certification from the North Coast, Regional Water Quality Control Board shall be provided specifically authorizing the proposed culvert replacement.
11. Prior to any work on a culvert located within the jurisdiction of the California Coastal Commission, concurrence that the work will comply with California's Coastal Zone Management Act must be provided.
12. No fill shall be placed below the ordinary high water mark of the Navarro River, Rancheria Creek, Big River, Eel River, Gualala River including South Fork Gualala River, Mattole River, Russian River to ensure these rivers on the Nationwide Rivers Inventory are not adversely affected by project implementation.

13. The area immediately upstream and downstream of each culvert replacement shall be monitored post-construction at years 1, 3, and 5 to qualitatively assess channel conditions surrounding the work area. Photographs and a brief summary of conditions shall be provided with the annual summary of completed work. Any finding of channel instability (e.g. migrating headcuts, RSP failure, or bank erosion) shall be documented and remediation measures shall be proposed and submitted to USACE for review. After receiving approval from USACE, the proposed measures shall be implemented.
14. Application of compost blankets for erosion control will be implemented concurrently with project construction. All other revegetation activities will begin the fall after completion of culvert construction. If areas do not revegetate by the first year of post-construction monitoring (described in special condition 11 above), the Corps may require further monitoring, re-vegetation, and/or off-site mitigation.

FURTHER INFORMATION:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - (x) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. Section 403).
 - (x) Section 404 of the Clean Water Act (33 U.S.C. Section 1344).
 - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. Section 1413).
2. Limits of this authorization:
 - a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.
 - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

1. This drawing is to be read in conjunction with the notes on the drawing and the specifications for the project.

2. The contractor shall be responsible for obtaining all necessary permits and approvals from the appropriate authorities.

3. The contractor shall be responsible for maintaining access to all existing utilities and structures.

4. The contractor shall be responsible for protecting all existing structures and utilities.

5. The contractor shall be responsible for maintaining the safety of all workers and the public.

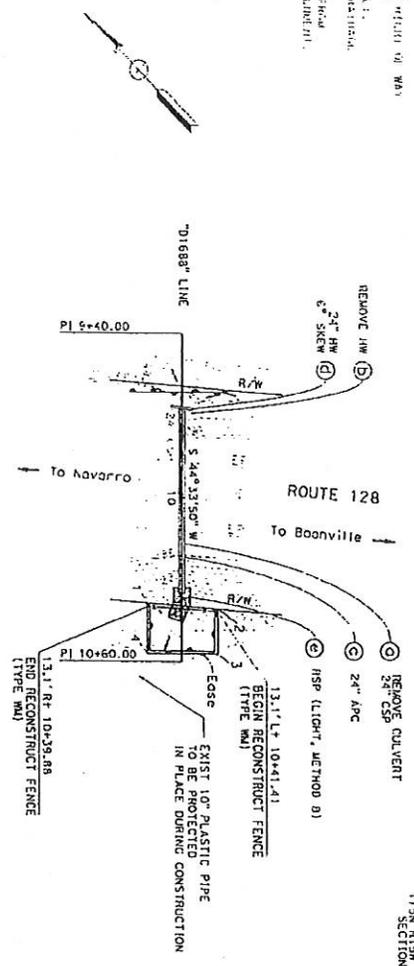
6. The contractor shall be responsible for maintaining the quality of the work.

7. The contractor shall be responsible for maintaining the schedule of the project.

8. The contractor shall be responsible for maintaining the cost of the project.

9. The contractor shall be responsible for maintaining the safety of the project.

10. The contractor shall be responsible for maintaining the quality of the project.



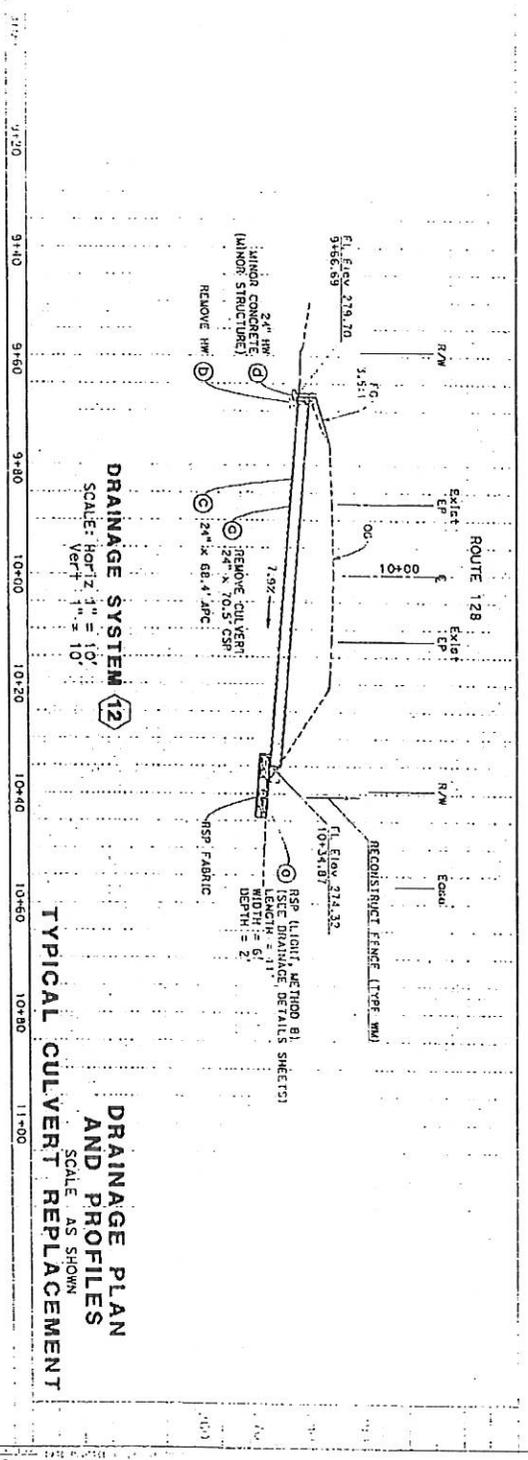
DRAINAGE SYSTEM (12)
 ROUTE 128
 PM 16.58
 SCALE: 1" = 20'

POINT	STATION	OFFSET
1	10+24.48	13.13' RT
2	10+40.54	13.13' RT
3	10+55.94	13.13' RT
4	10+55.94	13.13' RT

11.5N R15W N080A
 SECTION 33

DATE: 11/11/12
 DRAWN: [Signature]
 CHECKED: [Signature]

REGISTERED PROFESSIONAL ENGINEER
 STATE OF TEXAS
 NO. 111111
 EXPIRES: 11/11/15



DRAINAGE SYSTEM (12)
 SCALE: HORIZ. 1" = 10'
 VERT. 1" = 10'

