

INFORMATION HANDOUT

WATER QUALITY

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

CIWQS Place No. 751635
Site No.: 02-43-C0635 (BT)

STORM WATER INFORMATION HANDOUT

PERMITS

STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME

NOTIFICATION NO. 1600-2010-0082-R3

UNITED STATES ARMY CORPS OF ENGINEERS

NON-REPORTING NATIONWIDE 404 PERMIT

MATERIALS INFORMATION

**FOUNDATION REPORT FOR SOLDIER PILE WALL, BRIDGE NUMBER 37E0057 DATED
AUGUST 11, 2009**

**FOUNDATION REVIEW FOR RETAINING WALL AT PM 1.55, BRIDGE NUMBER
37E0057 DATED FEBRUARY 25, 2010**

**CROSS SECTIONS RETAINING WALL AT PM 1.55 EVERY 50 FEET
UNDERGROUND CLASSIFICATIONS & MEMO (MINING AND TUNNELING PERMIT)**

ROUTE: 04-SCL-17-0.0/2.8



California Regional Water Quality Control Board

San Francisco Bay Region



Linda S. Adams
Secretary for
Environmental
Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
<http://www.waterboards.ca.gov/sanfranciscobay>

Arnold Schwarzenegger
Governor

June 22, 2010
Site No. 02-43-C0635 (BT)
CIWQS Place No. 751635

California Department of Transportation
Attn: Ms. Dina El-Tawansy
Dina_El_Tawansy@dot.ca.gov
111 Grand Avenue
Oakland, CA 94612

Subject: Water Quality Certification for the State Route 17 Wet Pavement Correction and Culvert Repair Project, Unincorporated Santa Clara County

Department Project No.: EA 04-264900

Dear Ms. El-Tawansy:

San Francisco Bay Regional Water Quality Control Board (Water Board) staff have reviewed the 401 water quality certification application submitted by the California Department of Transportation (the Department) for the State Route 17 Wet Pavement Correction and Culvert Repair Project (Project). The Department has filed a U.S. Army Corps of Engineers (Corps) non-reporting Nationwide Permit (NWP) application for NWP Nos. 3, *Maintenance*, and 13, *Bank Stabilization*, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). You applied to this office under Section 401 of the CWA for water quality certification verifying that the Project does not violate State water quality standards.

Project: The Department proposes to improve drainage conditions on State Route 17 (SR 17) between Santa Clara County post miles 0.0 and 2.8. Proposed improvements to the SR 17 drainage system include repair and replacement of culverts, installation of new drainage inlets and one new drainage system, rehabilitation of six riser pipes, replacement of median concrete barriers, and resurfacing of the existing pavement. The entire Project area drains to Lexington Reservoir. Project improvements are necessary to reduce hazardous driving conditions and associated vehicle accidents. Project construction is projected to take approximately 18 months.

Impacts: The proposed Project will result in permanent impacts up to approximately 0.09 acres of jurisdictional waters. All permanent impacts are the result of three headwall replacements and placement of riprap at 37 culvert outlets. New riprap shall not be used in areas where existing riprap

is functional. These areas are unknown at the time of certification issuance and will be identified during a field visit preceding construction.

The proposed Project will result in temporary impacts to approximately 0.07 acres of jurisdictional waters due to construction access.

The Department is proposing to repair approximately two culverts using a “cured-in-place-pipeliner (CIPP)” method. The CIPP method has the potential to result in discharge of un-cured thermosetting resin material and aquatic life toxicity if improperly installed. Styrene (i.e., vinylbenzene) is a contaminant that may be discharged from CIPP installations¹. This certification specifically addresses styrene because a Virginia Transportation Research Council report² found styrene at levels toxic to aquatic species in post-construction discharges from CIPP pipes, several days after installation. The affected Project drainages drain to Lexington Reservoir, approximately 1,600 feet from the Project site. Lexington Reservoir is a drinking water source managed by the Santa Clara Valley Water District. As such, repair of culverts using the CIPP method is prohibited by this certification until CIPP specifications are submitted and accepted by the Water Board Executive Officer. Additionally, the Department is required to ensure that dischargers from CIPP culverts do not contain residual levels of styrene in excess of 0.1 mg/L, which is the Basin Plan Water Quality Objective for municipal water supply.

Hydromodification impacts: The Project will not add additional impervious area and not result in hydromodification impacts.

Jurisdictional Wetlands and Waters Mitigation: Existing outfalls that currently create erosional conditions will be repaired by reconfiguring outlets to discharge at the receiving water bed elevation. Placement of down-drains and rock slope protection shall be completed without operation of heavy machinery in jurisdictional waters. Only hand tools shall be used when grading is necessary for placement of riprap in jurisdictional waters.

CEQA Compliance: On October 1, 2008, the Department found that the project was categorically exempt from CEQA pursuant to 14 CCR § 15302, replacement or reconstruction.

Certification: I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 – DWQ, “General

¹ There are other, less common, thermosetting resins that may be used in CIPP installations. Certification condition 4 requires the Department report to the Water Board if a non-styrene resin is proposed. A contaminant monitoring plan will be required based upon the characteristics of the alternative resin.

² http://www.virginiadot.org/vtrc/main/online_reports/pdf/08-r16.pdf



Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification” which requires compliance with all conditions of this Water Quality Certification. The following conditions are associated with this certification:

1. The Department shall adhere to the Standard and Regional conditions imposed by the Corps Nationwide Permit Nos. 3 and 13;
2. Erosion control measures shall be utilized throughout all phases of construction where sediment runoff from disturbed areas threatens to enter waters of the State. At no time shall silt-laden runoff be allowed to enter waters of the State;
3. Trees shall not be removed from riparian areas or jurisdictional waters;
4. Repair of culverts using cured-in-place-pipeliner (CIPP) shall not proceed until CIPP Specifications (CIPP Specs) are submitted and accepted by the Water Board Executive Officer. The accepted CIPP Specs shall be implemented and shall include:
 - a. Identification of the resin system and actual chemical name of monomer that will be used during CIPP installation (please include MSDS);
 - b. Detailed specifications describing the containment method for all process water;
 - c. Specifications to repetitively flush and capture water through the culvert after the liner has cured and installation is complete;
 - d. Specifications to test the final flush water, including appropriate target constituents and testing methods. Flushing and testing shall be conducted until test results show acceptable levels of any target constituents, including styrene monomer or other appropriate monomer and any toxic additives;
 - e. Specifications to appropriately dispose of all process and rinse water with receipt of disposal; and
 - f. Specifications to prohibit resumption of natural flow through the culvert until residual styrene concentrations are not greater than one part per billion 60 days after installation, or until other monomer-specific appropriate concentration(s) are not exceeded 60 days after installation;
5. Discharge to waters of the state from any CIPP-repaired culvert is prohibited until the Department demonstrates that residual effluent styrene concentrations or other appropriate monomer and additive concentrations, for each CIPP-repaired culvert, do not exceed one part per billion styrene or other appropriate monomer or additive concentration during a 60 day period after installation. The Department shall submit a CIPP post-construction sampling plan (Plan), subject to the acceptance of the Executive Officer. The Plan shall be implemented to determine compliance with this condition. The Plan shall include:



- a. A detailed description of the sampling strategy to detect residual styrene concentrations in culvert effluent;
- b. A commitment to have sample collection and analysis performed by a third party not associated with any portion of Project construction; and
- c. Daily sampling events during the first week after installation, weekly sampling events during the second, third, and fourth weeks after installation, and bi-weekly (every other week) sampling events thereafter, until the final, 60-day sampling event.

Sampling results shall be reported twice-a-month to the Water Board staff. Please report sampling results electronically to the attention of Brendan Thompson, BThompson@waterboards.ca.gov. Resumption of natural flows through CIPP culverts shall not be reinstated until Water Board staff accepts the final sample report;

6. Placement of riprap above ordinary high water mark is prohibited. Riprap pieces shall not be bonded together with cement. Existing riprap shall be used wherever possible. New riprap shall not be used in areas where existing riprap is adequate;
7. All temporary dewatering methods shall be designed to have the minimum necessary impacts to waters of the State to isolate the immediate work area. All dewatering methods shall be installed such that natural flow is maintained upstream and downstream of the project area. Any temporary dams or diversions shall be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the project area. All dewatering structures shall be removed immediately upon completion of Project activities;
8. Only hand tools shall be used in jurisdictional waters when excavation or grading is necessary for placement of riprap;
9. This certification does not allow for the take, or incidental take, of any special status species. The City shall use the appropriate protocols, as approved by the California Department of Fish and Game and the U.S. Fish and Wildlife Service, to ensure that Project activities do not impact the Beneficial Use of the Preservation of Rare and Endangered Species;
10. The Department shall maintain a copy of this water quality certification at the Project site so as to be available at all times to site operating personnel. It is the responsibility of the Department to assure that all personnel (employees, contractors, and subcontractors) are adequately informed and trained regarding the conditions of this certification;
11. Project construction within waters of the State shall occur only between May 15 and October 15. Regardless of date, Project construction within waters of the State is prohibited during rain events capable of mobilizing sediment;



12. All disturbed soil areas shall be protected within 48 hours of the onset of any forecasted rain event;
13. This Certification applies to the Project as proposed in the application materials. Please be advised that failure to implement the Project as proposed is a violation of this water quality certification;
14. To prevent grout from entering jurisdictional waters during riser rehabilitation, the bottom of each riser shall be sealed prior to use of grout;
15. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the State may occur; construction materials and heavy equipment must be stored outside of the active flow of the creek;
16. Except as expressly allowed in this Certification, the discharge, or creation of the potential for discharge, of any soil materials including fresh concrete, cement, silts, clay, sand and other organic materials to waters of the State is prohibited;
17. All temporarily disturbed areas shall be restored to pre-construction or enhanced conditions.
18. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code (CWC) and Section 3867 of Title 23 of the California Code of Regulations(23 CCR);
19. This certification action does not 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 California Code of Regulations (CCR) Title 23, Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought; and,
20. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR Section 3833). Water Board staff received full payment of \$805.00 on April 29, 2010.

We anticipate your cooperation in implementing these conditions. However, please be advised that any violation of water quality certification conditions is a violation of State law and subject to administrative civil liability pursuant to California Water Code (CWC) section 13350. Failure to respond, inadequate response, late response, or failure to meet any condition of this certification may subject you to civil liability imposed by the Water Board to a maximum of \$5,000 per day per violation or \$10 for each gallon of waste discharged in violation of this certification.



Conditions 4 and 5 are requirements for information or reports. Any requirement for a report made as a condition to this action is a formal requirement pursuant to CWC section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in CWC section 13268.

Should new information come to our attention that indicates a water quality problem with this project, the Water Board may issue Waste Discharge Requirements pursuant to 23 CCR Section 3857.

If you have any questions, please contact Brendan Thompson at (510) 622-2506, or via e-mail to BThompson@waterboards.ca.gov.

Sincerely,

For

Bruce H. Wolfe
Executive Officer

cc (via e-mail): Mr. Bill Orme SWRCB-DWQ
Mr. Hal Durio, USACE
Ms. Jane Hicks, USACE
Mr. Cameron Johnson, USACE
Ms. Holly Costa, USACE

Mr. Dale Bowyer, Water Board
Mr. Jason Brush, USEPA
Mr. Hardeep Takhar, Caltrans
Mr. Cyrus Vafai, Caltrans
Ms. Andrea Meier, USACE



WATER QUALITY INFORMATION HANDOUT

CONTRACT NO. 04-264904

04-Santa Clara-17-PM0.0/2.8

Wet Pavement Safety Improvement Project

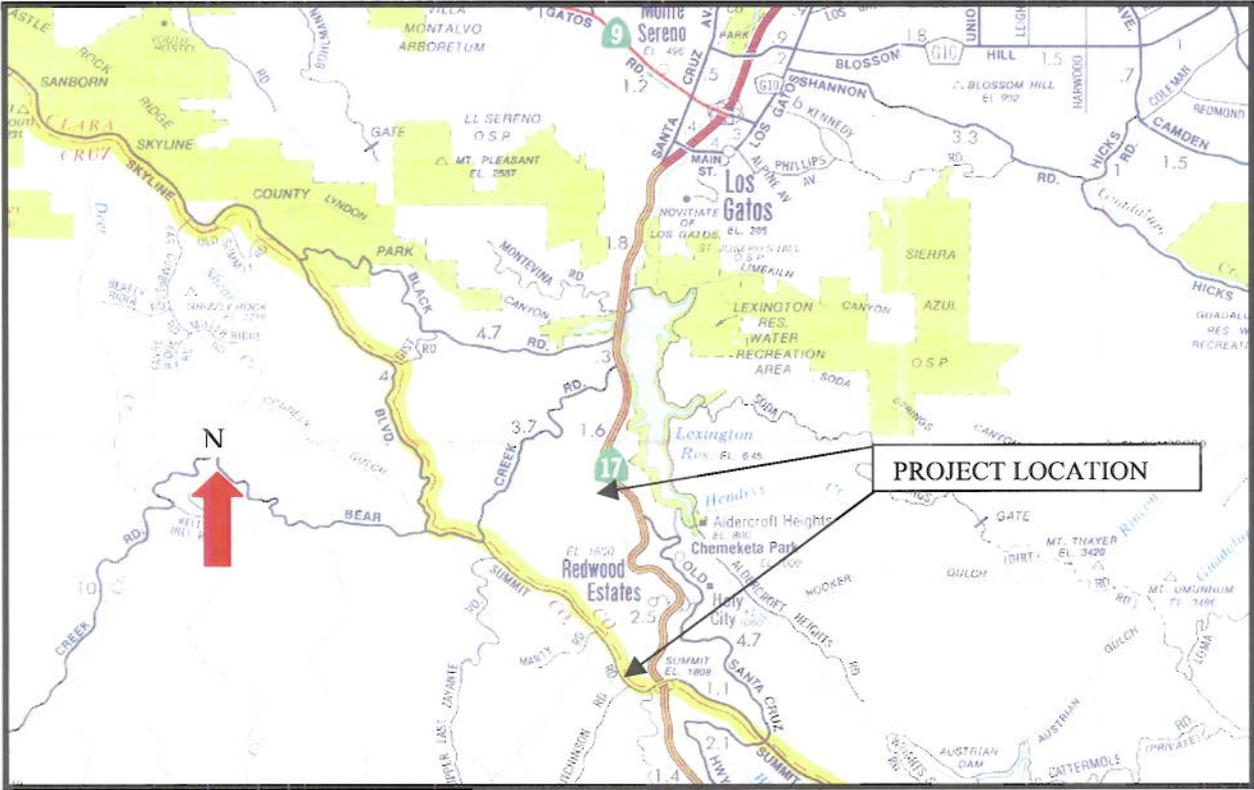
California Department of Transportation
District 4
Water Quality Program
111 Grand Avenue
Oakland, California 94612

August 2010

Disclaimer

A “Disclaimer” is required specifying that the information provided in the Storm Water Information Handout is just a guideline and is to be used for information purposes only and should not be considered a sole source document to adhere to the requirements of the new National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), Number CAS000002, adopted on September 2, 2009. The contractor is required to provide water quality monitoring, sampling and implement best management practices (BMPs) based on standard industry operations, field conditions and conditions encountered based on the contractor’s means and methods. The information in this handout is not to be construed in any way as a waiver of the provisions in the CGP. Bidders and contractors are cautioned to make independent investigations and examinations as they deem necessary to satisfy the conditions encountered in performance of work, with respect to the following: sampling and monitoring locations, distribution of watershed areas for sizing of BMPs, and selection of BMPs in order to conform to the requirement of the contract documents and the CGP.

Project Vicinity



Copy of NOI



State Water Resources Control Board
NOTICE OF INTENT
 TO COMPLY WITH THE TERMS OF THE
 GENERAL PERMIT TO DISCHARGE STORM WATER
 ASSOCIATED WITH CONSTRUCTION ACTIVITY (WQ ORDER No. 99-08-DWQ)



I. NOI STATUS (SEE INSTRUCTIONS)

MARK ONLY ONE ITEM	1. <input checked="" type="checkbox"/> New Construction	2. <input type="checkbox"/> Change of Information for WDID#	
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II. PROPERTY OWNER

Name California Department of Transportation		Contact Person Dina El-Tawansy	
Mailing Address 111 Grand Avenue		Title Regional Project Manager	
City Oakland	State CA	Zip 94612	Phone (510) 286-7236
Owner Type (check one) 1. <input type="checkbox"/> Private Individual 2. <input type="checkbox"/> Business 3. <input type="checkbox"/> Municipal 4. <input checked="" type="checkbox"/> State 5. <input type="checkbox"/> Federal 6. <input type="checkbox"/> Other			

III. DEVELOPER/CONTRACTOR INFORMATION

Developer/Contractor		Contact Person	
Mailing Address		Title	
City	State	Zip	Phone

IV. CONSTRUCTION PROJECT INFORMATION

Site/Project Name Route 17 Wet Pavement Safety Improvement Project		Site Contact Person	
Physical Address/Location SR17-PM 0.0/2.8		Latitude 37.1612	Longitude -121.98
City (or nearest City) Los Gatos		County Santa Clara	
City (or nearest City) Los Gatos		Zip 95033	Emergency Phone Number
A. Total size of construction site area: 21.9 Acres	C. Percent of site imperviousness (including rooftops): Before Construction: 96.35% After Construction: 96.27%		D. Tract Number(s): _____
B. Total area to be disturbed: 0.8 Acres (% of total 3.65%)			E. Mile Post Marker: 0.0/2.8
F. Is the construction site part of a larger common plan of development or sale? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		G. Name of plan or development:	
H. Construction commencement date: 12/01 / 2010		J. Projected construction dates: Complete grading: ____/____/____ Complete project: 05/01/ 2012	
I. % of site to be mass graded: _____			
K. Type of Construction (Check all that apply): 1. <input type="checkbox"/> Residential 2. <input type="checkbox"/> Commercial 3. <input type="checkbox"/> Industrial 4. <input type="checkbox"/> Reconstruction 5. <input checked="" type="checkbox"/> Transportation 6. <input type="checkbox"/> Utility Description: _____ 7. <input type="checkbox"/> Other (Please List): _____			

V. BILLING INFORMATION

SEND BILL TO: <input type="checkbox"/> OWNER (as in II. above)	Name	Contact Person	
<input type="checkbox"/> DEVELOPER (as in III. above)	Mailing Address	Phone/Fax	
<input type="checkbox"/> OTHER (enter information at right)	City	State	Zip

VI. REGULATORY STATUS

A. Has a local agency approved a required erosion/sediment control plan?..... YES NO
Does the erosion/sediment control plan address construction activities such as infrastructure and structures?..... YES NO
Name of local agency: California Department of Transportation Phone: (510) 286-5664

B. Is this project or any part thereof, subject to conditions imposed under a CWA Section 404 permit of 401 Water Quality Certification?..... YES No
If yes, provide details: _____

VII. RECEIVING WATER INFORMATION

A. Does the storm water runoff from the construction site discharge to (Check all that apply):

- Indirectly to waters of the U.S.
- Storm drain system - Enter owner's name: California Department of Transportation
- Directly to waters of U.S. (e.g., river, lake, creek, stream, bay, ocean, etc.)

B. Name of receiving water: (river, lake, creek, stream, bay, ocean): Lexington Reservoir

VIII. IMPLEMENTATION OF NPDES PERMIT REQUIREMENTS

A. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (check one)

A SWPPP has been prepared for this facility and is available for review: Date Prepared: ___/___/___ Date Amended: ___/___/___

A SWPPP will be prepared and ready for review by (enter date): ___/___/___

A tentative schedule has been included in the SWPPP for activities such as grading, street construction, home construction, etc.

B. MONITORING PROGRAM

A monitoring and maintenance schedule has been developed that includes inspection of the construction BMPs before anticipated storm events and after actual storm events and is available for review.

If checked above: A qualified person has been assigned responsibility for pre-storm and post-storm BMP inspections to identify effectiveness and necessary repairs or design changes..... YES NO

Name: _____ Phone: _____

C. PERMIT COMPLIANCE RESPONSIBILITY

A qualified person has been assigned responsibility to ensure full compliance with the Permit, and to implement all elements of the Storm Water Pollution Prevention Plan including:

- Preparing an annual compliance evaluation..... YES NO
Name: _____ Phone: _____
- Eliminating all unauthorized discharges..... YES NO

IX. VICINITY MAP AND FEE (must show site location in relation to nearest named streets, intersections, etc.)

Have you included a vicinity map with this submittal? YES NO

Have you included payment of the annual fee with this submittal?..... YES NO

X. CERTIFICATIONS

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. In addition, I certify that I have read the entire General Permit, including all attachments, and agree to comply with and be bound by all of the provisions, requirements, and prohibitions of the permit, including the development and implementation of a Storm Water Pollution Prevention Plan and a Monitoring Program Plan will be complied with."

Printed Name: _____

Signature: _____ Date: _____

Title: _____

Risk Assessment

	A	B	C
1	Sediment Risk Factor Worksheet		Entry
2	A) R Factor		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5		R Factor Value	83.33
6	B) K Factor (weighted average, by area, for all site soils)		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9		K Factor Value	0.1
10	C) LS Factor (weighted average, by area, for all slopes)		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13		LS Factor Value	7.7
14			
15	Watershed Erosion Estimate (=R_xK_xLS) in tons/acre		64.1641
16	Site Sediment Risk Factor		Medium
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet

Entry

A. Watershed Characteristics

yes/no

A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment**? For help with impaired waterbodies please check the attached worksheet or visit the link below:

[2006 Approved Sediment-impaired WBs Worksheet](#)

http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml

OR

A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY?

<http://www.ice.ucdavis.edu/geowbs/asp/wbquse.asp>

no

Combined Risk Level Matrix

		<u>Sediment Risk</u>		
		Low	Medium	High
<u>Receiving Water Risk</u>	Low	Level 1	Level 2	
	High	Level 2		Level 3

Project Sediment Risk: **Medium**

Project RW Risk: **Low**

Project Combined Risk: **Level 2**

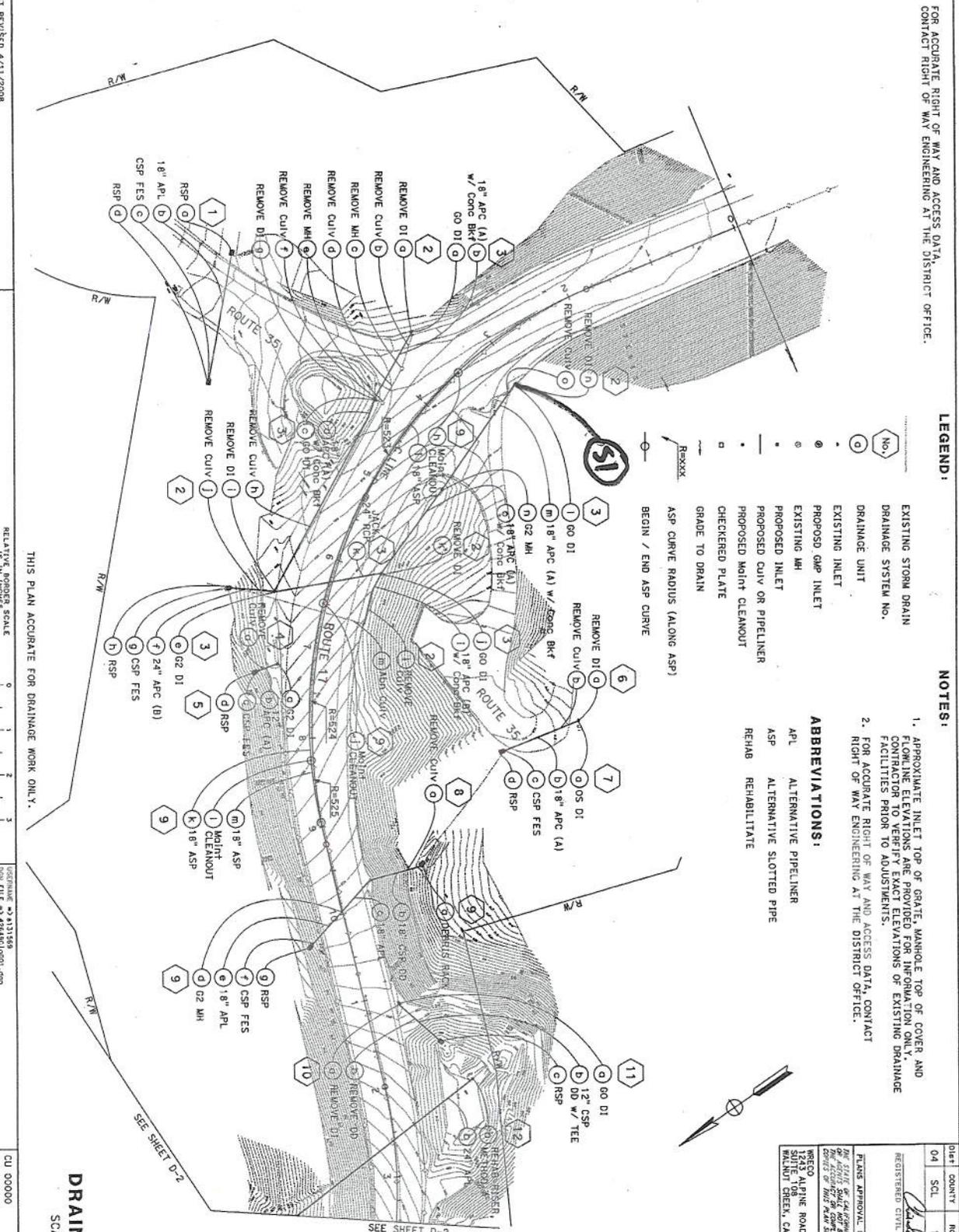
Sampling Locations

SAMPLING LOCATIONS

5-

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA
 CONTRACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	JENNIFER ABRAMS	REVISED BY	J. ABRAMS
Caltrans	HAN-BIN LIANG	CHECKED BY	CHRIS SEWELL	DATE REVISED	03/29/10



LEGEND:

- No. 1 EXISTING STORM DRAIN DRAINAGE SYSTEM NO.
- No. 2 DRAINAGE UNIT
- No. 3 EXISTING INLET
- No. 4 PROPOSED GMP INLET
- No. 5 EXISTING MH
- No. 6 PROPOSED INLET
- No. 7 PROPOSED CUIV OR PIPELINER
- No. 8 PROPOSED MOJIT CLEANOUT
- No. 9 CHECKERED PLATE
- No. 10 GRADE TO DRAIN
- No. 11 ASP CURVE RADIUS (ALONG ASP)
- No. 12 BEGIN / END ASP CURVE

NOTES:

1. APPROXIMATE INLET TOP OF GATE, MANHOLE TOP OF COVER AND FLOWLINE ELEVATIONS ARE PROVIDED FOR INFORMATION ONLY. CONTRACTOR TO VERIFY EXACT ELEVATIONS OF EXISTING DRAINAGE FACILITIES PRIOR TO ADJUSTMENTS.
2. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

ABBREVIATIONS:

- APL ALTERNATIVE PIPELINER
- ASP ALTERNATIVE SLOTTED PIPE
- REHAB REHABILITATE

Dist	COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	SCL	17	0.00/2.83	
REGISTERED CIVIL ENGINEER		DATE	03/29/2010	
REGISTERED CIVIL ENGINEER		DATE	03/29/2010	
THE STATE OF CALIFORNIA REGISTERED CIVIL ENGINEER No. 57307 DATE 5/30/11 REGISTERED CIVIL ENGINEER No. 57307 DATE 5/30/11				
WSECO	ALPINE ROAD	CALTRANS	111 GRAND AVENUE	DAVIS, CA 95618
WALNUT CREEK, CA 94596				

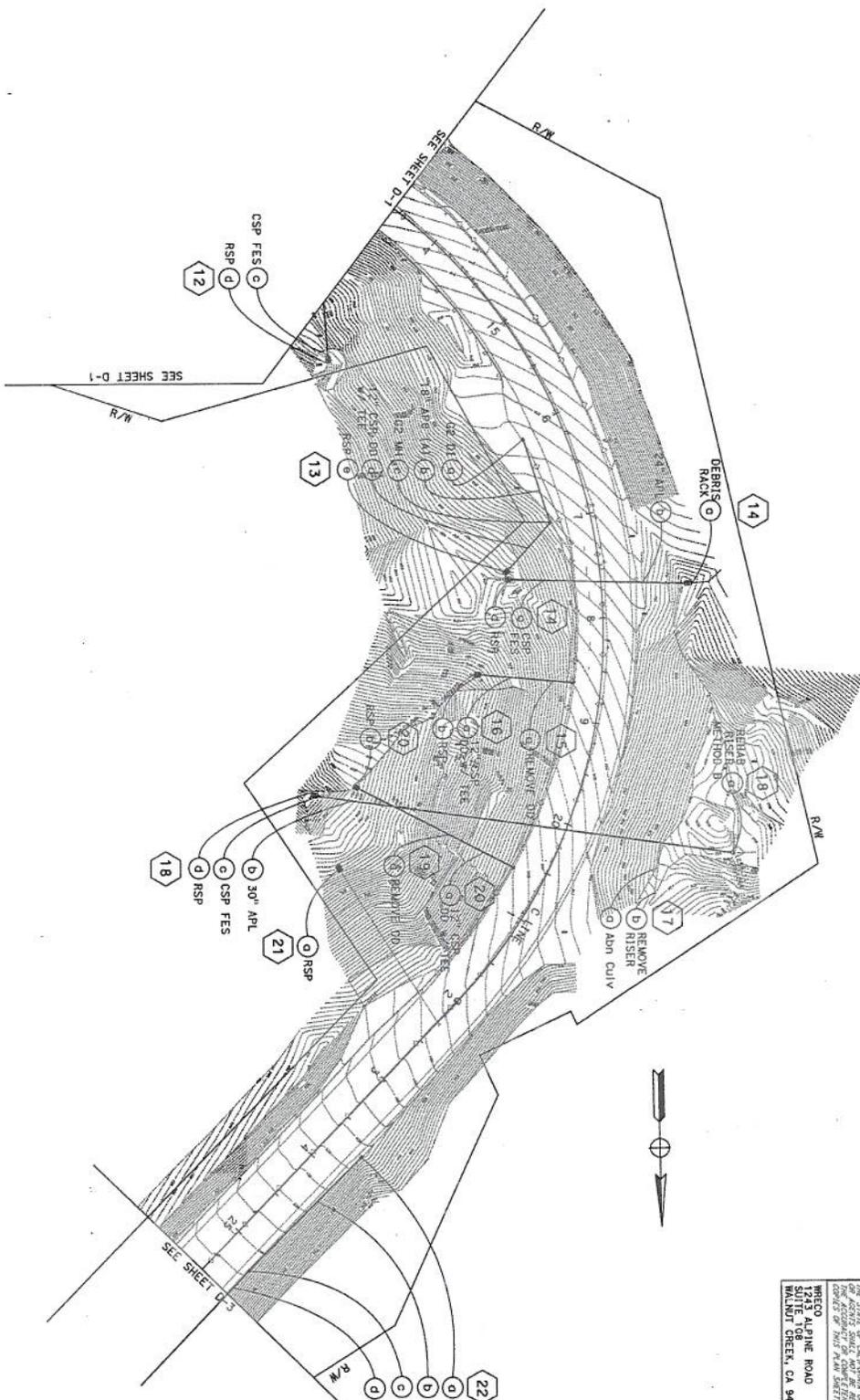
THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

RELATIVE BORDER SCALE
 0 1 2 3
 1/8" = 10'

DRAINAGE PLAN
 SCALE: 1" = 50'
 D-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	JENNIFER ABRAMS	REVISED BY	J. ABRAMS
Caltrans	HAN-BIN LIANG	CHECKED BY	CHRIS SEWELL	DATE REVISED	03/29/10

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

RELATIVE BORDER SCALE
1/8" = 10' HORIZ.



