INFORMATION HANDOUT

For Contract No. 01-0A3604
At 01-Hum-299-19.3/19.8

Identified by
Project ID 0100020289

PLAC CONDITION RESPONSIBILITY

PLAC Condition Responsibility Summary

PERMITS

United States Army Corps of Engineers

Non-Reporting Nationwide Permit No. 14

WATER QUALITY

California Regional Water Quality Control Board

North Coast Region
Board Order No. WDID No. 1B13145WNHU

AGREEMENTS

California Department of Fish and Wildlife

Notification No. 1600-2013-0344-R1

MATERIALS INFORMATION

Geotechnical Design Recommendations for Acorn Curve Improvement Project

PLAC CONDITION RESPONSIBILITY

PLAC CONDITION RESPONSIBILITY SUMMARY

PLAC CONDITION RESPONSIBILITY (PCR) SUMMARY

General:
This PCR Summary clarifies various PLAC requirements. Perform all work described in the PLACs on behalf of the Department unless otherwise stated in Table 2 below. If a discrepancy exists between the PCR Summary and the PLAC, the PCR Summary governs.

Definitions:
Agency: A board, agency, or other entity that issues a PLAC
Activity: A task, event or other project element
PLAC Condition: A work activity and/or submittal required by a PLAC

Table 1 - Clarification of PLAC Requirements

PLAC Name	Section of the PLAC	PLAC Requirement
All PLACs	Applicable PLAC section	Submittals: Submit to the Engineer when PLAC conditions require: 1. Communications. The Engineer will contact the agencies. 2. Records to be maintained, within 5 working days after the inactivity. 3. Submittals 5 days before the agencies require them. The Engineer will review and submit to the agencies.
North Coast Regional Water Quality Control Board WDID No. 1B13145WNHU	Project-Specific Conditions	Condition 3 - The drainage inlet at drainage system 6 functions as a traction sand trap and was designed to treat no less than 0.88 acres of impervious area.

	Standard Conditions	Condition 16 - Both the Contractor and the Department "shall provide access to project construction site upon request by Regional Water Board staff."
		Condition 17 - The RE will schedule and facilitate the water quality permit compliance meetings. Contractor will ensure attendance by appropriate personnel.
California Department of Fish and Wildlife Streambed Alteration Agreement Notification No. 1600-2013-0344-R1	Section 1 - Administrative Measures	Measure 1.4 - Both the Contractor and the Department "agrees that CDFW personnel may enter the project site at any time to verify compliance with the Agreement."
	Section 2 - Avoidance and Minimization Measures	Measure 2.6a - Contact the RE if water is present during in-channel work. The Department will provide a biologist.
		Measure 2.13 - The Contractor is responsible for maintenance until contract acceptance

Table 2 - Work to be Performed by the Department		
PLAC Name	**Section of the PLAC**	**PLAC Requirement**
North Coast Regional Water Quality Control Board WDID No. 1B13145WNHU	Project-Specific Conditions Requiring Reports	Condition 2
	Standard Conditions	Conditions 6, 22 & 23
California Department of Fish and Wildlife Streambed Alteration Agreement Notification No. 1600-2013-0344-R1	Site-Specific Measures	Measure 2.6a & 2.19

PERMITS

UNITED STATES ARMY CORPS OF ENGINEERS

NON-REPORTING NATIONWIDE PERMIT NO. 14

Nationwide Permit Information

I. Project Location and Contact Information

District No: 01 Project Title: Acorn Curve Improvement

County: Humboldt Route: 299 Post Mile: 19.3/19.8 Project EA: 0A360

Project Manager: Kim Floyd Phone No.: (707) 441-5739

Project Biologist: Peter Lewendal Phone No.: (707) 445-5205

Quad Name: Lord-Ellis Summit 7.5' Waterway/Watershed: un-named / Redwood Creek

II. Project Description: Please see attached a complete project description.

III. Name of Lead Federal Agency: State of California, Department of Transportation (Caltrans)

IV. Endangered Species Act Section 7 Consultation: There was a *No Effect* determination (i.e., there was no formal/informal consultation).

List all federally-listed species potentially occurring within the project area:

Northern spotted owl (Strix occidentalis caurina) and west coast DPS fisher (Martes pennanti)

Has Section 7 Consultation concluded with USFWS? Yes _____ No ✓ Date

Has Section 7 Consultation concluded with NMFS? Yes _____ No ✓ Date

Lead Federal agency (i.e. agency responsible for Section 7 Consultation with USFWS or NMFS): Caltrans

Determination (List species under the appropriate category below)

No effect *S. caurina, M. pennanti*

Not likely to adversely affect _____

May affect _____

Appended to a programmatic _____

V. Essential Fish Habitat Consultation (EFH) Please attach a copy of determination and/or NMFS' EFH recommendations.

Select affected EFH Fishery Management Plan: _____ Pacific Ground Fish _____ Coastal Pelagic _____ Pacific Salmon

Lead Federal agency EFH (i.e. agency responsible for section 7 consultation) Caltrans

Has EFH Consultation concluded with NMFS? Yes _____ No _____ N/A ✓ Date 21 Nov 2013

VI. Permit Being Requested (check one that applies)

_____ Reporting Nationwide Permit ✓ Non-Reporting Nationwide Permit

14 Indicate which NWP(s) would appropriately authorize the proposed project.

VII. Corps' Authority Information

Section 10 (Attach Justification and Maps): Yes ____ No ✓

Section 404 (Attach Justification and Maps): Yes ✓ No ____

Has a preliminary jurisdictional determination report been verified by the Corps? Yes ____ No ✓ Date_____

VIII. Minimal Impact Criteria

Explain whether or not the proposed project would result in minimum impact to the aquatic environment (attach additional information if necessary):

The project will result in minimum impact to the aquatic environment.

IX. Permit Compliance Information (Nationwide General Conditions and the San Francisco District's Regional Conditions)

Explain how the project complies with each of the following. Attach additional sheets if necessary.
For more information go to: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/NationwidePermits.aspx

1. Navigation — Activity will not cause any adverse effect on navigation.
2. Aquatic Life Movements — No activity will substantially disrupt life cycle movements of indigenous aquatic species.
3. Spawning Areas — Both stream courses are not accessible to fishes of any type.
4. Migratory Bird Breeding Areas — Breeding sites of migratory birds are avoided project-wide.
5. Shellfish Beds — Both stream courses are not accessible to shellfish of any type.
6. Suitable Material — No unsuitable materials will be used.
7. Water Supply Intakes — Neither water course outlet is a public water supply intake.
8. Adverse Effects of Impoundments — No activity will create an impoundment of water.
9. Management of Water Flows — Open waters will be maintained and the culverts will be replaced during the dry season.
10. Fills within 100-Year Floodplains

    Does the activity comply with applicable FEMA-approved state or local floodplain management requirements? Yes ✓ No _____
11. Equipment — All equipment will remain in Caltrans ROW.
12. Soil Erosion and Sediment Controls — Work in the two streams will take place during the driest season (15 may – 15 October) of any year.
13. Removal of Temporary Fills — This project does not have any temporary fills.
14. Proper Maintenance — This facility will be properly maintained.
15. Single and Complete Project — This project is single and complete.

    *Definition: "... that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e. a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization."
16. Wild and Scenic Rivers

    Does the activity occur in a component of a National Wild and Scenic River System? Yes _____ No ✓

    Does the activity occur in a river officially designated by Congress as a study river? Yes _____ No ✓
17. Tribal Rights — This project will not impair reserved tribal rights.
18. Endangered Species — See section IV above.
19. Migratory Birds and Bald and Golden Eagles — No *take* of migratory birds, bald eagles, or golden eagles will occur per this project.
20. Historic Properties (attach documentation of determination)

    Is it possible that the activity may affect properties listed, or eligible for listing in the National Register of Historic Places? Yes _____ No ✓

    Lead Federal agency (i.e. agency responsible for Section 106 Compliance) Caltrans
21. Discovery of Previously Unknown Remains and Artifacts — RE will notify the district engineer if any remains or artifacts are discovered.

22. Designated Critical Waters (select those that apply): None apply.

_____ N0AA-designated marine sanctuaries, _____ National Estuarine Research Reserves,

_____ State natural heritage sites, _____ Corps designated critical resource,

_____ Outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance.

Note: NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51 and 52: **NWP authorization prohibited**

NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38: **PCN required**

23. Mitigation

Has the activity been designed and constructed to avoid and minimize adverse effects to Waters of the U.S.? Yes ✓ No ____

Has compensatory mitigation been proposed? See 401 and 1602 for details. Yes ✓ No ____

Does mitigation meet required minimum 1:1 ratio? Yes ✓ No ____

If streams are affected by the project, are vegetated buffers with native plant species near streams maintained and / or restored?

Yes _____ No ✓

24. Safety of Impoundment Structures

Does the project comply with established state dam safety criteria Yes____ No ____ N/A ✓

25. Water Quality

RWQCB 401 Certification Yes ✓ No ____ Pending (provide date of application) _____

Point of Contact at RWQCB Mr. Brendan Thompson

Date 401 Certification issued 5 February 2014

26. Coastal Zone Management

Consistency Determination Yes____ No ✓ Pending (provide date of application) _____

Point of Contact at Costal Commission N/A

Date of Consistency Determination issued N/A

27. Regional and Case-by-Case Conditions (The following section summarizes the SPD and S.F. District's Regional Conditions)

SPD Regional Conditions:

PCN requirements (see 31 below).

Is the project proposed to occur within EFH? Yes _____ No ✓ **If Yes, a PCN is required with additional information**

Does the project ensure suitable passage for federally –listed fish species? Yes _____ No _____ N/A ✓

Will mitigation occur before or concurrently with project construction? Yes ✓ No _____

Are you requesting a waiver of the 300 linear foot threshold? Yes _____ No ✓ **If Yes, a PCN is required with additional information**

SPN Regional Conditions:

Does the proposed project occur in Diked Baylands? Yes _____ No ✓ **If Yes, a PCN is required**

Does the propose project occur within the Santa Rosa Plain? Yes _____ No ✓ **If Yes, a PCN is required**

Is the project proposed to occur within Eelgrass beds? Yes _____ No ✓ **If Yes, a PCN is required**

Specific NWP Regional Conditions

NWP 3: Excavation equipment shall work from an upland sit; and justification for work within special aquatic site is required (please attach).

NWP 11: Are any temporary structures proposed in wetlands or vegetated shallow water areas? Yes _____ No ____ **If Yes, a PCN is required**

NWP 12: Excess material removed from the trench shall be disposed of at an upland site; and authorization of substation facilities by this NWP is prohibited.

NWP 13: PCN required for stabilization of more than 300 linear feet; excavation of a toe trench is allowed as long as excess material is disposed of at an upland location; additional fill which extends beyond the original shoreline may not exceed one cubic yard per running foot; bank stabilization must incorporate structures or modification beneficial to fish and wildlife; and PCN should address up and downstream effects of stabilization.

NWP 14: PCN required for projects proposed to fill greater than 300 linear feet of channel; authorization prohibited for taxiways or runways; modifications must incorporate structures or modification beneficial to fish and wildlife; PCN should address up and downstream effects of fill.

Has NWP 14 been used to authorize previous project segments within the same linear transportation project? Yes _____ No ✓

If Yes, cumulative effects information required.