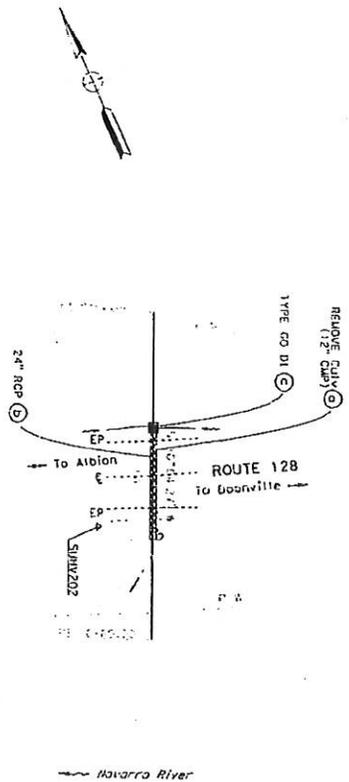
DRAINAGE PLAN AND PROFILES
 SCALE AS SHOWN
TYPICAL CULVERT REPLACEMENT

RELATIVE BENCHMARK SCALE



U.S. Army Corps of Engineers
 San Francisco District
 Regulatory Division

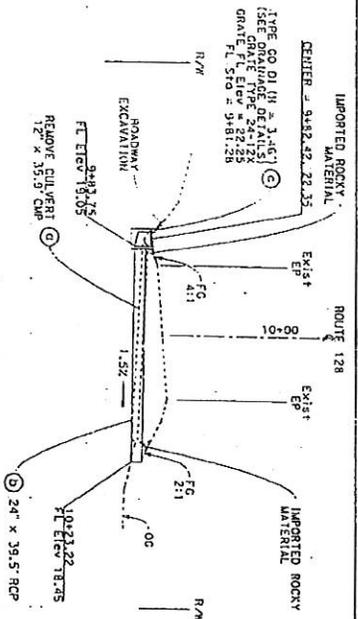
ISACIE File # 2009-40047N1
 State Routes 128 and 253
 Culvert Replacement
 March 28, 2012
 Figure 2 of 4



DRAINAGE SYSTEM No. 5

ROUTE 128
PM 00.59

SCALE: 1" = 20'



PROFILE

SCALE: 1" = 10'

RELATIVE POWER SCALE
IS IN FEET

TYPICAL CULVERT REPLACEMENT

DRAINAGE PLAN AND PROFILE

SCALE AS SHOWN

DATE	COMMITTEE	PROJECT	PROJECT NUMBER
01	MON	128	VON
REVISIONS APPROVAL DATE (SEE STATE OF CALIFORNIA AND THE UNITED STATES OF AMERICA FOR THE PROVISIONS OF THE FEDERAL AID ROAD ACT AND THE FEDERAL AID HIGHWAY ACT)			
REGISTERED CIVIL ENGINEER JEFF CIVIL ENGINEER CIVIL ENGINEER CIVIL ENGINEER			

USACE File #2009-0447N
 State Routes 128 and 253
 Culvert Replacement
 March 28, 2012
 Figure 3 of 4



U.S. Army Corps
 of Engineers
 San Francisco District
 Regulatory Division

ANCHOR OUTLET IN PLACE
 (SEE NOTE 5)
 EXISTING CREEK BED
 CONSTRUCTION ACTIVITIES
 EXISTING CREEK BANK
 PUMP
 FLEXIBLE PLASTIC PIPE
 TEMPORARY DAM
 PLAN
 (SEE NOTE 3)

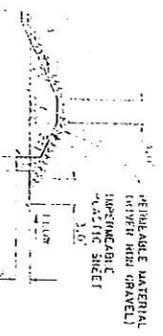
HYDROLOGIC SUMMARY

PERMEABLE MATERIAL (GRAVEL OR GRAVEL)
 IMPERMEABLE PLASTIC SHEET
 FLEXIBLE PLASTIC PIPE
 ALTERNATE LOCATION FOR PIPE
 TEMPORARY DAM (TYPE 1)
 SECTION B-B

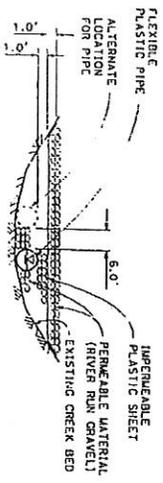
NO.	LOCATION	PL
23	20.15	
31	27.54	
44	35.63	
48	39.88	

TEMPORARY CREEK DIVERSION SYSTEM

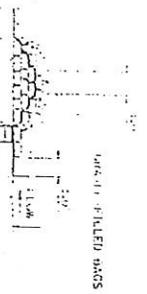
PLAN



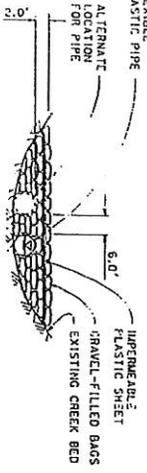
TEMPORARY DAM (TYPE 1)
 SECTION B-B



TEMPORARY DAM (TYPE 1)
 SECTION B-B



TEMPORARY DAM (TYPE 2)
 SECTION B-B

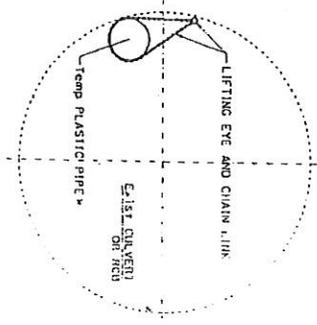


TEMPORARY DAM (TYPE 2)
 SECTION B-B

THIS PLAN ACCURATE FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY
 HORIZONTAL SCALE
 1" = 10'

DATE	DESIGN	SCALE	PROJECT
01	MAN	1:20	TEMPORARY CREEK DIVERSION SYSTEM

REGISTERED CIVIL ENGINEER
 STATE OF CALIFORNIA
 LICENSE NO. 12345
 EXPIRES 12/31/2012



TYPICAL SECTION
 Temp PLASTIC PIPE
 INSTALLED IN CSP/RCB

NO.	LOCATION	PL
23	20.15	
31	27.54	
44	35.63	
48	39.88	

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY CREEK DIVERSION SYSTEM)
 TYPICAL STREAM DIVERSION
 NO SCALE

ISAC# File #20000447N
 State Routes 128 and 253
 Culvert Replacement
 March 28, 2012
 U.S. Army Corps of Engineers
 San Francisco District
 Regulatory Division
 Figure 4 of 4

AGREEMENTS

STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
NORTHERN REGION
601 LOCUST STREET
REDDING, CALIFORNIA 96001

RECEIVED

FEB 15 2013

D. F. G. - EUREKA



LAKE OR STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2013-0039-R1
Dry, Rancheria Creek and Anderson Creek Watersheds

56 Encroachments

Mr. Sebastian Cohen Representing the Department of Transportation
CULVERT REHABILITATION PROJECT
DRY, RANCHERIA AND ANDERSON CREEK WATERSHEDS, MENDOCINO COUNTY

This Lake or Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and Mr. Sebastian Cohen (Permittee) representing the California Department of Transportation (Caltrans).