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

DRAINAGE PLAN

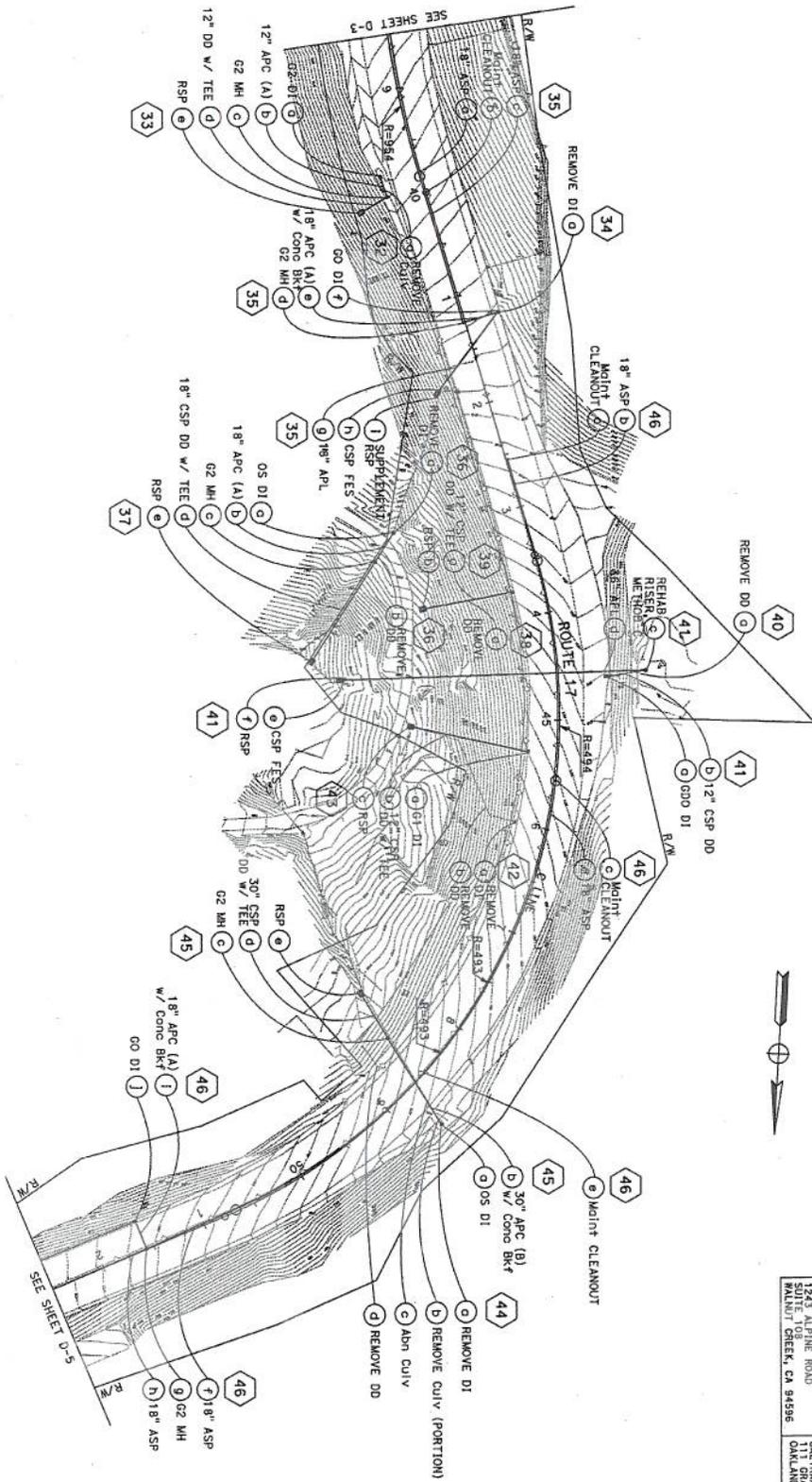
SCALE: 1" = 50'

D-2

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	SCL	17	0.00/2.83	NO. SHEETS
REGISTERED CIVIL ENGINEER			DATE	03/29/2010
REGISTERED CIVIL ENGINEER			DATE	03/29/2010
THE STATE OF CALIFORNIA OR ITS OFFICES ARE NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR ACCURACY OR COMPLETENESS OF SCHEMATIC CONTENTS OF THIS PLAN SHEET.				
WRECO 111 GRAND AVENUE SUITE 1108 WALNUT CREEK, CA 94596		CALTRANS 111 GRAND AVENUE DUBLIN, CA 94568		

BORDER LAST REVISED 4/11/2008

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.
RELATIVE BORDER SCALE
15 IN. INCHES

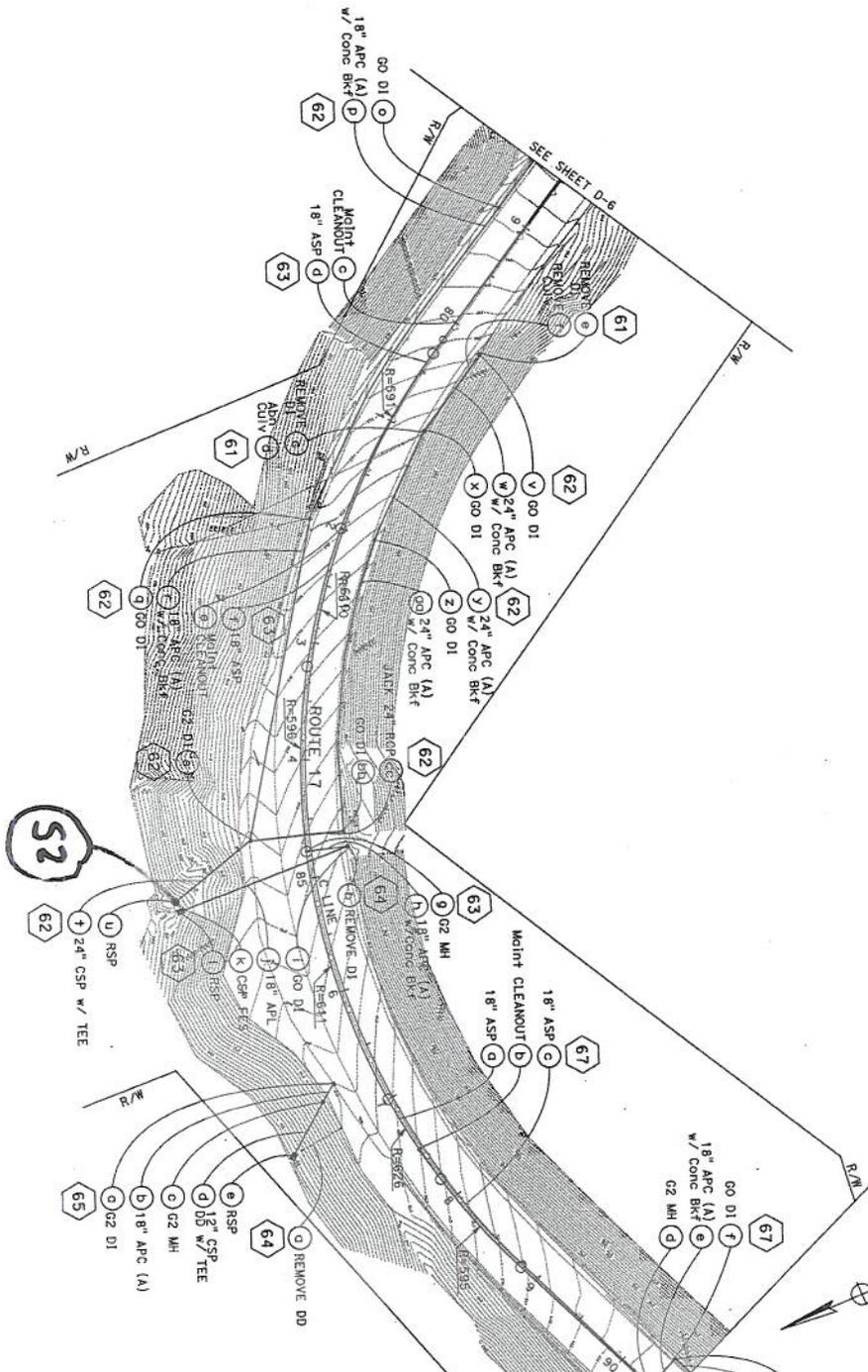
FOR NOTES, ABBREVIATIONS
&/OR LEGEND, SEE SHEET D-1
DATE PLOTTED: 25-MAY-2010
TIME PLOTTED: 17:26

DRAINAGE PLAN
SCALE: 1" = 50'
D-4

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	SCL	17	0.00/2.83	NO. SHEETS
REGISTERED CIVIL ENGINEER			DATE	02/28/2010
REGISTERED PROFESSIONAL ENGINEER			DATE	02/28/2010
THE STATE OF CALIFORNIA, BY ITS OFFICERS OF AGENCIES SHALL HOLD NO RESPONSIBILITY FOR THE ACCURACY OF THIS PLAN SHEET.				
PROJECT NO. 04-00000 DRAWING NO. 264301		REGISTERED PROFESSIONAL ENGINEER NO. 61507 DATE 02/28/10 CHRYSTAL L. WILSON		
PROJECT LOCATION 12421 ALPINE ROAD CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		PROJECT LOCATION 12421 ALPINE ROAD CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	JENNIFER ABRAMS	REVISED BY	J. ABRAMS
Caltrans	HAN-BIN LIANG	CHECKED BY	CHRIS SEWELL	DATE REVISED	03/29/10

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.
RELATIVE BORDER SCALE IS IN INCHES

FOR NOTES ABBREVIATIONS & OR LENDEND, SEE SHEET D-1
USERID: 4131359
JOB FILE # 414901007.dgn

CU 00000 EA 264301

DRAINAGE PLAN
SCALE: 1" = 50'

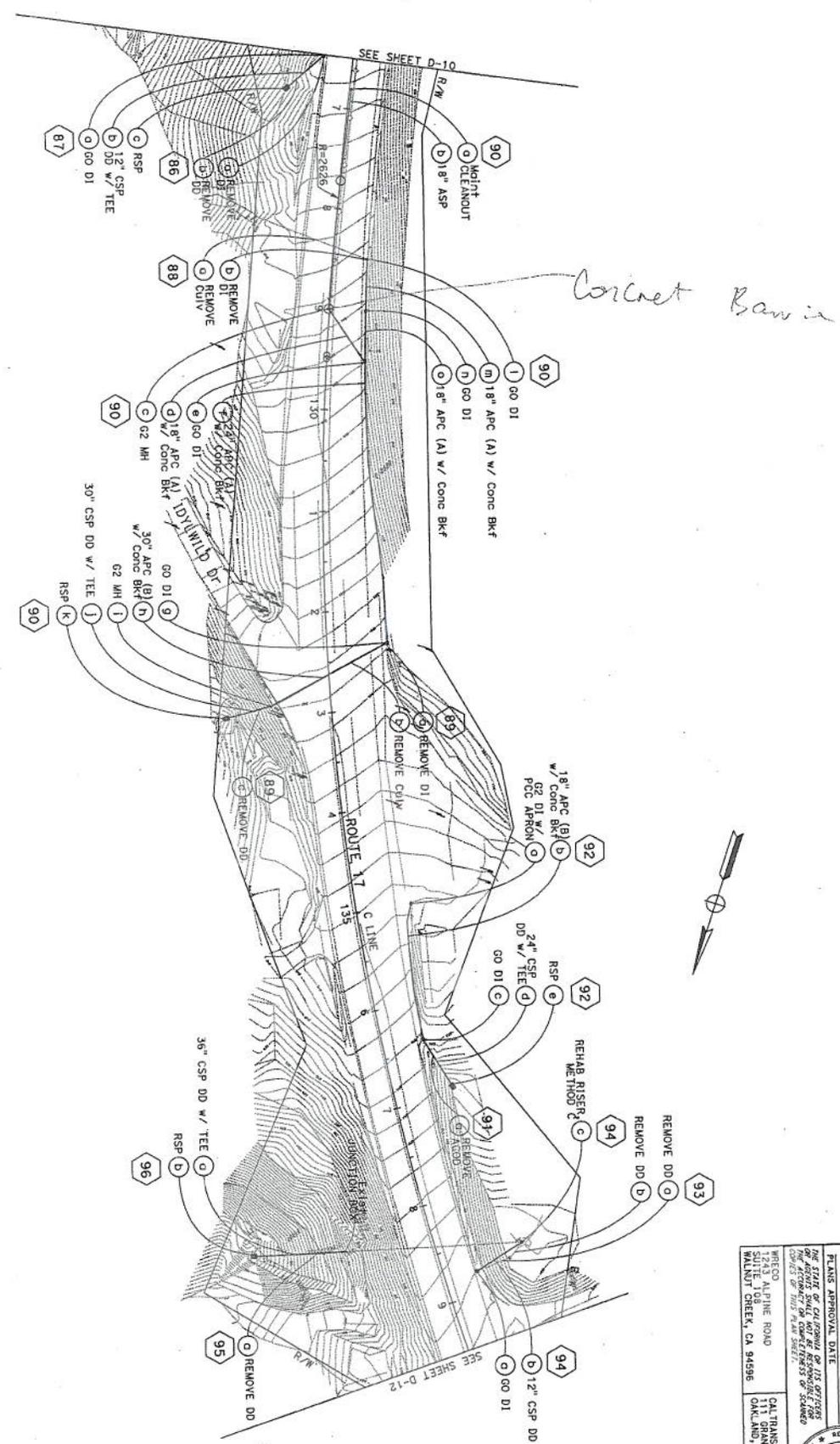
D-7

Sheet No. 04	County SCL	Route 17	Post Miles 0.00/2.83	Sheet No. 1	Total Sheets
REGISTERED CIVIL ENGINEER			DATE 01/29/2010	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE			DATE 06/20/11	REGISTERED CIVIL ENGINEER	
<p>THE STATE OF CALIFORNIA DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THESE PLANS OR THE RESULTS OF THEIR USE. THE USER ASSUMES ALL LIABILITY FOR ANY DAMAGE OR INJURY RESULTING FROM THE USE OF THESE PLANS.</p>					
WRECO ALPINE ROAD			CALTRANS		
SITE LOG			111 GRAND AVENUE		
WALNUT CREEK, CA 94596			OAKLAND, CA 94612		

BOBBER LAST REVISED 4/11/2008

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	JENNIFER ABRAMS	REVISED BY	J. ABRAMS
Caltrans	HAN-BIN LIANG	CHECKED BY	CHRIS SEWELL	DATE REVISED	03/29/10

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.
RELATIVE PAPER SCALE
1" = 15' INCHES

FOR NOTES, ABBREVIATIONS &/OR LENGTHS, SEE SHEET D-11
USERNAME: 4131358
JOB FILE: 4135101011-50

CU 00000
EA 264901

DRAINAGE PLAN
SCALE: 1" = 50'

D-11

Sheet	04	County	SCL	Route	17	Post Miles	0.00/2.53	Sheet Total	17
Project	03/29/2010								
REGISTERED CIVIL ENGINEER	Chris Sewell								
DATE	03/29/10								
PLANS APPROVAL DATE	03/29/10								
REGISTERED CIVIL ENGINEER	Chris Sewell								
DATE	03/29/10								
PROJECT	WRECO ALPINE ROAD								
SITE	SLOT 108								
LOCATION	WALNUT CREEK, CA 94596								
REGISTERED CIVIL ENGINEER	Chris Sewell								
DATE	03/29/10								
PROJECT	WRECO ALPINE ROAD								
SITE	SLOT 108								
LOCATION	WALNUT CREEK, CA 94596								

80080R LAST REVISED 4/11/2008

Rainfall Data

Rainfall Intensity can be obtained by the following link:

<http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif>

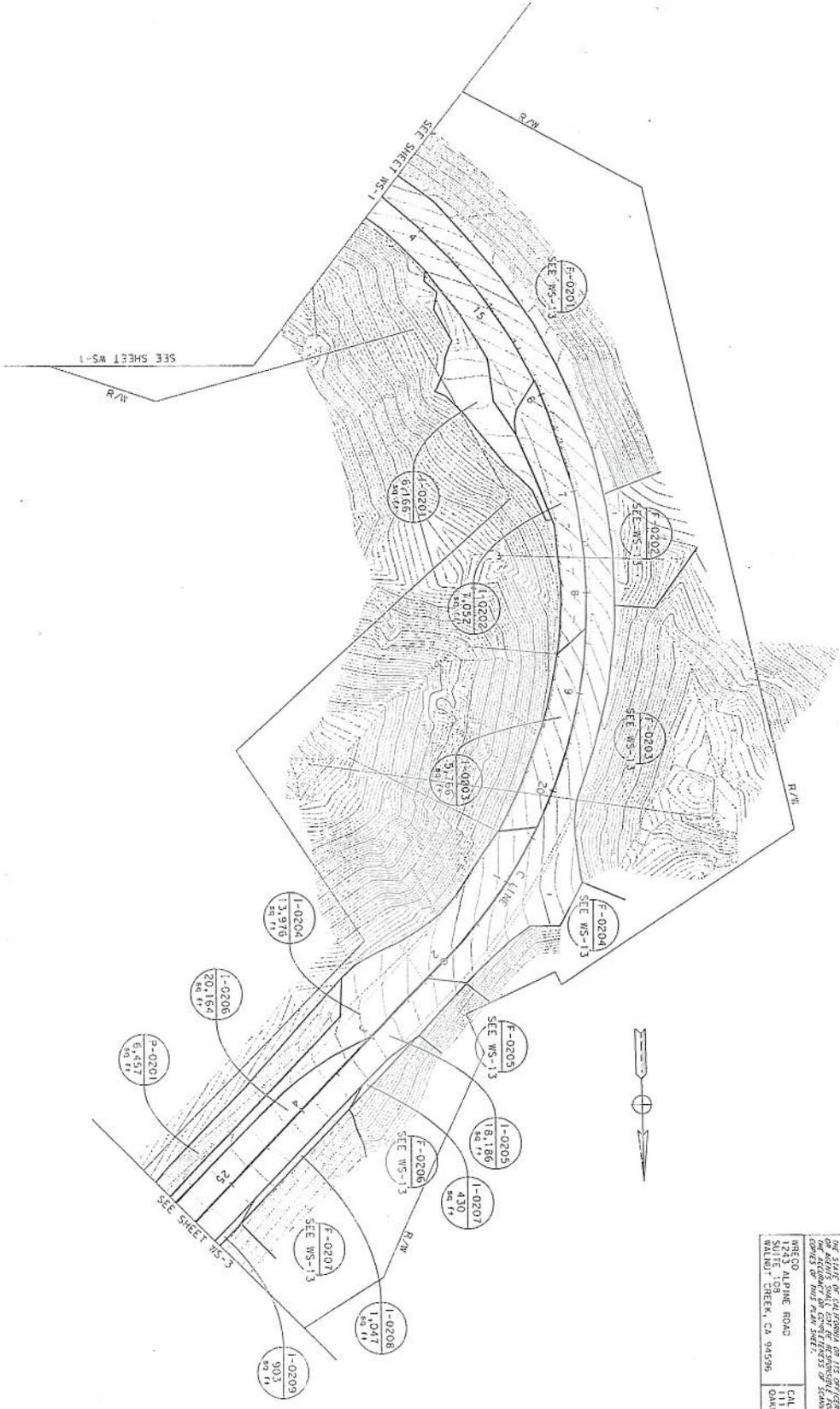
For runoff coefficient, refer to Highway Design Manual,
Chapters 800 Highway Drainage Design

Watershed Map

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	JENNIFER ABPAMS	REVISED BY	
<i>St. Johns</i>	HAN-BIN LIANG	CHECKED BY	CHRIS SEWELL	DATE REVISED	

BORNER LAST REVISED 4/11/2008

NOTE:
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA
CONTACT RIGHT OF WAY ENGINEERING AT IN DISTRICT OFFICE.



THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
RELATIVE BORNER SCALE
1.5 IN INCHES

FOR NOTES, ABBREVIATIONS
FROM LENSING, SEE SHEET WS-1
USERNAME: a3na1.du
DGN FILE: ... WS-02.dgn

WATERSHED MAP
SCALE: 1" = 50'

CU 00000 EA 264901

04+ COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	SCL	17	0.00/2.83
REGISTERED CIVIL ENGINEER		DATE	
PLANS APPROVAL DATE		DATE	
<p>FOR STATE OF CALIFORNIA OR ITS OFFICERS NOT ACCORDING TO THE COMPRESSIVE OF STANDARD CODES OF THIS PLAN SHEET:</p>			
REGISTERED CIVIL ENGINEER	DATE	REGISTERED PROFESSIONAL ENGINEER	DATE
NO. C 48807	NO. 6/30/11	NO. C 48807	NO. 6/30/11
WESCO - L PINE ROAD		CALTRANS	
SUITE 108		SUITE 108	
WALNUT CREEK, CA 94596		OAKLAND, CA 94612	

BRIDGE LAST REVISED 4/11/2008

THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
 RELATIVE BORDER SCALE
 15 IN INCHES

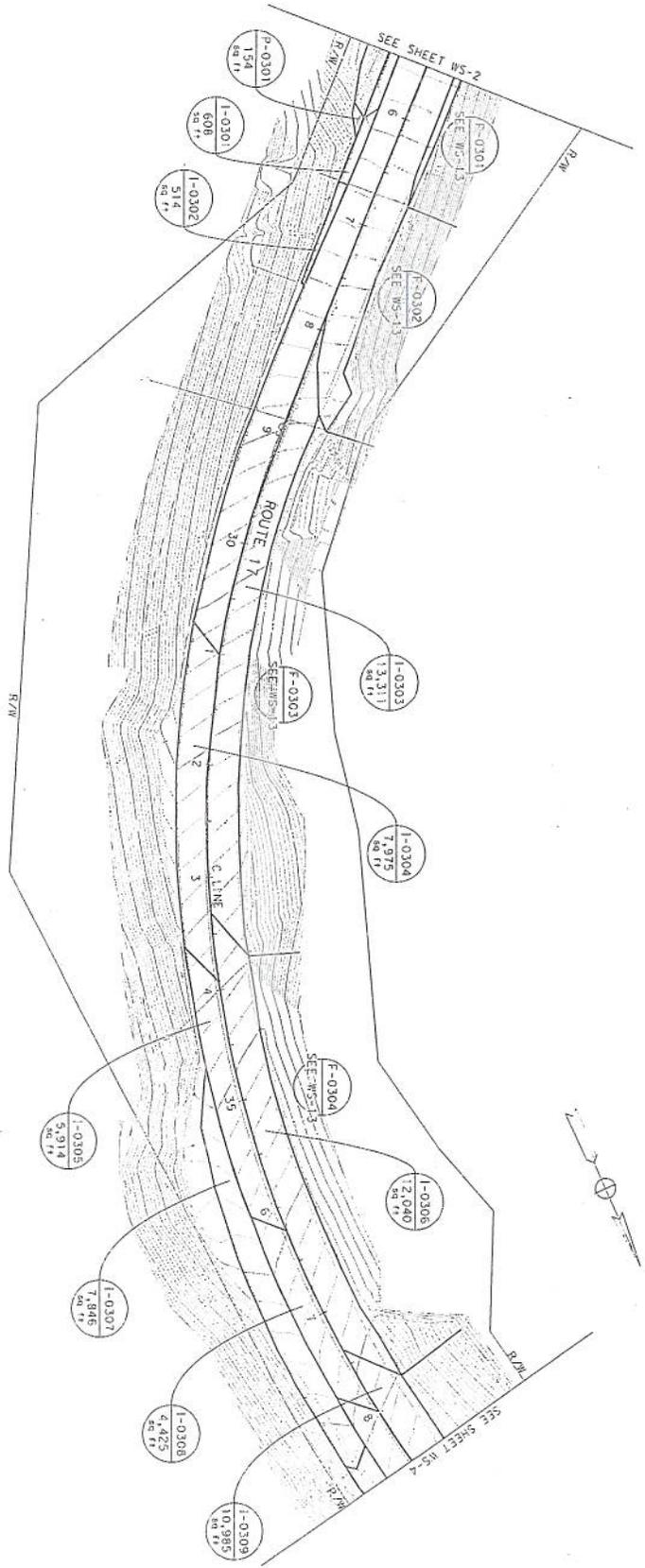
FOR NOTES, ABBREVIATIONS
 (OR EMBLEM), SEE SHEET WS-1
 USGS MAP 2281-04
 FOR FILE # 2... AND 01-029

CU 00000 EA 264301

WATERSHED MAP
 SCALE: 1" = 50'

DATE PLOTTED => 27 Jun 10
 TIME PLOTTED => 11:52:23

NOTE:
 FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
 CONTACT RIGHT OF WAY ENGINEERING IN THE DISTRICT OFFICE.