NWP 23: PCN Required. Please refer to regional conditions for additional information on PCN requirements.

NWP 27: Post construction reporting required to demonstrate the project would result in a net increase in aquatic function. Information must include adverse affects to adjacent properties or structures.

NWP 29: This NWP is prohibited in the Diked Baylands. Does the project incorporate LID concepts? Yes _____ No _____

NWP 33: Access roads shall be designed to be the minimum width necessary; the road shall be properly stabilized; fill shall be placed to minimize encroachment of equipment within Waters of the U.S.; vegetative disturbance shall be minimized; borrow shall be taken from upland source; and stream channelization authorization by this NWP is prohibited.

NWP 35: PCN Required. Please refer to regional conditions for additional information on PCN requirements.

NWP 39: This NWP is prohibited in the Diked Baylands. Does the project incorporate LID concepts? Yes _____ No _____

NWP 40: Work shall not impede flows during high volume events.

NWP 41: Mitigation may be required; PCN required if fill material will be re-deposited, re-graded, discharged, or if channel lining is installed; and PCN shall include an explanation of the project's benefit to water quality.

NWP 42: 404(b)(1) guidelines must be met if buildings are proposed in Waters of the U.S.

28. Use of Multiple Nationwide Permits Yes _____ No ✓

If yes, list NWP and acreage impact _____

29. Transfer of Nationwide Permit Verifications This NWP is not to be transferred.

30. Compliance Certification This project is processed with a non-reporting NWP.

31. Notification PCN Contents (please attach) No PCN is required.

_____ Name, address, and telephone number of the applicant;
_____ Location of proposed project;
_____ Delineation of special aquatic sites and other Waters of the U.S.;
_____ Detailed mitigation and monitoring plan;
_____ Federally-listed species information;
_____ Historic properties information
_____ Statement of avoidance and minimization measures
_____ Representative site photographs
_____ A project description including purpose, direct and indirect effects, additional Corps' authorizations for the project;

*All drawings should be consistent with the Regional Mapping Standards (Public Notice 8/6/12).

X. Multiple Nationwide Permit Requested

If multiple Nationwide Permits are requested, list No. and Title, and explain how each activity complies with the NWP terms. (Attach additional sheets if necessary):

1. _____
2. _____

XII. Project Impact Information [Area Affected (acres) and (cubic yards)]

Wetlands (permanent): None Wetlands (temporary): None

Waters of the US (permanent): 177 square feet, 14.45 cubic yards Waters of the US (temporary): None

Linear extent of impact within Corps' jurisdiction: 31 feet

XIII. Project Mitigation Information

Special Conditions (List conditions specified by specialist Division personnel): None.

Best Management Practices (attach additional information if necessary): See 401 for details

Site Restoration Plan (attach additional information if necessary): None.

Proposed Mitigation (attach additional information if necessary): See 401 for details

Attachments
Site location map
Delineation of jurisdictional boundaries (on aerial photo or contour map) prepared in accordance with November 2007 Memo titled, "*San Francisco District's Information Requested for Verification of Corps' Jurisdiction*".
Completed routine delineation data forms
Reduced project plans showing all proposed impacts to aquatic resources
Mitigation information
Copy of applicable nationwide permit(s) and general conditions

FOR CALTRANS USE ONLY:

IX. Signatures

Based on the information provided above, I hereby certify that this project qualifies for a nationwide permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344) and/or Section 10 of the U.S. Rivers and Harbors Act (33 U.S.C. 406).

Prepared by: Peter Lewendal Date: 21 November 2013

Supervisory Concurrence: Kim Lloyd Date: 2/7/14

cc: U.S. Army Corps of Engineers, Liaison
Environmental Planning Branch Nationwide Permit File
District Office Engineer
District Project Manager
Resident Engineer Pending File

WATER QUALITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

NORTH COAST REGION

WDID No. 1B13145WNHU

February 5, 2014

In the Matter of

Water Quality Certification

for the

California Department of Transportation
State Route 299, Acorn Curve Improvement Project
(Caltrans EA No. 01-0A360)
WDID No. 1B13145WNHU

APPLICANT:	California Department of Transportation
RECEIVING WATER:	Redwood Creek
HYDROLOGIC AREA:	Beaver Hydrologic Area No. 1107.20
COUNTY:	Humboldt
FILE NAME:	CDOT Acorn Curve Improvement; Highway 299 PM 19.3/19.8PM

FINDINGS BY THE EXECUTIVE OFFICER:

1. On November 26, 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 State Route 299 Acorn Curve Improvement Project (Project).

2. **Hydrologic Unit**: The proposed Project would cause disturbances to jurisdictional waters that are tributary to Lacks Creek within the Beaver Hydrologic Area of the Redwood Creek Hydrologic Unit (Basin Plan Hydrologic Planning Area 1107.2)

3. **Public Notice:** The Regional Water Board provided public notice of the application pursuant to title 23, California Code of Regulations, section 3858 on January 13, 2014, and posted information describing the project on the Regional Water Board's website. No comments were received.

4. **Project Description:** The proposed Project is located on State Route (SR) 299, at post-miles 19.3 and 19.8, in Humboldt County. The purpose of the Project is to improve roadway safety by widening paved shoulders, improving the superelevation, closing a 1000-foot gap between two existing westbound truck climbing lane segments, and installing centerline and shoulder rumble strips. Other project elements include:
    - Excavation to install a geo-synthetic reinforced embankment. The embankment would be built in layers by placing geo-fabric and back-filling and compacting earth material;
    - Two culverts at post-miles 19.48 and 19.72 would be replaced with the same length and diameter corrugated steel pipes; and
    - Replacement of the existing concrete drainage inlet at post-mile 19.48 and placement of rock slope protection at the outlets of both drainage outlets.

5. **Construction Duration:** Project implementation is expected to be completed in approximately eighty days between May 15, 2014, and October 15, 2014.

6. **Permanent Impacts:** Caltrans has determined that the proposed Project would result in approximately 177 square feet (0.004 acres) of permanent impacts to jurisdictional tributaries to Lacks Creek.

7. **Temporary Impacts:** All Project impacts are permanent; there are not temporary impacts.

8. **Mitigation for Permanent Impacts**: To compensate for permanent impacts to jurisdictional waters, Caltrans is proposing to use 0.0056 acres in surplus State waters restoration credit at the Lacks Creek mitigation site on Bureau of Land Management property, approximately 10 miles southeast of the town of Orick. The Lacks Creek mitigation project is being implemented as mitigation for the State Route 299 Green Point Sink Project, which Caltrans received 401 water quality certification from the Regional Water Board on June 20, 2012.

9. **Post-Construction Stormwater Treatment:** Project implementation would result in approximately 0.73 acres of new impervious surface area. Caltrans is proposing to install a traction sand trap to treat approximately 0.88 acres of stormwater runoff from impervious roadways surfaces at Station 720+50. Because traction sand traps do not treat smaller particles and soluble pollutants, the Regional Water Board is requiring Caltrans to identify and implement additional treatment opportunities within the same watershed (see condition no. 2).

10. **Disturbed Soil Area**: Project implementation would result in greater than one acre of disturbed soil area. Caltrans shall apply for coverage under the National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ) and prepare a Stormwater Pollution Prevention Plan detailing Best Management Practices

to control pollution from the Project area during construction. All disturbed areas within the Project area shall be appropriately stabilized and/or replanted with appropriate native vegetation.

11. **Utility Relocations:** Utility relocations are not included in this Project.

12. **Other Agency Actions:** Caltrans has claimed coverage under a United States Army Corps of Engineers non-reporting Nationwide Permit 14 pursuant to Clean Water Act, section 404. Caltrans has also applied to California Department of Fish and Wildlife for a Streambed Alteration Agreement.

13. **CEQA Compliance:** On October 22, 2013, Caltrans, acting as lead agency, signed a Notice of Determination pursuant to the California Environmental Quality Act (CEQA), declaring that a mitigated negative declaration had been approved for the Project.

14. **Antidegradation Policy:** The federal antidegradation policy requires that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water 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.

15. 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 Water:	Tributaries to Lacks Creek in the Beaver Hydrologic Area of the Redwood Creek Hydrologic Unit (Basin Plan Hydrologic Planning Area 1107.2)	
Filled and/or Excavated Areas:	Permanent – jurisdictional waters	177 ft^2 (0.004 acres)
	Temporary – jurisdictional waters	No temporary fill
Dredge Volume:	none	
Fill Volume:	Permanent – 31 cubic yards	
Mitigation proposed:	Off-site: 0.0056 waters restoration at Lacks Creek mitigation site	
Latitude/Longitude:	40° 55' 28.66" N, 123° 50' 13.04" W	

Accordingly, based on its independent review of the record, the Regional Water Board certifies that the State Route 299 Acorn Curve Improvement Project (WDID No. 1B13145WNHU), as described in the application 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.

Project-Specific Conditions Requiring Reports

1. The Regional Water Board shall be notified in writing (e-mail is acceptable) at least five working days prior to commencement of ground disturbing activities for each construction season.
2. Prior to Project construction, Caltrans shall submit a treatment plan to treat no less than 0.29 acres of impervious area within the Redwood Creek watershed (Basin Plan Hydrologic Planning Area 1107.00). The treatment plan shall detail a vegetated-based stormwater treatment BMP sized to treat 0.36 inches of rainfall per hour from the entire contributing area. The treatment plan shall also include an implementation schedule. The required treatment amount shall be increased if Caltrans proposes a treatment location outside the Redwood Creek watershed. Project construction shall be prohibited until the treatment plan has been found acceptable to Regional Water Board staff.

Project-Specific Conditions

3. Caltrans shall install a traction sand trap at Station 720+50 to treat roadway runoff from no less than 0.88 acres of impervious area.

Standard Conditions

4. 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 and consideration of acceptance.

5. All Project elements shall be implemented according to the submitted application package and the findings and conditions of this certification. If any change to the Project could affect water quality, then Caltrans shall first submit the proposed change to Regional Water Board staff for review and consideration of concurrence. Caltrans shall not implement the proposed Project change until Water Board staff concur that

Standard Conditions (continued)

Caltrans will sufficiently avoid, minimize, or mitigate possible water quality impacts. Caltrans staff should contact the Regional Water Board if it is unsure whether a given Project change may impact water quality.

6. 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.

7. 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, shall be allowed to enter into State waters.

   Except for temporary stockpiling of waste generated during demolition operations ("temporary" in this instance means generated and removed during the same working day), waste materials shall not be placed in a manner where the materials may be transported into waters of the State. Waste materials shall not be placed within 100 linear feet of State waters. Exceptions to the 100-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.

8. Caltrans is liable and responsible for the proper disposal of Project-generated waste. Additionally, when handling, transporting, and disposing of Project-generated waste, Caltrans and their contractors shall:
   - i) Comply with all applicable State and Federal laws and regulations;
   - ii) Make appropriate arrangements to dispose of the material, including, but not limited to, property owner agreements, permits, licenses, and environmental clearances;
   - iii) Obtain satisfactory evidence that the work in 8.i has been completed; and
   - iv) Obtain a dated, signed manifest from the disposal site owner, or authorized representative, that identifies the type and quantity of disposed waste.