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified CDFW on February 15, 2013 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1602, CDFW has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project is located along State Route 128 and affects tributaries to Dry, Rancheria and Anderson Creek watersheds in Mendocino County. Detailed project location information is listed in the following table:

Table 1. U.S. Geological Survey Quad Map, Section, Township, and Range

Conduit No.	Route	Milepost (PM)	Longitude	Latitude	Township	Range	Section
1	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
2	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
3	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
4	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
5	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
6	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
7	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
8	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
9	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
10	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
11	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
12	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
13	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
14	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
15	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
16	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
17	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
18	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
19	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
20	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
21	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
22	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
23	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
24	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
25	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
26	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
27	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
28	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
29	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
30	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
31	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
32	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
33	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
34	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
35	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
36	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
37	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
38	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
39	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
40	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
41	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
42	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
43	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
44	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
45	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
46	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
47	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
48	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
49	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
50	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
51	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
52	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
53	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
54	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
55	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
56	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
57	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
58	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
59	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
60	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
61	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
62	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
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65	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
66	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
67	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
68	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
69	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21
70	128	PM 11.00	121 512.88	39 05 22.94	15N	15W	21

PROJECT DESCRIPTION

The project involves 56 encroachments: replace and/or modify a variety of culverts on State Route 128 that are corroded/damaged, have inadequate lengths, inadequate/absent treatments (head wall, end wall, rock energy dissipater), non-standard pipe diameters, lack of down-drains and/or need improvements to improve fish passage.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: populations of steelhead (*Oncorhynchus mykiss*), Navarro River roach (*Lavinia symmetricus navarroensis*), foothill yellow-legged frog (*Rana boylei*), northern red-legged frog (*Rana aurora*) and other aquatic and riparian species.

The adverse effects the project could have on the fish or wildlife resources identified above include: direct and/or incidental take, impede up- and/or down-stream migration, damage to spawning and/or rearing habitat and potential cumulative impacts.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

- 1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.
- 1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify CDFW if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, CDFW shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that CDFW personnel may enter the project site to verify compliance with the Agreement.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

- 2.1 Except where otherwise stipulated in this Agreement, all work shall be conducted in accordance with the forms, work plans, biological surveys, mitigation plans, maps and drawings submitted with Notification No. 1600-2013-0039, as modified or amended on February 15, 2013.
- 2.2 This Agreement pertains to 56 encroachments affecting tributaries to Dry, Rancheria and Anderson Creeks.
- 2.3 Permanent culverts at stream crossings shall be sized to pass the estimated 100-year flood flow, including debris and sediment loads, without overtopping or diverting. Culvert sizing factors shall include transportation of bedload, and the abundance and size of woody debris likely to be introduced to the stream upstream of the culvert crossing. The culverts shall be set at the natural streambed elevation to the maximum extent feasible.
- 2.4 All work within the bed, bank and channel shall be confined to the period June 15 through October 15 of each year. Work may be conducted in or near the stream during the late season work period October 15 through November 1, provided adherence to all conditions in this Agreement and a) – c) below:
 - a) The Permittee shall complete any unfinished encroachment work, including erosion control measures, within 24 hours of DFG directing the Permittee to do so.
 - b) Prior to any work at a site, the Permittee shall stock-pile erosion control materials at the site. All bare mineral soil exposed in conjunction with crossing construction, deconstruction, maintenance or repair or removal shall be treated for erosion immediately upon completion of work on the crossing, and prior to the onset of precipitation capable of generating runoff.
 - c) When a 7-day National Weather Service forecast of rain includes a minimum of 5 consecutive days with any chance of precipitation, 3 consecutive days with a 30% or greater chance of precipitation, or 2 consecutive days of 50% or greater chance of precipitation, the Permittee shall finish work underway at encroachment and refrain from starting any new work at encroachment prior to the rain event.
- 2.5 Equipment shall not operate in a live (flowing) stream or wetted channel except as may be necessary to construct and remove in-stream structures to catch and

contain water (i.e., cofferdams) to divert stream flow and isolate the work site, or as otherwise specifically provided for in this Agreement.

2.6 Where flowing water is present during operations:

- a) Cofferdams shall be installed to divert stream flow and isolate and dewater the work site, and to catch any sediment-laden water and minimize sediment transport downstream. Cofferdams shall be constructed of non-polluting materials including sand bags, rock, and/or plastic tarps. Mineral soil shall not be used in the construction of cofferdams.
- b) Flowing water shall be cleanly bypassed and/or prevented from entering the work area through pumping or gravity flow, and cleanly returned to the stream below the work area. Flow diversions shall be done in a manner that shall prevent pollution and/or siltation and provides flows to downstream reaches.
- c) The Responsible Party shall remove any turbid water and sediment present in the work area prior to restoring water flow through the project site, and place them in a location where they cannot enter the Waters of the State.

2.7 To prevent the release of materials that may be toxic to fish and other aquatic species, poured concrete shall be isolated from stream flow and allowed to dry/cure for a minimum of 30 days. As an alternative, the Responsible Party shall monitor the pH of water that has come into contact with the poured concrete. If this water has a pH of 9.0 or greater, the water shall be pumped to tanker truck or to a lined off-channel basin and allowed to evaporate or be transported to an appropriate facility for disposal. During the pH monitoring period, all water that has come in contact with poured concrete shall be isolated and not allowed to flow downstream or otherwise come in contact with fish and other aquatic resources. The water shall be retested until pH values become less than 9.0. Once this has been determined, the area no longer needs to be isolated and water may be allowed to flow downstream. Results of pH monitoring shall be made available to DFG upon request.

2.8 All bare mineral soil exposed in conjunction with project related activities shall be treated for erosion prior to the onset of precipitation capable of generating run-off or the end of the yearly work period, whichever comes first. Treatments shall include using native slash or seeding and mulching of all bare mineral soil exposed in conjunction with encroachment work. Only clean straw (such as rice, barley, wheat, or weed-free straw), and seeding with regional native seed or non-native seed that is known not to persist or spread (e.g., barley (*Hordeum vulgare*) or wheat (*Triticum aestivum*) shall be used. No known invasive grass seed shall be used such as annual or perennial ryegrass (*Lolium multiflorum* or *L. perenne*, which are now referred to as *Festuca perennis*).