0341 COUNTY	ROUTE	POST MILE	SHEET TOTAL
04 SCL	17	0.00/2.83	NO. SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

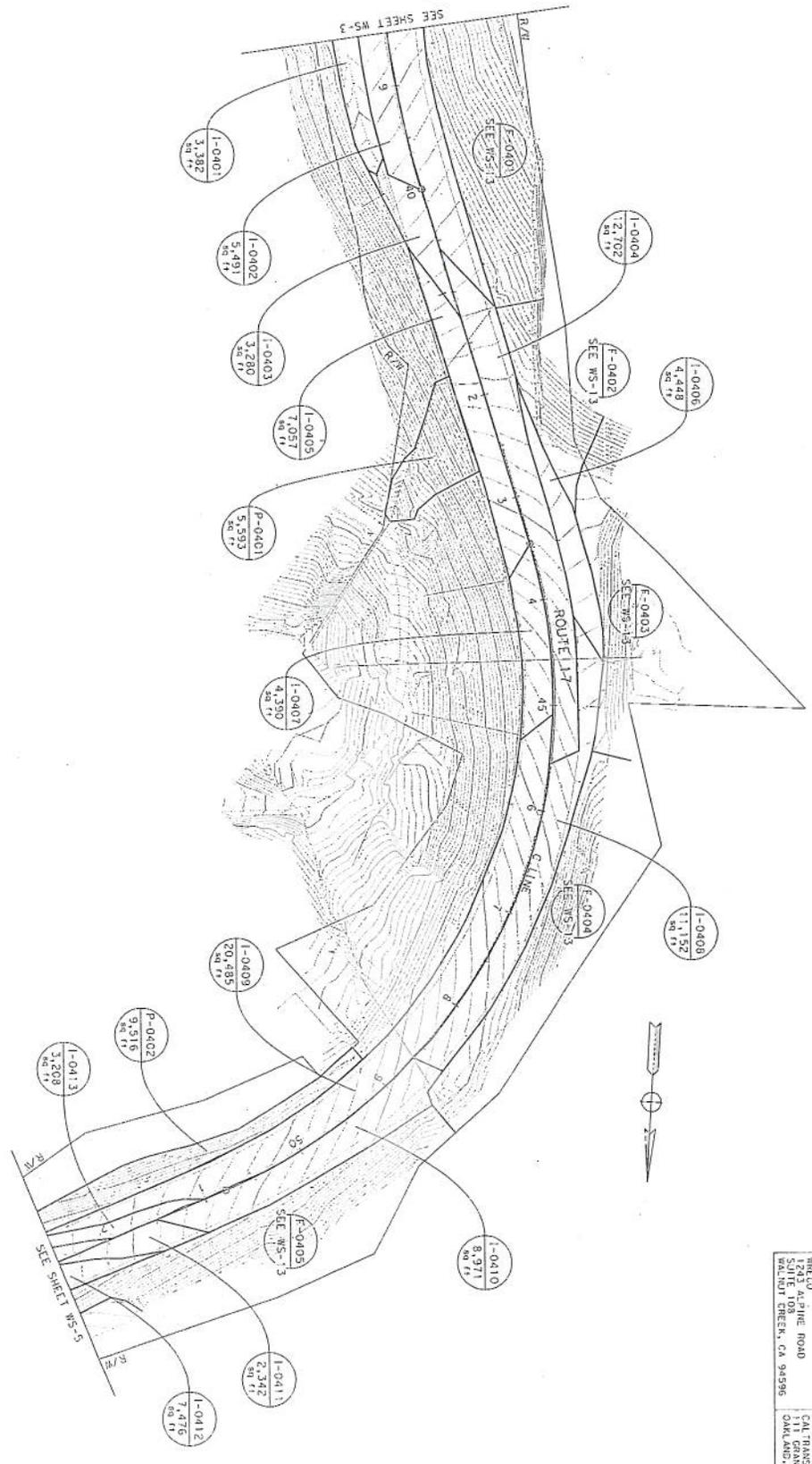
THE STATE OF CALIFORNIA REGISTERED PROFESSIONAL CIVIL ENGINEER
 No. 51207
 Exp. 6/30/11
 CIVIL ENGINEER
 (OR EMBLEM)

REGISTERED PROFESSIONAL CIVIL ENGINEER
 No. 64801
 Exp. 6/30/11
 CIVIL ENGINEER
 (OR EMBLEM)

OFFICE
 2745 ALPINE ROAD
 111 GRAND AVENUE
 OAKLAND, CA 94612

WBECO
 2745 ALPINE ROAD
 WALKER CREEK, CA 94596

NOTE:
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
RELATIVE BORDER SCALE
15 IN INCHES

FOR NOTES: ABBREVIATIONS
FROM LANSING, SEE SHEET WS-1
USE FILE # ... WS-3-0-000

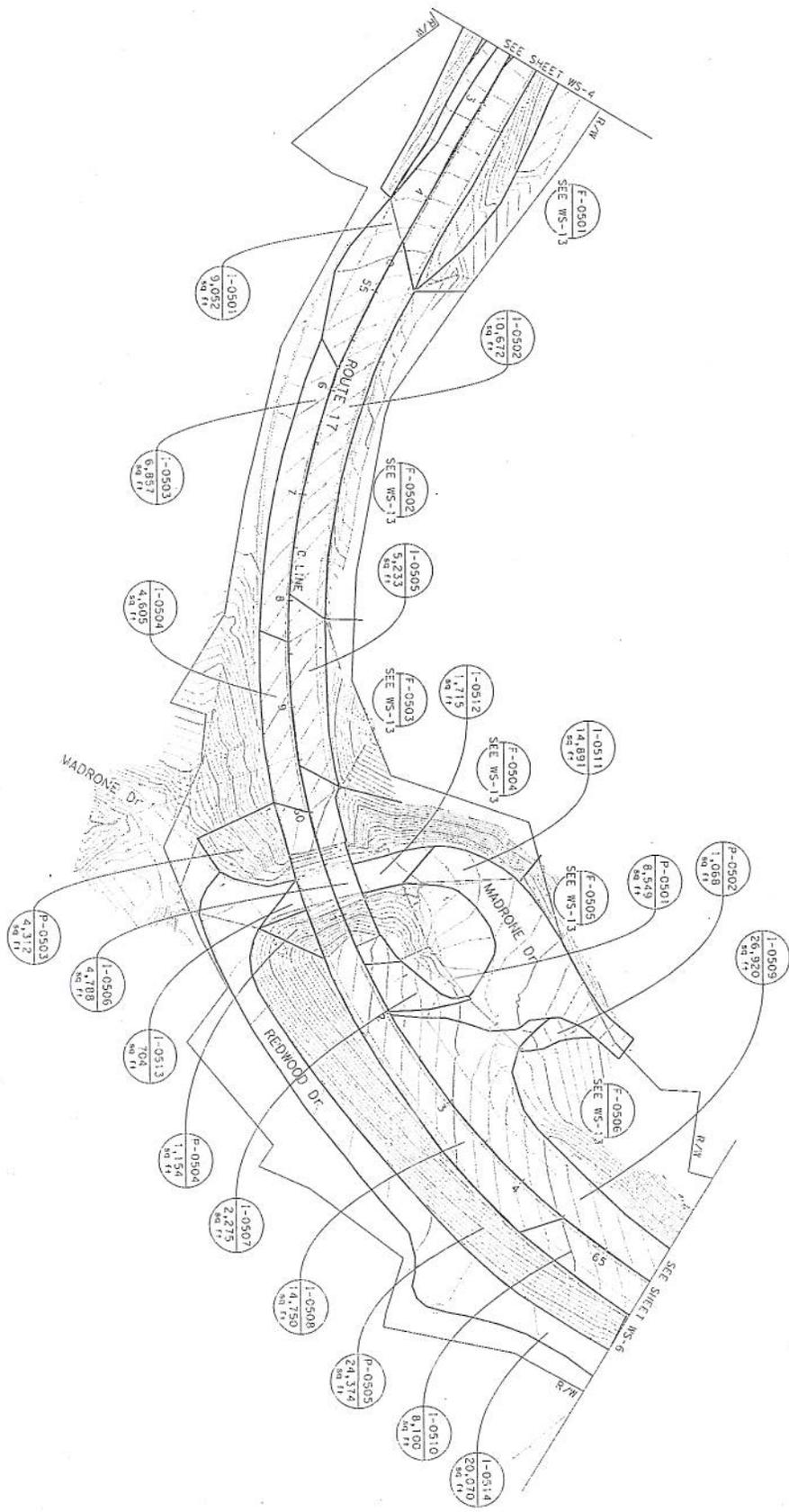
CU 00000
EA 264901

WATERSHED MAP
SCALE: 1" = 50'

044	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL
04	SCL	17	0.00/2.83	NO. SHEETS
REGISTERED CIVIL ENGINEER DATE				
PLANS APPROVAL DATE				
REGISTERED PROFESSIONAL ENGINEER				
No. C 64807				
No. S 730719				
ELEV				
DATE				
PROJECT				
WALNUT CREEK, CA 94596				
CALTRANS				
011 GRAND AVENUE				
SUITE 108				
WALNUT CREEK, CA 94596				

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT/FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	JENNIFER ABRAMS	REVISED BY	
	HAN-BIN LIANG	CHECKED BY	CHRIS SEWELL	DATE REVISED	

NOTE:
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
RELATIVE BORDER SCALE
1/8" IN INCHES

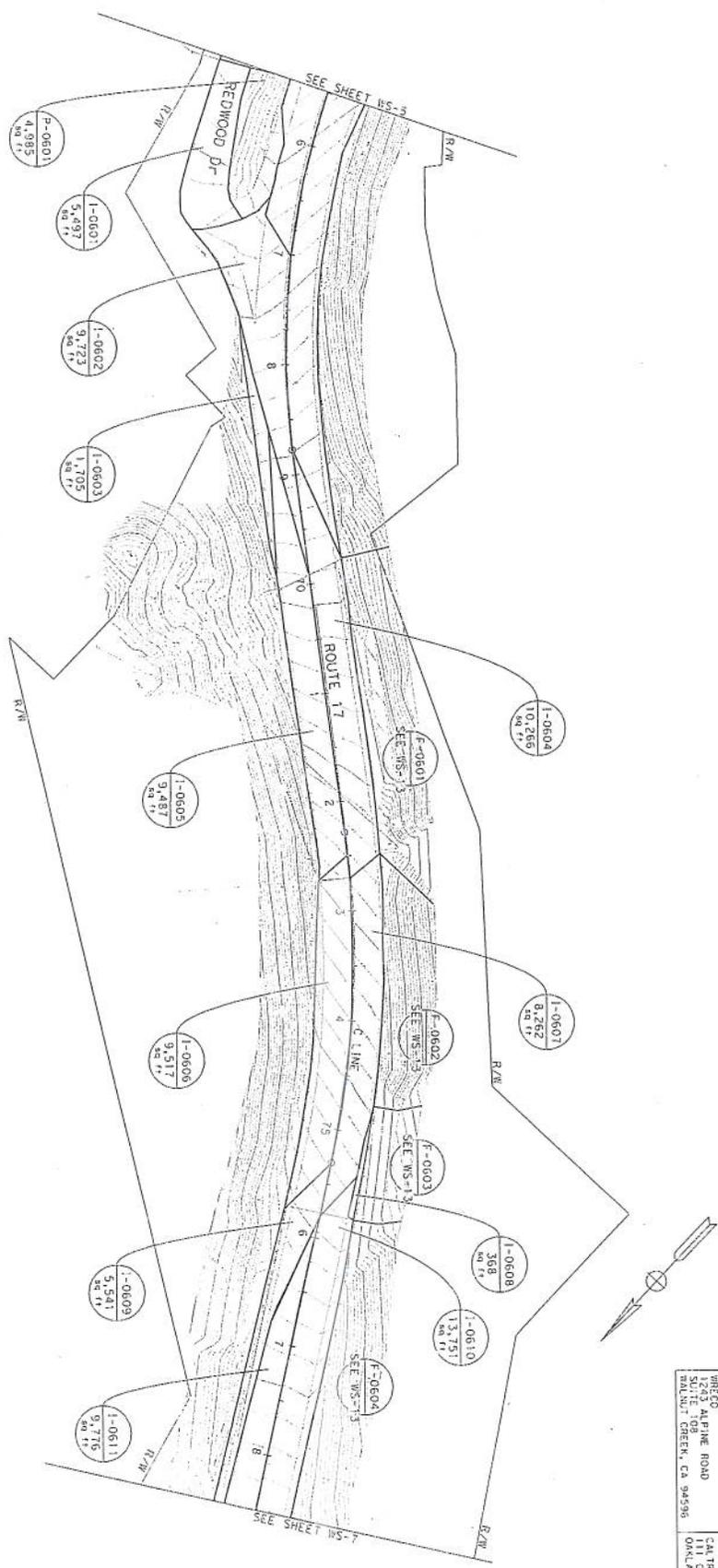
FOR NOTES, ABBREVIATIONS
&/OR LEGENDS, SEE SHEET WS-1
DATE PLOTTED: 04/11/2008
JOB FILE: 04-11-08-05.dgn

WATERSHED MAP
SCALE: 1" = 50'

CU 00000 EA 264901

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	SCL	17	0.00/2.03	NO. SHEETS
REGISTERED CIVIL ENGINEER DATE				
PLANS APPROVAL DATE				
THE STATE OF CALIFORNIA ON ITS OFFICERS OR AGENTS SHALL HOLD IT RESPONSIBLE FOR ANY MISTAKES OR ERRORS IN THIS PLAN SHEET.				
WRECO 3251 ALPINE ROAD DALLAM, CA 94596		EAL TRANS 111 GRAND AVENUE DALLAM, CA 94612		

NOTE:
 FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
 CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
 RELATIVE BORDER SCALE
 1 2 3
 1/3" IN INCHES

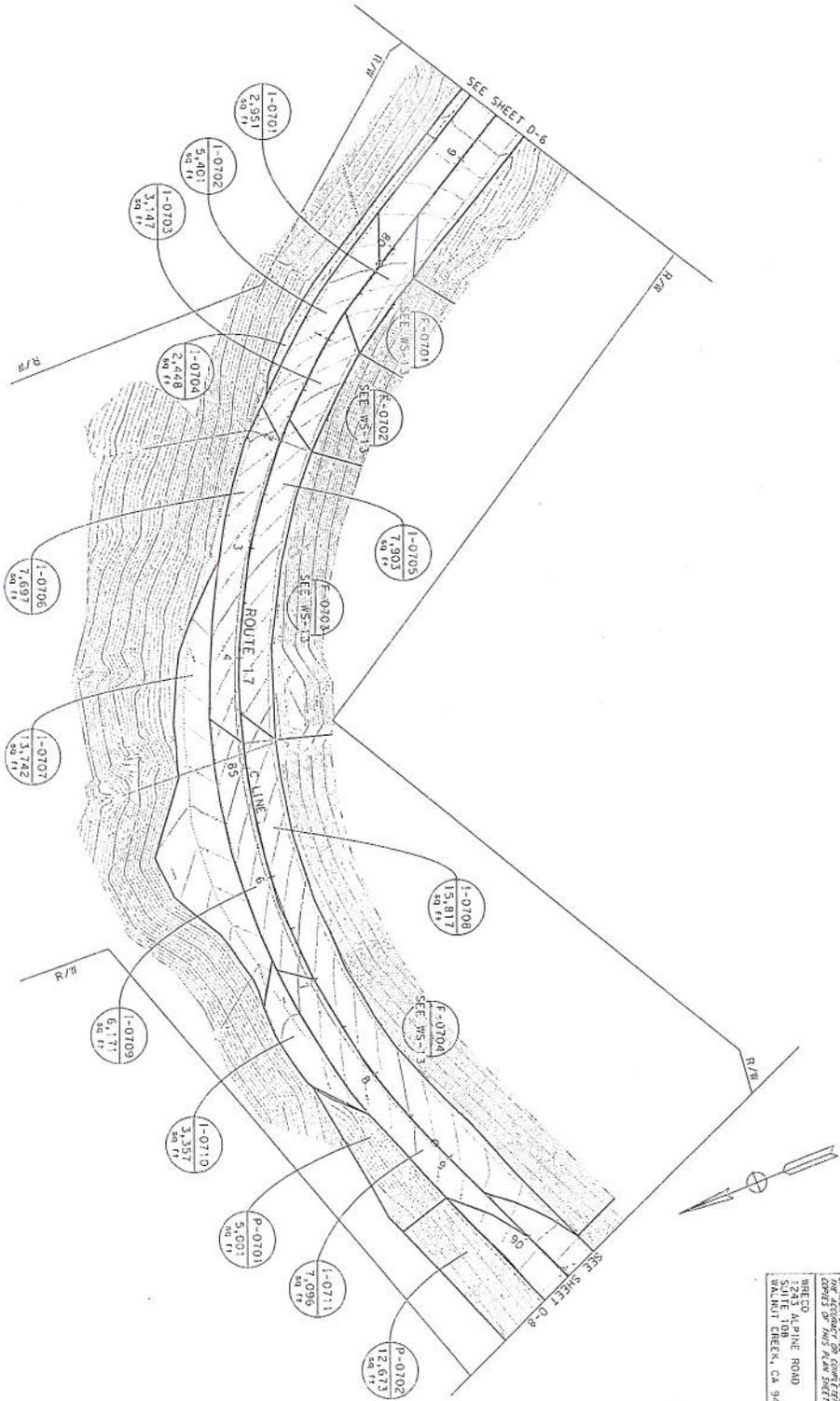
FOR NOTES, ABBREVIATIONS
 &/OR LEGEND, SEE SHEET WS-1
 05/20/06 2:24:10 PM
 05/20/06 2:24:10 PM

DIST. COUNTY	ROUTE	POST MILES	SHEET TOTAL
04 SCL	17	0.00/2.83	NO. SHEETS
REGISTERED CIVIL ENGINEER		CATE	
PLANS APPROVAL DATE REGISTERED CIVIL ENGINEER NO. 61307 EXPIRES 6/30/11 THE STATE OF CALIFORNIA ON ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THIS PLAN SHEET. CONTRACT NO. 04-00000-01			
PROJECT		CALTRANS	
1243 ALPINE ROAD		OAKLAND, CA 94612	
SUITE 109 GREEN, CA 94596			

WATERSHED MAP
 SCALE: 1" = 50'

CU 00000 EA 264901
WS-6

NOTE:
 FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
 CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE
 THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
 15 IN. HIGHER

FOR NOTES, APPROPRIATIONS
 & FOR LENDING, SEE SHEET WS-1
 UNDER FILE # 111-000-07-000
 FOR FILE # 111-000-07-000

CU 00000

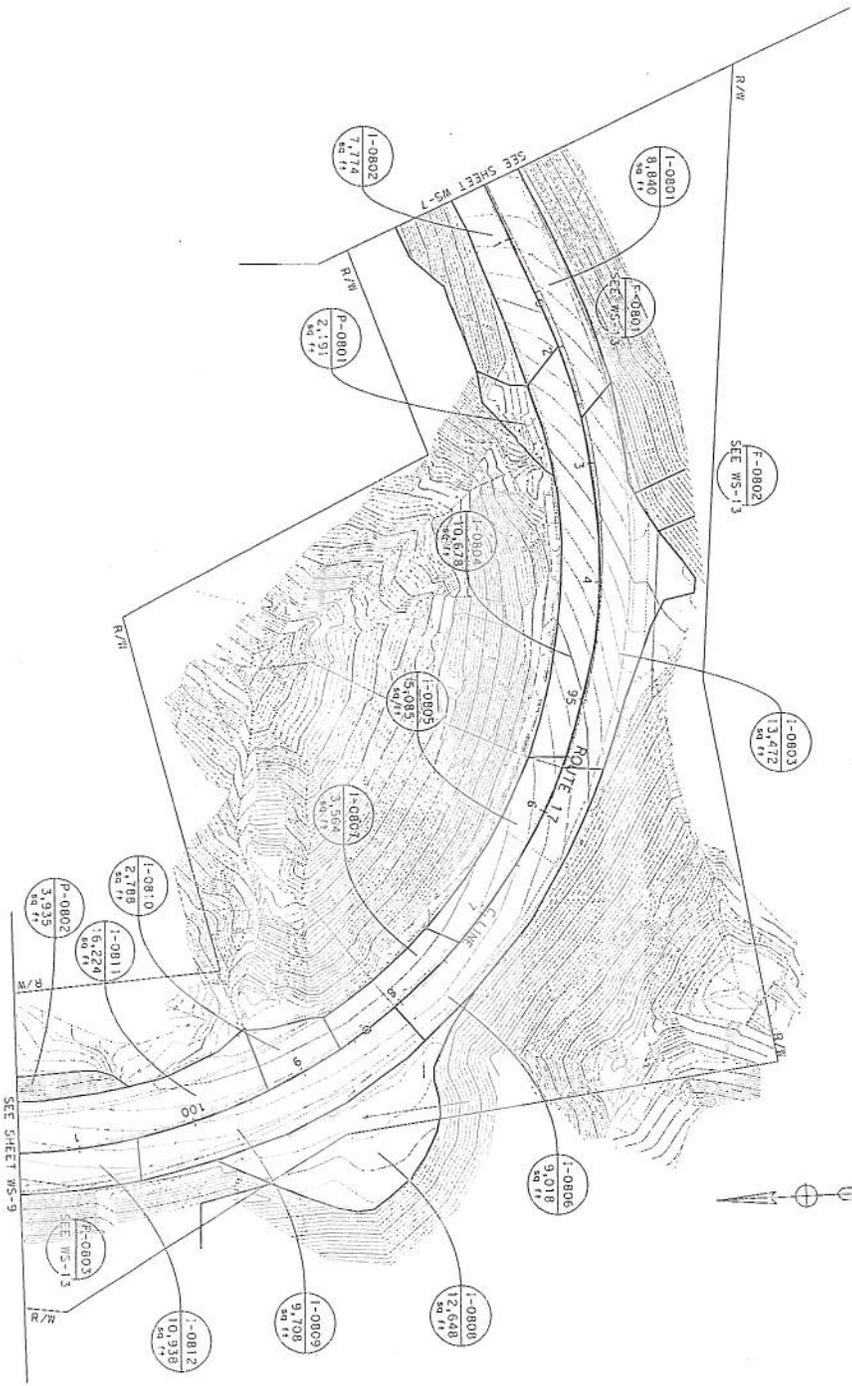
EA 2849301

WATERSHED MAP
 SCALE: 1" = 50'

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	SCL	17	0.00/2.83	TOTAL PROJECT NO. SHEETS
REGISTERED CIVIL ENGINEER		DATE	REGISTERED CIVIL ENGINEER	
PLANS APPROVAL DATE		DATE	REGISTERED CIVIL ENGINEER	
THE STATE OF CALIFORNIA ON ITS BEHALF HAS AGENCIES WHICH ARE RESPONSIBLE FOR THE REGULATION OF THE STATE'S WATER RESOURCES. THESE AGENCIES ARE THE CALIFORNIA DEPARTMENT OF WATER RESOURCES AND THE CALIFORNIA DEPARTMENT OF PUBLICATIONS.				
WREDO 1283 ALPINE ROAD SUITE 108 PLACENTIA, CA 94696		CALTRANS 1283 ALPINE AVENUE OAKLAND, CA 94612		

NOTE:
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	JENNIFER ABRAMS	REVISED BY	
	HAN-BIN LIANG	CHECKED BY	CHRIS SEWELL	DATE REVISED	



THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
RELATIVE PROJECT SCALE
1" = 50'
9 1 2 3

FOR NOTES, ABBREVIATIONS
6/OR LEGEND, SEE SHEET WS-1
LOADING TO BE 100
200 FILE TO ... WS-08.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

REGISTERED CIVIL ENGINEER DATE

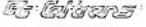
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA FOR ITS OFFICERS AND AGENCIES OR CONTRACTORS OF STATEWORKS OR THIS PLAN SHEET.

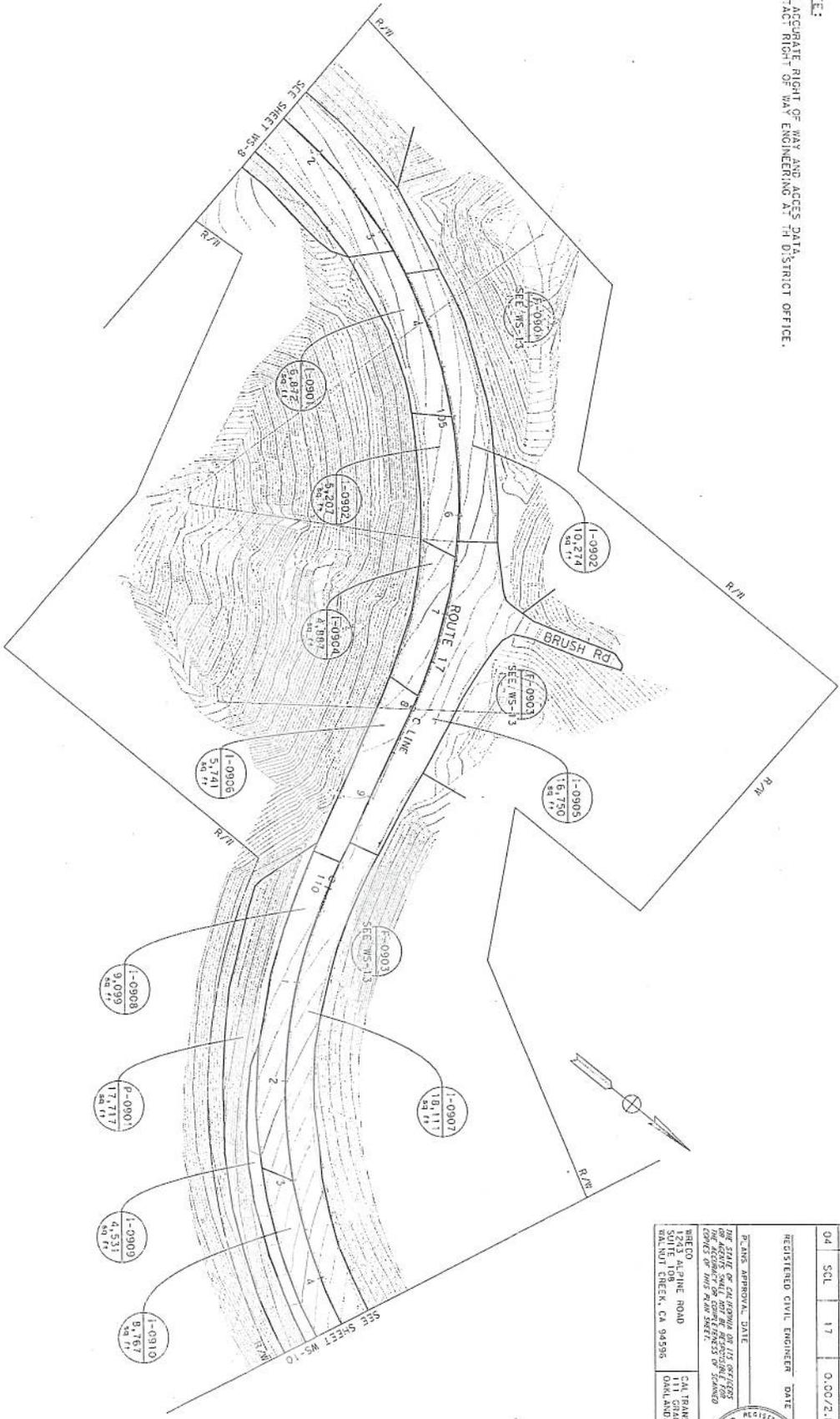
REGISTERED PROFESSIONAL ENGINEER
HAN-BIN LIANG
No. C 64807
Exp. 6/30/11
CIVIL
111 GRAND AVENUE
OAKLAND, CA 94612

WATERSHED MAP
SCALE: 1" = 50'

CU 00000 EA 264901



NOTE:
 FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
 CONTACT RIGHT OF WAY ENGINEERING AT TH DISTRICT OFFICE.



ORDER LAST REVISED 4/11/2008

THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
 RELATIVE BORDER SCALE
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FOR NOTES, ABBREVIATIONS
 AND/OR LEGEND, SEE SHEET WS-1
 DRAWING 22nd 00
 DDM FILE # 22-00-000000

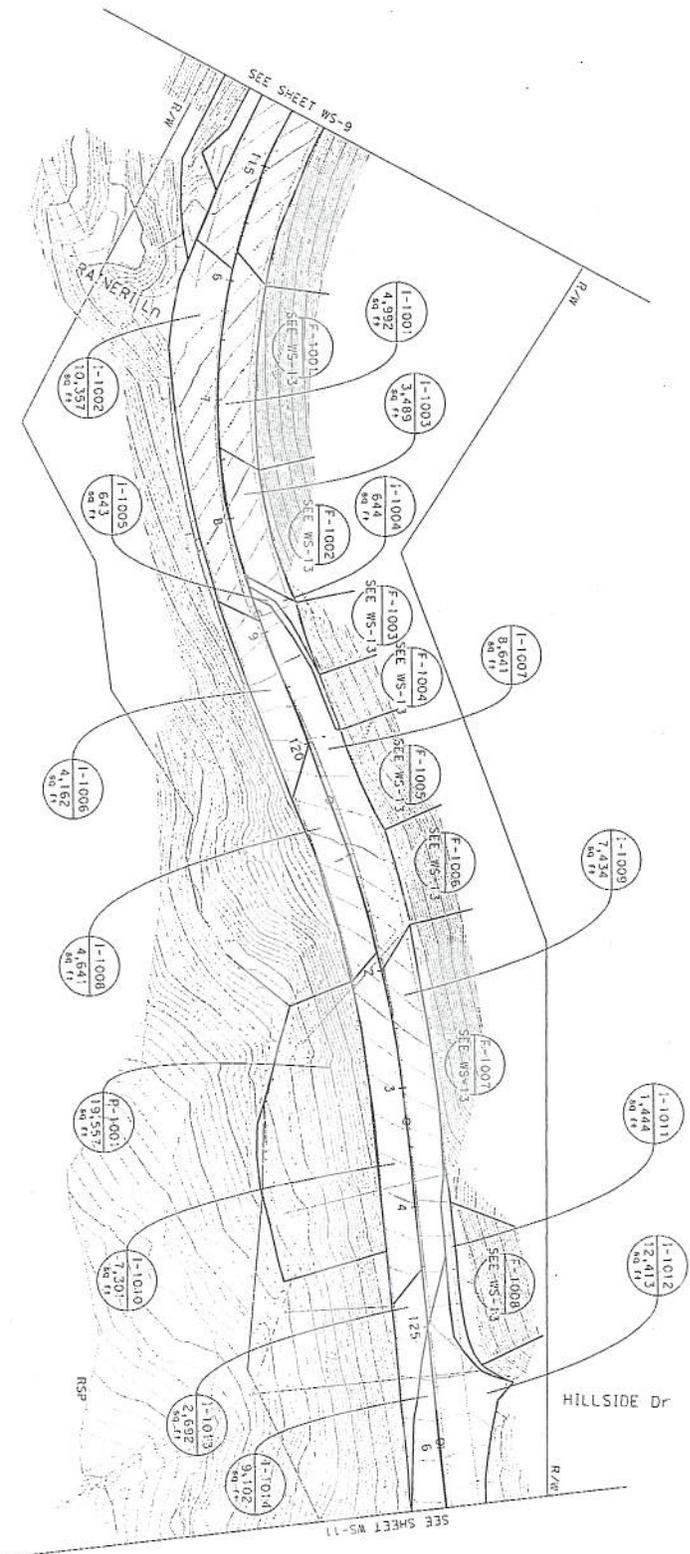
CU 00000 EA 264901

WATERSHED MAP
 SCALE: 1" = 50'

WS-9

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	SCL	17	0.00/2.83	10/10
REGISTERED CIVIL ENGINEER		DATE		
REGISTERED CIVIL ENGINEER		DATE		
REGISTERED PROFESSIONAL ENGINEER No. C 66807 Exp. 6/30/11 REGISTERED CIVIL ENGINEER No. 11111 Exp. 6/30/11				
THE STATE OF CALIFORNIA BY ITS OFFICERS OF THE ENGINEERING BOARD FOR REGISTERED PROFESSIONAL ENGINEERS AND ARCHITECTS AND REGISTERED PROFESSIONAL LAND SURVEYORS CERTIFICATE OF THIS PLAN SHEET: VALID				
BUREAU 1723 S ALPINE ROAD 111 GRAND AVENUE RINDLE CREEK, CA 94596		CALTRANS 111 GRAND AVENUE OAKLAND, CA 94612		

NOTE:
 FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
 CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



Dist	COUNTY	ROUTE	TOTAL MILES	SHEET TOTAL
04	SCL	17	0.00/2.03	1 OF 2 SHEETS
REGISTERED CIVIL ENGINEER		DATE		
PLANS APPROVAL DATE		DATE		
THE STATE OF CALIFORNIA REGISTERED PROFESSIONAL CIVIL ENGINEER JENNIFER ABRAMS No. C 64890 Exp. 6/30/17 REGISTERED CIVIL ENGINEER OFFICE: 111 GRAND AVENUE, OAKLAND, CA 94612				
PROJECT	1243 ALPINE ROAD, CAR TRAILS, OAKLAND, CA 94612			

WATERSHED MAP
 SCALE: 1" = 50'