9. Asphalt-concrete grindings shall not be placed in any location where it may, at any time, be directly exposed to surface waters or seasonally-high ground water, except asphalt-concrete grindings may be re-used and incorporated into hot mix asphalt products or encapsulated within the roadway structural section.

10. Fueling, lubrication, maintenance, storage and staging of vehicles and equipment

Standard Conditions (continued)

shall be prohibited within waters of the State (e.g., gravel bars, seeps, ephemeral streams) and riparian areas. Caltrans shall not use leaking vehicles or equipment within State waters or riparian areas.

11. 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.

12. Caltrans shall not use or allow the use of erosion control products that contain synthetic materials within waters of the State at any time, with the exception of plastic sheeting used in water diversion or dewatering activities. Caltrans shall first request approval from the Regional Water Board if an exception from this requirement is needed for a specific location.

13. Work in flowing or standing surface waters, unless otherwise proposed in the project description and approved by the Regional Water Board, is prohibited.

14. Non-stormwater discharges are prohibited unless the discharge is first approved by the Regional Water Board and in compliance with the Basin Plan. 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 either of these permits, then discharge is prohibited until Caltrans has received notification of coverage under the respective permit.

15. This Order does not authorize drafting of surface waters.

16. Caltrans shall provide access to the Project construction site upon request by Regional Water Board staff.

17. 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. 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

Standard Conditions (continued)

the site. The contractors, subcontractors and their employees, and inspectors or monitors assigned to work on the Project within the next week, shall be present at the meetings. Caltrans shall maintain dated sign-in sheets for attendees at these meetings, and shall make them available to Regional Water Board staff on request.

18. 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.

19. Uncured concrete shall not be exposed to State waters or surface waters that may discharge to State waters. Concrete sealants may be applied to the concrete surface where difficulty in excluding flow for a long period may occur. If concrete 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.

20. Ground and surface water that has come into contact with fresh concrete, and all other wastewater, shall not be discharged to State waters or to a location where it may discharge to State waters; the wastewater shall be collected and re-used or disposed of in a manner approved by the Regional Water Board.

21. 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 consideration of acceptance.

22. 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 and subcontractors.

23. 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 Caltrans. The Regional Water Board received $963 from Caltrans on November 26, 2013.

Standard Conditions (continued)

24. This certification action is not intended and shall not be construed to apply to any 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.

25. 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.

26. 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.

27. This certification is not transferable. In the event of any change in control of ownership of land presently owned or controlled by Caltrans, Caltrans 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) The 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.

Standard Conditions (continued)

28. Except as may be modified by any preceding conditions, all certification actions are contingent on: a) the discharge being limited, and all proposed revegetation, avoidance, minimization, and mitigation measures being completed, in strict compliance with Caltrans's 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.

29. The authorization of this certification for any dredge and fill activities expires five years from the date of this Order. 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 1, 2, and 5 include requirements for information and reports. Any requirement for a report made as a condition to this certification is a formal requirement pursuant to California Water Code 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.

for Matthias St. John
Executive Officer

140205_BJT_dp_CDOT_Hwy299_AcornCurve_401

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: Mrs. Kim Floyd, Caltrans, District 1, 1656 Union Street, Eureka, CA 95501

cc: U.S. Army Corps of Engineers, Regulatory Functions - San Francisco District
California Department of Fish and Wildlife, Bay Delta Region
State Water Resources Control Board
Environmental Protection Agency, Region IX

AGREEMENTS

STATE OF CALIFORNIA

DEPARTMENT OF FISH AND GAME

NOTIFICATION NO. 1600-2013-0344-R1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
REGION 1 - NORTHERN
601 LOCUST STREET
REDDING, CALIFORNIA, 96001

RECEIVED
FEB 04 2014
D. F. G. – EUREKA

STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2013-0344-R1
Unnamed Tributaries to Redwood Creek
STREAM ENCROACHMENTS ON SR 299 PMS 19.48 AND 19.72

CALIFORNIA DEPARTMENT OF TRANSPORTATION,
AS REPRESENTED BY MS. KIM FLOYD
ACORN CURVE IMPROVEMENT ON SR 299, HUMBOLDT COUNTY

This Lake or Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Wildlife (CDFW) and the California Department of Transportation (Caltrans) (Permittee), as represented by Ms. Kim Floyd.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified CDFW on November 26, 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 on Unnamed Tributaries to Redwood Creek on State Route (SR) 299 between Post Mile (PM) markers 19.3 and 19.8, approximately 19 miles east of the junction of SR's 101 and 299, and includes two permanent stream crossings at PM markers 19.48 and 19.72 in the County of Humboldt, State of California; Section 9, Township 6N, Range 3E; Humboldt Base and Meridian, in the Lord-Ellis Summit USGS 7.5-minute quadrangle.

PROJECT DESCRIPTION

The project consists of work proposed between PM markers 19.3 and 19.8 on SR 299, including widening paved shoulders, improving superelevation of the road, closing a 1000-foot gap between two existing westbound truck climbing lane segments, and removal and replacement of two permanent stream culverts at PM markers 19.48 and 19.72. Existing culverts will be replaced with new corrugated steel pipes and rock slope protection placed at the outlets. At PM 19.48, the existing concrete drainage ~~headwall~~ inlet will be removed and replaced.

o.k. gd 3/10/14

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: **Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), steelhead (*O. mykiss*), coastal cutthroat trout (*O. clarki clarki*), northern red-legged frog (*Rana aurora*), foothill yellow-legged frog (*R. boylii*),** 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 of aquatic species, damage to spawning and/or rearing habitats 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 at any time 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 in accordance with the forms, work plans, drawings, biological reports and maps submitted with Notification No. 1600-2013-0344 as submitted by January 14, 2014. No asphalt ditches shall be installed.

2.2 All work within the bed, bank and channel shall be confined to the period June 1 through October 15 of each year.

2.3 Vegetation proposed for removal shall be removed between September 15 and February 28 to avoid impacts to nesting birds.

2.4 If sightings or den sites of ring-tailed cat (*Bassariscus astutus*), Pacific fisher (*Martes pennanti*), or marten (*Martes americana*) are encountered in the course of activities at project sites, the Permittee shall immediately notify and consult with CDFW to identify any measures that may be needed to avoid take or minimize adverse impacts to these species.

2.5 No fill material shall be placed within a stream except as specified in this Agreement.

2.6 Where flowing water is present during operations:

a) A biologist shall be on-site to identify and, if necessary, remove and relocate amphibians, reptiles or other aquatic species.

b) 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.

c) 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.

d) 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 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.

2.8 Any equipment or vehicles driven and/or operated within or adjacent to the stream channel shall be checked and maintained in a manner which prevents materials that, if introduced to water, could be deleterious to aquatic life, wildlife, or riparian habitat.

2.9 Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations unless specifically authorized to do so under this Agreement. The disturbed portions of any stream channel or banks shall be restored to as near their original condition as possible. Restoration shall include re-vegetation of areas stripped or exposed by project activities. Slash pack, rock, or other erosion protection suitable to CDFW shall be placed in areas where vegetation cannot reasonably be expected to become reestablished.

2.10 Adequate and effective erosion and siltation control measures shall be used to prevent sediment or turbid or silt-laden water from entering streams. Where needed, the Permittee shall use native vegetation or other treatments including native slash, jute netting, straw wattles, and geotextiles to protect and stabilize soils. Geotextiles, fiber rolls, and other erosion control treatments shall be made with wildlife-friendly, biodegradable[1] products that will not entrap or harm wildlife. Permanent erosion control products shall not contain synthetic (e.g., plastic or nylon) netting or materials.

2.11 All bare mineral soil outside the stream bed exposed in conjunction with crossing deconstruction, construction, maintenance or repair 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. Erosion control shall include using native slash or seeding and mulching with at least 2 to 4 inches 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*). No known invasive grass seed such as annual or perennial ryegrass (*Lolium multiflorum or L. perenne*, which are now referred to as *Festuca perennis*), shall be used.

2.12 Encroachments and associated structures, fills, and other exposed soils shall be armored as needed to protect fill, abutments, and the stream channel and banks from erosion.

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[1] Photodegradable synthetic products are not considered biodegradable.

2.13 The Permittee shall provide site maintenance for the life of the structures, including, but not limited to, re-applying erosion control to minimize surface erosion and ensuring drainage structures, streambeds and banks remain sufficiently armored, stable, and capable of passing stream flows as designed.

2.14 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.

2.15 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.

2.16 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 for all types of hazardous materials spills and incidents. CDFW shall be notified by the Permittee and consulted regarding clean-up procedures.

2.17 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. (This is not applicable to material installed permanently or temporarily as a permitted part of the project activities). When operations are complete, any excess materials or debris within 150 feet of the stream channel shall be removed from the work area and disposed of properly prior to the first rainfall.

SITE-SPECIFIC MEASURES:

2.18 When existing culverts are removed for culvert replacement at PMs 19.48 and 19.72, all fill shall be excavated down to the original stream channel and outwards, horizontally, as wide as or wider than the natural channel to form a channel as close as feasible to the natural stream grade and alignment. Excavated fill shall be placed in stable areas where it cannot enter or erode into a stream.

2.19 Permanent culverts installed at PMs 19.48 and 19.72 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 transport of bedload, and the abundance and size of woody debris likely to be introduced to the stream upstream of the culvert crossing.

2.20 Permanent culverts shall extend lengthwise completely beyond the toe of fill. Permanent culverts and their outfall structures shall be aligned with the stream channel, as wide as or wider than the channel width, and shall be placed with the bottom set at or slightly below the natural streambed elevation to the maximum extent feasible. If permanent culverts cannot be set to grade, they shall have downspouts and/or energy dissipators below the outfall as needed to effectively control erosion.

2.21 Installation of culverts shall be such that water flow is not impaired and upstream or downstream passage of all aquatic life-forms is assured at all times.

2.22 To prevent the release of materials that may be toxic to fish and other aquatic species at MP 19.48, either a precast concrete ~~headwall~~ inlet shall be used, or any poured concrete for a cast-in-place ~~headwall~~ inlet shall be isolated from water and allowed to dry/cure for a minimum of 30 days.

O.K. 2/10/14

3. Reporting Measures

Permittee shall meet each reporting requirement described below.

3.1 Permittee shall notify CDFW 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. Information to be disclosed in Notification shall include Agreement number and anticipated start/completion date.

CONTACT INFORMATION

Written communication or documentation that Permittee or CDFW submits to the other shall be delivered to the address below unless Permittee or CDFW specifies otherwise:

To Permittee:

Ms. Kim Floyd
Caltrans
1656 Union Street
Eureka, California 95501
Office Phone: 707-441-5899
E-Mail: kim.floyd@dot.ca.gov

To CDFW:

Department of Fish and Wildlife
Region 1
619 Second Street
Eureka, California 95501
Attn: Lake and Streambed Alteration Program
Notification #1600-2013-0344-R1
Fax: 707-441-2021

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 sections 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., tit. 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., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 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., tit. 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 (Fish & G. Code, § 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 section 711.4 filing fee listed at http://www.cdfw.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire ***three 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.

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.