- 2.9 Only wildlife-friendly 100 percent biodegradable erosion control products that will not entrap or harm wildlife shall be used. Erosion control products shall not contain synthetic (e.g., plastic or nylon) netting. Photodegradable synthetic products are not considered biodegradable.
- 2.10 The Permittee shall provide site maintenance including, but not limited to, re-applying erosion control to minimize surface erosion and ensuring drainage structures, streambeds and banks remain sufficiently armored and/or stable.
- 2.11 Structures and associated materials not designed to withstand high seasonal flows shall be removed to areas above the ordinary high water mark before such flows occur or the end of the yearly work period, whichever comes first.
- 2.12 Refueling of equipment and vehicles and storing, adding or draining lubricants, coolants or hydraulic fluids shall not take place within or adjacent to any stream. All such fluids and containers shall be disposed of properly. Heavy equipment parked within or adjacent to the stream shall use drip pans or other devices (e.g., absorbent blankets, sheet barriers or other materials) as needed to prevent soil and water contamination.
- 2.13 All activities performed in the field which involve the use of petroleum or oil based substances shall employ absorbent material designated for spill containment and clean up activity on site for use in case of accidental spill. Clean-up of all spills shall begin immediately. The Permittee shall immediately notify the State Office of Emergency Services at 1-800-852-7550. CDFW shall be notified by the Permittee and consulted regarding clean-up procedures.
- 2.14 No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other organic or earthen material from construction work, or associated activity of whatever nature shall be allowed to enter into, or be placed where it may be washed by rainfall or runoff into Waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area. (Not applicable to material installed permanently or temporarily as part of the project activities).
- 2.15 Upon CDFW determination that turbidity/siltation levels resulting from project related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation, shall be halted until effective CDFW approved control devices are installed, or abatement procedures are initiated.
- 2.16 Removal of the above-ground portions of existing trees and shrubs shall occur after August 31 and before February 1 to avoid impacts to nesting birds. If vegetation must be removed during the nesting season (February 1 to August 31) nest surveys shall be conducted prior to vegetation clearing (see Measure 2.17).

- 2.17 If vegetation is proposed for removal during the nesting season (February 1 to August 31), an avian and nest survey protocol (Bird Survey Protocol) and a nest protection and monitoring plan shall be submitted to CDF for review and approval. CDFW will be allowed up to 30 days to review and approve the Bird Survey Protocol. The Bird Survey Protocol and nest protection and monitoring plan shall include the following: a) list of bird species expected to nest in the area, b) description of life histories, c) survey protocols that are designed and tailored specifically to detect the various species expected to nest in the area, d) proposed nest buffer and nest protection measures, e) project activity disturbance monitoring, and e) reporting protocols.

SITE-SPECIFIC CONDITONS:

- 2.18 At Culvert No. 4 (PM 14.39), work shall be conducted when the affected work area is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall: a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.
- 2.19 At Culvert No. 7 (PM 14.80), work shall be conducted when the affected work area is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall: a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.
- 2.20 At Culvert No. 11 (PM 15.14), this site maintains ponded, wetland habitat. Adult frogs (species not confirmed) were observed and will likely be present during the work period. Work at this site will adhere to the following conditions:
- a) a qualified biologist will visit this site immediately prior to initiating work to determine the species of frog(s) that may be impacted. If native frogs are identified, contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and allow CDFW staff up to 10 business days for consultation regarding proposed impacts to native frogs,
 - b) to prevent permanet dewatering or notable reduced water elevations, the invert elevation of the replacement culvert will be the same or higher as the existing culvert elevation,
 - c) work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall: a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.

- 2.21 At Culvert No. 12 (PM 15.62), a) pull back and stabilize vertical banks adjacent to culvert inlet, b) pull back and stabilize vertical banks adjacent to culvert outlet and c) install a rock slope protection energy dissipater at the new culvert outlet.
- 2.22 At Culvert No. 15 (PM 15.90), the existing culvert discharges into a stream that had surface water during the May 2013 site visit. Frogs may be present at or adjacent to this site. Work at this site will adhere to the following conditions:
- a) a qualified biologist will visit this site immediately prior to initiating work to determine the presence and species of frog(s) that may be impacted. If native frogs are identified, contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and allow CDFW staff up to 10 business days for consultation regarding proposed impacts to native frogs,
 - b) work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall: a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations,
 - c) the eroding gully that exists at the western corner (and leads to the grate above the inlet) shall be stabilized to prevent further erosion and sediment discharge.
- 2.23 At Culvert No. 19 (PM 17.11), water was present at the culvert inlet and outlet during the May 2013 site visit and potential amphibian habitat exists. Two live oak trees (*Quercus wizlizenii*) and one large, multi-stem willow (*Salix sp.*) will be removed as a result of the project. Work at this site will adhere to the following conditions:
- a) to mitigate tree removal, a minimum of six live oak trees and three willows (same species as the removed tree) will be planted at or near the project site. Planted trees shall be monitored post-project for a minimum of three years to ensure rooting and long term success. Dead and/or dying replacement trees shall be replaced,
 - b) a qualified biologist will visit this site immediately prior to initiating work to determine the presence and species of frog(s) that may be impacted. If native frogs are identified, contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and allow CDFW staff up to 10 business days for consultation regarding proposed impacts to native frogs,
 - c) work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075

- and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.
- 2.24 At Culvert No. 21 (PM 17.51), water was present at the culvert outlet during the May 2013 site visit and potential amphibian habitat exists. One approximate eight-inch diameter California bay tree (*Umbellularia californica*) will be removed as a result of the project. Work at this site will adhere to the following conditions:
- a) work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall: a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations,
 - b) pull back and stabilize vertical banks adjacent to existing culvert outlet.
 - c) to mitigate tree removal, a minimum of three California bay trees will be planted at or near the project site. Planted trees shall be monitored post-project for a minimum of three years to ensure rooting and long term success. Dead and/or dying replacement trees shall be replaced.
- 2.25 At Culvert No. 22 (PM 18.15), three plastic pipes currently run through the existing culvert presumable for conveying diverted water from an unknown source to an existing pond at "Reilly Heights Ranch". Propose culvert replacement plans call for installing a separate 10-inch metal conduit that will be used to re-establish the existing pipe crossing under State Route 128. Water diversion associated with the plastic pipes may require a lake/streambed alteration agreement (Agreement) from CDFW pursuant to FGC section 1602. Failure to possess a valid Agreement may be a violation of FGC section 1602. Proposed work at this site is not covered under this Agreement until the Permittee receives evidence from the owners of the plastic water pipes that:
- a) owner(s) of plastic pipes are in possession of a current Agreement from CDFW authorizing water diversion and storage pursuant to FGC section 1602,
 - b) owners of plastic pipes produce evidence from CDFW that use of the affected plastic pipes and associated water diversion do not require an Agreement pursuant to FGC section 1602.
- 2.26 At Culvert No. 26 (PM 19.30), stabilize the erosion gully at the easterly side of the existing culvert inlet to prevent additional down-cutting and erosion.
- 2.27 At Culvert No. 29 (PM 19.36), this site maintains impounded water and wetland habitat. Work at this site will adhere to the following conditions:

- a) a qualified biologist will visit this site immediately prior to initiating work to determine the presence and species of frog(s) that may be impacted. If native frogs are identified, contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and allow CDFW staff up to 10 business days for consultation regarding proposed impacts to native,
 - b) work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall:
 - a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and
 - b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.
- 2.28 At Culvert No. 30 (PM 20.15), this projects affects a well-defined, perennial stream with fish and amphibian habitat. Work at this site shall adhere to pertinent conditions provided in the National Marine Fisheries Service's (NMFS) Biological Opinion/Incidental Take Permit. In addition, work at this site will adhere to the following conditions:
- a) the Permittee shall not initiate work at this site until NMFS has prepared a written document approving fish passage considerations and/or current fish passage designs,
 - b) a qualified biologist will visit this site immediately prior to initiating work to determine the presence and species of fish, amphibians and other aquatic vertebrate species that may be impacted. If fish and/or other aquatic species are identified, contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and allow CDFW staff up to 10 business days for consultation regarding proposed impacts to these resources,
 - c) in addition to implementing the protective procedures in Measure 2.7, a concrete containment plan will be developed and implemented to ensure that uncured concrete is fully isolated from flowing stream water.
- 2.29 At Culvert No. 32 (PM 21.23), stabilize the erosion gully near the westerly side of the existing culvert inlet to prevent additional down-cutting and erosion.
- 2.30 At Culvert No. 33 (PM 21.80), work at Clow Creek shall adhere to pertinent conditions provided in NMFS's Biological Opinion/Incidental Take Permit. In addition, work at this site will adhere to the following conditions:
- a) the Permittee shall not initiate work at this site until NMFS has prepared a written document approving fish passage considerations and/or current fish passage designs,

- b) adhere to de-watering and fish relocation plans in the NMFS's Biological Opinion/Incidental Take Permit,
 - c) to mitigate for tree removal at culvert inlet and outlet areas, a minimum of three new trees of the same species as removed will be planted at or near the project site. Planted trees shall be monitored post-project for a minimum of three years to ensure rooting and long term success. Dead and/or dying replacement trees shall be replaced,
 - d) remove the abandoned car near the existing culvert outlet.
- 2.31 At Culvert No. 35 (PM 21.96), pull back and stabilize vertical banks adjacent to culvert outlet.
- 2.32 At Culvert No. 37 (PM 22.97), work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall: a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.
- 2.33 At Culvert No. 41 (PM 27.54), work at "Graveyard Creek" shall adhere to pertinent conditions provided in NMFS's Biological Opinion/Incidental Take Permit. In addition, work at this site will adhere to the following conditions:
- a) the Permittee shall not initiate work at this site until NMFS has prepared a written document approving fish passage considerations and/or current fish passage designs,
 - b) stabilize existing gullies that lead from highway road fill to the areas where the new culvert inlet will be cut back (e.g. shortened),
 - c) to mitigate for tree removal at culvert inlet and outlet areas, a minimum of three new trees of the same species as removed will be planted at or near the project site. Planted trees shall be monitored post-project for a minimum of three years to ensure rooting and long term success. Dead and/or dying replacement trees shall be replaced,
 - d) remove blocks of dirt fill that currently reside on top of the culvert inlet section that is scheduled for removal,
 - e) work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall: a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.

- 2.34 At Culvert No. 44 (PM 30.75), one approximately six-inch Pacific madrone tree (*Arbutus menziesii*) will be removed as a result of the project. To mitigate for this tree, a minimum of three Pacific madrone trees will be planted at or near the project site. Planted trees shall be monitored post-project for a minimum of three years to ensure rooting and long term success. Dead and/or dying replacement trees shall be replaced.
- 2.35 At Culvert No. 46 (PM 30.94), current plans call for replacing an existing substandard culvert with a new culvert and down-drain. The proposed new down-drain location is the same as the existing down-drain, which is above the break in slope and subject to gulying and downstream sediment discharge. At the inlet, accumulated sediment has been partially excavated to expose an inverted/perforated pipe (e.g. drop-inlet). To minimize erosion and sediment delivery to downstream watercourses, work at this site will adhere to the following conditions:
- a) the replacement outlet down-drain will extend further down to the first break in slope (approximately 15 feet downslope of the existing outlet location),
 - b) pull back and stabilize vertical banks adjacent to culvert outlet.
- 2.36 At Culvert No. 47 (PM 30.97), equipment access into the channel will, if feasible, use the southerly area as it will avoid taking larger trees.
- 2.37 At Culvert No. 48 (PM 31.84), protect the large, multi-stemmed California bay tree (*Umbellularia californica*) that is adjacent to the existing culvert inlet.
- 2.38 At PM 32.01 (culvert number not provided), current plans call for removing/abandoning the existing culvert and installing a new, larger culvert with a new culvert outfall location. New culvert installation may require removing an approximately 14-inch diameter California black oak (*Quercus kelloggii*) that is near the proposed new culvert outlet location. To minimize erosion and sediment delivery to downstream watercourses and mitigate for the potential removal of the oak tree, work at this site will adhere to the following conditions:
- a) pull back and stabilize eroding vertical banks that exist downstream of the existing culvert outlet,
 - b) if removal of black oak is necessary, a minimum of three California black oak trees will be planted at or near the project site. Planted trees shall be monitored post-project for a minimum of three years to ensure rooting and long term success. Dead and/or dying replacement trees shall be replaced.