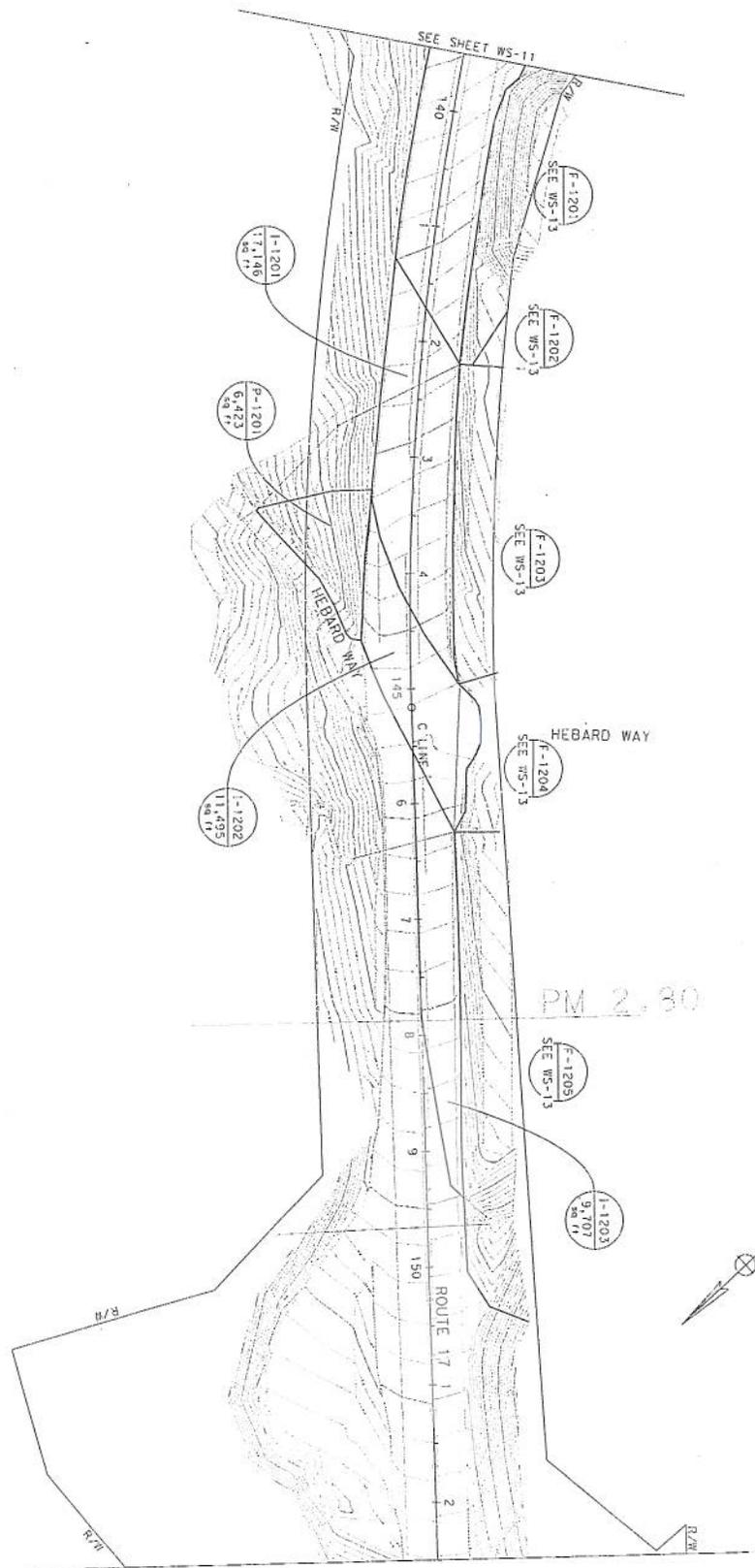
THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
 RELATIVE BORING SCALE
 0 1 2 3
 1/8" = 10'

FOR NOTES, ABBREVIATIONS
 &/OR LENGTHS, SEE SHEET WS-1
 USPLANNING 2/20/10.dwg
 2006 FILE # 2... V2-10.dwg

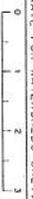
CU 000003 EA 264901

BORDER LAST REVISED 4/11/2008

NOTE:
FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



THIS PLAN ACCURATE FOR WATERSHEDS ONLY.
RELATIVE DANGER SCALE
IS IN INCHES



FOR NOTES, AMBIGUOUS
6/OR LENGTH, SEE SHEET WS-1
000 FILE # 111-04-2-090

CU 00000 EA 264901

WATERSHED MAP
SCALE: 1" = 50'

WS-12

Dist. COUNTY	ROUTE	POST MILES	SHEET TOTAL
04 SCL	17	0.00/2.83	NO. SHEETS
REGISTERED CIVIL ENGINEER		DATE	
PLANS APPROVAL DATE THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR CORRECTNESS OF THIS PLAN SHEET.			
HEBARD 1243 ALPINE ROAD SUITE 108B OAKLAND, CA 94612		CAL TRANS 1243 ALPINE ROAD OAKLAND, CA 94612	

Copy of 401 Permit



California Regional Water Quality Control Board

San Francisco Bay Region



Linda S. Adams
Secretary for
Environmental
Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
<http://www.waterboards.ca.gov/sanfranciscobay>

Arnold Schwarzenegger
Governor

June 22, 2010
Site No. 02-43-C0635 (BT)
CIWQS Place No. 751635

California Department of Transportation
Attn: Ms. Dina El-Tawansy
Dina_El_Tawansy@dot.ca.gov
111 Grand Avenue
Oakland, CA 94612

Subject: Water Quality Certification for the State Route 17 Wet Pavement Correction and Culvert Repair Project, Unincorporated Santa Clara County

Department Project No.: EA 04-264900

Dear Ms. El-Tawansy:

San Francisco Bay Regional Water Quality Control Board (Water Board) staff have reviewed the 401 water quality certification application submitted by the California Department of Transportation (the Department) for the State Route 17 Wet Pavement Correction and Culvert Repair Project (Project). The Department has filed a U.S. Army Corps of Engineers (Corps) non-reporting Nationwide Permit (NWP) application for NWP Nos. 3, *Maintenance*, and 13, *Bank Stabilization*, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). You applied to this office under Section 401 of the CWA for water quality certification verifying that the Project does not violate State water quality standards.

Project: The Department proposes to improve drainage conditions on State Route 17 (SR 17) between Santa Clara County post miles 0.0 and 2.8. Proposed improvements to the SR 17 drainage system include repair and replacement of culverts, installation of new drainage inlets and one new drainage system, rehabilitation of six riser pipes, replacement of median concrete barriers, and resurfacing of the existing pavement. The entire Project area drains to Lexington Reservoir. Project improvements are necessary to reduce hazardous driving conditions and associated vehicle accidents. Project construction is projected to take approximately 18 months.

Impacts: The proposed Project will result in permanent impacts up to approximately 0.09 acres of jurisdictional waters. All permanent impacts are the result of three headwall replacements and placement of riprap at 37 culvert outlets. New riprap shall not be used in areas where existing riprap

is functional. These areas are unknown at the time of certification issuance and will be identified during a field visit preceding construction.

The proposed Project will result in temporary impacts to approximately 0.07 acres of jurisdictional waters due to construction access.

The Department is proposing to repair approximately two culverts using a “cured-in-place-pipeliner (CIPP)” method. The CIPP method has the potential to result in discharge of un-cured thermosetting resin material and aquatic life toxicity if improperly installed. Styrene (i.e., vinylbenzene) is a contaminant that may be discharged from CIPP installations¹. This certification specifically addresses styrene because a Virginia Transportation Research Council report² found styrene at levels toxic to aquatic species in post-construction discharges from CIPP pipes, several days after installation. The affected Project drainages drain to Lexington Reservoir, approximately 1,600 feet from the Project site. Lexington Reservoir is a drinking water source managed by the Santa Clara Valley Water District. As such, repair of culverts using the CIPP method is prohibited by this certification until CIPP specifications are submitted and accepted by the Water Board Executive Officer. Additionally, the Department is required to ensure that dischargers from CIPP culverts do not contain residual levels of styrene in excess of 0.1 mg/L, which is the Basin Plan Water Quality Objective for municipal water supply.

Hydromodification impacts: The Project will not add additional impervious area and not result in hydromodification impacts.

Jurisdictional Wetlands and Waters Mitigation: Existing outfalls that currently create erosional conditions will be repaired by reconfiguring outlets to discharge at the receiving water bed elevation. Placement of down-drains and rock slope protection shall be completed without operation of heavy machinery in jurisdictional waters. Only hand tools shall be used when grading is necessary for placement of riprap in jurisdictional waters.

CEQA Compliance: On October 1, 2008, the Department found that the project was categorically exempt from CEQA pursuant to 14 CCR § 15302, replacement or reconstruction.

Certification: I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 – DWQ, “General

¹ There are other, less common, thermosetting resins that may be used in CIPP installations. Certification condition 4 requires the Department report to the Water Board if a non-styrene resin is proposed. A contaminant monitoring plan will be required based upon the characteristics of the alternative resin.

² http://www.virginiadot.org/vtrc/main/online_reports/pdf/08-r16.pdf

Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification” which requires compliance with all conditions of this Water Quality Certification. The following conditions are associated with this certification:

1. The Department shall adhere to the Standard and Regional conditions imposed by the Corps Nationwide Permit Nos. 3 and 13;
2. Erosion control measures shall be utilized throughout all phases of construction where sediment runoff from disturbed areas threatens to enter waters of the State. At no time shall silt-laden runoff be allowed to enter waters of the State;
3. Trees shall not be removed from riparian areas or jurisdictional waters;
4. Repair of culverts using cured-in-place-pipeliner (CIPP) shall not proceed until CIPP Specifications (CIPP Specs) are submitted and accepted by the Water Board Executive Officer. The accepted CIPP Specs shall be implemented and shall include:
 - a. Identification of the resin system and actual chemical name of monomer that will be used during CIPP installation (please include MSDS);
 - b. Detailed specifications describing the containment method for all process water;
 - c. Specifications to repetitively flush and capture water through the culvert after the liner has cured and installation is complete;
 - d. Specifications to test the final flush water, including appropriate target constituents and testing methods. Flushing and testing shall be conducted until test results show acceptable levels of any target constituents, including styrene monomer or other appropriate monomer and any toxic additives;
 - e. Specifications to appropriately dispose of all process and rinse water with receipt of disposal; and
 - f. Specifications to prohibit resumption of natural flow through the culvert until residual styrene concentrations are not greater than one part per billion 60 days after installation, or until other monomer-specific appropriate concentration(s) are not exceeded 60 days after installation;
5. Discharge to waters of the state from any CIPP-repaired culvert is prohibited until the Department demonstrates that residual effluent styrene concentrations or other appropriate monomer and additive concentrations, for each CIPP-repaired culvert, do not exceed one part per billion styrene or other appropriate monomer or additive concentration during a 60 day period after installation. The Department shall submit a CIPP post-construction sampling plan (Plan), subject to the acceptance of the Executive Officer. The Plan shall be implemented to determine compliance with this condition. The Plan shall include:

- a. A detailed description of the sampling strategy to detect residual styrene concentrations in culvert effluent;
- b. A commitment to have sample collection and analysis performed by a third party not associated with any portion of Project construction; and
- c. Daily sampling events during the first week after installation, weekly sampling events during the second, third, and fourth weeks after installation, and bi-weekly (every other week) sampling events thereafter, until the final, 60-day sampling event.

Sampling results shall be reported twice-a-month to the Water Board staff. Please report sampling results electronically to the attention of Brendan Thompson, BThompson@waterboards.ca.gov. Resumption of natural flows through CIPP culverts shall not be reinstated until Water Board staff accepts the final sample report;

6. Placement of riprap above ordinary high water mark is prohibited. Riprap pieces shall not be bonded together with cement. Existing riprap shall be used wherever possible. New riprap shall not be used in areas where existing riprap is adequate;
7. All temporary dewatering methods shall be designed to have the minimum necessary impacts to waters of the State to isolate the immediate work area. All dewatering methods shall be installed such that natural flow is maintained upstream and downstream of the project area. Any temporary dams or diversions shall be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the project area. All dewatering structures shall be removed immediately upon completion of Project activities;
8. Only hand tools shall be used in jurisdictional waters when excavation or grading is necessary for placement of riprap;
9. This certification does not allow for the take, or incidental take, of any special status species. The City shall use the appropriate protocols, as approved by the California Department of Fish and Game and the U.S. Fish and Wildlife Service, to ensure that Project activities do not impact the Beneficial Use of the Preservation of Rare and Endangered Species;
10. The Department shall maintain a copy of this water quality certification at the Project site so as to be available at all times to site operating personnel. It is the responsibility of the Department to assure that all personnel (employees, contractors, and subcontractors) are adequately informed and trained regarding the conditions of this certification;
11. Project construction within waters of the State shall occur only between May 15 and October 15. Regardless of date, Project construction within waters of the State is prohibited during rain events capable of mobilizing sediment;

12. All disturbed soil areas shall be protected within 48 hours of the onset of any forecasted rain event;
13. This Certification applies to the Project as proposed in the application materials. Please be advised that failure to implement the Project as proposed is a violation of this water quality certification;
14. To prevent grout from entering jurisdictional waters during riser rehabilitation, the bottom of each riser shall be sealed prior to use of grout;
15. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to waters of the State may occur; construction materials and heavy equipment must be stored outside of the active flow of the creek;
16. Except as expressly allowed in this Certification, the discharge, or creation of the potential for discharge, of any soil materials including fresh concrete, cement, silts, clay, sand and other organic materials to waters of the State is prohibited;
17. All temporarily disturbed areas shall be restored to pre-construction or enhanced conditions.
18. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code (CWC) and Section 3867 of Title 23 of the California Code of Regulations(23 CCR);
19. This certification action does not 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 California Code of Regulations (CCR) Title 23, Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought; and,
20. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR Section 3833). Water Board staff received full payment of \$805.00 on April 29, 2010.

We anticipate your cooperation in implementing these conditions. However, please be advised that any violation of water quality certification conditions is a violation of State law and subject to administrative civil liability pursuant to California Water Code (CWC) section 13350. Failure to respond, inadequate response, late response, or failure to meet any condition of this certification may subject you to civil liability imposed by the Water Board to a maximum of \$5,000 per day per violation or \$10 for each gallon of waste discharged in violation of this certification.

Conditions 4 and 5 are requirements for information or reports. Any requirement for a report made as a condition to this action is a formal requirement pursuant to CWC section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in CWC section 13268.

Should new information come to our attention that indicates a water quality problem with this project, the Water Board may issue Waste Discharge Requirements pursuant to 23 CCR Section 3857.

If you have any questions, please contact Brendan Thompson at (510) 622-2506, or via e-mail to BThompson@waterboards.ca.gov.

Sincerely,

Dale

For

Bowyer

Bruce H. Wolfe
Executive Officer

Digitally signed by Dale Bowyer
DN: cn=Dale Bowyer, o=S.F. Bay
Water Quality Control Board,
ou=Waterboard Division,
email=dbowyer@waterboards.ca.
gov, c=US
Date: 2010.06.22 15:10:26 -0700

cc (via e-mail): Mr. Bill Orme SWRCB-DWQ
Mr. Hal Durio, USACE
Ms. Jane Hicks, USACE
Mr. Cameron Johnson, USACE
Ms. Holly Costa, USACE

Mr. Dale Bowyer, Water Board
Mr. Jason Brush, USEPA
Mr. Hardeep Takhar, Caltrans
Mr. Cyrus Vafai, Caltrans
Ms. Andrea Meier, USACE



DEPARTMENT OF FISH AND GAME

Bay Delta Region
Post Office Box 47
Yountville, California 94599
(707) 944-5520
www.dfg.ca.gov



June 8, 2010

Dina El-Tawansy
California Department of Transportation
111 Grand Avenue
Oakland, CA 94623

Subject: Final Lake or Streambed Alteration Agreement
Notification No. 1600-2010-0082-R3
State Route 17 Wet Pavement Correction

Dear Dina El-Tawansy:

Enclosed is the final Streambed Alteration Agreement ("Agreement") for the Route 17 Wet Pavement Correction Project ("Project"). Before the Department may issue an Agreement, it must comply with the California Environmental Quality Act ("CEQA"). In this case, the Department, acting as a lead agency, determined your project is exempt from CEQA and filed a notice of exemption ("NOE") on June 8, 2010.

Under CEQA, filing a NOE starts a 35-day period within which a party may challenge the filing agency's approval of the project. You may begin your project before the 35-day period expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Melissa Escaron, Staff Environmental Scientist at (707)339-0334 or mescaron@dfg.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Scott Wilson".

Scott Wilson
Environmental Program Manager
Bay Delta Region

cc: Melissa Escaron
Lieutenant Nores

CALIFORNIA DEPARTMENT OF FISH AND GAME
BAY DELTA REGION
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5520
WWW.DFG.CA.GOV



STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2010-0082-3

CALIFORNIA DEPARTMENT OF TRANSPORTATION
WET PAVEMENT CORRECTION PROJECT, SANTA CLARA COUNTY, ROUTE 17

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Game (DFG) and California Department of Transportation (Permittee) as represented by Dina El-Tawansy.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified DFG on February 16, 2009 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, DFG 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 route 17 in Santa Clara county between Hebard Road and Summit Road. Latitude 37 degrees 10'22.17" -121 degrees 59'32.27", or between Post Miles (PM) 0.0 and 2.8.

PROJECT DESCRIPTION

The project is limited to work within unnamed drainages tributary to Lexington Reservoir.

Authorized work is limited to the following:

Eleven existing 18" to 36" diameter corrugated steel pipe cross culverts will be lined with and the liners will be anchored a cement slurry or grout. The liners will be limited to the following: 1) plastic pipeliner, 2) cured-in-place pipeliner 3) machine spiral wound polyvinyl chloride pipeliner 4) machine spiril wound polyvinyl chloride pipeliner. Minor grading and rock slope protection (RSP) will be installed at the downstream ends. The lining of each culvert should take 2 days work, no heavy equipment will be allowed on the slopes.

Six existing risers will be rehabilitated. This work will include cleaning, realigning, lining, and anchoring the liners with a cement slurry or grout. To prevent grout from entering into the cross culverts, the bottom of each riser will be sealed. The lining of the risers will be restricted to corrugated steel pipe liners.

Replacement of 1 riser. Replacement will involve removal of the existing 36" riser and driving a new 48" diameter steel pipe caisson. The existing cross culvert will be extended.

RSP will be installed at 20 locations at the culvert outlets. No heavy equipment will be allowed on the slope to complete the installations.

At one location a pipe will be replaced and a new head wall will be constructed.

Construction equipment will include an excavator, backhoe, cement mixer, crane truck, and support trucks.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: California red legged frog habitat.

The adverse effects the project could have on the fish or wildlife resources identified above include: Temporarily increased sedimentation and decreased water quality at the project site and downstream from the project site.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee (Caltrans and/or its Designee) 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 DFG 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 Resident Engineers, contractors, subcontractors, inspectors, and monitors.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify DFG 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, DFG shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that DFG 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 (Caltrans and/or its Designee) shall implement each measure listed below.

- 2.1 Permittee shall not remove any trees. If tree removal becomes necessary the Permittee shall obtain approval from DFG before removing any tree.
- 2.2 Permittee shall conduct all work according to the project description stated above as well as the plans submitted to DFG that are not in conflict with the above stated project description. Caltrans shall notify the DFG of any modifications made to the plans submitted to DFG that pertain to impacts to drainages.

- 2.3 A Caltrans Designated On-Site Biologist, approved by the Department, shall monitor weather forecasts for rain events in coordination with the department. The Designated Biologist and Caltrans Water Quality shall work together to ensure protection of aquatic resources before rain events. Storm Water Pollution Prevention Plan measures shall be monitored for proper installation and maintained to prevent sediment transport into the creek. The Resident Engineer shall make corrections suggested by the Designated On-Site Biologist to ensure compliance with this Agreement. Permittee shall monitor Storm Water Pollution Prevention Plan measures for proper installation and maintain them to prevent sediment transport into the creek.
- 2.4 The Resident Engineer shall make corrections suggested by the storm water inspectors and/or the Designated Onsite Biologist to ensure compliance with this Agreement.
- 2.5 Permittee shall provide monitoring by the Designated Onsite Biologist during the initial ground disturbing activities. The Designated Onsite Biologist shall perform a pre-construction survey for California red-legged frog immediately prior to the initial ground disturbance. The Designated Onsite Biologist shall investigate areas of disturbed soil for signs of listed species within 30 minutes following the initial disturbance.
- 2.6 Permittee shall not work within riparian/drainage areas between October 15 and June 15.
- 2.7 Erosion control netting shall consist of 100 percent spun coir fiber for all phases of the project.
- 2.8 Permittee shall be in compliance with Migratory Bird Treaty Act (MBTA) and Fish and Game Code 3503. To avoid potential impacts to nesting birds, Permittee shall remove vegetation or install exclusion measures during the time period of August 15 to February 15. If construction activities that have the potential to violate MBTA and Fish and Game Code 3503 are scheduled during the nesting season, focused surveys for active nests shall be conducted within 72 hours of said construction activities. If active nests are identified, a 50-foot no-work buffer for non-raptors and a 300-foot no-work buffer for raptors shall be established. If active nests are found, Caltrans shall consult with DFG and the United States Fish and Wildlife Service (USFWS) regarding appropriate action to comply with the MBTA of 1918 and the Fish & Game Code of California.

- 2.9 Permittee shall allow any wildlife encountered during the course of construction to leave the construction area unharmed. This authorization does not allow for the trapping, capture, or relocation of any state or federally listed species.
- 2.10 If any state or federal listed species, or state species of special concern, are observed during project surveys, Permittee shall submit California Natural Diversity Data Base (CNDDDB) forms to the CNDDDB for all preconstruction survey data within five working days of the sightings, and provide DFG Region 3 with copies of the CNDDDB forms and survey maps.
- 2.11 Permittee shall install high-visibility Environmentally Sensitive Area fencing to protect sensitive resources. The fencing shall be monitored and maintained on a daily basis. Permittee shall remove as little vegetation as is necessary to conduct construction activities.
- 2.12 Permittee shall conduct an employee orientation program, presented by the Designated Onsite Biologist, for all persons who will work on-site during construction and landscape establishment activities.
- 2.13 Permittee shall have readily available, at all times, plastic sheeting or visquine and will cover exposed spoil piles and exposed areas to prevent these areas from losing loose soil into the stream. These covering materials shall be applied when it is evident rainy conditions threaten to erode loose soils into the stream.
- 2.14 Permittee shall not commence construction within DFG jurisdiction areas if the work and its associated erosion control measures cannot be completed prior to the onset of a storm event. 72-hour weather forecasts from the National Weather Service shall be consulted prior to start up of any phase of the project.
- 2.15 Permittee shall not operate equipment or vehicles in water-covered portions of the stream, or where wetland vegetation, riparian vegetation, or aquatic organisms may be destroyed, except as otherwise provided for in this Agreement and as necessary to complete authorized work.
- 2.16 Permittee shall locate staging and storage areas for equipment, materials, fuels, lubricants and solvents, outside of the stream channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the stream will be positioned over drip pans. Any equipment or vehicles driven and/or operated within or adjacent to the stream will be checked and maintained daily, to prevent leaks of materials that if

introduced to water could be deleterious to aquatic life. Vehicles will be moved away from the stream prior to refueling and lubrication.

- 2.17 Permittee shall prevent raw cement/concrete or washings thereof, asphalt, straw, paint or other coating material, oil or other petroleum products, or any other substances related to project activities which could be hazardous to aquatic life, wildlife, or riparian habitat from contaminating the soil and/or entering the waters of the State. Permittee may be subject to a citation for placing materials where they may enter a stream or lake.
- 2.18 Permittee shall not dump any litter or construction debris within the riparian/stream zone. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site.
- 2.19 Any materials placed in seasonally dry portions of a stream or lake, that could be washed downstream or could be deleterious to aquatic life, wildlife, or riparian habitat shall be removed by Permittee prior to inundation by high flows.
- 2.20 DFG personnel shall be allowed onto the work site at any time during and after construction of the project for the purposes of establishing compliance with this Agreement.

CONTACT INFORMATION

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

To Permittee:

Jeffrey G. Jensen
California Department of Transportation
111 Grand Ave., Oakland, Ca 94623
(510) 622-8729
Jeffrey_jensen@dot.ca.gov

To DFG:

Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Attn: Lake and Streambed Alteration Program – Melissa Escaron

Notification #1600-2010-0082-R3
mescaron@dfg.ca.gov

LIABILITY

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

This Agreement does not constitute DFG'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

DFG 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 DFG 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 DFG 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 DFG to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes DFG 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 DFG'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

DFG may amend the Agreement at any time during its term if DFG 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 DFG and Permittee. To request an amendment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in DFG'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 DFG 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 DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in DFG'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 DFG a completed DFG "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in DFG's current fee schedule (see Cal.

Code Regs., tit. 14, § 699.5). DFG 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 DFG's signature, which shall be: 1) after Permittee's signature; 2) after DFG 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.dfg.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire on December 31, 2013, 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.

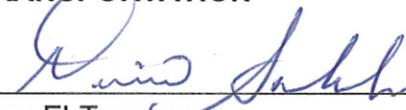
AUTHORIZATION

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 DFG in accordance with FGC section 1602.

CONCURRENCE

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

**FOR MR. JEFFREY G. JENSEN REPRESENTING
CALIFORNIA DEPARTMENT OF
TRANSPORTATION**

F02 

Dina El-Tawansy

6/7/2010

Date

FOR DEPARTMENT OF FISH AND GAME



Scott Wilson
Environmental Program Manager

6/8/10

Date

Prepared by: Melissa Escaron
Staff Environmental Scientist

Nationwide Permit Application for Caltrans Projects

San Francisco District
Regulatory Division

hed update Apr 27, 2009

Nationwide Permit Information

I. Project Location and Contact Information

District No: 04	Project Title: Sub-Project to the SR-17 Wet Pavement Correction Project; Placement of RSP at Culvert Outfalls and Culvert Rehab/Removal		
County: Santa Clara	Route: 17	Post Mile(s): 0.0/2.8	Project EA: 264900
Project Manager: (Name and complete mailing address) Dina El-Tawansy		Phone Number: 510-286-7236	
Project Biologists: Ryan Graybehl		Phone Number: 510-286-6071	
Quad Name: Los Gatos	Waterway / Watershed: Guadalupe		

II. Project Description:

Removal/replacement or rehabilitation of culverts, downdrains and risers and placement of rock slope protection (RSP) at the culvert outfalls (see Attachment A)

III. Name of Lead Federal Agency:

Caltrans as designated by the Federal Highways Administration

IV. Endangered Species Act Section 7 Consultation (Please attach the determination (the BO) and / or the results of informal or formal consultation.)

U.S. Fish and Wildlife Service (USFWS) Biological Opinion File #81420-2008-F-1923; See Attachment B

Not likely to affect the marbled murrelet, likely to adversely affect California red-legged frog.

List all Federally-Listed Species Potentially Occurring within the Project Area.

Marbled murrelet (*Brachyramphus marmoratus*) and California red-legged frog (*Rana draytonii*)

Has Section 7 Consultation been **initiated** with USFWS? Yes ; No Date: 04/23/2008

Has Section 7 Consultation **concluded** with USFWS? Yes ; No Date: 10/01/2008, File #: 81420-2008-F-1923

Has Section 7 Consultation been **initiated** with NMFS? Yes ; No Date:

Has Section 7 Consultation **concluded** with NMFS? Yes ; No Date: , File #:

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

Caltrans through the Federal Highways Administration

Determination (List species under the appropriate category below)

No effect:

Marbled murrelet

Not likely to adversely affect:

N/A

May affect:

California red-legged frog

Appended to a programmatic:

N/A

Note

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)

Has EFH Consultation been initiated with NMFS? Yes ; No Date:

Has EFH Consultation concluded with NMFS? Yes ; No Date: File #:

VI. Permit Being Requested (check one that applies)

Reporting Nationwide Permit Non-Reporting Nationwide Permit

Indicate which NWP(s) would appropriately authorize the proposed project. **3, 13**

VII. Corps' Authority Information

Section 10 (Is project within Section 10 Jurisdiction?): Yes ; No

Section 404 (Is project within Section 404 Jurisdiction?): Yes ; No

Do you have maps to attach that show Section 10 and / or Section 404 Jurisdiction? Yes ; No

Are your maps included with this application Yes ; No , If not, Why?

Has a preliminary jurisdictional determination report been verified by the Corps? Yes ; No Date: **Feb. 4, 2010**

VIII. Minimal Impact Criteria

Explain whether or not the proposed project would result in minimum impact to the aquatic environment

The work at each culvert location is single and complete project. The culvert and riser rehab/repair projects constitute maintenance of a currently serviceable structure and will continue to be used in a manner previously authorized. These maintenance operations meet the prescriptions of NWP 3.

The RSP pads range in size between 4'X3' feet to a maximum of 21'X9' (see Project Impacts Table, Attachment C). These pads do not exceed the conditions allowed under NWP 13, which allows for work up to 500' in length and less than 1 cubic yard per running foot. The RSP will be used to reduce erosion to the hillside.

General Conditions

IX. Permit Compliance Information (General and Regional Conditions of the Nationwide Permit)

1. Navigation: Note **NO IMPACTS** The waters are non-navigable.
2. Aquatic Life Movements: Note **NO IMPACTS** Aquatic life movements will not be impeded by this project.
3. Spawning Areas: Note **NO IMPACTS** There are no spawning areas in the waters within the project site.
4. Migratory Bird Breeding Areas: Note **NO IMPACTS** This is not a migratory bird breeding area.
5. Shellfish Beds: Note **NO IMPACTS** No shellfish beds are in the waters within the project site.