FOR CALIFORNIA DEPT OF TRANSPORTATION

Kim Floyd — 2/3/2014

Kim Floyd
Project Manager

Date

FOR DEPARTMENT OF FISH AND WILDLIFE

Scott Bauer — 2/10/14

Curt Babcock for
Environmental Program Manager

Date

Prepared by: JoAnn Dunn, Senior Environmental Scientist (Specialist), January 30, 2014

MATERIALS INFORMATION

GEOTECHNICAL DESIGN RECOMMENDATIONS FOR ACORN CURVE IMPROVEMENT

State of California Business, Transportation and Housing Agency

DEPARMENT OF TRANSPORTATION

M e m o r a n d u m

Flex your power

Be energy efficient!

Date: February 28, 2014

To: JOHN MARTIN
Branch Chief
Design R1

File: 01-HUM-299-PM 19.3/19.8
Acorn Curve Improvement Project
EFIS ID: 0100020289

Attn: BILL SUTHERLAND

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – OGDN

Subject: Geotechnical Design Recommendations for Acorn Curve Improvement Project

1. INTRODUCTION

The following recommendations are provided for the proposed Geosynthetic Reinforced Embankment (GRE) and cuts between post miles (PMs) 19.3 and 19.8 on Highway 299 in Humboldt County for the Acorn Curve Improvement Project (Figure 1 – Vicinity Map).

The project purpose is to address incidents of collisions within the project limits. The project consists of widening both sides of the existing roadway to provide 8-foot wide shoulders throughout the project limits. The proposed improvements are expected to reduce the occurrence and severity of collisions.

The project proposes 1.5H:1V cut slopes with a maximum height of approximately 42 feet, and a GRE with a slope face varying between 1H:1V and 1H:1.25V. The maximum height of the GRE is approximately 44 feet. The layout line of the GRE is shown on Figure 2- GRE Site Plan. Approximately 10,300 cubic yards need to be excavated for this project and approximately 13,600 cubic yards need to be imported for the GRE. Highway planting and erosion control elements will be included to establish vegetation on the newly constructed slopes. Metal Beam Guard Rail (MBGR) will be placed 3 feet from the hinge point of the proposed embankment slope.

2. EXISTING FACILITIES AND PROPOSED IMPROVEMENTS

The project site is located in a rural area with privately owned timber lands and sparse residential development. The existing highway is a two-lane conventional highway with intermittent passing lanes that traverses mountainous terrain.

3. SCOPE OF WORK

The recommendations contained in this report are based on a review of geologic literature, a subsurface investigation, field observations and geotechnical calculations. Subsurface conditions were evaluated only at the boring locations and may deviate elsewhere within the Project Limits. The elevations reported in this memorandum are with respect to Mean Sea Level (MSL).

4. PERTINENT REPORTS AND INVESTIGATIONS

Caltrans Standard Specifications, 2010

Berg, R.A. et. al. 2009, “Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Vol. I”, National Highway Institute, Federal Highway Administration, Report no. FHWA-NHI-10-024 FHWA GEC 011-Vol. I.

Berg, R.A. et. al. 2009, “Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Vol. II, National Highway Institute, Federal Highway Administration, Report no. FHWA-NHI-10-025 FHWA GEC 011-Vol.II.

Holtz, D.H. et. al. 2008, “Geosynthetic Design and Construction Guideline”, National Highway Institute, Federal Highway Administration, Report no. FHWA-NHI-07-092.

Fall, J.N. et. al. 2006,“Landslides in the Highway 299 Corridor between Blue Lake and Willow Creek, Humboldt County, California, California Geological Survey, Special Report 195.

5. PHYSICAL SETTING

5.1 Site Geology

A geologic map of the site is provided in Figure 3-Project Geologic Map. Bedrock within the project limits is mapped as Redwood Creek schist (KJFr) Eastern Belt Franciscan Complex (Falls et. al; 2006). The bedrock at the site is a very dark grey, fine-grained and crenulated quartz mica schist within the Franciscan Complex of the Coast Ranges Province. The schist possesses a distinctive, strongly developed platy (metamorphic) texture with a relatively high quartz/mica content. Large dormant landslide complexes and earthflows are common along the main channel of Redwood Creek and its western tributaries underlain by this unit. These features typically are seen as broad, bowl-shaped depressions in

the hillsides that often extend from Redwood Creek to the ridge top (Falls et. al; 2006). The large features do not appear to be recently active from a geomorphic perspective, but rather contain occasional areas of localized activity.

Figure 3 shows that the entire project is located within a dormant Quaternary landslide. No field evidence of landslide movement was observed along or below the roadway prism. Upslope of the roadway prism the slopes appear stable and are vegetated with a young Douglas fir forest.

5.2 Subsurface Conditions

Four geotechnical borings were drilled along the shoulder of the highway between September 24, 2013 and October 2, 2013 (Table 1 – Summary of Geotechnical Borings and Figure 2). A review of the 1958 As-built Plans indicate that the entire project will be built on existing fill that ranges in depth from approximately 10 to 50 feet.

The borings encountered approximately one to one and a half feet of asphalt. The fill under the asphalt is composed of alternating layers of moist coarse and fine grained soils. The thickness of the fill varied between 15 and 55 feet. The coarse grained soils encountered include Gravelly Clay (GC), Well-graded Sand with Clay and Gravel (SW-SC) and Clayey Sand (SC) that was primarily medium dense in consistency. The fine grained soils ranged from Sandy lean Clay and Lean Clay with Gravel (CL). The consistency of the fine grained soils ranged from soft to stiff. Wood debris was encountered between 15 to 22 feet in Borehole RC-13-004. A gravel blanket, composed of well graded gravel (GW) was encountered in borings RC-13-001, RC-13-003 and RC-13-004. This blanket varied in thicknesses between half a foot (in RC-13-003) to as much as 5 feet (in RC-13-004) at the base of the original fill. Underlying the blanket drain is a schist, decomposed to a sandy clay (CL) or a gravelly lean clay (GC). Schist was encountered at 15 feet in borehole RC-13-002.

Table 1 - Summary of Geotechnical Borings

BORING I.D.	STATION AND OFFSET FROM "A1" ALIGNMENT	DEPTH OF BORING (ft, bgs)	SURFACE ELEVATION (ft, MSL)	DEPTH TO BEDROCK (ft, bgs)
RC-13-001	712+65 2' LT	55	1803	51
RC-13-002	710+22' 31' LT	30	1820	15
RC-13-003	716+19 1' LT	45	1783	40
RC-13-004	713+39.7 2' LT	50	1800	40

The Boring records are included in Appendix A.

5.3 Groundwater Conditions

Due to project time constraints, groundwater levels were only measured in Borings RC-13-001 through RC-13-003 on October 2, 2013. A summary of the measured groundwater elevations is provided in Table 2.

Table 2 -Summary of measured groundwater elevations

BORING I.D.	DEPTH TO GROUNDWATER (ft, bgs)	GROUNDWATER ELEVATION (ft, MSL)
RC-13-0001	41.7	1761.3
RC-13-0002	Dry	-
RC-13-0003	26.12	1756.88
RC-13-0004	Not measured	-

In Boring RC-13-001 the measured groundwater surface is at the contact between the drainage blanket and the decomposed schist. The groundwater surface measured in borings RC-13-003 is within a loose layer of Clayey Gravel within the fill prism.

It should be noted that the measurements of the groundwater levels may not reflect the groundwater flow conditions because of the inherent slow response time of open pipe monitoring wells.

Water was also observed flowing from the horizontal drains below the roadway prism on September 9, 2013. The locations of the horizontal drains are shown on Figure 2. Surface water and hydrophilic plants were observed in the inlets of the culverts at PM 19.63 and 19.72 in the summer of 2013.

6. GRE DESIGN RECOMMENDATIONS

6.1 Reinforced Fill Design

The engineering properties of the existing fill were determined from the slope stability program SLOPE/W 2007 using the critical design cross section (Figure 4 – Design Cross-Section). Table 3 summarizes the Engineering Properties of the In-situ Soils. A factor of safety (FOS) of 1.5 was assumed for the existing slope for the measured groundwater surface. The Morgenstern and Price Method of limit equilibrium that satisfies both force and moment equilibrium was used for this analysis.

Table 3 - Engineering Properties of In-situ Soils

LAYER	APPROXIMATE THICKNESS (ft)[1]	TOTAL UNIT WEIGHT (pcf)	ANGLE OF INTERNAL FRICTION (degrees)	COHESION (c, psf)
(1) Fill	15-51	130	37	100
(2) Drainage Blanket	0.5-5	135	40	0
(3) Decomposed Schist	11-30	125	34	0

1- Along the GRE layout line.

Table 4 outlines the Design Factors of Safety used for the GRE Design.

Table 4 – Design Factors of Safety

Description	Minimum Design Factor of Safety
Global Stability (Rotational below the GRE)	1.3
Sliding (Translational along the Geogrid interface at base)	1.3
Pull-Out	1.5

The design groundwater surface was assumed to be at approximate elevation 1782 at the back of the GRE excavation for the critical design cross-section.

Tables 5 through 8 summarize the design requirements of the components of the GRE.

Table 5– Backfill Requirements

GRADING [1]	**U.S. SIEVE SIZE**	**PERCENT PASSING**
	¾ -inch (20 mm)	100
	No. 4 (4.76 mm)	20-100
	No. 40 (0.425 mm)	0-60
	No. 200 (0.075 mm)	0-15
PLASTICITY INDEX, PI [2]	PI $\leq$ 10	
SOUNDNESS [3]	The materials shall be substantially free of shale or other soft, poor durability particles. Magnesium sulfate soundness loss less than 30% after 4 cycles or an equivalent sodium sulfate soundess of < 15% after 5 cycles.	
COMPACTION[4]	95% with $\pm$2% of optimum moisture	
Soil Fill pH[5]	$5 \leq$ pH ≤ 8	

1- Per California Test 202. The fill should be well-graded in accordance with the Unified Soil Classification System (USCS) in ASTM D2487. $C_u \geq 4$
2- Per California Test 204.
3- Per California Test 214
4- Per California Test 216
5- Per California Test 643

Table 6 – Design Geogrid Reduction Factors

REDUCTION FACTOR	VALUE
Durability (R_D)	1.1
Creep (R_{CR})	5
Installation Damage (R_{ID})	1.2

The typical GRE design cross section is shown in Figure 4.

Foundation settlement was not analysed for the GRE. A base reinforcement geogrid and a crushed rock base layer are recommended to account for the variations expected in the foundation soils and to minimize settlement. The crushed rock base layer should be a minimum of 2-feet thick and cover the entire base of the excavation for the GRE. The reduction factors for the Base Reinforcement are shown in Table 6.

Table 7- Engineering properties of the Base Reinforcement

PROPERTY	TEST METHOD	UNITS	VALUE
Ultimate Multi-Rib Tensile Strength	ASTM D 6637	lb/ft	2000
Junction Strength (min.)	GSI GRI GG2	lb	25
Aperture Size	Direct measure	in	0.5 to 3-in
Ultraviolet Stability (Retained Tensile Strength)	ASTM D 4355	%	50% after 500 hours of exposure

Table 8 - Engineering properties of the Uniaxial and Biaxial Geogrid[1]

GEOGRID	ULTIMATE STRENGTH T_{ULT} (lb/ft)	LONG-TERM ALLOWABLE STRENGTH[2] T_{al} (lb/ft)
Uniaxial Geogrid	7600	1150
Biaxial Geogrid	1370	208

1- The strength properties are valid only for the fill specified in Table 5.
2- Use an overall reduction factor of 6.6 to calculate the Long Term Allowable Strength.