- 2.39 At Culvert No. 52 (PM 33.23), current plans call for replacing an existing damaged culvert with a new, realigned culvert that will discharge on what appears to be an unstable slope. The Permittee will change existing plans to include the following modifications:
- a) the new culvert outlet will be at the same location and the existing culvert outlet,
 - b) a rock slope protection energy dissipater will be installed at the new culvert outlet.
- 2.40 At PM 33.71 (culvert number not provided), work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.
- 2.41 At Culvert No. 57 (PM 36.63), work at Lost Creek shall adhere to pertinent conditions provided in NMFS's Biological Opinion/Incidental Take Permit. In addition, work at this site will adhere to the following conditions:
- a) the Permittee shall not initiate work at this site until NMFS has prepared a written document approving fish passage considerations and/or current fish passage design,
 - b) An alternative rock-step weir design is permitted under this Agreement provided the Permittee provides CDFW with adequate confirmation from NMFS's hydraulic engineering staff approving the alternative fish passage design option.
- 2.42 At Culvert No. 58 (PM 37.44), the proposed project does not address a notable erosion and sediment delivery issue resulting from the outlet of the affected culvert discharging directly onto a private ranch road. After water from the culvert outlet intersects the ranch road, it continues down the road in a developing gully for approximately 75 feet and eventually discharges sediment-laden water directly into Rancheria Creek. This Agreement does not authorize work at this site unless measures a) or b) below are fully implemented:
- a) construct an appropriately designed rock-armored ford that will correct pertinent erosion issues on the ranch road and convey water from the replacement culvert directly across the ranch road and into Rancheria Creek,
 - b) submit an alternative plan for review and approval by CDFW. This Agreement does not authorize work at this site unless measures a) or b) are fully implemented.

- 2.43 At Culvert No. 59 (PM 39.22), pull back and stabilize the vertical stream bank that exists adjacent to the existing culvert outlet.
- 2.44 At Culvert No. 61 (PM 39.88), work at Bebee Creek shall adhere to pertinent conditions provided in NMFS's Biological Opinion/Incidental Take Permit. In addition, work at this site will adhere to the following conditions:
- a) the Permittee shall not initiate work at this site until NMFS has prepared a written document approving fish passage considerations and/or current fish passage design,
 - b) an alternative rock-step weir design is permitted under this Agreement provided the Permittee provides CDFW with adequate confirmation from NMFS's hydraulic engineering staff approving the alternative fish passage design option.
- 2.45 At Culvert No. 62 (PM 40.24), work shall be conducted when the affected stream reach is void of surface water. If water will be present during construction, the Permittee (or Permittee designee) shall: a) contact Mr. Rick Macedo at (707) 928-4369 or CDFW at (707) 441-2075 and b) allow CDFW staff up to 10 business days for consultation regarding proposed in-water operations.
- 2.46 At Culvert No. 63 (PM 40.63), one large multi-stem interior live oak (*Quercus wizlizenii*) will be removed as a result of the project. To mitigate for this tree, a minimum of three new live oak trees will be planted at or near the project site. Planted trees shall be monitored post-project for a minimum of three years to ensure rooting and long term success. Dead and/or dying replacement trees shall be replaced.
- 2.47 At Culvert No. 64 (PM 41.38), protect existing black oak and buckeye trees that are growing adjacent to the existing culvert outlet.
- 2.48 At Culvert No. 67 (PM 45.64), this location should be evaluated for fish passage issues as information on fish passage was not including with the Permittee's Notification. If appropriate, work at this location shall adhere to pertinent conditions provided in NMFS's Biological Opinion/Incidental Take Permit. In addition, work at this site will adhere to the following conditions:
- a) the Permittee shall not initiate work at this site until NMFS has prepared a written document approving fish passage considerations and/or current fish passage design or NMFS has determined that this site does not warrant fish passage considerations,
 - b) stabilize left bank adjacent to culvert outlet,

- c) re-position and stabilize the down oak tree that currently spans the channel approximately 30 feet from the existing culvert outlet.

3. Reporting Measures

Permittee shall meet each reporting requirement described below.

- 3.1 Permittee shall notify the Department, in writing, at least five (5) days prior to initiation of construction (project) activities and at least five (5) days prior to completion of construction (project) activities. Notification shall be faxed to the Department at (707) 441-2021, Attn: Rick Macedo, Staff Environmental Scientist, or via e-mail at richard.macedo@wildlife.ca.gov.

CONTACT INFORMATION

Any communication that Permittee or CDFW submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or CDFW specifies by written notice to the other.

To Permittee:

Mr. Sebastian Cohen
California Department of Transportation
1656 Union Street
Eureka, CA 95501
E-Mail: Sebastian.Cohen@dot.ca.gov

To CDFW:

Department of Fish and Wildlife
Region 1
619 Second Street, Eureka, California 95501
Attn: Lake and Streambed Alteration Program – Laurie Harnsberger
Notification #1600-2013-0039-R1
Fax: 707-441-2021
E-mail: laurie.harnsberger@wildlife.ca.gov

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute CDFW's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

CDFW may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before CDFW suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before CDFW suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused CDFW to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes CDFW from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects CDFW's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC §§ 2050 et seq. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

CDFW may amend the Agreement at any time during its term if CDFW determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by CDFW and Permittee. To request an amendment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., title 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter CDFW approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to CDFW a completed CDFW "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in CDFW's current fee schedule (see Cal. Code Regs., title 14, § 699.5).

EXTENSIONS

In accordance with FGC § 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to CDFW a completed CDFW "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in CDFW's current fee schedule (see Cal. Code Regs., title 14, § 699.5). CDFW shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (FGC § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of CDFW's signature, which shall be: 1) after Permittee's signature; 2) after CDFW complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC § 711.4 filing fee listed at http://www.wildlife.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire five years after the date the Agreement is fully executed, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

EXHIBITS

None.

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify CDFW in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

SEBASTIAN COHEN

Sebastian Cohen 6/10/2013
Name: Project Manager Date
Title

FOR DEPARTMENT OF FISH AND WILDLIFE

[Signature] T. LABAREE 6/11/13
for Name: Curt Babcock Date
Environmental Program Manager

Prepared by: Rick Macedo
Staff Environmental Scientist
6-7-13

MATERIALS INFORMATION

UNDERGROUND CLASSIFICATION
C217-045-08T



State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C217-045-08T

DEPARTMENT OF TRANSPORTATION

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of 2800 Gateway Oaks Drive, Suite 200, Sacramento, California 95833

(MAILING ADDRESS)

at ROUTE 128 DRAINAGE IMPROVEMENTS PROJECT

(LOCATION)

has been classified as *** POTENTIALLY GASSY with Special Conditions***

(CLASSIFICATION)

as required by the California Labor Code Section 7955.

The Division shall be notified if sufficient quantities of flammable gas or vapors have been encountered underground. Classifications are based on the California Labor Code Part 9, Tunnel Safety Orders and Mine Safety Orders.