- 6 Suitable Material: Note **NO IMPACTS** All material used in the construction of this project will be suitable for the natural environment.
- 7 Water Supply Intakes: Note **DOES NOT APPLY** No construction activities occur within the proximity of a public water supply.
- 8 Adverse Effects from Impoundments: Note **DOES NOT APPLY** There will be no effect due to impoundment.
- 9 Management of Water Flows: Note **DOES NOT APPLY** Work will be conducted between June 15 and October 15.
- 10 Fills within 100-Year Floodplains: Note
 Does the activity comply with applicable FEMA-approved state or local floodplain management requirements?
 Yes ; No
- 11 Equipment: Note **PROJECT IS IN COMPLIANCE** Equipment is prohibited in the ditch.
- 12 Soil Erosion and Sediment Controls: Note **NO IMPACTS** Caltrans standard BMPs will be used.
- 13 Removal of Temporary Fills: Note **DOES NOT APPLY** There is not any temporary fill.
- 14 Proper Maintenance: Note **DOES NOT APPLY** This project improves the drainage facility.
- 15 Wild and Scenic Rivers: Note **DOES NOT APPLY**
 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
- 16 Tribal Rights: Note **NO IMPACTS TO TRIBAL RIGHTS**
- 17 Endangered Species (See section IV above): Note **Impacts to Listed Species Described in Section IV**
- 18 Historic Properties: Note **NO IMPACTS to Historic Properties**
 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)
- 19 Designated Critical Resource Waters (select those below that apply): Note
No Impacts to Designated Critical Waters
 Check the box(s) below if dredge or fill material is being discharged to any of the following critical resources:
 NOAA-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.
 For these NWP, NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49 and 50, discharge of dredged or fill material into waters of the U.S. is not authorized if the discharge is within or directly affecting critical resource waters, including adjacent wetlands.
 For these NWP, NWP 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, a PCN is required if the Project takes place in Designated Critical Resource Waters.
- 20 Mitigation: **N/A**
 Has the activity been designed and constructed to avoid and minimize adverse effects to Waters of the U.S.?
 Yes ; No

Has mitigation been proposed? Yes ; No

If yes, please attach detailed mitigation and monitoring plan.

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

21 Water Quality: Note

Do you need a RWQCB 401 Certification Yes ; No ; If No, explain:

Do you have a RWQCB 401 Certification Yes ; No ; Pending (provide date of application)

Point of Contact at RWQCB **Brendan Thompson**

Date 401 Certification issued ; File Number:

22 Coastal Zone Management: Note **N/A**

Has a Consistency Determination been obtained? Yes ; No

Consistency Determination is Pending: Yes ; No ; Date of Application:

Point of Contact at Coastal Commission:

Date of Consistency Determination issued:

23 General Condition # 23 is the Regional and Case-by-Case Conditions for the Corps District for which you are submitting an application. The Regional Conditions are discussed below after the General Conditions Section and are referred to as the **Regional Conditions of the San Francisco District**

Continuing with General Conditions

24 Use of Multiple Nationwide Permits Yes ; No Note

If yes, list NWP and acreage impact **3, 13**

25 Transfer of Nationwide Permit Verifications. Are you transferring the NWP? Yes ; No Note

26 Compliance Certification: (This is a form you should receive from the Corps when you are sent the NWP verification letter. This form needs to be completed and signed by the project manager or Resident Engineer (RE) when the project is completed and sent back to Corps.) Note

27 Notification (To understand notification and what a PCN is study, General Condition No. 27)

If activity of a project exceeds the threshold which triggers notification to the Corps, as described in the text of each NWP, than a PCN may be required for the following NWPs: NWPs 3, 7, 8, 12, 13, 14, 17, 18, 21, 22, 23, 27, 29, 31, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, and 50.

PCN Contents (When using a PCN you must attach the following items in your application or supply a good reason why the item is not attached. Please check the boxes below for which you are supplying, **Yes** if you are supplying information or **No** if you are not. If not, give a reason in the text field. information with the application)):

Name, address, and telephone number of the applicant. Included: Yes ; No . If no, Why?

Location of the proposed project: Yes ; No . If no, Why?

Delineation of special aquatic sites and other Waters of the U.S.: Yes ; No . If no, Why?

Detailed mitigation and monitoring plan: Yes ; No . If no, Why?

Federally-listed species information: Yes ; No . If no, Why?

Historic properties information: Yes ; No . If no, Why?

A project description including purpose, direct and indirect effects, additional Corps' authorizations for the project: Yes ; No . If no, Why?

Other:

- 28 Is the activity a single and complete project? Note Yes ; No Don't Know
(independent utility) Note

Regional Conditions of San Francisco District (General Condition # 23)

General Condition # 23 is the Regional and Case-by-Case Conditions (The following section summarizes the S.F. District's Regional Conditions)

Does the proposed project occur in Diked Baylands? Note

Yes ; No If Yes, a PCN is required

Does the proposed project occur within the Santa Rosa Plain? Note

Yes ; No If Yes, a PCN is required

Is the project proposed to occur within Eelgrass beds? Note

Yes ; No If Yes, a PCN is required

Is the project proposed to occur within EFH? Note

Yes ; No If Yes, a PCN is required with additional information

Will mitigation occur before or concurrently with project construction? Note

Yes ; No

Are you requesting a waiver of the 300 linear foot threshold? (see the Note attached to the specific General Condition for NWP 13 below and also see the following Note) Note

Yes ; No If Yes, a PCN is required with additional information

Specific NWP Regional Conditions, Check the box(s) that apply: (The following conditions only apply to the NWP listed in the section block. Example, the condition in the first block below only applies to NWP No. 3; the condition in the second block only applies to NWP No. 11; etc)

NWP 3 (Maintenance): Excavation equipment shall work from an upland site; bank stabilization must incorporate structures or modifications beneficial to fish and wildlife; and justification for work within special aquatic site is required (please attach). [See explanation below in Section X](#)

NWP 11 (Temporary Recreational Structures): Are any temporary structures proposed in wetlands or vegetated shallow water areas?

Yes ; No If Yes, a PCN is required

NWP 12 (Utility Line Activities): 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 (Bank Stabilization): A PCN is 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. [See explanation below in Section X](#)

NWP 14 (Linear Transportation Projects): 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 modifications beneficial to fish and wildlife; PCN should address up and downstream effects of fill.

NWP 23 (Approved Categorical Exclusions): PCN Required. Please refer to regional conditions for additional information on PCN requirements.

- NWP 33 (Temporary Construction, Access, and Dewatering): 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 (Maintenance Dredging Of Existing Basins): PCN Required. Please refer to regional conditions for additional information on PCN requirements.
- NWP 40 (Agricultural Activities): Work shall not impede flows during high volume events.
- NWP 41 (Reshaping Existing Drainage Ditches): 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. Note
- NWP 42 (Recreational Facilities): 404(b)(1) guidelines must be met if buildings are proposed in Waters of the U.S.
- NWP 44 (Mining Activities): Revoked in Humboldt and Del Norte Counties.

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. NWP No. 13: Bank Stabilization; All RSP sites are less than 300 linear feet and 1 cubic yard per running foot.
2. NWP No. 3: Maintenance; Culvert and riser rehab and replacements are occurring to previously authorized, currently serviceable structures. Culverts are not being put to different uses than those previously authorized.

XI. Project Impact Information [Area Affected (acres or square feet or square yards)]

The space below is for totals:

Wetland (permanent) *N/A*

Wetland (temporary) *N/A*

Waters of the U.S. (permanent) *0.0341 acres*
(See Attachment C for individual project totals)

Waters of the U.S. (temporary) *0.2615 acres*
(See Attachment C for individual project totals)

Linear extent of impact within Corps' jurisdiction *See Attachment C*

Other:

Fill Material in Cubic Yards Added Below OHWM: (totals)

See Attachment C

XII. Project Mitigation Information: (attach supporting documents with the permit application)

Are there Special Conditions on the mitigation imposed by other agencies: Yes ; No

Explain if necessary:

Are Best Management Practices (BMPs) going to be used: Yes ; No

Explain if necessary: *Standard Caltrans BMPs will be used.*

Is a Site Restoration Plan going to be used in Mitigation Plan: *NO*

Explain if necessary:

Is there a Mitigation Proposal for this project? *NO*

Explain if necessary:

Other information if needed:

Attachments (check the attachments you have included, add notes if needed in the space provided,

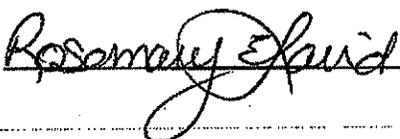
- Site location map. Figure 1
- Delineation of jurisdictional boundaries (on aerial photo or contour map) prepared in accordance with November 2007 Memo titled, "San Francisco District's Information Requested for Verification of Corps' Jurisdiction". See Attachment D
- Completed routine delineation data forms. (It is not required that you use the delineation forms that are provided in the Arid West Regional Supplement or the Western Mountains, Valleys, and Coast Regional Supplement) Routine delineation data forms are not required as no wetlands were identified. Jurisdictional waters can be seen in Attachment D.
- Reduced project plans showing all proposed impacts to aquatic resources. See Attachment D
- Mitigation information
- Copy of applicable nationwide permit(s) and general conditions See Attachment E
- Other: Project Description, See Attachment A. Biological Opinion, See Attachment B. Project Impacts Table, See Attachment C

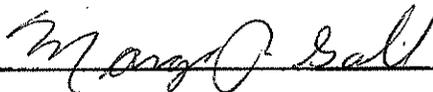
FOR CALTRANS USE ONLY:

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:  for ANDREA COLEMAN Date: Feb/25/2010
KATHERINE CALDWELL

Peer Review:  Date: 25 February 2010

Supervisory Concurrence:  Date: 2/25/10

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

Figure 1

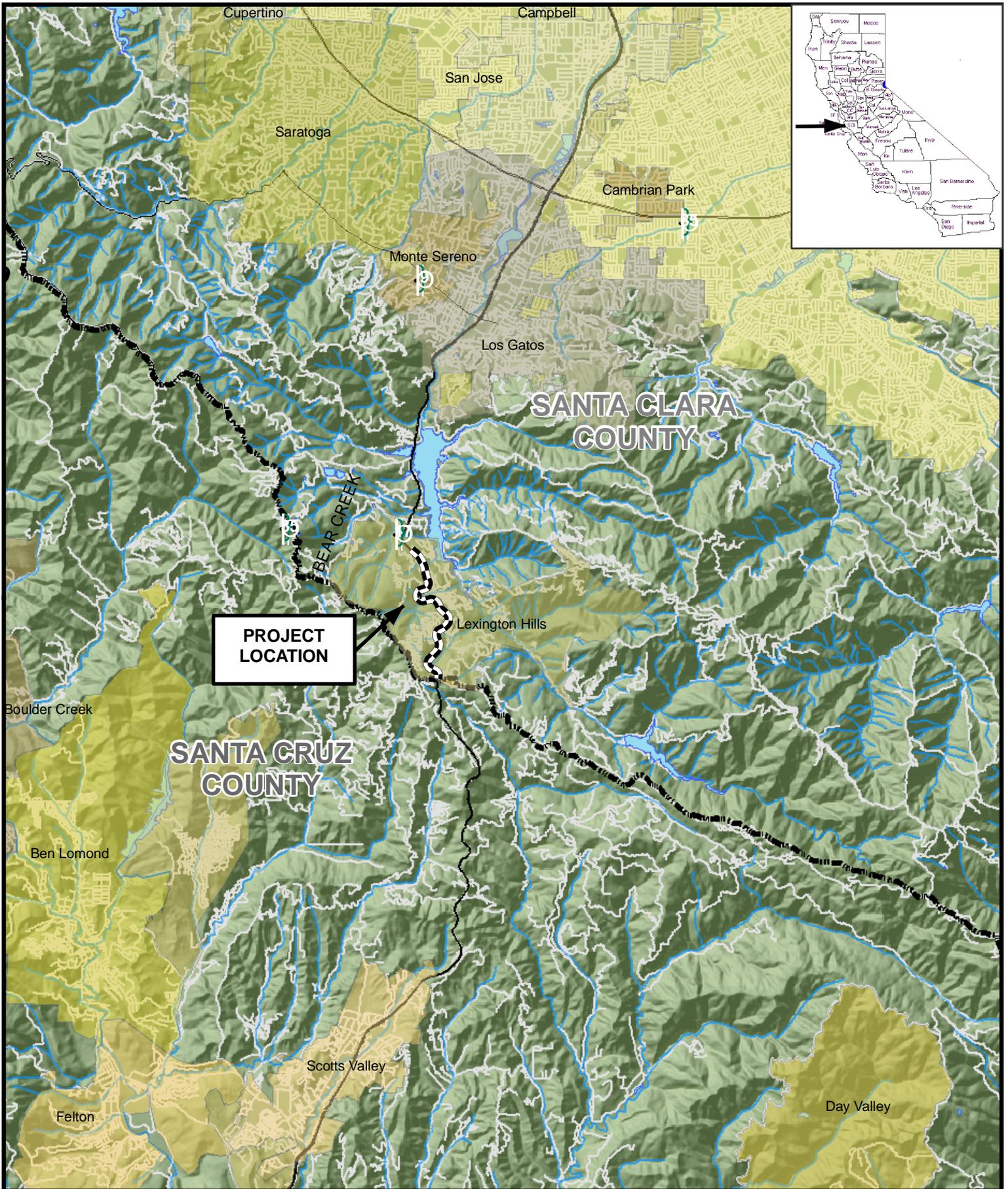


Figure 1
 Project Location
 404 Permit
 RSP Placement at Culvert Outfalls on SCI-17

Attachment A

Project Description

Project Description

1.1 Project Location

The California Department of Transportation (Department) proposes to update drainage systems on State Route 17. The project is located from post mile (PM) 0.0 to PM 2.8. The project latitude and longitude is 37 10' 25" N 121 59' 17"W. Existing State Route 17 in Santa Clara County is classified as a rural principal arterial and is designated as a Federal Aid Primary Route. In the State System, Route 17 is a part of the Freeway and Expressway System as well as the Interregional Road System, which is important to the interregional movement of people and goods. For goods movement purposes, Route 17 is a terminal access route accommodating Federal Surface Transportation Assistance Act trucks.

State Route 17 is classified as a four-lane conventional highway facility within the project limits. The highway begins south in Santa Cruz County at its junction with State Route 1 and continues north through the rolling terrain of Santa Cruz County, and north into Santa Clara County, where the route terminates and becomes Interstate Route 880 at its junction with Interstate Route 280. In its entirety, State Route 17 functions as recreational, commercial and commuter route. The project is 2.8 miles in length and is a four-lane divided highway consisting of four 12 foot lanes with outside shoulder widths varying from 0.0 to 8 feet and inside shoulder widths varying from 0.0 to 2 feet. There are six (6) intersections with left and or right turn lanes to several county and local access roads; two bridge structures - the Junction State Route 35 Separation (Br. No. 37-343) and the Madrone Drive Undercrossing (Br. No. 37-59), and a MSE Retaining Wall. Concrete barriers with scuppers separate the northbound and southbound directions on the median that varies in width from 2 to 6 feet. Additionally, there are slotted drain pipes built along the median, concrete barriers and metal beam guard railings (MBGR) on the outside shoulders. The horizontal alignment is generally winding, while various earth-retaining systems hold earth at steeper cuts and embankments.

1.2 Project Purpose and Need

The primary purpose of State Route 17 is to serve regional traffic needs. State Route 17 is the main highway connecting Santa Clara and Santa Cruz Counties. State Route 17 extends from Highway 1 in Santa Cruz to Interstate Route 280 in San Jose. Continuing commercial and residential growth in Santa Clara County has increased the demand and congestion on State Route 17.

At several locations, the existing concrete median barrier scuppers and slotted-drain pipes are clogged or covered. These drainage elements have become deficient in transporting storm runoff to drainage systems that ultimately drain to Lexington Reservoir, which is 1.2 miles north of the project limits. The deteriorating drainage systems correlate to the high wet pavement accident rate, which necessitates drainage and roadway improvements. The major scope of work consists of constructing various drainage systems, median concrete barriers and resurfacing the existing pavement in order to reduce wet pavement related accidents during wet weather conditions.

1.3 Construction Activities

The following sections describe the various project activities that will impact Jurisdictional waters.

1.3.1 Placement of Rock Slope Protection (RSP)

Rock Slope Protection (RSP) will be placed at the end of Jurisdictional drainages at 21 locations as shown in the project's drainage plans (Appendix D). The exact dimensions of each RSP pad are listed in the impacts table and range from 6 feet by 4.5 feet to 21 feet by 9 feet. Installation of each RSP pad should take 1 day of work to construct. No heavy equipment will be allowed on the slope adjacent to route 17 during RSP construction.

1.3.2 Rehabilitation of Corrugated Steel Pipe (CSP) Cross-Culverts

Rehabilitation of cross-culverts associated with Jurisdictional waters will occur at 10 locations as shown in the project's drainage plans (Appendix D). Rehabilitation of each cross-culvert entails inspecting, cleaning, realigning (as needed), lining (with an appropriate liner), and filling the annular space with a cementitious slurry or grout between the liner (inside) and the existing cross-culvert (outside). The lining methods will be restricted to one of the following:

1. Plastic Pipeliner
2. Cured-In-Place Pipeliner (CIPP)
3. Machine Spiral Wound Polyvinyl Chloride Pipeliner (expandable diameter)
4. Machine Spiral Wound Polyvinyl Chloride Pipeliner (fixed diameter).

1.3.3 Rehabilitate Risers

Rehabilitation of risers associated with Jurisdictional waters will occur at 10 locations as shown in the project's drainage plans (Appendix D). Rehabilitation of each riser entails inspecting, cleaning, realigning (as needed), lining (with an appropriate liner), and filling the annular space between the new Corrugated Steel Pipe (CSP) and the wall of the existing riser with grout. To prevent the grout from entering into any of the cross-culverts located at the bottom of each riser, the bottom of each riser will be sealed.

Attachment B

USFWS Biological Assessment



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846



IN REPLY REFER TO:
81420-2008-F-1923

Mr. Jim Richards
Attn: Ryan Graybehl
Office of Biological Sciences and Permits
California Department of Transportation
P.O. Box 23660
Oakland, California 94623-0660

OCT 01 2008

Subject: Informal Consultation on the Effects of the Proposed State Route 17 Downdrain Rehabilitation Project in Santa Clara County, California (Caltrans EA 04-264900)

Dear Mr. Richards:

This letter responds to a letter from the California Department of Transportation (Caltrans), dated April 22, 2008 that requested consultation for the proposed State Route 17 Downdrain Rehabilitation Project from PM 0.0 to PM 2.8 in Santa Clara County, California. Your letter was received by the U.S. Fish and Wildlife Service (Service) on April 23, 2007. At issue are the potential adverse effects to the threatened marbled murrelet (*Brachyramphus marmoratus*) and its critical habitat, and the threatened California red-legged frog (*Rana aurora draytonii*) and its critical habitat. This document represents the Service's biological opinion on the effects of the proposed project on the listed species and critical habitat in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

Based on the information provided in the April 2008 biological assessment, the proposed project is within the potential range of the marbled murrelet. This species inhabits large-diameter mature and old-growth Douglas-fir and coastal redwood forests up to 50 miles inland from the California coastline. Nests are typically built in large or forked limbs, limb deformities, mistletoe infections, and similar features. The proposed project is within the breeding range of the marbled murrelet and is located approximately 12 miles inland from the coastline. The action area is characterized by second-growth coast redwood and intermediate hardwood species. A site inspection was conducted by the Service on April 14, 2008 and by the Service and California Department of Fish and Game on May 15, 2008. Moody Gulch supported the largest redwood stand and exhibited a moderate-to-high canopy cover closure with multiple canopy layers; however, the second-growth trees within this stand lacked limbs of suitable size with the necessary microhabitat characteristics to support marbled murrelet nesting. Based on the Biological Assessment prepared by Caltrans, Marbled Murrelet Habitat Survey prepared by Robert Hewitt of LBJ Enterprises, the marbled murrelet pre-consultation letter prepared by Brenda Blinn of California Department of Fish and Game, and the proposed conservation measures, the Service has determined that the proposed action is not likely to affect the threatened marbled murrelet. Critical habitat for the marbled murrelet has been designated, but does not occur within the action area; therefore, critical habitat will not be affected by the proposed project.

This biological opinion is based on: (1) the *Biological Assessment: Downdrain Rehabilitation Project* dated April 2008 (PM 0.00–2.80; EA 264900); (2) the April 14, 2008 and May 15, 2008 site visits with the California Department of Transportation (Caltrans) and California Department of Fish and Game; (3) marbled murrelet pre-consultation letter dated June 20, 2008 from the California Department of Fish and Game; (4) phone and electronic mail correspondence concerning the proposed action between the Service, California Department of Fish and Game, and Caltrans; and (5) other information available to the Service.

CONSULTATION HISTORY

- April 14, 2008 Jerry Roe of the Service and Ryan Graybehl of Caltrans visited the project site and evaluated habitat suitability for the marbled murrelet and California red-legged frog.
- April 23, 2008 The Service received correspondence from Caltrans to initiate formal consultation and received the *Biological Assessment: Downdrain Rehabilitation Project* from Caltrans.
- May 15, 2008 Jerry Roe of the Service, Melissa Escaron and Brenda Blinn of the California Department of Fish and Game, and Ryan Graybehl of Caltrans visited the project site to discuss proposed project activities, potential impacts, avoidance and minimization measures, and evaluate habitat suitability for the marbled murrelet and California red-legged frog.
- June 23, 2008 Received marbled murrelet pre-consultation letter from the California Department of Fish and Game.
- September 18, 2008 The Service requested information from the Santa Clara Valley Water District regarding the status of California red-legged frog in Los Gatos Creek upstream of Lexington Reservoir.
- September 22, 2008 The Service received an electronic correspondence from the Santa Clara Valley Water District regarding the status of California red-legged frog in Los Gatos Creek upstream of Lexington Reservoir.
- September 29, 2008 Jerry Roe of the Service sent Caltrans recommendations to avoid or minimize adverse affects to the California red-legged frog and for consideration of incorporation into the project description.
- September 29, 2008 The Service received an electronic correspondence from Margaret Gabil of Caltrans accepting the conservation measures for the California red-legged frog for incorporation into the project description.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The project limits and BSA are located on and around a 2.8-mile long section of SR 17 from PM 0.00 to PM 2.80 in southern Santa Clara County near its border with Santa Cruz County at the

crest of the Santa Cruz Mountains. This portion of SR 17 is near the western edge of the Los Gatos USGS 7.5-minute quadrangle, Township 9 South, Range 1 West, at about a 1,200-foot elevation.

The California Department of Transportation (Caltrans) has proposed the Santa Clara County Route 17 Downdrain Rehabilitation Project to upgrade and improve 53 drains, pipes, and downdrains. These modifications to the drainage system would improve water conveyance off the roadway, reduce sheet flow and ponding, and thereby improve traffic safety related to wet-pavement accidents.

SR 17 is the primary highway connecting Santa Clara and Santa Cruz Counties. It extends northward from its southern terminus at U.S. Highway 1 in Santa Cruz to Interstate 280 in San Jose to the north. As it does so, it passes over the Santa Cruz Mountains, the summit of which is the border between the two counties. The southernmost portion of SR 17, between Post Mile (PM) 0.00 and PM 2.80, are the limits of the proposed project. This section of SR 17 has consistently been identified by California's Traffic Accident Surveillance Analysis System (TASAS) as an area of high wet accident concentration, where the accident rate is higher than the statewide average.

Caltrans has concluded that the wet accident rate is due in large part to the degradation of the drainage system. The line pipes and downdrains which carry water along and under the road, and then to the hill slopes below it, have clogged, cracked, and otherwise become less effective. These problems with the aging drainage system were compounded in the late 1960s when concrete median strip barriers were added to SR 17 to prevent head-on collisions between vehicles. These barriers have scuppers allowing water to run through it. As SR 17 was resurfaced and repaved, the scupper drains have become buried beneath the asphalt overlays, impeding drainage. The accumulation of water on the roadway decreases traction and contributes to wet pavement accidents. Successive road resurfacing has also effectively lowered the height of the barriers, further reducing safety.

The proposed project would remedy the drainage problems through repair, rehabilitation, or replacement of 53 existing drainage works, and through associated improvements to the roadway and median strip barriers. The project limits lie within a particularly mountainous and environmentally sensitive location, making major roadway improvements difficult. Further, SR 17 is a major thoroughfare with high traffic volume and limited opportunities for closure. The continued residential and commercial growth in Santa Clara and Santa Cruz Counties has increased the demand on the roadway, which highlights the importance of improving safety and reversing the ongoing degradation of the drainage systems.

Project Description

The Downdrain Rehabilitation Project is scheduled to occur at the most southern segment of SR 17 in Santa Clara County, at the county border with Santa Cruz County. Project limits are from PM 0.00 to PM 2.80. Construction is designed to occur in several stages:

1. Removal of Type 50 median barrier and replacement with Type 60 median barrier;
2. Installation of median drain and pipe to edge-of-pavement;
3. Installation of pipe from edge-of-pavement to either an existing drainage system or to a daylight system;
4. Replacement of metal beam guardrails; and

5. Overlay with new asphalt road surface.

The Type 50 median barriers have scuppers that allow water to run through the barrier. However, successive repaving and resurfacing of SR 17 have buried the scuppers and impeded water flow through them. The plan for the first stage is to replace Type 50 barriers with Type 60 barriers, which are stronger and taller to improve traffic safety. Depending on the degree of slope, the barriers will also have slotted drains, instead of scuppers, placed alongside them to improve collection of water along the median barriers. The second stage would install median drains and pipes out to the edge-of-pavement. This would collect water at the median and deliver it to the edge of roadway. Stage two activities would require digging trenches across the roadway to add pipes or replace existing ones, and so would require lane closures. Stage three would continue the new drainage route and carry water through downdrain systems from the edge of pavement to the hill slope below the road. There, rock slope protection (RSP) and T-dissipaters will be placed to disperse the water in such a way as to minimize erosion. The fourth and fifth stages of work will involve a new asphalt surface overlay and replacing metal guard rails where needed, primarily the curves in the northbound direction.

Equipment for stage one activities would include jackhammer-equipped backhoes, cement saws, flatbed trucks with cranes, and cement trucks. Jackhammers would be used to break down the barriers, so they are more easily loaded onto trucks for removal. The Type 60 barriers would be cast in place. The other equipment would be used to dig trenches for the slotted drains and to seal them in place. Stage two would use similar equipment in similar ways - to cut through pavement, dig trenches, lay pipe, and resurface the road. In stage three, use of heavy equipment is less feasible because of the steep, vegetated slopes beside the road. Instead, a flatbed truck with a crane will pass the pipes to workers who will manually place pipes down the slopes.

Once the pipes are in place, retaining hoops will be installed around them. The RSP placement at the end of the downdrain will be hand-dug and will consist of 5- to 50- pound stones that will be slid down the slope with a special slide fitted with bumpstops to slow the stones as they slide downhill. A cement pump truck and trough system will deliver concrete down the slope and to the RSP.

The work for stages one and two would require intermittent lane closures. Parts of these stages, including removing existing median barriers and extending new pipes across the road, will be daytime activities. The new median barriers will be cast in place during overnight hours. Stage three activities take place off the road and so could be completed during daylight hours and without disrupting traffic.

All of the construction activities would take place within the project limits around which a Biological Study Area (BSA) was designated to guide the technical environmental studies for the project. The BSA is composed of a buffer zone extending 150 ft from each side of SR 17 throughout the 2.8-mile long project area. This BSA includes the work areas around each of the 53 drains included in the project. Note that the roadway and median of SR 17 is excluded from the BSA because it is already paved road; there are no biological effects there. The total area of the BSA is estimated to be approximately 103 acres.

Construction Impacts

At each of the 53 locations, project activities in the BSA have potential to result in permanent or temporary impacts or both to ground vegetation. Permanent impacts arise from the installation of new drainage systems and the placement of RSP; these activities will permanently remove the natural ground cover under their footprints. However, these impacts are small, being little more

than the diameter and length of the downdrains and RSP. Replacement of existing pipes, especially along the median or under the road, does not constitute permanent impacts from this project. Roadway impacts will remain on the roadway prism. RSP will not be placed at all drainages.

The temporary impacts are caused by increased human presence; foot traffic; construction noise; ground and vegetation disturbance from vehicle or equipment placement, parking, or operation; and exclusion of plants or animals from the work area. Permanent impacts to vegetation and other natural ground cover are estimated to total approximately 0.08-acre. The areas of temporary impacts throughout the project limits are estimated to total 0.05-acre.

Caltrans plans to minimize or eliminate indirect negative environmental impacts through implementation of standard and approved best management practices, including erosion, dust, and sedimentation controls, as well as timing construction activities to avoid disturbing sensitive animal species during nesting or breeding times.

Wildlife Crossings

Caltrans has considered wildlife crossings in the design phase of the project. It has been determined that it is not possible to add wildlife crossings because the inside lanes abut against the median barrier. Wildlife crossings would involve openings in the median barrier that would be spanned by metal beam guardrail which would intrude into the travel way. Thus, public safety would be compromised by the addition of wildlife crossings.

Proposed Conservation Measures

As part of compliance with the ESA, Caltrans has incorporated a number of avoidance and minimization measures into the design plans for proposed project. These measures are described here.