6.2 GRE Drainage Requirements

The drainage components of the GRE consist of a Geocomposite drain, a gravel blanket drain, perforated collector pipe and solid outlet pipes.

The Geocomposite drain shall extend a distance of 70% of the slope height along the back face of the excavation for GRE heights greater than 10 feet. Table 9 outlines the required engineering properties of this layer.

Table 9 - Engineering properties of the Geocomposite Drain

GEOSYNTHETIC MATERIAL	PROPERTY	TEST	VALUE
Double-sided Composite[1]	Transmissivity, gal/min/ft	ASTM D 4716	9.6
Geotextile	Permittivity sec^{-1}	ASTM D 4491	1.3
	Mass per Unit Area, oz/yd^2	ASTM D 5261	8
	AOS, US Sieve (mm)	ASTM D 4751	80

1- The core shall consist of an extruded geonet

The blanket drain at the base of the excavation shall be a 1-foot thick, 5-feet wide layer of Class 1 B permeable material wrapped in a geotextile filter fabric. This drain shall be placed at the base of the excavation for the entire length of the GRE. Table 10 outlines the engineering properties of the geotextile filter fabric.

Table 10 - Engineering properties of the Geotextile[1]

ENGINEERING PROPERTY	TEST METHOD	UNITS	VALUE[2]	
			ELONGATION≤ 50%	ELONGATION≥ 50%
Grab strength	ASTM D 4716	lb	250	157
Tear Strength	ASTM D 4533	lb	90	56
Puncture Strength	ASTM D 6241	lb	495	309
AOS	ASTM D 4751	US Sieve (mm)	80	
Mass per Unit Area	ASTM D 5261	oz/yd^2	8	

[1] - Due to filtration and drainage requirements, woven slit film geotextiles are not allowed.

[2] - Values represent minimum average roll value.

The collector pipe at the base of the excavation shall be a Schedule 80 PVC pipe perforated to AASHTO M278 Highway Underdrain Specifications. The outlet pipes shall be solid pipe of the same material.

The GRE will intersect three culverts at approximate Stations 710+65, 713+66 and 718+67. The geogrid shall be conformed around the pipe as shown on Figure 5 - Geogrid Conform Around Culvert. A minimum of 2-inch separation should be maintained between the geogrid layers and the culvert. Attention should be paid to the compaction around the culvert to eliminate seepage into the reinforced fill. At the culvert locations the geocomposite drainage layer shall be extended only to the base of the culvert pipe for ease of construction.

7. CUT-SLOPE RECOMMENDATIONS

Based on a review of the existing cuts within the project limits and other cut slopes in the vicinity of Acorn Curve, we recommend a slope ratio of 1.5H:1V for the proposed cuts on both sides of the highway between approximately Stations 719+88 and 722+50.

A slope ratio of 0.5(H):1(V) is recommended for the proposed cuts between Stations 706+20 and 706+75 and between Stations 710+88 to 711+20. The existing cut along the inboard edge of the roadway in this

area is approximately 3 feet or less in height and daylights on a flat bench. The proposed cuts will be relatively minor.

It is anticipated that all the material encountered within the limits of the proposed cuts will be rippable.

8. CONSTRUCTION CONSIDERATIONS

The FOS of the excavated 1H:1V backslope was determined to be 1.02 with a groundwater surface elevation at the base of the excavation at an approximate elevation 1766. We recommend that this project be constructed within one season during the drier months. The stability of the excavation should be monitored during construction. Due to the relatively poor compaction of the material and the potential for seepage encountered in the existing fill, the 1H:1V backslope may require temporary shoring during construction.

The base reinforcement geogrid shall be placed on a level sub-grade that has been proof-rolled. The crushed rock layer shall be compacted with a vibratory or plate-type compactor. To prevent installation damage to the uniaxial geogrid, a maximum 6-inches of select fill shall be placed on the crushed rock prior to placing the first layer of the uniaxial geogrid.

The GRE construction should conform at a minimum to the following Standard Specifications modified according to the recommendations in this report:

Section 6- Control of Materials

Section 19 – Earthwork

Section 19-5.03B - Relative compaction (95 Percent) shall be obtained by using a method specification for the Granular Reinforced fill. A test fill shall be used to determine the 95% compaction and the method used to obtain compaction such as the type and size of compaction equipment to be used, the lift thickness, the acceptable range of molding water content and number of passes.

Section 19-6.02B -Geosynthetic Reinforced Embankment, modified to include the recommended fill. The fill test requirements have to be approved by the Office of Geotechnical Design North prior to being placed. Allow time in the schedule for review of test fill results.

Section 88 - Geosynthetics

9. PROJECT INFORMATION

The Project Information disclosed to the bidders can be found under the Standard Specifications (SP) 2 -1.06B, "Supplemental Project Information".

The information handout available to the bidders are:

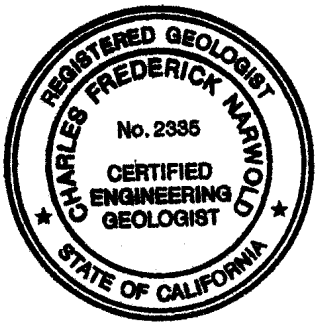
Design Recommendations for the Acorn Curve Correction Project –Dated February 28, 2014

These maybe viewed at the Bidders' Exchange Website.

Data and Information available for observation at the Transportation Laboratory:

A. Borehole Core Samples

If you have any questions or require additional information, please contact June James at (707) 441-4692 or Charlie Narwold at (707) 445-6036.



JUNE JAMES
Transportation Engineer
Office of Geotechnical Design North

CHARLIE NARWOLD
Senior Engineering Geologist
Office of Geotechnical Design North

C: Reza Mahallati – GS

List of Figures:

Department of Transportation
Division of Engineering Services
Geotechnical Services
Office of Geotechnical Design North- Branch B

EFIS:0100020289

Date: February 2014

VICINITY MAP

ACORN CURVE IMPROVEMENT PROJECT
01-HUM-299-PM 19.3/19.8

FIGURE 1

RC-13-002

CULVERT AT
PM 19.57

RC-13-001

RC-13-004

HINGE POINT - GRE

HORIZONTAL DRAIN OUTLETS

CULVERT @
PM 19.63

RC-13-003

CULVERT @
PM 19.72

LEGEND:

RC-13-001 BOREHOLE LOCATIONS AND IDENTIFICATION

GRE LAYOUT LINE

FILL LINE

CUT LINE

0′ 50′ 100′

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Branch B

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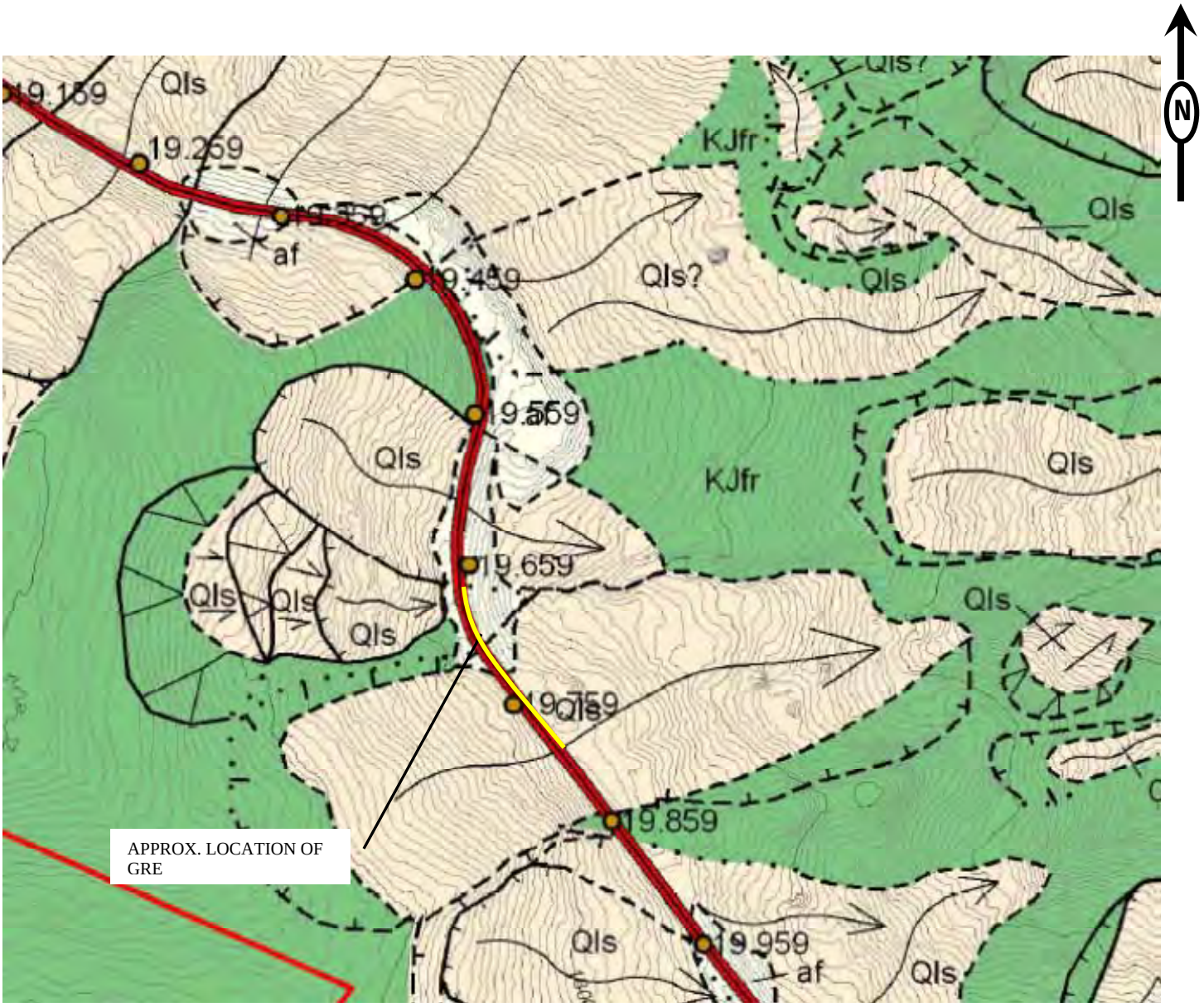
DATE: FEBRUARY 2014

GRE SITE PLAN

ACORN CURVE IMPROVEMENT PROJECT
01-HUM-299-PM 19.3/19.8

FIGURE 2



Reference: Falls, James. N. et.al. "Geologic Map of the Highway 299 Corridor, Humboldt County, California" 2005

MAP UNIT DESCRIPTIONS

af	Artificial Fill
KJfr	Redwood Creek Schist
Qls	Quarternary Landslide Deposit

LANDSLIDE SYMBOLS

LINE SYMBOLS

ROCK SLIDE: Slope movement with bedrock as its primary source material. This class of failure includes rotational and translational landslides; relatively cohesive slide masses with failure planes that are deep-seated in comparison to those debris slides of similar areal extent. The slide plane is curved in a rotational slide. Movement along a planer joint or bedding surface may be referred to as translational. Complex versions with combinations of rotational heads and translational movement or earthflows downslope are common. Landslide boundary indicates confidence; solid line- definite, dashed line - probable, dotted line - questionable. indicates a scarp, arrows show direction of movement. Qls denotes deposit when present.