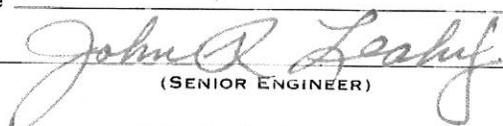
SPECIAL CONDITIONS

1. A Certified Gas Tester shall perform pre-entry and continuous monitoring of the underground environment to measure Oxygen and detect explosive, flammable, and toxic gasses whenever an employee is working in the underground environment.
2. Mechanical ventilation shall provide for continuous exhaust of fumes and air at any time an employee is working in the underground environment. The primary ventilation fans must be located outside of the underground environment and shall be reversible by a single switch near the fan location.
3. The Division shall be notified immediately if any **Flammable Gas** or **Petroleum Vapor** exceeds 5% of the Lower Explosive Limit.
4. All utilities that may be in conflict with the project shall be identified and physically located (potholed) prior to the start of project operations.

The 60-inch diameter by 170 feet long tunnel bore project located beneath Route 128 approximately 7.7 miles northeast of the intersection of Route 128 and Route 253 at Post Mile 21.8, Philo, Mendocino County.

This classification shall be conspicuously posted at the place of employment.

Date June 4, 2008


(SENIOR ENGINEER)

John R. Leahy

MATERIALS INFORMATION

GEOTECHNICAL RECOMMENDATION

Dated February 9, 2011

Memorandum

*Flex your power!
Be energy efficient!*

To: LARISA SASEVICH
Project Engineer
District 3 North Region DOE
Office of NR Program Management &
Engineering, Design Branch S3

Date: February 9, 2011
File: 01-MEN-128
PM 30.97
01-378161
Culvert Rehabilitation

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – MS 5

Subject: Geotechnical Recommendations

INTRODUCTION

General

As requested, the Office of Geotechnical Design – North (GDN) is providing geotechnical recommendations for culvert rehabilitation on Route 128 in Mendocino County at PM 30.97. The North Region Division of Engineering, Design Branch S3 has indicated that “bore and jacking” techniques will be utilized to rehabilitate the existing culvert at this location.

Purpose and Scope

The purpose of this memo is to address the presence of hard rock boulders that can potentially increase pipe bore and jack costs. The scope of our work included the review of published geological mapping, followed by field review of the site performed on August 20, 2004. The field review was limited to visual inspection of the site, and an attempt to identify near surface materials overlying and around the existing culvert. Identification of near surface materials was limited to shallow surface mining (≤ 1 foot depth) utilizing geologists pick. Subsurface exploration utilizing drilling equipment was not included in our scope of work.

FINDINGS

The culvert at this location consists of a roughly 24 inch (600-mm) diameter CSP culvert. On the outflow side, the embankment appears to be as much as 25 feet (8-m) + in height. Although the native materials underlying the embankment appeared soil-like (with isolated cobbles and boulders), a roadway cut westerly of the culvert exposes a large formation of moderately hard, serpentinized rock. Numerous small boulders were observed in the fill around the outlet of the pipe, some of which appeared to be composed of serpentinized rock.

CONCLUSIONS & RECOMMENDATIONS

The presence of near surface rocky a material at these sites indicates that significant quantities of boulder-sized, hard rock materials will likely be encountered when bore and jacking is performed for the proposed culvert improvements.

Naturally Occurring Asbestos

Serpentinized ultramafic rocks are known to contain naturally occurring asbestos. The reference geologic mapping indicated ultramafic rock formations present in close proximity to the PM 30.97 culvert. Based on our field observations, the presence of serpentinized ultramafic rock was confirmed in a nearby cut exposure and in rock fragments on the immediate site of the PM 30.97 culvert. The District 1 Hazardous Waste coordinator should be contacted regarding specific questions on this matter.

If you have any questions or comments, please call Mark Hagy at (916) 227-1077.

MARK C. HAGY, PE, GE
Transportation Engineer – Civil
Geotechnical Design – North

Attachments: References

E-copy:

DBrittsan (GDN Branch C), GTell (DPM), ETaddese (PCE),
MWilliam (GS Corporate), KFlannery (DEP), NR Construction, MStapleton (DME)
SCohen (D1 Hydraulics), GS File



1. Dibble, T.W. (1950) "Geology of parts of the Point Arena and Ornaun Quadrangles, Mendocino County, California: unpublished maps, scale 1:62,500.
2. Bortugno, E.J. & Wagner, D.L. (1980) "Reconnaissance mapping of parts of the Point Arena and Ornaun Valley Quadrangles, Mendocino County, California: unpublished field study for the State Map Project, scale 1:62,500.
2. Wagner, D.L. & Bortugno, E.J. (1982) "Geologic Map of the Santa Rosa Quadrangle", scale 1:250,000, California Department of Conservation - Division of Mines and Geology, RGM 2A.

MATERIALS INFORMATION

GEOTECHNICAL RECOMMENDATION

Dated February 14, 2011

Memorandum

*Flex your power!
Be energy efficient!*

To: ANDREA WILLIAMS
ROBERT POLGAR
TRIN CAMPOS (URS)
DISTRICT 3 DESIGN – M1

Date: February 14, 2011

File: 01-MEN-128-PM21.80
EA: 01-37816
Culvert Rehab

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL DESIGN NORTH – MS 5

Subject: Culvert Rehabilitation at Clow Creek

1. Introduction

Per your request, the Office of Geotechnical Design North is providing geotechnical data for State Route 128 at the vicinity of post mile 21.80 in Mendocino County. The request concerned an existing CSP culvert at Clow Creek that was not included in the Preliminary Geotechnical Report dated September 15, 2004. This memorandum was originally submitted on December 13, 2007 and has been revised to indicate a change of EA from 01-37810 to 01-37816.

This report presents the results of two rotary borings completed to 40 feet below ground surface in November 2007. These borings were needed to help estimate bore and jack costs and to provide site-specific information to bidders.

2. Existing Facilities and Proposed Improvements

State Route 128 is a two-lane conventional rural highway that links Highway 101 with Highway 1 and the Pacific Coast. Culvert rehabilitation has been proposed as part of a Drainage System Restoration (151) Program. A previous report addressed a number of culverts scheduled for upgrades but omitted an existing culvert at Clow Creek, a tributary to Navarro River. The existing pipe is corroded and non-standard (1.5 x 44.3 CSP). A new 3000mm welded steel pipe is proposed for installation using a "bore and jacking" method.

3. Caltrans Reports

The following Caltrans documents were reviewed for this report:

- a) Memorandum, "Preliminary Geotechnical Report, 01-MEN-128/253, 128 KP 0.11/81.44 (PM 0.18/50.59), 253 KP 0.62/10.66 (PM 0.99/17.15) Culvert Rehabilitation, Drainage

System Restoration (151) Program”, from Mark Hagy, Office of Geotechnical Design North, Branch C, September 15, 2004.

- b) Draft Project Report, “01-MEN-128 & 253, KP 0.3/81.44 (PM 0.2/50.6) & 1.6/27.6 (PM 1.0/17.2) 201-120-151- Culvert Rehabilitation”, District 3 Division of Design and Engineering Services, March 2005.