1. No tree removal is permitted. The project can be completed without removing trees.
2. Limit heavy equipment on slopes. Use of heavy equipment on steep slopes will be unlikely because of the safety risk; however, some use might occur.
3. Use sleds and slides to move construction materials down the slope. Rather than heavy machinery, sleds and slides will be used to move construction materials down the slope.
4. Minimize effects of construction noise and lighting. Eliminating use of heavy equipment on slopes will reduce noise off the highway. Caltrans will use techniques to direct and restrict lighting to only those sections of roadway on which work is occurring. For reasons of both safety and light pollution, Caltrans is required to minimize scattered or misdirected light from work areas. The expertise developed for these requirements will be applied to this project to avoid and minimize light impacts.
5. Sediment control. The State Water Quality Control Board has issued a National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit to Caltrans to regulate storm water and non-storm water discharges from Caltrans facilities. One of the permit requirements is for Caltrans to develop a Storm Water Pollution Prevention Plan (SWPPP) for all projects that have at least one acre of soil disturbance. The SWPPP developed for this project will also comply with the Caltrans Storm Water Management Plan.
6. The SWPPP is referenced to the Caltrans Construction Site Best Management Practices Manual (2007). This manual is comprehensive and includes many other

protective measures and guidance to prevent and minimize pollutant discharges and to minimize any wind- or water-related erosion. The SWPPP will also include guidance for Caltrans to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize stormwater and non-stormwater discharges. Protective measures in the contract will include, at a minimum:

- a. Concrete wastes will be collected in washouts and water from curing operations will be collected and disposed of. These wastes will not be allowed into watercourses.
 - b. Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.
 - c. Coil rolls will be installed along or at the base of slopes during construction to capture sediment.
 - d. Graded areas will be protected from erosion using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate on sloped areas.
7. If possible, construction, or isolation of the site, will be initiated during the dry season to minimize potential effects to California red-legged frogs. Timing restrictions do not apply to work within State Route 17 proper, i.e. within the road prism; however, the Service encourages Caltrans to schedule road work to occur within the dry season to the maximum extent feasible. Because California red-legged frogs are most active during the period between late November and late April, construction should occur between May 15 and October 15 when conditions are more likely to be dry. If any work remains to be completed outside the roadway prism after October 15, exclusion fencing will be erected for downdrain work areas on vegetated/unpaved slopes where construction is still needed. Exclusion fencing will consist of taut silt fabric 24 inches in height, stacked at 4-foot intervals, with the bottom buried 6 inches below grade. Exclusion fencing will be maintained so that it is intact during rain events and 24 hours after any rain event. The biological monitor will ensure that the integrity of the fence is maintained throughout the duration of work within the aforementioned designated areas and is completely removed and properly disposed of off site following project completion.
8. Caltrans will designate one or more Service-approved biologist(s) for the project. This qualified biologist(s) will be onsite during all activities that may result in the take of listed species. The qualifications of the biologist(s) will be presented to the Service for review and written approval prior to groundbreaking at the project site. The biologist(s) will be given the authority, through the Resident Engineer, to stop any work that may result in the take of these listed animal species. If the biologist(s) exercises this authority, the Service and the California Department of Fish and Game (CDFG) will be notified by telephone and electronic mail within one working day. The Service contact will be Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program, Sacramento Fish and Wildlife Office, (916) 414-6600 and CDFG representative Melissa Escaron at (707) 944-5577.
9. The resident engineer will halt work and immediately contact the Service-approved project biologist and the Service in the event that a listed species enters a construction

zone. The resident engineer will suspend all construction activities in the immediate construction zone until the species leaves the site voluntarily or is relocated by the biologist to a release site using Service- and CDFG-approved transportation techniques.

10. An employee education program covering the listed species will be conducted prior to the start of construction or staging of equipment and materials. The program will consist of a brief presentation by persons knowledgeable in the biology and legislative protection of listed species to explain endangered species concerns to staff personnel, contractors, and other person(s) involved in the project. The program will include the following: a description of the species and their habitat requirements; a report of species occurrences in the project vicinity; an explanation of the status of the species and their protection under the Federal and California Endangered Species Acts; a list of measures to reduce effects to listed species during project implementation; and procedures to be followed should a listed species be observed. A fact sheet conveying this information will be prepared for distribution to the above-mentioned people and anyone else who may enter the project site. Documentation of the training, including individual signed affidavits, will be kept of file and available to the Service or CDFG upon request.
11. The Service-approved biologist shall perform a clearance survey immediately prior to the initial ground disturbance. The Service-approved biologist(s) must investigate all potential California red-legged frog refugia sites including a full investigation of all equipment and supply access slide areas and work zones within non-paved areas where pipe replacement and RSP installation will occur. Safety permitting, the Service-approved biologist(s) must investigate disturbed areas for signs of listed species within 30 minutes following the initial disturbance of the area.
12. Procedure for California red-legged frog discovery onsite. If a California red-legged frog, or any amphibian that construction personnel believes may be this species, is encountered during project construction, or if an contractor, employee, or agency personnel inadvertently kills or injures a California red-legged frog, the following protocol will be followed:
 - a. All work that could result in direct injury, disturbance, or harassment of the individual animal will immediately cease.
 - b. The foreman will be immediately notified.
 - c. The foreman will notify the Service-approved biologist, who will immediately notify the Service via telephone or electronic mail.
 - d. The Service-approved biologist will relocate the California red-legged frog to nearest suitable location along Los Gatos Creek upstream of Lexington Reservoir based on their professional judgment and knowledge of the species. The Service-approved biologist shall monitor the frog until he/she determines that the animal(s) are not imperiled by predators, or other dangers. California red-legged frogs will not be moved from the project site without the specific written authorization of the Service. The written authorization of the Service shall be obtained by the California Department of Transportation prior to transporting California red-legged frogs to a location other than the approved translocation site (i.e., individuals of either of these two listed animals shall not be moved to laboratories, holding facilities, or other facilities without the written authorization of the Service.

- e. The Service-approved biologist(s) will use nets or their bare hands to capture California red-legged frogs at the project site. The Service-approved biologist(s) will not use soaps, oils, creams, lotions, repellents, or solvents of any sort on their hands within two (2) hours before and during periods when they are capturing and relocating either of these two listed species.
 - f. Biologists will take precautions to prevent introduction of amphibian diseases to the action area by disinfecting equipment and clothing as recommended by the USFWS California Red-Legged Frog Survey Guidance. The protocol is available at the USFWS Sacramento Field Office website: <http://www.fws.gov/sacramento/es/protocol.htm>. Disinfecting equipment and clothing is especially important when biologists are coming to the action area to handle frogs after working in other aquatic habitats.
13. Listed species that are found injured will be cared for by a licensed veterinarian or other qualified person, such as the onsite biologist. Dead individuals of any of these listed species will be preserved according to standard museum techniques and held in a secure location. The Service and CDFG will be notified within one working day of the discovery of death or injury to a listed species that occurs due to project-related activities or is observed at the project site. Notification will include the date, time, and location of the incident or finding of a dead or injured animal clearly indicated on a USGS 7.5-minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. Dead individual animals will be placed in a zippered plastic storage bag with a piece of paper stating where and when the animal was found and the name of the person who found it. The bag will be frozen in a freezer located in a secure location until instructions are received from the Service regarding the disposition of the specimen or until the Service takes custody of the specimen. The Service contacts are Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program at the Sacramento Fish and Wildlife Office at (916) 414-6600, and Dan Crum, Resident Agent-in-Charge of the U.S. Fish and Wildlife Service Law Enforcement Division at (916) 414-6660. The CDFG contact is Liam Davis, Senior Environmental Scientist at (707) 944-5529.
 14. Prohibit use of erosion control materials potentially harmful to California red-legged frogs such as plastic mono-filament netting (erosion control matting) or similar material. Tightly woven fiber netting or similar material will be used for erosion control or other purposes at the project to ensure that California red-legged frogs do not get entangled or trapped. This limitation will be communicated to the contractor through use of Special Provisions included in the bid solicitation package.
 15. Project employees will be provided with written guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.
 16. To prevent animals from scavenging onsite, food scraps and all food-related trash such as wrappers, cans, and bottles will be disposed of in closed containers and removed at least once a day from the entire project site.
 17. To avoid injury or death to listed species, no firearms will be allowed on the project site except for those carried by authorized security personnel, or local, state, or federal law enforcement officials.
 18. To prevent harassment, injury, or mortality of listed species or destruction of their burrows by dogs or cats, no canine or feline pets will be permitted in the action area.

19. All fueling and maintenance of vehicles and other equipment will take place at least 65 feet from any riparian habitat or aquatic habitat.

ACTION AREA

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the proposed action, the Service considers the action area to encompass the entire 2.8-mile length of SR 17 from PM 0.00 at the Santa Cruz/Santa Clara County border to PM 2.80 and extending 150 feet on either side of the alignment including adjacent habitat that will be subjected to noise and visual disturbance. The action area encompasses an area totaling approximately 103 acres.

STATUS OF THE SPECIES

California Red-legged Frog

The California red-legged frog was federally listed as a threatened species on May 23, 1996 (61 FR 25813) (USFWS 1996). Critical habitat for California red-legged frog was designated on April 13, 2006, (71 FR 19244) (USFWS 2006), and proposed revised critical habitat that would increase critical habitat acreage to 1.8 million acres (73 FR 53492) (USFWS 2008). The Recovery Plan for the California Red-Legged Frog was completed on September 12, 2002 (USFWS 2002).

Description: This species is the largest native frog in the western United States (Wright and Wright 1949), ranging from 3.81 to 12.95 centimeters (1.5 to 5.1 inches) in length (Stebbins 2003). The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers (Stebbins 2003), and dorsolateral folds are prominent on the back. Larvae (tadpoles) range from 1.52 to 7.87 centimeters (0.6 to 3.1 inches) in length, and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

Red-legged frogs have paired vocal sacs and vocalize in air (Hayes and Krempels 1986). Female frogs deposit egg masses on emergent vegetation so that the egg mass floats on or near the surface of the water (Hayes and Miyamoto 1984). Red-legged frogs breed from November through March with earlier breeding records occurring in southern localities (Storer 1925). Individuals occurring in coastal drainages are active year-round (Jennings et al. 1992), whereas those found in interior sites are normally less active during the cold season.

Distribution: The historic range of the red-legged frog extended coastally from the vicinity of Elk Creek in Mendocino County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (Fellers 2005; Jennings and Hayes 1985; Hayes and Krempels 1986). The red-legged frog was historically documented in 46 counties but the taxa now remains in 238 streams or drainages within 23 counties, representing a loss of 70 percent of its former range (USFWS 2002). Red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The species is believed to be extirpated from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (CDFG 2008).

Habitat Requirements: California red-legged frogs predominately inhabit permanent water sources such as streams, lakes, marshes, natural and manmade ponds, and ephemeral drainages in valley bottoms and foothills up to 1,500 meters in elevation (Jennings and Hayes 1994, Bulger et al. 2003, Stebbins 2003). However, red-legged frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. California red-legged frogs breed between November and April in still or slow-moving water at least 0.7 meters (2½ feet) in depth with emergent vegetation, such as cattails (*Typha* spp.), tules (*Scirpus* spp.) or overhanging willows (*Salix* spp.) (Hayes and Jennings 1988).

During other parts of the year, habitat includes nearly any area within 1.6-3.2 kilometers (1-2 miles) of a breeding site that stays moist and cool through the summer (Fellers 2005). According to Fellers (2005), this can include vegetated areas with coyote bush (*Baccharis pilularis*), California blackberry thickets (*Rubus ursinus*), and root masses associated with willow (*Salix* species) and California bay (*Umbellularia californica*) trees. Sometimes the non-breeding habitat used by red-legged frogs is extremely limited in size. For example, non-breeding red-legged frogs have been found in a 1.8-meter (6-foot) wide coyote bush thicket growing along a tiny intermittent creek surrounded by heavily grazed grassland (Fellers 2005). Sheltering habitat for red-legged frogs is potentially all aquatic, riparian, and upland areas within the range of the species and includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay stacks may also be used. Incised stream channels with portions narrower and depths greater than 45.7 centimeters (18 inches) also may provide important summer sheltering habitat. Accessibility to sheltering habitat is essential for the survival of red-legged frogs within a watershed, and can be a factor limiting frog population numbers and survival.

Life History: California red-legged frogs do not have a distinct breeding migration (Fellers 2005). Adult frogs are often associated with permanent bodies of water. Some frogs remain at breeding sites all year while others disperse. Dispersal distances are typically less than 0.8 kilometers (0.5 mile), with a few individuals moving up to 1.6-3.2 kilometers (1-2 miles) (Fellers 2005). Movements are typically along riparian corridors, but some individuals, especially on rainy nights, move directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas (Fellers 2005).

In a study of California red-legged frog terrestrial activity in the Santa Cruz Mountains, Bulger (2003) categorized terrestrial use as migratory and non-migratory. The latter occurred from one to several days and was associated with precipitation events. Migratory movements were characterized as the movement between aquatic sites and were most often associated with breeding activities. Bulger reported that non-migrating frogs typically stayed within 60 meters (200 feet) of aquatic habitat 90% of the time and were most often associated with dense vegetative cover, i.e. California blackberry, poison oak and coyote brush. Dispersing frogs in northern Santa Cruz County traveled distances from 0.25 miles (0.4 kilometers) to more than 2 miles (3.2 kilometers) without apparent regard to topography, vegetation type, or riparian corridors (Bulger et al. 2003).

California red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Egg masses containing 2,000 to 5,000 eggs are attached to vegetation below the surface and hatch after 6 to 14 days (Storer 1925, Jennings and Hayes 1994). In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity (Jennings et al. 1992). Eggs exposed to salinity levels greater than 4.5 parts per thousand results in 100 percent mortality (Jennings and

Hayes 1990). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3½ to 7 months following hatching and reach sexual maturity 2 to 3 years of age (Storer 1925; Wright and Wright 1949; Jennings and Hayes 1985, 1990, 1994). Of the various life stages, larvae probably experience the highest mortality rates, with less than 1 percent of eggs laid reaching metamorphosis (Jennings et al. 1992). Sexual maturity normally is reached at 3 to 4 years of age (Storer 1925; Jennings and Hayes 1985). Red-legged frogs may live 8 to 10 years (Jennings et al. 1992). Populations of red-legged frogs fluctuate from year to year. When conditions are favorable red-legged frogs can experience extremely high rates of reproduction and thus produce large numbers of dispersing young and a concomitant increase in the number of occupied sites. In contrast, red-legged frogs may temporarily disappear from an area when conditions are stressful (e.g., drought).

The diet of red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food items. According to their data, vertebrates, such as Pacific tree frogs and California mice (*Peromyscus californicus*); represent over half the prey mass eaten by larger frogs (Hayes and Tennant 1985). Hayes and Tennant (1985) found juvenile frogs to be active diurnally and nocturnally, whereas adult frogs were largely nocturnal. Feeding activity probably occurs along the shoreline and on the surface of the water (Hayes and Tennant 1985). The diet of red-legged frogs is not well studied, but their diet probably is similar to other ranid frogs that feed on algae, diatoms, and detritus by grazing on the surface of rocks and vegetation (Fellers 2005; Kupferberg 1996a, 1996b).

Threats: Several researchers in central California have noted the decline and eventual local disappearance of California and northern red-legged frog populations once bullfrogs became established at the same site (L. Hunt, in litt. 1993; S. Barry, in litt. 1992; S. Sweet, in litt. 1993). This has been attributed to predation, competition, and reproduction interference. Twedt (1993) documented bullfrog predation of juvenile northern red-legged frogs (*Rana aurora aurora*), and suggested that bullfrogs could prey on subadult northern red-legged frogs as well. Bullfrogs may also have a competitive advantage over red-legged frogs. For instance, bullfrogs are larger and possess more generalized food habits (Bury and Whelan 1984). In addition, bullfrogs have an extended breeding season (Storer 1933) during which an individual female can produce as many as 20,000 eggs (Emlen 1977). Further more, bullfrog larvae are unpalatable to predatory fish (Kruse and Francis 1977). Bullfrogs also interfere with red-legged frog reproduction. Both California and northern red-legged frogs have been observed in amplexus (mounted on) with both male and female bullfrogs (Jennings and Hayes 1990; Twedt 1993; M. Jennings, in litt. 1993; R. Stebbins in litt. 1993). Thus bullfrogs are able to prey upon and out-compete red-legged frogs, especially in sub-optimal habitat.

The urbanization of land within and adjacent to red-legged frog habitat has also impacted red-legged frogs. These declines are attributed to channelization of riparian areas, enclosure of the channels by urban development that blocks red-legged frog dispersal, and the introduction of predatory fishes and bullfrogs. This report further identifies the conversion and isolation of perennial pool habitats resulting from urbanization as an ongoing impact to red-legged frogs. Mao et al. (1999 cited in Fellers 2005) reported northern red-legged frogs infected with an iridovirus, which was also presented in sympatric three-spined sticklebacks (*Gasterosteus aculeatus*) in northwestern California. Ingles (1932a, 1932b, and 1933 cited in Fellers 2005) reported four species of trematodes from red-legged frogs, but he later synonymized two of them (found them to be the same as the other two).

Recovery: The recovery plan for red-legged frogs identifies eight Recovery Units (USFWS 2002). The establishment of these Recovery Units is based on the Recovery Team's

determination that various regional areas of the species' range are essential to its survival and recovery. The status of the red-legged frog will be considered within the smaller scale of Recovery Units as opposed to the overall range. These Recovery Units are delineated by major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog. The goal of the draft recovery plan is to protect the long-term viability of all extant populations within each Recovery Unit. Within each Recovery Unit, core areas have been delineated and represent contiguous areas of moderate to high red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that, combined with suitable dispersal habitat, will allow for the long term viability within existing populations. This management strategy will allow for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of red-legged frogs.

ENVIRONMENTAL BASELINE

California Red-Legged Frog

The action area is within the current range of the California red-legged frog and is located within the South San Francisco Bay Recovery Unit (Unit 4). Eight (8) occurrences have been documented within five miles of the proposed project. Two sightings were reported in 1989 along Los Gatos Creek upstream of Lexington Reservoir: one (#17) located adjacent to a small pond within an alder/maple riparian corridor and the other (#18) found dead on a road adjacent to Los Gatos Creek (CDFG 2008). Four were reported at the south end of Lexington Reservoir, Los Gatos Creek and Hendry's Creek between 1970 and 1987 (H.T. Harvey & Associates 1997). Two additional sightings have been reported in Santa Cruz County south of Summit Road in Upper Bean Creek (#844) and Mountain Charlie Gulch (#584) dating from 2002 and 2005, respectively (CDFG 2008). Although no recent sightings have been reported from Los Gatos Creek in the past decade, this population is presumed to be extant and may reflect a lack of survey effort. California red-legged frogs within this area of the Santa Cruz Mountains occur within sag ponds, instream pools and impoundments, and lowland saturated freshwater marshes. Habitat within the action area is comprised of second-growth coast redwood forest, redwood riparian forest, ruderal grassland, and suburban single-family residential. The single aquatic feature within the action area consists of a small perennial tributary to Los Gatos Creek within Moody Gulch (PM 1.66-2.25) and is characterized as a first-order cascading stream with small, shallow plunge pools not typical of habitat utilized by this species. However, their presence within Los Gatos Creek and adjacent watersheds to the north, east and south indicates that dispersal through atypical habitat may occur.

USFWS-protocol surveys conducted by Caltrans in March 2007 (Caltrans 2008) and a California red-legged frog site assessment prepared by Samuel McGinnis in October 2007 (Caltrans 2008) did not identify any California red-legged frogs and characterized the habitat within the action area as nontypical. Based on the focused survey results, California red-legged frog site assessment, Biological Assessment, and site inspection, occurrence data, the Service has determined there is a reasonable potential for California red-legged frogs to disperse through the action area.

EFFECTS OF THE ACTION

California Red-legged Frog

The proposed action is likely to adversely affect the California red-legged frog through direct mortality, injury, or harassment from being crushed by rocks, equipment or vehicles within the action area. Individuals of this listed species could become trapped under rocks or debris and be killed due to desiccation, entombment, or starvation, or could be harassed by noise, vibration or light. Construction activities could cause individuals to circumnavigate the action area thereby increasing their risk to predation and vehicle strikes.

Various other work activities associated with the proposed action also may adversely affect California red-legged frogs. Trash left during or after project activities could attract predators to work sites, which could subsequently harass or prey on individuals of this species. For example, raccoons, crows, and ravens are attracted to trash and also prey opportunistically on amphibians. Accidental spills of hazardous materials or careless fueling or oiling of vehicles or equipment could degrade water quality or habitat to a degree where frogs are adversely affected. Some potential also exists for disturbance of habitat which could result in the spread or establishment on non-native invasive plant species.

According to the Biological Assessment for this project (Caltrans 2008), the proposed action will not result in the permanent loss of breeding or non-aquatic upland habitat, but it will result in permanent loss of 0.08 ac (0.03 ha) and temporary loss of 0.05 ac (0.02 ha) of dispersal habitat for the California red-legged frog. Critical habitat for the California red-legged frog has been designated, but does not occur within the action area; therefore, critical habitat will not be affected by the proposed project.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Numerous non-Federal activities continue to negatively affect the California red-legged frog in Santa Clara County. Habitats are lost or degraded as a result of road and utility construction and maintenance, overgrazing, habitat fragmentation, and land conversion projects that may not be funded, permitted, or constructed by a Federal agency. Other threats include contamination, poisoning, increased predation, and competition from non-native species associated with human development. Small private actions that may impact listed species, such as conversion of land, small mammal population control, mosquito control, and residential development, may occur without consultation with or authorization by the Service or the California Department of Fish and Game pursuant to their respectively Endangered Species Act.

It is anticipated that population increases and development pressures will continue to affect land use and growth in Santa Clara County for the foreseeable future. The population in Santa Clara County doubled between 1950 and 1960 and nearly double again by 1970 (Santa Clara County 1994). The population in Santa Clara County is expected to continue growth by more than 206,000 people between 1995 and 2010 for a total of almost 1.8 million (Santa Clara County 1994). Increased demand for housing will likely result in loss of suitable habitat for all listed species discussed in this opinion as housing developments replace agricultural and ranch lands.

Increased urbanization in the region will contribute to the degradation of water quality in streams, altered flow regimes, increased contaminated road runoff, loss of upland habitat, and increased human presence in natural areas.

Increased levels of vehicles and increased vehicle speeds on the three roads could lead to an increased mortality level for the California red-legged frog. The cumulative local development will result in temporary and permanent habitat fragmentation. The results of fragmentation are inhibition of genetic exchange between populations and impediments to recolonization of habitats from which populations have been extirpated. Small, isolated populations are substantially more vulnerable to stochastic events (e.g., aberrant weather patterns, fluctuations in availability of food) and may exhibit reduced adaptability to environmental (natural or anthropogenic) changes.

California red-legged frogs likely are exposed to a variety of pesticides and other chemicals throughout their ranges. This species could also die from starvation due to the loss of their prey base. Hydrocarbon and other contamination from oil production and road runoff; the application of numerous chemicals for roadside maintenance; urban/suburban landscape maintenance; and rodent and vector control programs may all have negative effects on California red-legged frog populations. In addition, California red-legged frogs may be harmed through increased road kill due to the construction and use of new roads and increased traffic in the overall region and collection by amphibian enthusiast and others.

Further habitat fragmentation, additional non-native species introduction, and increased access to aquatic habitat could facilitate or increase the spread of amphibian diseases within the range of the California red-legged frog. The global mass extinction of amphibians primarily due to chytrid fungus continues to be of significant concern (Norris 2007; Skerratt et al 2007).

The global average temperature has risen by approximately 0.6 degrees centigrade during the 20th Century (International Panel on Climate Change 2001, 2007; Adger et al 2007). There is an international scientific consensus that most of the warming observed has been caused by human activities (International Panel on Climate Change 2001, 2007; Adger et al. 2007), and that it is "very likely" that it is largely due to increasing concentrations of greenhouse gases (carbon dioxide, methane, nitrous oxide, and others) in the global atmosphere from burning fossil fuels and other human activities (Cayan et al. 2005, EPA Global Warming webpage <http://yosemite.epa.gov>; Adger et al. 2007). Eleven of the twelve years between 1995 and 2006 rank among the twelve warmest years since global temperatures began in 1850 (Adger et al. 2007). The warming trend over the last fifty years is nearly twice that for the last 100 years (Adger et al. 2007). Looking forward, under a high emissions scenario, the International Panel on Climate Change estimates that global temperatures will rise another four degrees centigrade by the end of this Century; even under a low emissions growth scenario, the International Panel on Climate Change estimates that the global temperature will go up another 1.8 degrees centigrade (International Panel on Climate Change 2001). The increase in global average temperatures affects certain areas more than others. The western United States, in general, is experiencing more warming than the rest of the Nation, with the 11 western states averaging 1.7 degrees Fahrenheit warmer temperatures than this region's average over the 20th Century (Saunders et al. 2008). California, in particular, will suffer significant consequences as a result of global warming (California Climate Action Team 2006). In California, reduced snowpack will cause more winter flooding and summer drought, as well as higher temperatures in lakes and coastal areas. The incidence of wildfires in the Golden State also will increase and the amount of increase is highly dependent upon the extent of global warming. No less certain than the fact of global warming itself is the fact that global warming, unchecked, will harm biodiversity generally and cause the extinction of

large numbers of species. If the global mean temperatures exceed a warming of two to three degrees centigrade above pre-industrial levels, twenty to thirty percent of plant and animal species will face an increasingly high risk of extinction (International Panel on Climate Change 2001, 2007). The mechanisms by which global warming may push already imperiled species closer or over the edge of extinction are multiple. Global warming increases the frequency of extreme weather events, such as heat waves, droughts, and storms (International Panel on Climate Change 2001, 2007; California Climate Action Team 2006; Lenihan et al. 2003). Extreme events, in turn may cause mass mortality of individuals and significantly contribute to determining which species will remain or occur in natural habitats. Ongoing global climate change (Anonymous 2007; Inkley et al. 2004; Adger et al. 2007; Kanter 2007) likely imperils the California red-legged frog and the resources necessary for their survival. Since climate change threatens to disrupt annual weather patterns, it may result in a loss of their habitats and/or prey, and/or increased numbers of their predators, parasites, and diseases. Where populations are isolated, a changing climate may result in local extinction, with range shifts precluded by lack of habitat.

CONCLUSION

After reviewing the current status of the California red-legged frog, environmental baseline for the species, the effects of the proposed action, and the cumulative effects on the species, it is the Service's biological opinion that the proposed State Route 17 Downdrain Rehabilitation Project, as described herein, is not likely to jeopardize the continued existence of the California red-legged frog. Critical habitat for the California red-legged frog has been designated, but does not occur within the action area; therefore, critical habitat will not be affected by the proposed project.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by Caltrans so that they become binding conditions of any grant or permit issued to Caltrans, as appropriate, in order for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit

or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service anticipates that incidental take of the California red-legged frog will be difficult to detect because when California red-legged frogs are not in their breeding ponds, they inhabit the burrows of ground squirrels or other rodents, seek refuge within low-lying, dense riparian and upland vegetation; they may be difficult to locate due to their cryptic appearance and behavior; the sub-adult and adult animals may be located a distance from the breeding ponds; the migrations occur during a short temporal period on rainy nights in the fall, winter, or spring; and the finding of an injured or dead individual is unlikely because of their relatively small body size. Losses of California red-legged frogs may also be difficult to quantify due to seasonal fluctuations in their numbers, random environmental events, changes in water regime at their breeding ponds, or additional environmental disturbances. Due to the difficulty in quantifying the number of California red-legged frogs that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as all of the California red-legged frogs inhabiting or utilizing the entire 2.8-mile length of SR 17 from PM 0.00 at the Santa Cruz/Santa Clara County border to PM 2.80 and extending 150 feet on either side of the alignment comprising 103 acres of habitat. The incidental take is expected to be in the form of harm, harassment, capture, trap, collect, injury, and mortality to adult California red-legged frogs from habitat loss/degradation, construction-related disturbance, and capture and relocation.

Upon implementation of the following reasonable and prudent measures incidental take associated with the proposed action described above for the California re-legged frog will become exempt from the prohibitions described under section 9 of the Act.

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the California red-legged frog and is not likely to jeopardize the continued existence of this species. Critical habitat for the California red-legged frog has been designated, but does not occur within the action area; therefore, critical habitat will not be affected by the proposed project.

Reasonable and Prudent Measures

The following reasonable and prudent measures are necessary and appropriate to minimize the effect of the take on the California red-legged frog:

1. Caltrans shall reduce adverse effects to the California red-legged frog by implementing the project as described in the April 2008 Biological Assessment, September 29, 2008 response, and the Proposed Conservation Measures of this biological opinion.
2. Caltrans shall ensure compliance with this biological opinion.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The following Terms and Conditions implement Reasonable and Prudent Measure one (1):
 - a. Caltrans shall minimize the potential for harm, harassment, or killing of federally listed wildlife species resulting from project related activities by implementation of the conservation measures as described in the Project Description of this biological opinion.
 - b. Caltrans shall include Special Provisions that include the Proposed Conservation Measures from the Project Description of this biological opinion and the Terms and Conditions of this biological opinion in the solicitation for bid information. In addition, Caltrans shall educate and inform contractors involved in the project as to the requirements of the biological opinion.
2. The following Terms and Conditions implement Reasonable and Prudent Measure two (2):
 - a. If requested, before, during, or upon completion of ground breaking and construction activities, Caltrans shall allow access by Service and/or California Department of Fish and Game personnel to the project site to inspect project effects to the California red-legged frog and its habitat.
 - b. Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within 60 calendar days following project completion or within 60 calendar days of any break in construction activity lasting more than 60 calendar days. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the California red-legged frog, if any; (v) occurrences of incidental take of this species; (vi) documentation of employee environmental education; and (vii) other pertinent information. The reports will be addressed to the Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program at the Sacramento Fish and Wildlife Office.
 - c. Caltrans shall report to the Service any information about take or suspected take of listed wildlife species not authorized in this biological opinion. Caltrans must notify the Service via electronic mail and telephone within 24 hours of receiving such information. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and photographs of the specific animal. The individual animal shall be preserved, as appropriate, and held in a secure location until instructions are received from the Service regarding the disposition of the specimen or the Service takes custody of the specimen. The Service contacts are Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Division, Sacramento Fish and Wildlife Office at (916) 414-6600, and Dan Crum, Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.

Reporting Requirements

Injury to or death of California red-legged frog must be reported to the Service within one (1) working day of the discovery of death or injury that occurs due to project related activities or is observed at the project site. Injured listed species must be cared for by a licensed veterinarian or other qualified person; dead individuals of this listed species should be preserved according to standard museum techniques and held in a secure location. Notification must include the date,

time, and location of the incident or of the finding of a dead or injured animal clearly indicated on a USGS 7.5 minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. The Service contacts are Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program at the Sacramento Fish and Wildlife Office (916)414-6600, and Dan Crum, Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.

Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days of the date of the completion of construction activity. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the California red-legged frog, if any; (v) occurrences of incidental take of this listed species, if any; (vi) documentation of employee environmental education; and (vii) other pertinent information.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. We have the following conservation recommendations:

1. Caltrans should assist the Service in implementing recovery actions identified in the *Recovery Plan for the Marbled Murrelet* (USFWS 1997).
2. Caltrans should assist the Service in implementing recovery actions identified in the *Recovery Plan for the California Red-legged Frog* (USFWS 2002).
3. Caltrans should consider participating in the planning for a regional habitat conservation plan for the California red-legged frog and marbled murrelet, other listed species, and sensitive species.
4. Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the California red-legged frog and marbled murrelet, and other appropriate species. Such banking systems also could possibly be utilized for other required mitigation (i.e., seasonal wetlands, riparian habitats, etc.) where appropriate.
5. Sightings of any listed or sensitive animal species should be reported to the California Natural Diversity Database of the California Department of Fish and Game. A copy of the reporting form and a topographic map clearly marked with the location the animals were observed also should be provided to the Service.
6. Caltrans should incorporate culverts, tunnels, or bridges on highways and other roadways that allow safe passage by California red-legged frogs, other listed animals, and wildlife. Caltrans should include photographs, plans, and other information in their biological assessments if they incorporate "wildlife friendly" crossings into their projects.