EARTHFLOW: Slow to rapid movement of mostly fine-grained soil with some rocky debris in a semi-viscous, highly plastic state. After initial failure, the mass may flow or creep seasonally in response to changes in groundwater level. These types of slope failures often include complexes of nested rotational slides and deeply incised gullies. Landslide boundary indicates confidence; solid line- definite, dashed line - probable, dotted line - questionable. indicates scarp, arrows show direction of movement. Qls denotes deposit when present.

33.748 State highway and Post Mile

Post Miles shown are approximate.

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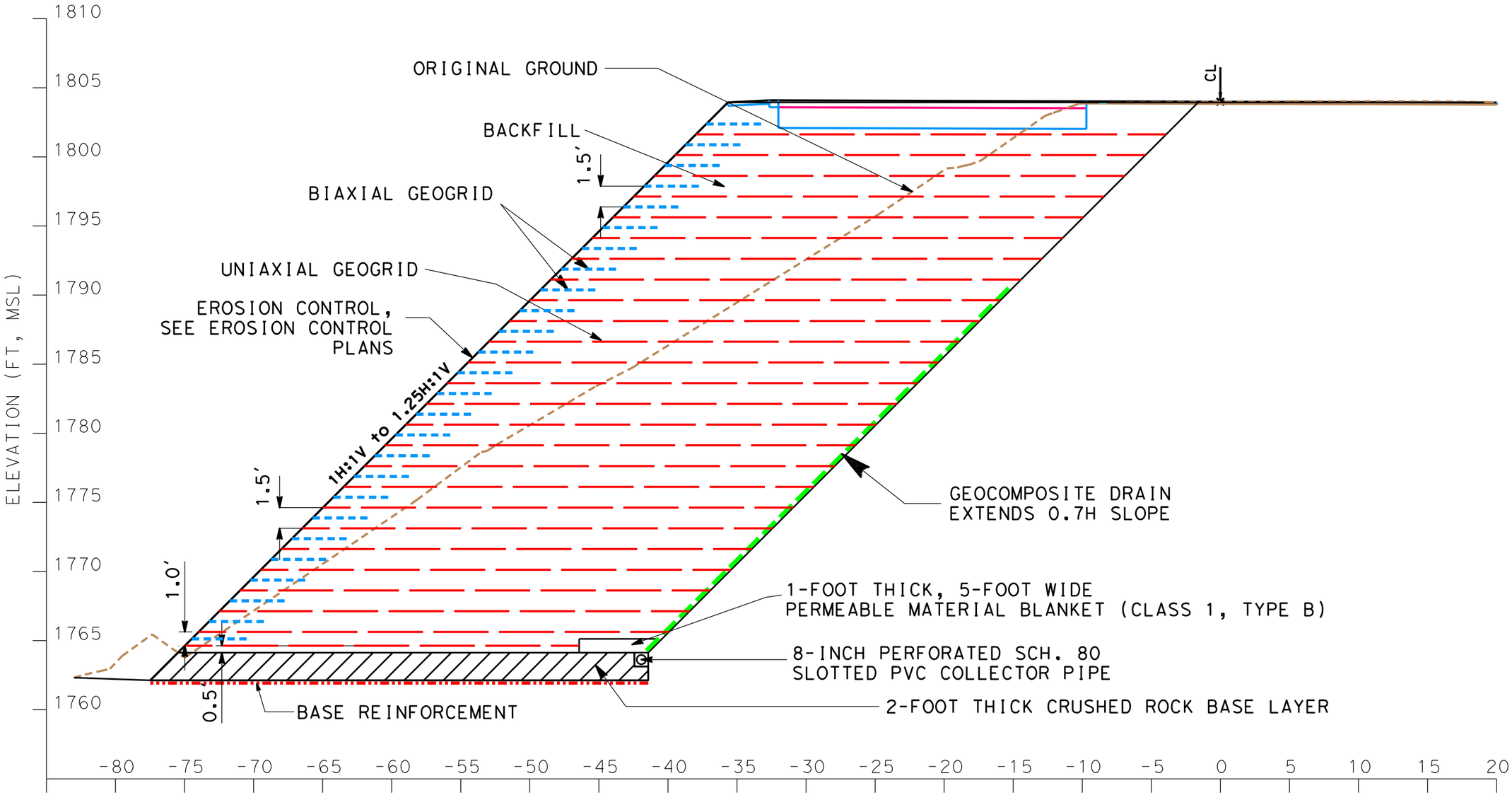
EFIS: 0100020289

Date: February 2014

PROJECT GEOLOGIC MAP

ACORN CURVE IMPROVEMENT PROJECT
01-HUM-299 PM 19.3/19.8

Figure 3



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Branch B

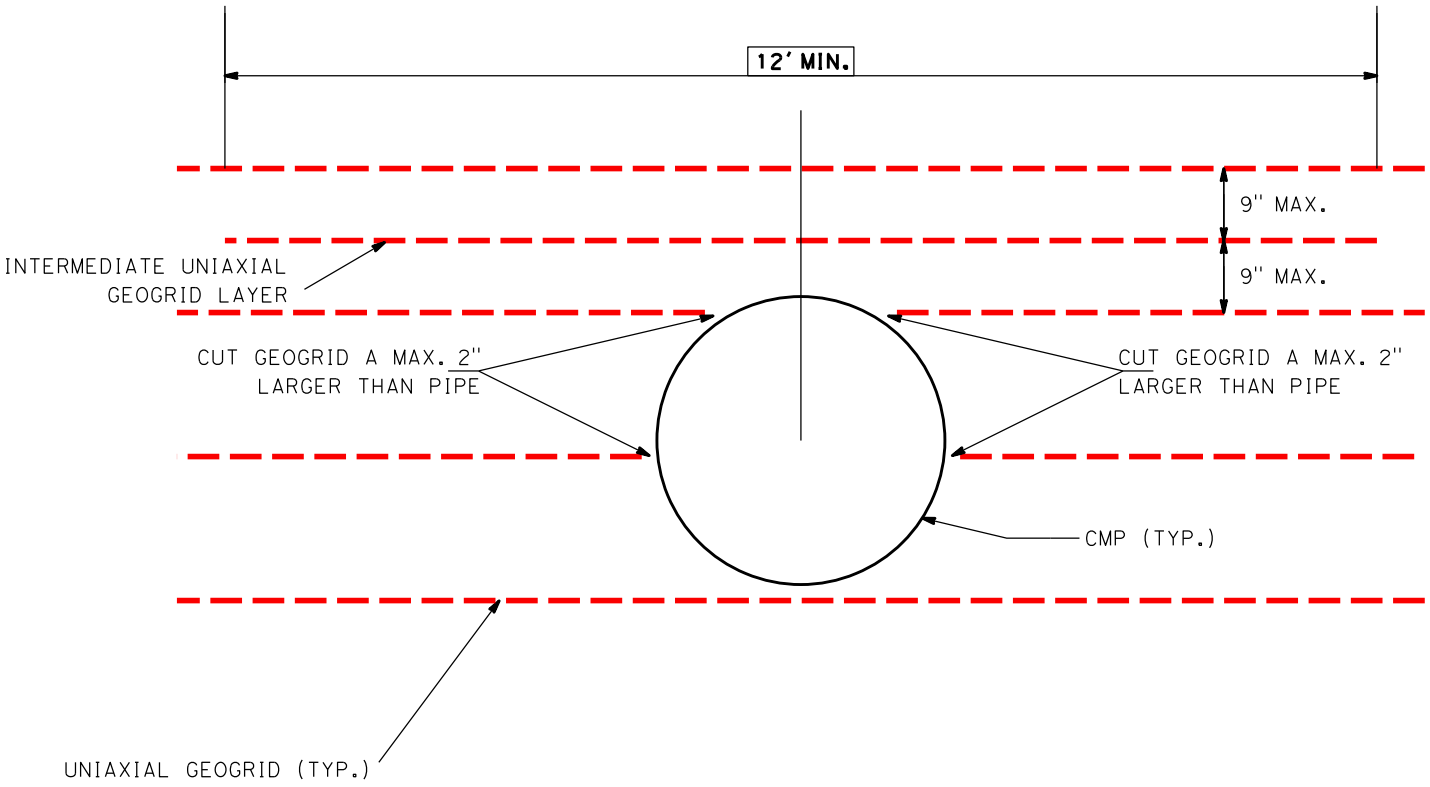
EFIS: 0112000289

DATE: FEBRUARY 2014

DESIGN CROSS-SECTION

ACORN CURVE IMPROVEMENT PROJECT
01-HUM-299-PM 19.3/19.8

FIGURE 4



NOT TO SCALE

Caltrans Department of Transportation Division of Engineering Services Geotechnical Services Office of Geotechnical Design - North	EFIS: 0100020289 DATE: FEBRUARY 2014	GEOGRID CONFORM AROUND CULVERT
	ACORN CURVE IMPROVEMENT PROJECT 01-HUM-299-PM19.3/19.8	FIGURE 5

APPENDIX A

RECORD OF BORINGS

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE:
RC-13-001	09-25-2013

LOCATION (STA/OFFSET or NORTHING/EASTING)
Sta. 712+64.92 2' LT "A1" ALIGNMENT Rte 299

TOP HOLE ELEVATION
1803'

DIST.	CO.	RTE.	P.M. (K.P.)	BRIDGE #
01	HUM	299	19.3	N/A

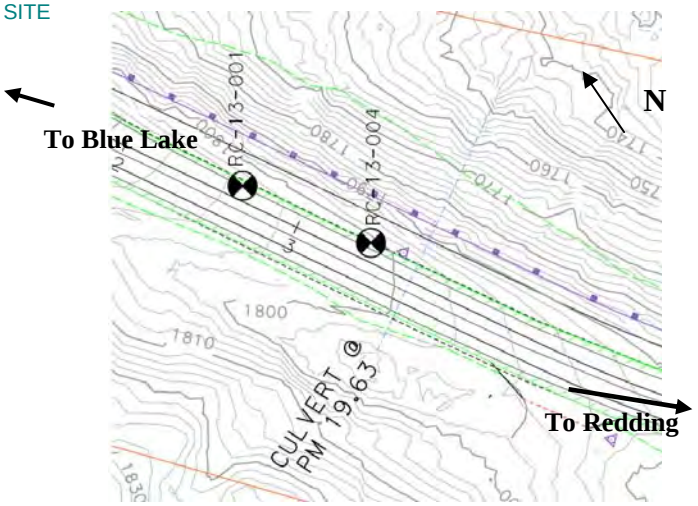
BRIDGE NAME
N/A

EFIS NUMBER
0100020289

CREW	EQUIPTMENT	CHC NUMBER
D. Douglas/R. Gingell/M. Brown	ACKER MPCA	7001974

HAMMER ID# Automatic ERi 69% C1974

SITE



LOCATION MAP (Inc. North Arrow & Benchmark Datum)

LOGGER
M. J. JAMES

GWS	DATE
41.7'	10-2-2013 @ 2:25 PM
GWS	DATE
CASING SIZE	CASING DEPTH
2"	55'
CASING SIZE	CASING DEPTH
SLURRY TYPE	#8 Sand and Bentonite

SURFACE CONDITIONS (Ground Slope, Water, Vegetation, etc)
Paved shoulder.