4. Physical Setting

Clow Creek is a small tributary of the Navarro River, which flows northwesterly through a narrow inland basin in western Mendocino County. West from Boonville, Highway 128 generally parallels the Navarro River until it reaches the Pacific Ocean, about one hundred miles south of the town of Mendocino. Elevations in the basin vary from sea level to about 3000 feet. The annual rainfall near Philo ranges from 39 to 43 inches, occurring mostly between December and March.

Geologically, the Navarro River Basin is underlain and surrounded on all sides by the Franciscan Complex. Alluvial deposits within the floodplain and channel consist of unconsolidated silts, clays, sands and gravels that were derived from bedrock. Land use is primarily forestland and rangeland.

5. Findings

Subsurface geological data was obtained from two mud rotary wireline borings drilled in the westbound and eastbound lanes of Highway 128, on each side of the culvert at PM 21.80. The borings were continuously cored using an HQ bit to a depth of 40 feet (12.2meters) below ground surface (bgs). Material recovered from each run was described and photographed but not retained. Both borings were abandoned with bentonite chips and cement grout. Photographs and descriptive logs are attached.

Boring 1 is located in the westbound lane of Highway 128, at approximate elevation of 206.7 feet (63m). The material below the asphalt pavement is interpreted to be compacted fill consisting of soft yellowish brown (Munsell notation 10YR 5/8) loam transitioning to a firm, mottled grayish green clay loam. The driller reported some fluid loss at about 10 ft (3.1m) below ground surface, possibly indicating an interface between lifts. A second soft area was encountered about twenty-five ft (7.62m) bgs. Increased drilling effort was required from about 36 ft bgs to the bottom of the boring. This interval consists of crushed sedimentary rock and very hard, greenish grey basalt with fine quartz veins. The basalt fragments appear to be from pebbles or cobbles rather than bedrock and could be either a gravel bed installed beneath the existing culvert or older alluvial deposits.

Boring 2 is located in the eastbound lane, with an estimated surface elevation of 206 feet (62.8 m). An exceptionally thick layer of asphalt pavement (approximately 1.5 ft or .5m) was encountered at the outset, suggesting past maintenance repair, possibly due to subsidence. This was underlain by firm, yellowish-brown loam and grayish green clay loam to 35 ft (10.7m) bgs,

similar to that encountered in Boring 1. The material from 35 to 38 ft (10.7 to 11.6m) bgs consists of rock fragments and rounded pebbles (possible gravel bed), underlain by two feet of bluish grey silty clay (5B 5/1).

6. Geotechnical Recommendations

The purpose of this investigation was to determine if any obstructions could prevent or impede a bore and jack installation of larger diameter culvert pipe. Both 40 ft (12.2m) borings penetrated compacted fill material above the existing culvert. Material encountered below the invert (approximately 35 feet or 11m below ground surface) consists of sedimentary rock fragments and well-rounded pebbles of metamorphic origin. These may be part of a gravel bed laid during installation of the existing culvert or older alluvial sediments. Depth to bedrock or the total thickness of the gravelly deposits beyond the forty-foot depth of the borings is unknown. No obstructions or difficult drilling conditions were encountered in either boring. Based on the results of our investigation, it is our opinion that the contractor can expect to rehabilitate the existing culvert at this location without significant difficulty attributable to the compacted fill or gravelly material.

If you have any questions or comments regarding the contents of this letter, please call Doug Brittsan at (916) 227-1079.

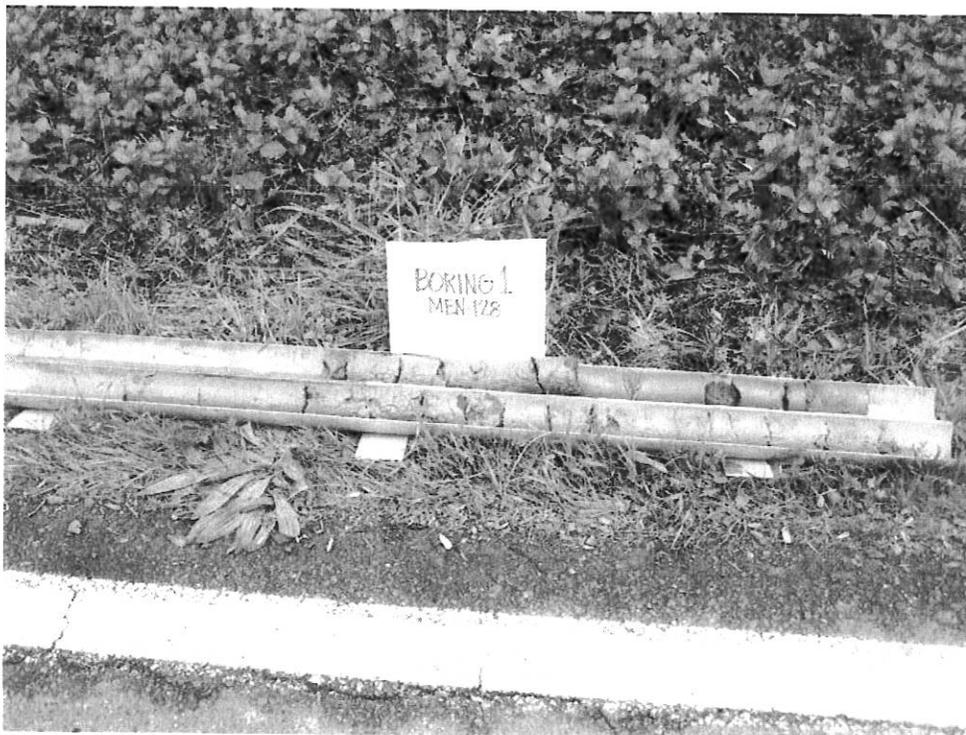
MARCIA KIESSE, PG 7111, CEG 2525 (Exp. 12/2012)
Engineering Geologist
Geotechnical Design North, Branch C

Attachments: Photographs
Boring Records (2)

C: OGDN
GS File Room
Douglas Brittsan, Br. C
Charlie Narwold, D1
RE Pending File



MEN-128 PM 20.8 - Setting up in westbound lane for Boring 1 W/B (Nov 2007)



Boring 1 W/B - Compacted fill



Boring 1 W/B – Closeup of compacted fill



Boring 2 E/B – Soft, clayey fill



Boring 1 W/B – Grey basalt gravel & crushed rock 36-38 feet below ground surface



Boring 1 W/B - Closeup of basalt gravel and rounded pebbles



Boring 2 E/B – Gravel-size rock from 35-38 ft, underlain by bluish grey silty clay



Boring 2 E/B – Borehole abandonment