7. Caltrans should provide habitat for bats, including surfaces for bat roosts on the underside of bridges and other structures whenever possible.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed and/or proposed species or their habitats, the Service requests notification of the implementation of these recommendations.

REINITIATION--CLOSING STATEMENT

This concludes formal consultation on the proposed State Route 17 Downdrain Rehabilitation Project, Santa Clara County, California. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this amendment to the biological opinion on the State Route 17 Downdrain Rehabilitation Project, please contact Jerry Roe, Endangered Species Biologist, (Jerry_Roe@fws.gov) or Chris Nagano, Deputy Assistant Field Supervisor, Endangered Species Program, (Chris_Nagano@fws.gov) at the letterhead address or at telephone (916) 414-6600 if you have any questions.

Sincerely,



Cay C. Goude
Acting Field Supervisor

cc:

Margaret Gabil, California Department of Transportation, Oakland, California
Jeff Jensen, California Department of Transportation, Oakland, California
Melissa Escaron, California Department of Fish and Game, Yountville, California
Brenda Blinn, California Department of Fish and Game, Yountville, California
Liam Davis, California Department of Fish and Game, Yountville, California
Scott Wilson, California Department of Fish and Game, Yountville, California

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When signed can you email the pdf to the following:

Ryan Graybehl ryan_graybehl@dot.ca.gov
Margaret Gabil margaret_gabil@dot.ca.gov

Thanks,
Jerry

Attachment C

Project Impacts Table

Table C-1. Project Impacts Table for Projects under Permit 3

Site #	Map #	Latitude North	Longitude West	Length (ft)	Width (ft)	Temp. Impact Acres
12	D-1	121.986938	37.1465177	300	2	0.013
13	D-2	121.987855	37.1475193	165	2	0.0076
17	D-3	121.987612	37.1481501	402	2.25	0.0208
37	D-4	121.985319	37.1539906	165	2	0.0076
42	D-5	121.983471	37.1559823	402	2.25	0.0208
43	D-6	121.983471	37.1559823	284	3	0.1196
52	D-6	121.983791	37.1596484	142	1.5	0.0049
53	D-6	121.983791	37.1596484	166	2	0.0079
68	D-9	121.990834	37.1636837	152	3	0.0105
71	D-9	121.989965	37.1643151	318	2	0.0148
78/79	D-10	121.9887700	37.1677906	24	2	0.0011
90	D-11	121.990472	37.1715368	271	3	0.0187
95/96	D-12	121.99329	37.17371547	185	2	0.0085

Table C-2. Project Impacts Table for Projects under Permit 13

Site #	Map #	Latitude North	Longitude West	Length (ft)	Width (ft)	Perm. Impact Acres	Fill (cu yd)
1	D-1	37.1455958	121.9841253	10.5	4.5	0.0011	1.57
3	D-1	37.1458955	121.9848208	8	6	0.0011	1.47
7	D-1	37.1454764	121.9859236	6	4.5	0.00062	1.57
9	D-1	37.1458754	121.9861114	10.5	4.5	0.0011	2.77
12	D-2	37.1469372	121.9869777	14	6	0.0019	2.77
13	D-2	37.1475235	121.9881469	14	6	0.0019	1.47
17	D-2	37.14807	121.9869189	14	6	0.0019	2.77
33	D-4	37.1539873	121.984737	10.5	4.5	0.0011	1.57
37	D-4	37.1540299	121.9848299	21	9	0.0043	6.23
41	D-4	37.1548085	121.9849703	14	6	0.0019	2.77
47i	D-5	37.1569479	121.9816859	8	6	0.0011	1.10
47ii	D-5	37.1569379	121.9817019	6	4.5	0.00062	1.11
56	D-7	37.1621875	121.9857398	10.5	4.5	0.0011	1.57
68	D-9	37.1635395	121.9900869	21	9	0.0043	6.23
70	D-9	37.1635572	121.9900956	10.5	4.5	0.0011	1.57
71	D-9	37.1639739	121.9896353	14	6	0.0019	2.77
79	D-10	37.1677246	121.9890132	14	6	0.00019	1.10
90	D-11	37.1716701	121.9900433	21	9	0.0043	6.23
92	D-12	37.1728689	121.9914347	6	4.5	0.00062	0.83
94	D-12	37.173203	121.9923995	14	6	0.0019	1.80
96	D-12	37.173915	121.993091	14	6	0.0019	2.77

Attachment D

Jurisdictional Boundaries Map / Drainage Plans

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

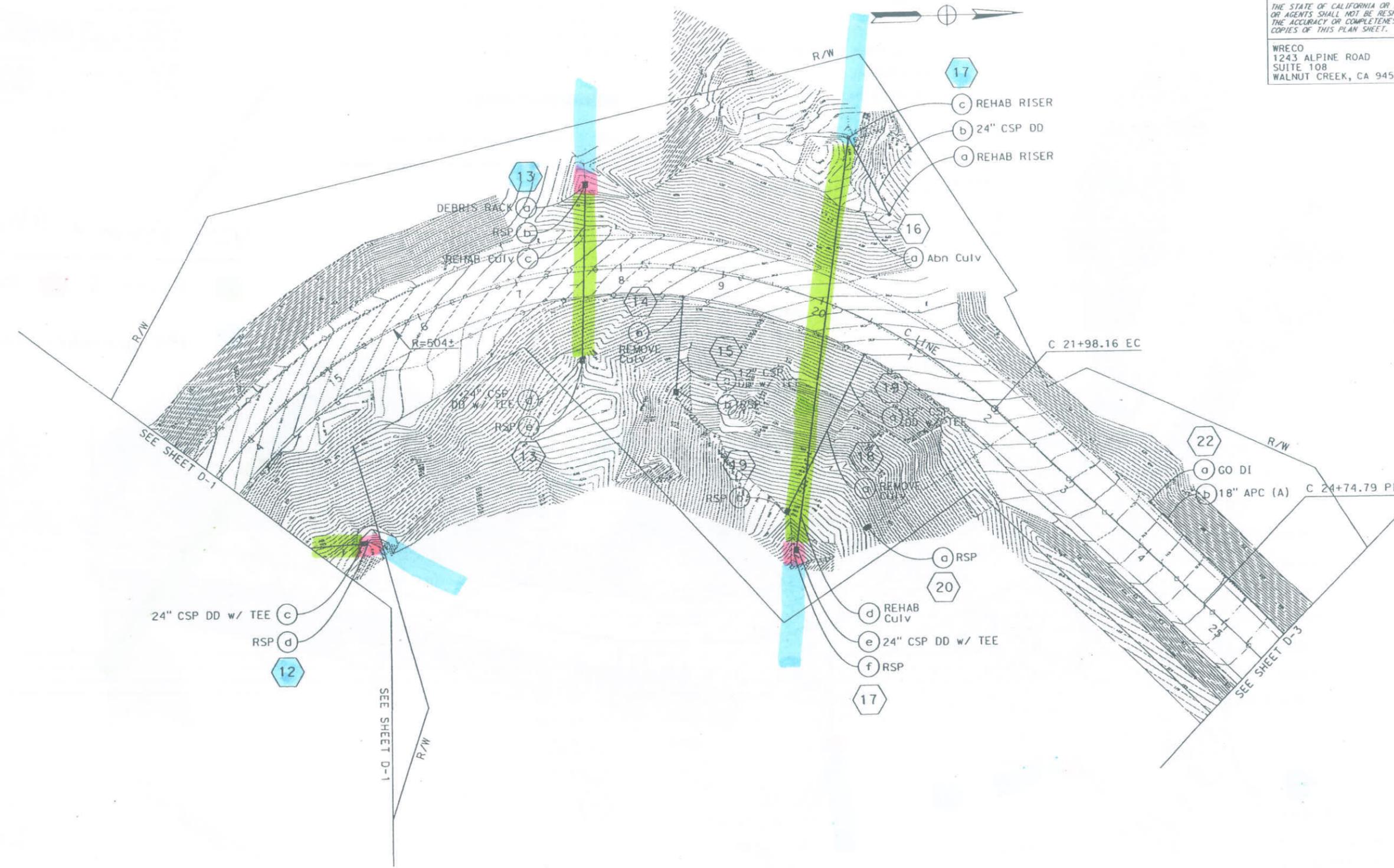
REGISTERED CIVIL ENGINEER DATE
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 No. C 48404
 Exp. 6/30/10
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Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR
 HAN-BIN LIANG

CALCULATED-DESIGNED BY
 CHECKED BY
 JENNIFER ABRAMS
 CHRIS SEWELL

REVISED BY
 DATE REVISED

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN
 SCALE: 1"=50'
D-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

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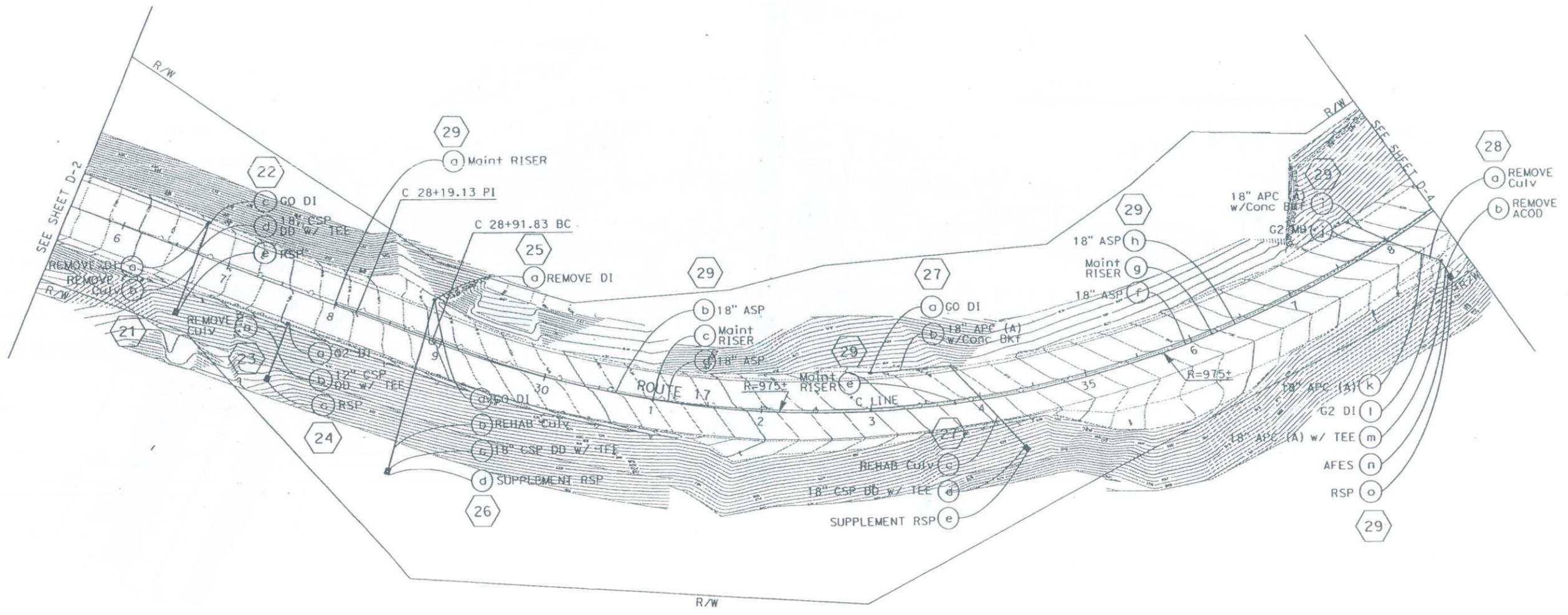
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OAKLAND, CA 94612

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DRAWN BY	REVISOR
St Caltrans	HAN-BIN LIANG	JENNIFER ABRAMS	JENNIFER ABRAMS
		CHECKED BY	DATE REVISED
		CHRIS SEWELL	



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DRAINAGE PLAN
SCALE: 1"=50'
D-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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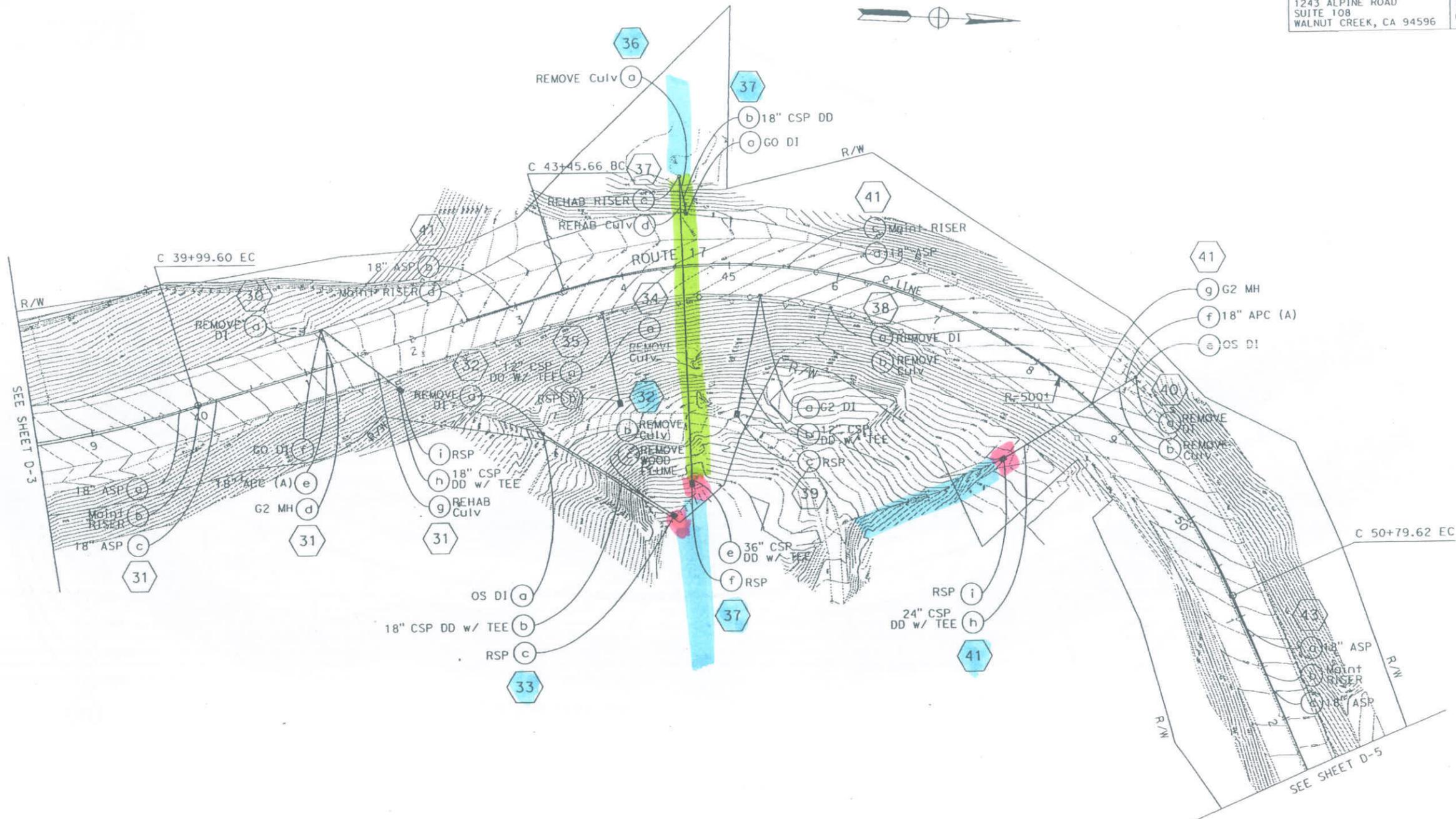
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG
 CHECKED BY: CHRIS SEWELL
 DESIGNED BY: JENNIFER ABRAMS
 REVISIONS: REVISOR: JENNIFER ABRAMS, DATE: _____
 REVISOR: CHRIS SEWELL, DATE: _____

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

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DRAINAGE PLAN
 SCALE: 1"=50'
D-4



FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

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PLANS APPROVAL DATE

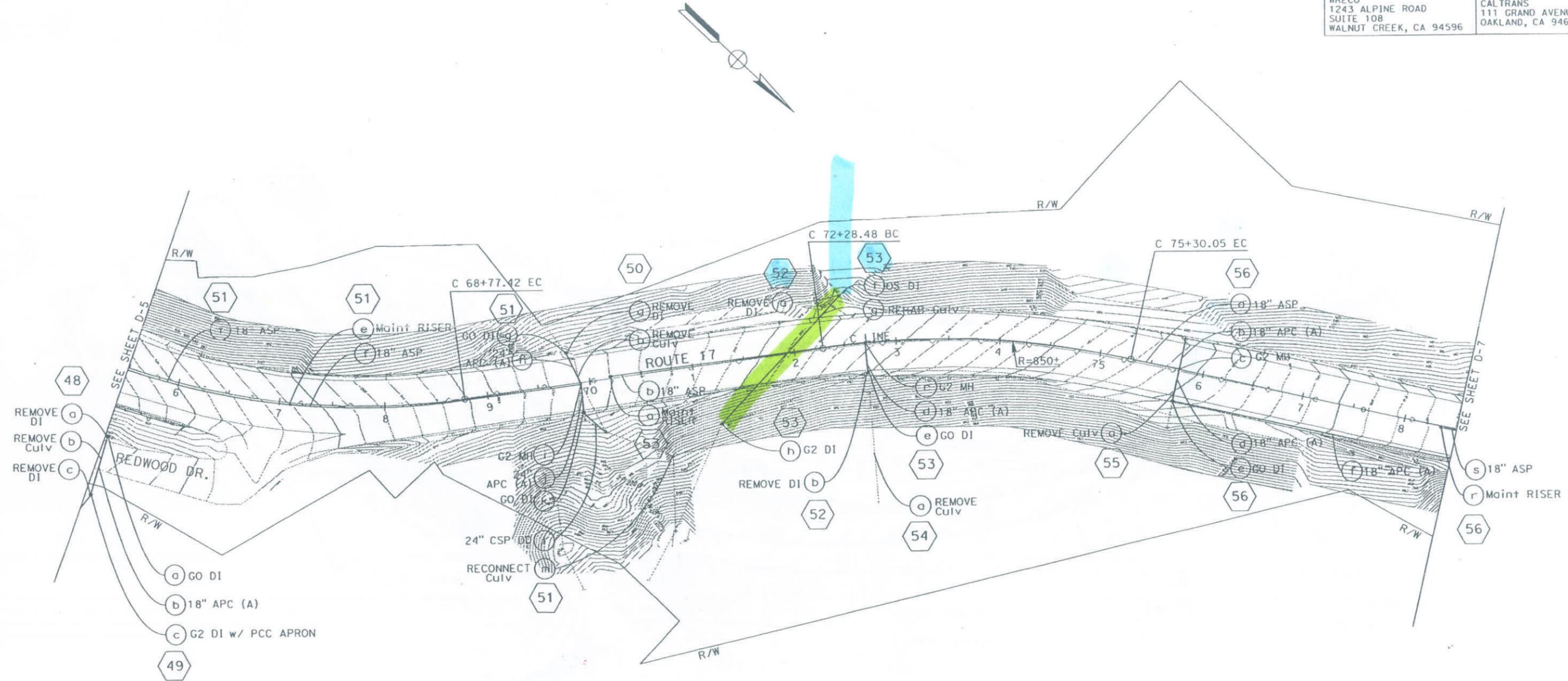
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OAKLAND, CA 94612

REGISTERED PROFESSIONAL ENGINEER
 HAN-BIN LIANG
 No. C 48404
 Exp. 6/30/10
 CIVIL
 STATE OF CALIFORNIA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG
 CALCULATED-DESIGNED BY: JENNIFER ABRAMS
 CHECKED BY: CHRIS SEWELL
 REVISED BY: JENNIFER ABRAMS
 DATE REVISED: CHRIS SEWELL



- (a) GO DI
- (b) 18" APC (A)
- (c) G2 DI w/ PCC APRON

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN
SCALE: 1"=50'

D-6

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

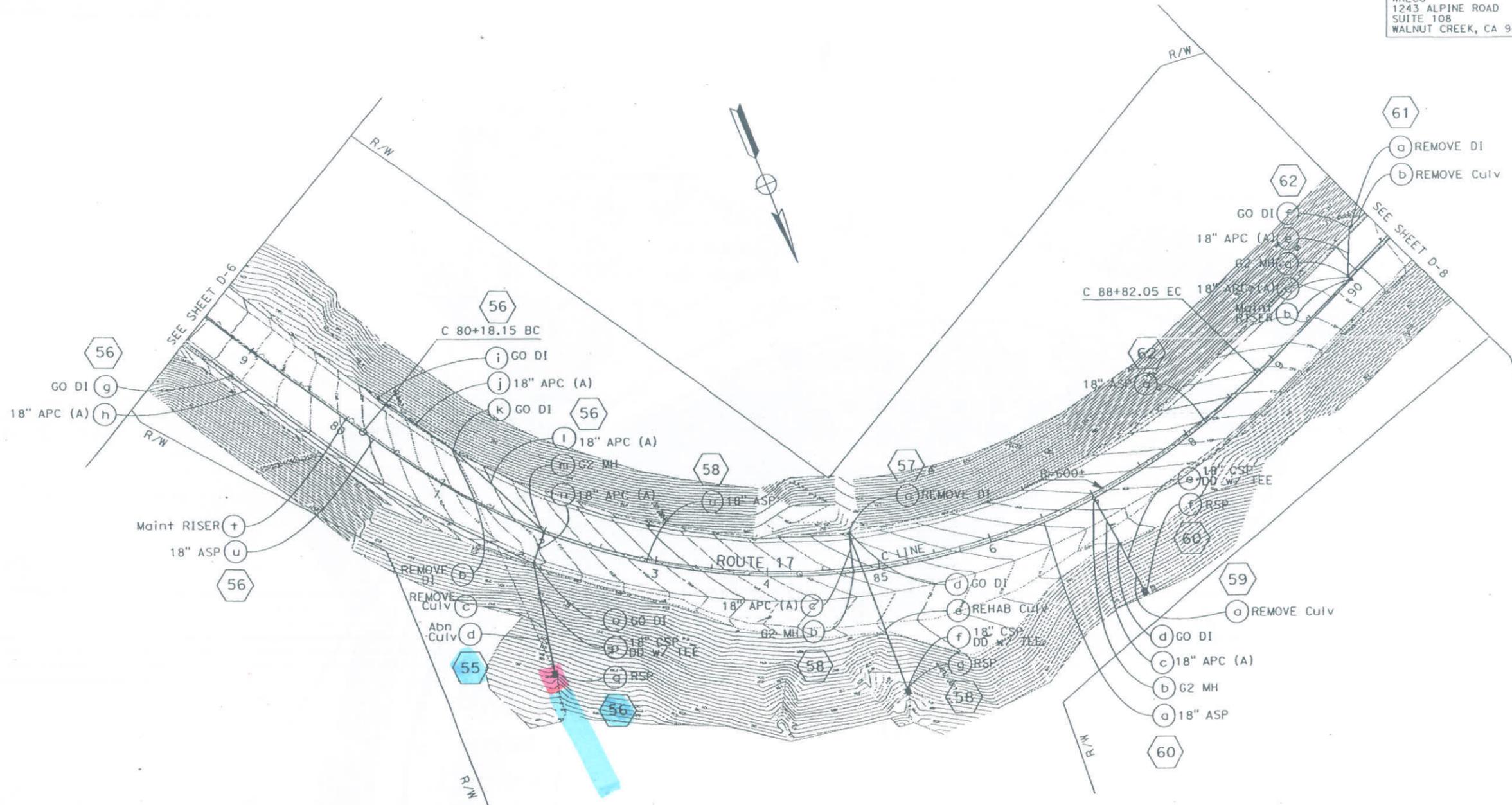
REGISTERED CIVIL ENGINEER	DATE
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No. C 48404	
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Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG
 CALCULATED-DESIGNED BY: JENNIFER ABRAMS
 CHECKED BY: CHRIS SEWELL
 REVISED BY: JENNIFER ABRAMS
 DATE REVISED: CHRIS SEWELL



FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN
 SCALE: 1"=50'
D-7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

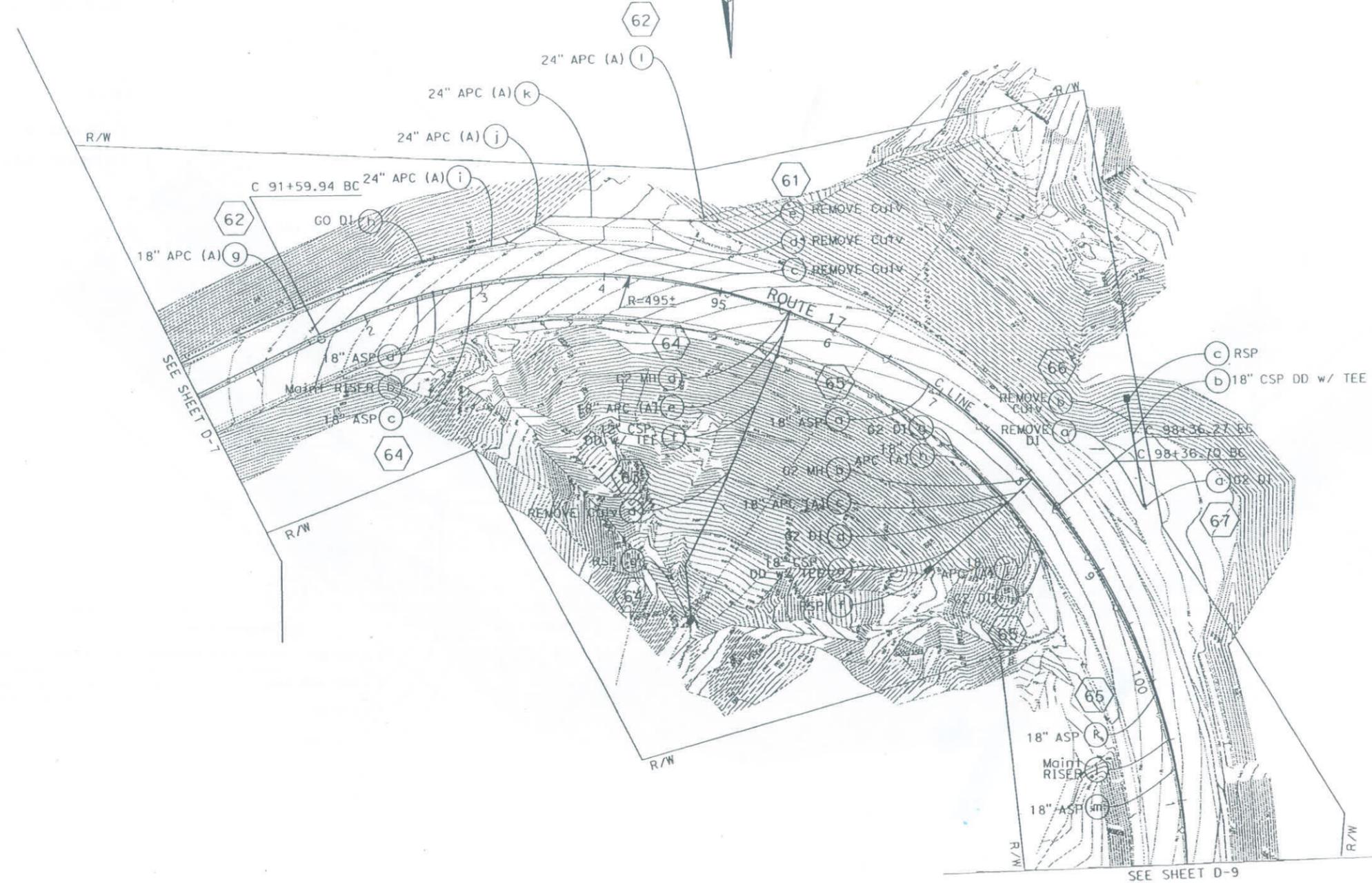
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1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

CALTRANS
111 GRAND AVENUE
OAKLAND, CA 94612

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: JENNIFER ABRAMS

CHECKED BY: CHRIS SEWELL

REVISED BY: JENNIFER ABRAMS

DATE REVISED: CHRIS SEWELL

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE: 1"=50'