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc.) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION: Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
Finger bit 4.5"					0		ASPHALT CONCRETE (12")
1.4" SPT sampler					1		
Drilled with water from the beginning. Drilled							Clayey GRAVEL(GC); dense; v. dark gray mottled with
without sampling first 5'.					2		grayish brown;moist; from c-f angular schist and shale GRAVEL,
Hard drilling at 2'.							some subrounded GRAVEL;some non-plastic fines; trace iron
					3		staining; (FILL)
Color change at 4.5'					4		
					5		
No SPT sample, tip blocked off with asphalt.	1	10	31				
		14			6		
		17					
					7		
					8		
					9		
	2		16		10		Clayey GRAVEL(GC); m.dense; v. dark gray;wet; from c-f

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-001	09/25/2013	01	HUM	299	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 712+65 2' LT "A1" ALIGNMENT Rte 299	1803'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	FIELD TESTING: BLOWS PER 6"	FIELD TESTING: SPT (N)	FIELD TESTING:	DEPTH	GRAPHIC LOG	DESCRIPTION
		5					GRAVEL of schist and shale; trace iron staining; few
		7			11		quartz veins; trace roots.
		9					
					12		
					13		
Slightly harder drilling at 14'.					14		
	3		13		15		grayish brown
		7					
		7			16		very dark gray
		6					
					17		
					18		
							Lean CLAY with GRAVEL (CL); soft; very dark gray; moist; fine
					19		GRAVEL pp = 0.5 tsf.
							Clayey GRAVEL with SAND (GC); med. dense; grayish brown;
	4		17		20		moist; fine schist and shale GRAVEL, few coarse GRAVEL;
		6					some non-plastic fines.
		10			21		
		7					
					22		
					23		
					24		
	5		14		25		pp = 0.5 tsf
		5					Some GRAVEL sub-rounded. Some iron staining.
		7			26		
		7					
					27		

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-001	9/25/2013	01	HUM	299	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 712+65 2' LT "A1" ALIGNMENT Rte 299	1803'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
					28		
					29		
	6				30		
		8	16				
		9			31		
		7					
					32		
					33		
					34		very dark gray
No sample							
	7				35		
In SPT, rounded Greenstone GRAVEL.		14	30				
		17			36		Well-graded GRAVEL with SAND (GW); dense; v. dark gray;
		13					wet; rounded from c-f sandstone, chert and quartz GRAVEL: some
					37		fine SAND; (DRAINAGE BLANKET)
					38		
					39		coarse rounded Sandstone GRAVEL
	8				40		
		7	14				Sandy lean CLAY (CL); stiff; yellowish brown; moist; fine SAND;
No sample.		6			41		few coarse Sandstone GRAVEL; pp=2 tsf
Last run is very hard at end of run.		8					
					42		
					43		
					44		

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-001	09/25/2013	01	HUM	101	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 712+65 2' LT "A1" ALIGNMENT Rte 299	1803'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION
No sample	10				45		
		5	15				Well-graded SAND with CLAY and GRAVEL (SW- SC);
		7			46		loose to med. dense; yellowish brown; little from c-f
		8					Sandstone GRAVEL.
					47		
					48		
					49		
	12				50		
		16	26				
		14			50		
		12					
					51		
							Metamorphic rock (Schist); v. dark gray; decomposed (Sandy
					52		lean CLAY (CL); m. stiff; some fine SAND; few fine schist
							GRAVEL; pp = 0.5 to 1 tsf.
					53		
					54		
End of borehole at 55' (Elevation 1748').	13				55		Vein of fine quartz GRAVEL
Installed 2" piezometer to 55'. 20' screen.		6	19				
Backfilled with #8 sand and bentonite seal.		8			56		
		11					
					57		
					58		

DESCRIPTION

Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)*

Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE:
RC-13-002	09-26-2013

LOCATION (STA/OFFSET or NORTHING/EASTING)
Sta. 710+18.74' 30' LT "A1" ALIGNMENT Rte 299

TOP HOLE ELEVATION
1820'

DIST.	CO.	RTE.	P.M. (K.P.)	BRIDGE #
01	HUM	299	19.3	N/A

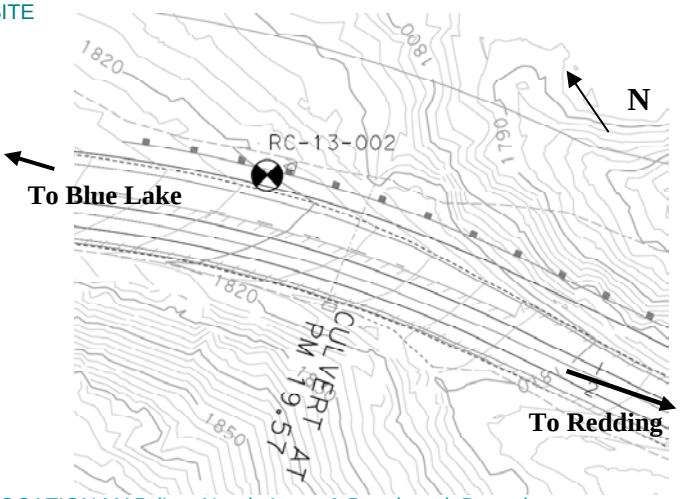
BRIDGE NAME
N/A

EFIS NUMBER
0100020289

CREW	EQUIPTMENT	CHC NUMBER
D. Douglas/R. Gingell/M. Brown	ACKER MPCA	7001974

HAMMER ID# Automatic ERi 69% C1974

SITE



LOCATION MAP (Inc. Nort h Arrow & Benchmark Datum)

LOGGER
M. J. JAMES

GWS	DATE
No encountered	10-1-2013 @ 3pm
GWS	DATE
CASING SIZE	CASING DEPTH
2"	30'
CASING SIZE	CASING DEPTH
SLURRY TYPE	#8 sand and Bentonite seal.

SURFACE CONDITIONS (Ground Slope, Water, Vegetation, etc)
Paved shoulder.

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc.) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION: Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
Finger bit 4.5"					0		ASPHALT CONCRETE (18")
1.4" SPT sampler					1		
Drilled with water from the beginning.							Poorly graded GRAVEL(GP); v. dense; dark gray; dry;
					2		Coarse sub- angular Sandstone GRAVEL; some fine SAND;
							(FILL)
					3		Clayey SAND (SC); m. dense; yellowish brown; moist; some
							non-plastic fines.
					4		
							Clayey GRAVEL with SAND (GC); m. dense; wet; grayish brown;
					5		f. angular GRAVEL composed of decomposed Metamorphic rock
	1	20	27				(Schist); some non-plastic fines; few f. SAND; weak
		15			6		cementation; iron staining throughout
		17					
					7		
					8		
							Clayey GRAVEL (GC); m. dense; grayish brown; f. angular schist
					9		GRAVEL; little fines; few f. SAND;
							Clayey SAND (SC); m. dense; yellowish brown; moist; some
	2				10		non-plastic fines.

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-002	9/26/2013	01	HUM	299	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 710+22' 31' LT "A1" ALIGNMENT Rte 299	1820'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
Quartz gravel in SPT shoe		90/ R	R				Weak cementation
Drill bit keeps blocking off. The third run was					11		Vein of fine quartz GRAVEL.
Hard and the run was stopped at 2' in an							
effort to clear it.					12		
							Silty GRAVEL (GM); v. dense; grayish brown; fine GRAVEL
					13		some fines; trace f. SAND .
					14		
Schist GRAVEL in tip of SPT shoe	3		63/ R		15		
		45					Metamorphic Rock (Schist); coarse grained; massive; greyish
		63/ R			16		brown; moderate to intensely weathered; hard; intensely to very
							Intensely fractured; fractures infilled with silty SAND; iron staining
					17		on fracture surfaces.
					18		
.					19		
Switch to diamond coring	4		10/ R		20		
Run #1:REC = 54% RQD = 0%		50					
		10/ R			21		
					22		
					23		
					24		
Run #2: REC = 70% RQD = 0%					25		
					26		
					27		

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-002	09/26/2013	01	HUM	299	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 710+22' 31' LT "A1" ALIGNMENT Rte 299	1820'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION
					28		
End of borehole at 30'.					29		
Install 2" piezometer. 10' screen.							v. intensely fractured.
Backfilled with #8 Sand.					30		

DESCRIPTION

Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)*

Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE:
RC-13-003	10-01-2013

LOCATION (STA/OFFSET or NORTHING/EASTING)
Sta. 716+19 1' LT "A1" ALIGNMENT Rte 299

TOP HOLE ELEVATION
1783'

DIST.	CO.	RTE.	P.M. (K.P.)	BRIDGE #
01	HUM	299	19.3	N/A

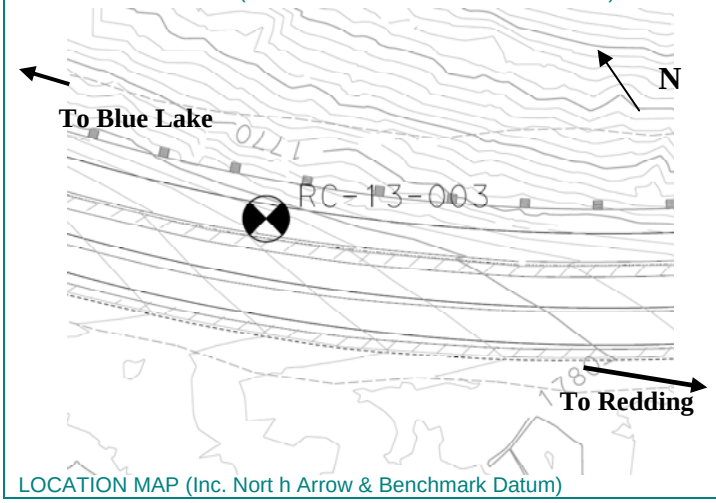
BRIDGE NAME
N/A

EFIS NUMBER
0100020289

CREW	EQUIPTMENT	CHC NUMBER
D. Douglas/R. Gingell/M. Brown	ACKER MPCA	7001974

HAMMER ID# Automatic ERi 69% C1974

SITE LOCATION MAP (Inc. Nort h Arrow & Benchmark Datum)



LOCATION MAP (Inc. Nort h Arrow & Benchmark Datum)

LOGGER
M. J. JAMES

GWS	DATE
26.12	10-2-2013 @ 3 PM
GWS	DATE
CASING SIZE	CASING DEPTH
2"	45'
CASING SIZE	CASING DEPTH
SLURRY TYPE	#8 Sand and Bentonite plug

SURFACE CONDITIONS (Ground Slope, Water, Vegetation, etc)
Paved shoulder.

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc.) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION: Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
Finger bit 4.5"					0		ASPHALT CONCRETE (12")
1.4" SPT sampler					1		
Drilled with water from the beginning.							Silty GRAVEL with SAND (GM); m. dense; dark yellowish brown
					2		moist; f. angular Sandstone GRAVEL; some fine SAND; little
							fines; (FILL)
					3		
					4		coarse Sandstone GRAVEL
							Clayey GRAVEL (GC); m. dense; v. dark gray mottled with
					5		dark yellowish brown; ,wet; fine angular schist GRAVEL; some
	1	6	12				non-plastic fines; little fine SAND; trace iron staining.
		6			6		
		6					
					7		
					8		
					9		
	2				10		

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-003	10/01/2013	01	HUM	299	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 716+19 1' LT "A1" ALIGNMENT Rte 299	1783'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
		1	11				Clayey SAND (SC); loose to m. dense; v. dark gray; wet; fine to
		3			11		medium SAND; some non-plastic fines; few f. schist GRAVEL.
		8					
					12		
					13		
					14		
Schist GRAVEL in tip of SPT shoe	3		9		15		mottled with grayish brown.
		4					
		4			16		
		5					
					17		
							Trace fine roots.
					18		
.					19		
	4		11		20		
		0					Loose to medium dense.
		5			21		
		6					
					22		
					23		
					24		
	5		4		25		
		0					Clayey GRAVEL (GC); loose to m. dense; dark grayish brown and
		2			26		v. dark gray; wet; f. angular schist GRAVEL; some fines; few c-f
		2					SAND; trace iron staining.
					27		

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-003	10/01/2013	01	HUM	299	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 716+19 1' LT "A1" ALIGNMENT Rte 299	1783'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	FIELD TESTING: BLOWS PER 6"	FIELD TESTING: SPT (N)	FIELD TESTING:	DEPTH	GRAPHIC LOG	DESCRIPTION Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
							Trace iron staining.
					28		
					29		
	6		11		30		
		0					
		5			31		
		6					
					32		
					33		
					34		Iron staining, mottled; trace fine roots.
	7		27		35		
		10					
		11			36		
		16					
					37		
					38		
					39		
Driller says drilling is harder.	8		21		40		Well-graded GRAVEL (GW); loose; dark grey; wet; c-f rounded
		7					Sandstone GRAVEL; trace fine SAND (DRAINAGE BLANKET).
		8			41		Metamorphic Rock (Schist); v. dark gray; decomposed (Sandy
		13					lean CLAY(CL); m. stiff; wet; fine SAND; pp = 1-1.5 tsf)
					42		
					43		quartz vein decomposed to fine SAND.
					44		Clayey GRAVEL (GC); dense; fine schist GRAVEL; some non-

STATE OF CALIFORNIA * DEPARTMENT OF TRANSPORTATION

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-003	10/01/2013	01	HUM	101	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 716+19' LT "A1" ALIGNMENT Rte 299	1783'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	FIELD TESTING: BLOWS PER 6"	FIELD TESTING: SPT (N)	FIELD TESTING:	DEPTH	GRAPHIC LOG	DESCRIPTION Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
							plastic fines; few fine SAND.
	10				45		
		10	28				
		12			46		
End of borehole at 45'. Installed 2" piezometers,		16					quartz vein decomposed to f. SAND
backfill with #8 Sand and a bentonite seal at							
top.							

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE:
RC-13-004	10-02-2013

LOCATION (STA/OFFSET or NORTHING/EASTING)
Sta. 713+39.7 2' LT "A1" ALIGNMENT Rte 299

TOP HOLE ELEVATION
1800'

DIST.	CO.	RTE.	P.M. (K.P.)	BRIDGE #
01	HUM	299	19.3	N/A

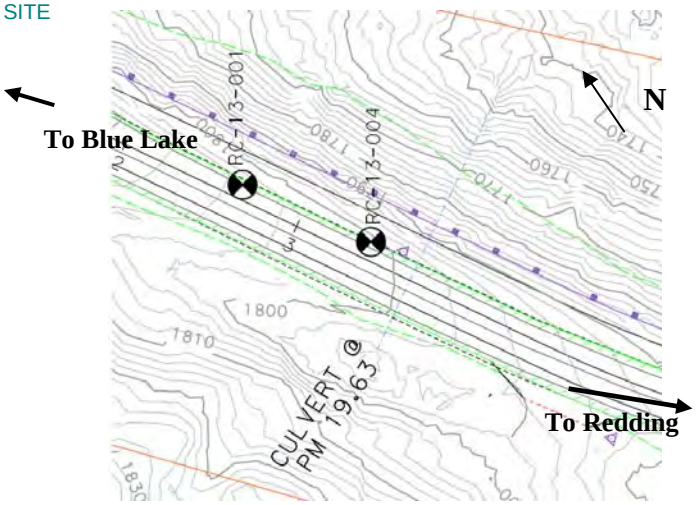
BRIDGE NAME
N/A

EFIS NUMBER
0100020289

CREW	EQUIPTMENT	CHC NUMBER
D. Douglas/R. Gingell/M. Brown	ACKER MPCA	7001974

HAMMER ID# Automatic ERi 69% C1974

SITE



LOCATION MAP (Inc. Nort h Arrow & Benchmark Datum)

LOGGER
M. J. JAMES

GWS	DATE
Not measured	
GWS	DATE
CASING SIZE	CASING DEPTH
CASING SIZE	CASING DEPTH
SLURRY TYPE	Bentonite

SURFACE CONDITIONS (Ground Slope, Water, Vegetation, etc)
Paved shoulder.

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc.) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
Finger bit 4.5"					0		ASPHALT CONCRETE (18")
1.4" SPT sampler					1		
Drilled with water from the beginning.							
					2		Poorly graded GRAVEL with Silt (GW-GM); dense; grayish brown;
							dry; sub-rounded Sandstone GRAVEL(FILL)
					3		
							.
					4		
							Poorly graded GRAVEL with SAND (GP); v. dense; yellowish
					5		brown; moist; c-f angular to sub-rounded GRAVEL; some f.
	1	8	21				SAND.
		11			6		Well-graded GRAVEL with CLAY and SAND (GW-GC); m. dense;
		10					dk. grey mottled with yellowish brown; moist; some f. SAND;
					7		GRAVEL composed of schist and phyllitic schist and Sandstone;
							trace iron staining.
					8		
					9		
	2	7			10		Becomes v. dark grey.

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-004	10/02/2013	01	HUM	299	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 713+39.72 2' LT "A1" ALIGNMENT Rte 299	1800'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION: Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
		7	17				
		8			11		
		9					
					12		
							Clayey SAND with GRAVEL (SC); m. dense; v. dark grey; moist;
					13		c-f SAND; some non-plastic fines; little fine GRAVEL; little
							grayish brown mottling grayish and iron staining.
					14		
	3		11		15		Some wood fragments between 15'-22'
		4					
		5			16		
		6					
					17		
					18		
.					19		
	4		11		20		
		4					
		5			21		
Wood in SPT shoe.		6					
					22		
					23		
					24		
	5		13		25		becomes grayish brown
		6					Clayey GRAVEL (GC); m. dense; grayish brown; moist; c-f
		5			26		angular schist GRAVEL; some non-plastic fines.
		8					Clayey SAND with GRAVEL (SC); m. dense; v. dark grey; moist;
					27		c-f SAND; some non-plastic fines; little fine GRAVEL; little

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-004	10/02/2013	01	HUM	299	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 713+39.72 2' LT "A1" ALIGNMENT Rte 299	1800'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION: Soil Classification *(group name, group symbol, consistency/relative density, color, moisture, percent of cobbles or boulders, particle size range, plasticity, cementation, description of cobbles and boulders. Take q_u, s_u, Additional Comments)* Rock Classification *(Rock name, bedding spacing, color, weathering descriptors, rock hardness, fracture density, discontinuity characteristic: type, weathering, dip & magnitude. Slaking, odor, other characteristics)*
							grayish brown mottling grayish and iron staining.
					28		
					29		Trace roots.
	6				30		
		4	17				
		7			31		
		10					
					32		
					33		
					34		
Driller says cobble at about 34.25'							Well-graded GRAVEL with SAND (GW); m. dense; v. dark grey;
dense; v. dark grey;	7				35		wet; rounded c-f sandstone, chert and quartz GRAVEL: fine
In SPT, multi colored rounded gravel.		11	22				SAND; (DRAINAGE BLANKET)
		10			36		
		12					
					37		
					38		
					39		
	8				40		Metamorphic Rock (Phyllitic Schist); gray; decomposed (Sandy
		7	13				lean CLAY (CL); m. stiff to stiff; moist; f. SAND; some iron staining;
		6			41		pp=1-1.5 tsf
		7					
					42		
					43		
					44		

STATE OF CALIFORNIA * DEPARTMENT OF TRANSPORTATION

ROTARY FIELD NOTES

TL-1271a (REV. 05/04/08)

BORING NUMBER	DATE	DIST.	CO.	RTE.	P.M. (K.P.)
RC-13-004	10/02/2013	01	HUM	101	19.3

LOCATION (STA/OFFSET or NORTHING/EASTING)	TOP HOLE ELEVATION	BRIDGE #	EFIS NUMBER
Sta. 713+39.72 2' LT "A1" ALIGNMENT Rte 299	1800'		0100020289

REMARKS (Tool Sizes/Type - Rods & Bits, etc) (Hole Condition – Caving, Squeezing, Loss of Circulation, etc) RECOVERY & RQD Drill Rig reactions – slowing, chattering, skipping, blocking off)	FIELD TESTING: SAMPLE #	BLOWS PER 6"	SPT (N)		DEPTH	GRAPHIC LOG	DESCRIPTION
pp = 1.5 tsf	10				45		
		13	17				
		8			46		
		9					
					47		
					48		
					49		
	12				50		
End of borehole at 50' (Elevation 1750').		7	19				pp=4 tsf
Backfilled with bentonite and quik set asphalt		9					
Plug.		10					

State of California Business, Transportation and Housing Agency

DEPARMENT OF TRANSPORTATION

M e m o r a n d u m

Flex your power

Be energy efficient!

Date: March 10, 2014

To: JOHN MARTIN
Branch Chief
Design R1

File: 01-HUM-299-PM 19.3/19.8
Acorn Curve Improvement Project
EFIS ID: 0100020289

Attn: BILL SUTHERLAND

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES – OGDN

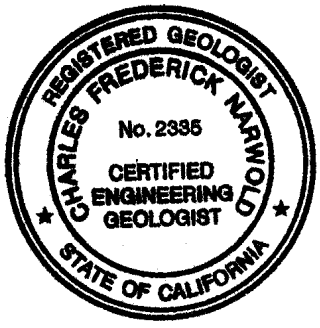
Subject: Geogrid conform around Culverts for the Acorn Curve Improvement Project

This memorandum was prepared in response to a request from your Design Branch to confirm that the OGDN reviewed the proposed modification to the recommended geogrid conform around the culverts.

The Geosynthetically Reinforced Embankment at this project intersects three culverts at approximate Stations 710+65, 713+66 and 718+67. In the Geotechnical Design Recommendations for Acorn Curve Improvement Project, dated February 28, 2014 we recommended that the culverts be constructed at the same time as the embankment progresses.

We understand that the preferred method of construction, per standard plans is to install the culvert through the constructed embankment as shown in Sheet C-2 of the Project Plans. We have reviewed the proposed design and consider it acceptable based on geotechnical considerations.

If you have any questions or require additional information, please contact June James at (707) 441-4692 or Charlie Narwold at (707) 445-6036.



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C: Reza Mahallati – GS