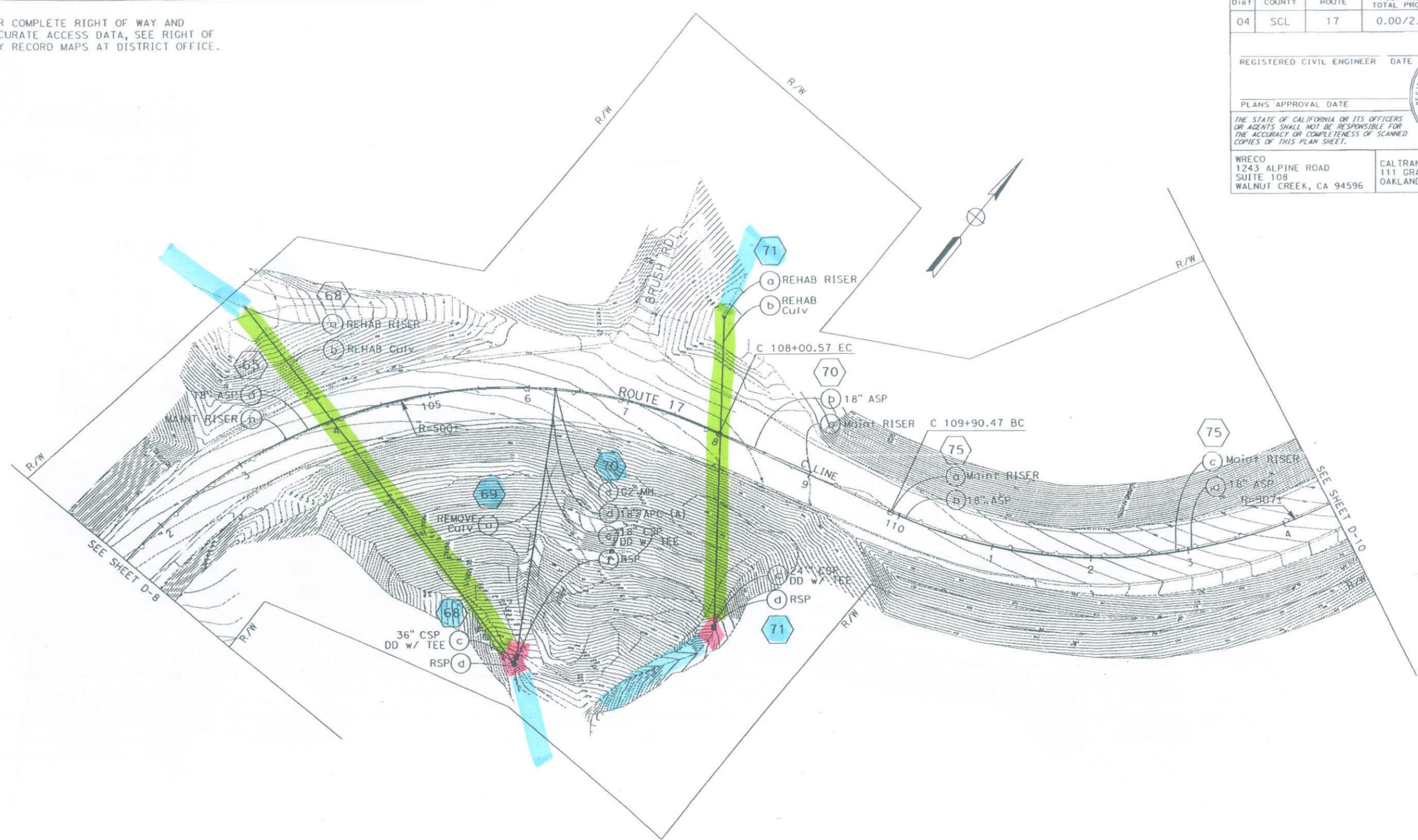
D-8



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	17	0.00/2.83		
REGISTERED CIVIL ENGINEER		DATE			
PLANS APPROVAL DATE					
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FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG
 CALCULATED-DESIGNED BY: JENNIFER ABRAMS
 CHECKED BY: CHRIS SEWELL
 REVISED BY: JENNIFER ABRAMS
 DATE REVISED: CHRIS SEWELL

FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN
 SCALE: 1"=50'
D - 9

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

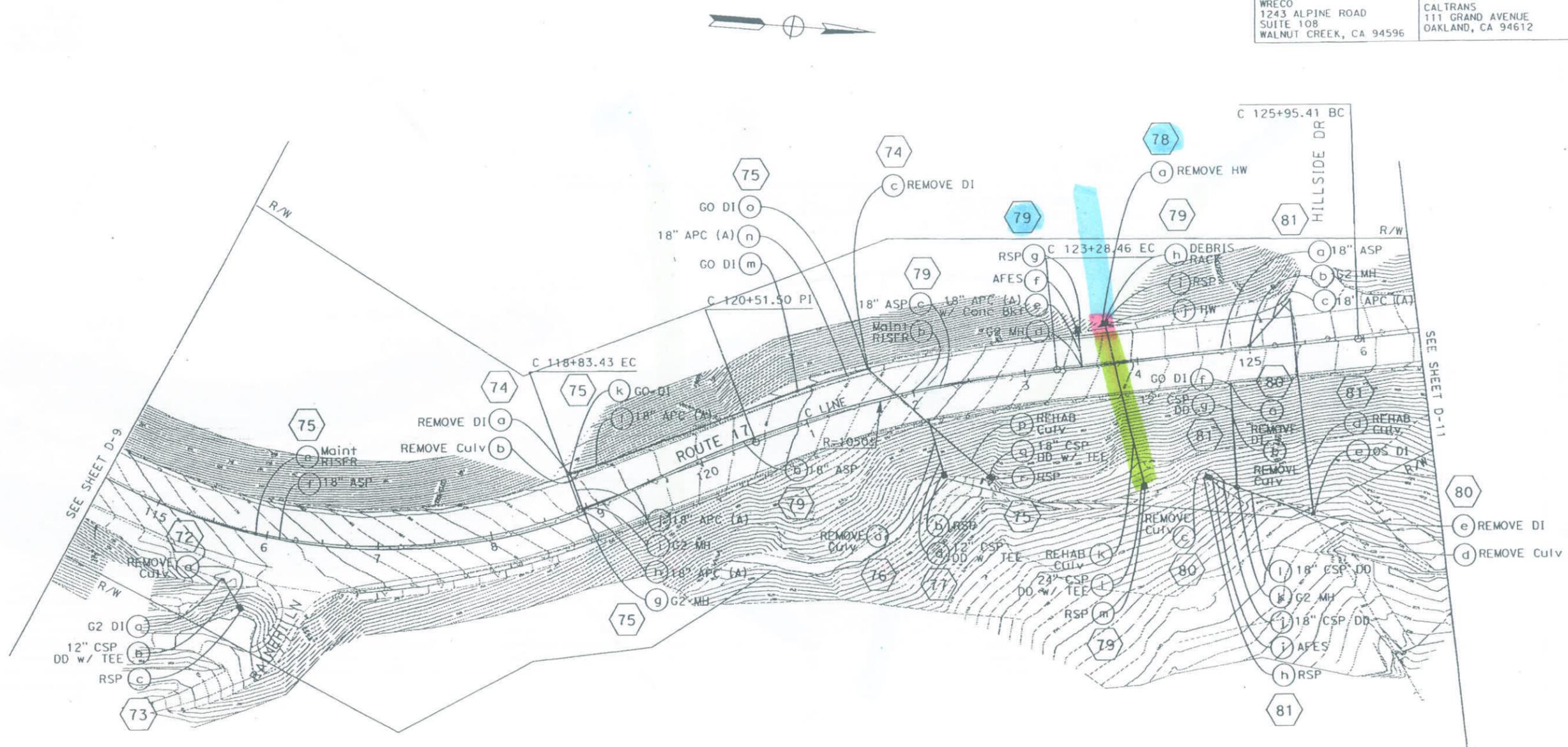
REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
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Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR HAN-BIN LIANG
 CALCULATED-DRAWN BY JENNIFER ABRAMS
 CHECKED BY CHRIS SEWELL
 REVISED BY DATE REVISION



FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN
 SCALE: 1"=50'
D-10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

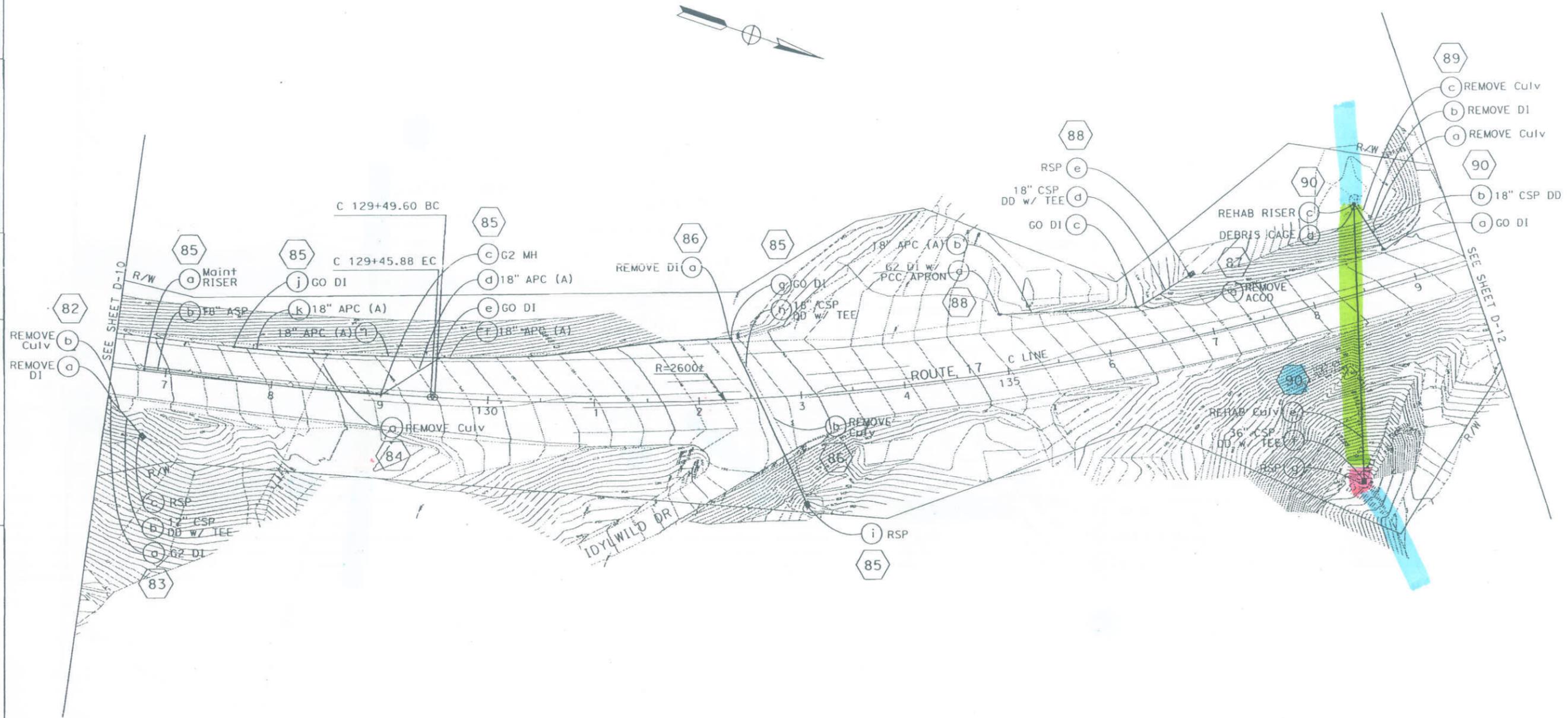
REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISED BY
Caltrans	HAN-BIN LIANG	CHECKED BY	JENNIFER ABRAMS
			CHRIS SEWELL
			DATE REVISED



FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE: 1"=50'

D-11



FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	17	0.00/2.83		

REGISTERED CIVIL ENGINEER DATE _____

PLANS APPROVAL DATE _____

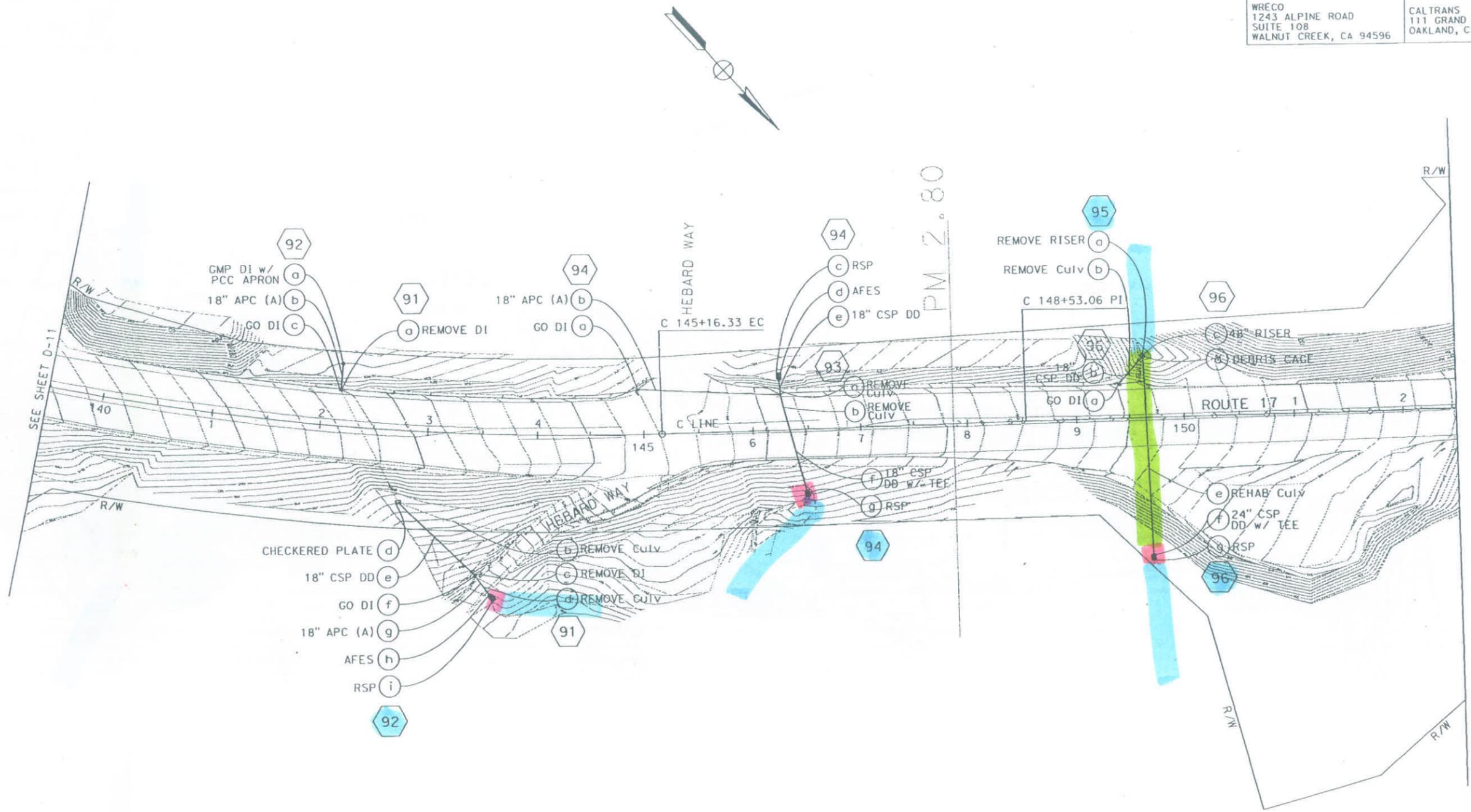
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111 GRAND AVENUE
OAKLAND, CA 94612

REGISTERED PROFESSIONAL ENGINEER
HAN-BIN LIANG
No. C 48404
Exp. 6/30/10
CIVIL
STATE OF CALIFORNIA

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG
 CALCULATED-DESIGNED BY: JENNIFER ABRAMS
 CHECKED BY: CHRIS SEWELL
 REVISED BY: _____
 DATE REVISED: _____



FOR NOTES, ABBREVIATIONS AND/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN
 SCALE: 1"=50'
D-12



Attachment E

Nationwide Permits

Nationwide Permit 3

2007 Nationwide Permits (effective 19 March 2007)

3. *Maintenance.*

(a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable, structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This NWP authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris in the vicinity of and within existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) and the placement of new or additional riprap to protect the structure. The removal of sediment is limited to the minimum necessary to restore the waterway in the immediate vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend further than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an upland area unless otherwise specifically approved by the district engineer under separate authorization. The placement of riprap must be the minimum necessary to protect the structure or to ensure the safety of the structure. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the district engineer.

(c) This NWP also authorizes temporary structures, fills, and work necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation or beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

Notification: For activities authorized by paragraph (b) of this NWP, the permittee must submit a preconstruction notification to the district engineer prior to commencing the activity (see general condition 27). Where maintenance dredging is proposed, the pre-construction notification must

2007 Nationwide Permits (effective 19 March 2007)

include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Sections 10 and 404)

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act Section 404(f) exemption for maintenance.

Nationwide Permit 13

2007 Nationwide Permits (effective 19 March 2007)

13. Bank Stabilization.

Bank stabilization activities necessary for erosion prevention, provided the activity meets all of the following criteria:

- (a) No material is placed in excess of the minimum needed for erosion protection;
- (b) The activity is no more than 500 feet in length along the bank, unless this criterion is waived in writing by the district engineer;
- (c) The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark or the high tide line, unless this criterion is waived in writing by the district engineer;
- (d) The activity does not involve discharges of dredged or fill material into special aquatic sites, unless this criterion is waived in writing by the district engineer;
- (e) No material is of the type, or is placed in any location, or in any manner, to impair surface water flow into or out of any water of the United States;
- (f) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and,
- (g) The activity is not a stream channelization activity.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if the bank stabilization activity: (1) Involves discharges into special aquatic sites; (2) is in excess of 500 feet in length; or (3) will involve the discharge of greater than an average of one cubic yard per running foot along the bank below the plane of the ordinary high water mark or the high tide line. (See general condition 27.) (Sections 10 and 404)

Memorandum

*Flex your power!
Be energy efficient!*

To: MS. OFELIA ALCANTARA
Supervising Bridge Engineer
Bridge Design West
Structures Design

Date: August 11, 2009

Attention: M0mran

File: 04-SCL-17, PM 0.0/2.8
04-264901
Wet Pavement Correction Project

From: M. ZABOLZADEH/ S. AWAD
Assoc M & R Engineer/Transportation Engr
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

S.A
H. Nikouei
HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject: Foundation Report for Soldier Pile Wall

Per your request, we are submitting the Foundation Report for the proposed Soldier Pile wall for the above referenced project on northbound Route 17 at PM 1.55 in Santa Clara County. The project area is located 1.3 miles north of Summit Road. The recommendations contained in this report are based on the result from subsurface exploration and field mapping of the site.

1. INTRODUCTION

For background of the slipout refer to the attached Memorandums dated November 20, 2008, and June 11, 2009 for the proposed alternatives (secant wall with MBGR installed on the piles, soldier pile wall with wood lagging and secant wall with PCC shoulder slab and concrete barrier) to repair the slipout. Alternative 1, constructing soldier pile wall with wood lagging, was deemed the most feasible alternative.

2. SCOPE OF WORK

Work performed for this investigation, included field mapping, drilling two boring (R-09-001 and R-09-002), reviewing the available information on the site geology, seismicity and subsurface soil/rock conditions.

MS. OFELIA ALCANTARA

August 11, 2009

Attn: M. Omran

Page 2

3. GEOLOGY

3.1 Regional

Located within the Coast Range geomorphic province of California, the geology of the region consists of northwest-trending ridges, gently sloping hills, intermontane valleys, and large elongated depressions. The San Andreas Fault system, the most prominent geologic feature in the area, includes the San Andreas Fault as well as numerous splays, including the Hayward and Calaveras Faults, which together take up strain between the northward migrating Pacific plate and the southward (relatively) moving North American plate. The major faults within the system are predominantly right-lateral, strike-slip faults with some compressional component, and these act together to form the prominent ridges and valleys. The San Francisco Bay, a partially filled northwest-trending depression extending from the Santa Clara Valley in the south to the Petaluma Valley in the north, is a direct result of these fault interactions.

3.2 Site

Site geology is taken from the 30X60 San Jose Sheet (Wentworth, et al., 1999) and from geotechnical borings retrieved at the site.

The project lies in close proximity to the San Andreas Fault, which in this area juxtaposes the Santa Cruz block from Franciscan Terrane. The Santa Cruz block is comprised of Cretaceous plutonic basement rocks overlain by Tertiary marine and nonmarine sedimentary units. The site is underlain by the Rices Mudstone member of the San Lorenzo Formation. This unit is characterized by light gray mudstone, locally bioturbated and glauconitic, near the top of the formation, and glauconitic, arkosic sandstone deeper within the unit.

3.3 Faulting and Seismicity

The San Andreas Fault passes within less than 1 mile of the project site. It could be expected that the site could experience extreme ground shaking and the possibility of fault rupture exists. The table below lists the faults within near proximity to the project site, their maximum credible earthquake, and expected peak ground acceleration.

MS. OFELIA ALCANTARA

August 11, 2009

Attn: M. Omran

Page 3

FAULT	Distance from project	Maximum Credible Earthquake	Peak Ground Acceleration
San Andreas	< 1 mi	7.75	0.72 g
Calaveras	17 mi	7.5	0.18 g
San Gregorio	16 mi	7.5	0.19 g

4.0 FOUNDATION SOIL AND GROUNDWATER

The Office of Geotechnical Design-West, Division of Engineering Services, investigated the subsurface conditions at the site. The foundation investigations consisted of drilling two power borings by mud rotary drill boring (R-09-001 and R-09-002) near PM 1.55, at Stations 82+45 & 81+85, respectively. Borings (R-09-001 and R-09-002) were drilled to the depths of 51.5 feet and 46.5 feet, respectively. Soil was sampled every 5 feet using a Standard Penetration Test (SPT) sampling.

Free groundwater was encountered in boring R-09-001 at approximately 7.5 feet below ground surface at the time of drilling (July 2009). However, groundwater elevations fluctuate seasonally and may be encountered at higher elevations.

According to the samples extracted from boring R-09-001 data, the boring describes the foundation soils as approximately 13 feet of soft to stiff sandy lean clay with gravel. This was overlain by 5 feet of soft sandy silt with gravel. The remainder of the boring describes the foundation soils/rocks as a mixture of sedimentary rock (sandstone to mudstone), fine-grained, slightly to intensely weathered, very soft to very hard, intensely fractured. Boring R-09-002 describes the foundation soils as approximately 8 feet of dense clayey gravel with sand. The remainder of the boring describes the foundation soils/rocks as a mixture of sedimentary rock (sandstone to mudstone), fine to medium - grained, slightly to intensely weathered, moderately soft to very hard and moderately to intensely fractured.

The unconfined compressive strength of the clayey soil (using a pocket penetrometer) was estimated to range between 0.5 tsf and 4 tsf. The SPT blow count values ranged from 14 blows per foot to as high as 50 (refusal) blows per foot. Log of Test Boring (LOTBs) sheets should be included with the contract plans and will be forwarded to you upon completion.

MS. OFELIA ALCANTARA
August 11, 2009
Attn: M. Omran
Page 4

The moisture content of the subsurface soils ranged from 9.8 to 34.2 percent, indicating a moist to wet condition.

The laboratory test results on the soil samples taken during our site explorations are presented in the attached EXHIBIT A.

5. CONCLUSIONS/RECOMMENDATIONS FOR SOLDIER PILE WALL

Based on the submitted plans and cross-sections, the proposed soldier pile wall with wood lagging will be constructed between Station 81+50 and Station 83+15. The wall will be constructed about 7 ft east of the existing embankment hinge point in order to provide a 10 ft wide standard shoulder. Based on the above, the design height of the wall is about 14 ft. Office of Structures Design will determine exact location of the wall. See attached Exhibit B for details.

We recommend that the soldier piles be designed to act as a 14 feet high (min).

We recommend that the proposed soldier pile wall be designed for the following:

Earth Pressures

The wall should be designed for the following:

For active pressure against the wall, use the following from the ground surface to the dredge line use:

- Internal friction angle $\phi = 28^\circ$, $C = 750$ psf & soil moist unit weight (γ) = 120 lb/ft³.
- For earth pressure distribution, use a triangular pressure distribution.
- A rectangular pressure diagram from top of the wall to a depth of 10 ft for traffic surcharge equivalent to 2 ft of fill.
- The wall shall be capable of resisting an additional seismic uniform earth pressure estimated to be equal to 40H psf.

MS. OFELIA ALCANTARA
August 11, 2009
Attn: M. Omran
Page 5

For *passive pressure* against the soldier piles, use the following input:

From the dredge line to the depth of 50 ft below the roadway:

- Internal friction angle $\phi = 36^\circ$, $C = 1000$ psf & soil moist unit weight (γ) = 125 lb/ft³.
- Isolation Factor = 3.0

Vertical CIDH Pile Capacities and Penetration Depth

The ultimate vertical compression and tension capacities of piles may be calculated using the following design parameters:

Use ultimate unit pile shaft friction of 4 ksf per unit surface area of the pile length below the dredge line of the wall.

Use 60 percent of the compression shaft resistance values mentioned above to calculate the ultimate tension (uplift) resistance of the pile.

For ultimate pile tips compression, use bearing pressure of 130 ksf per unit tip.

The above recommendations are based on parameters established by our field exploration and engineering judgment.

6. CORROSION INVESTIGATION

Caltrans currently considers a site to be corrosive to foundation elements if one or more of the following conditions exists: Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less.

Based on the result of a corrosion test conducted on representative samples of the fill materials encountered in our investigation (See the test result in Exhibit A), the soil may be considered as non-corrosive.

MS. OFELIA ALCANTARA

August 11, 2009

Attn: M. Omran

Page 6

7. CONSTRUCTION CONSIDERATIONS

Because of the existence of groundwater, the contractor should be prepared for dewatering during drilling holes for CIDH piles. Casing may also be needed due to the sandy nature of the soils.

If you have any questions or need additional information, please call S. Awad at (510) 622-5443 or M. Zabolzadeh at (510) 286 4831 or Hooshmand Nikoui, Branch Chief at (510) 286-4811.

Attachments:

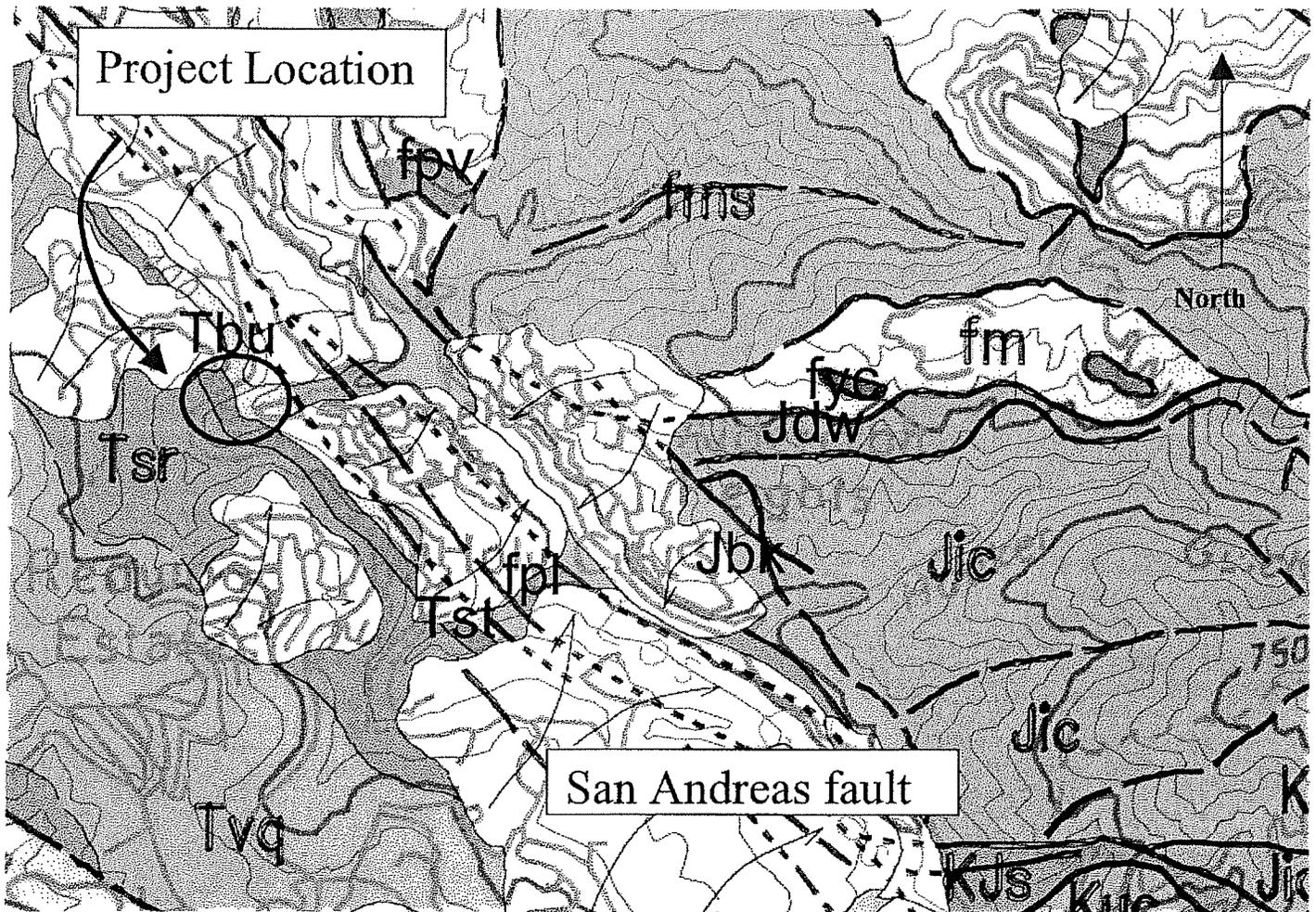
c: TPokrywka, HNikoui, MZabolzadeh, SAwad, SENjily, Daily File, Project File

SAwad /mm/04-264901(FR)



LIST OF FIGURES

1. Approximate Location of Soldier Pile Wall
2. Regional Fault Map



Geologic Units

- Tvq** Vaqueros Sandstone
- Tsr** Rices Mudstone (San Lorenzo Formation)
- Tst** Twobar Shale (San Lorenzo Formation)
- Tbu** Butano Sandstone

- KJs** Great Valley Mudstone

- Jic** Coast Range Ophiolite Intrusives
- Jbk** Coast Range Ophiolite Basaltic rocks
- Jdw** Coast Range Ophiolite Cumulate rocks

- fm** Franciscan Complex Melange
- fyc** Franciscan Complex Chert
- fpl** Franciscan Complex Limestone
- fms** Franciscan Complex Graywacke

Map Legend

Scale 1:25000

- **Contact**
- - - - - **Contact, approximately located**
- · · · · **Contact, inferred**
- · · · · **Contact, concealed**
- **Fault**
- - - - - **Fault, approximately located**
- · · · · **Fault, inferred**
- - - ? - - - **Fault, uncertain**
- · · · · **Fault, concealed**
- - - ? - - - **Fault, concealed and uncertain**

-  **Landslide**

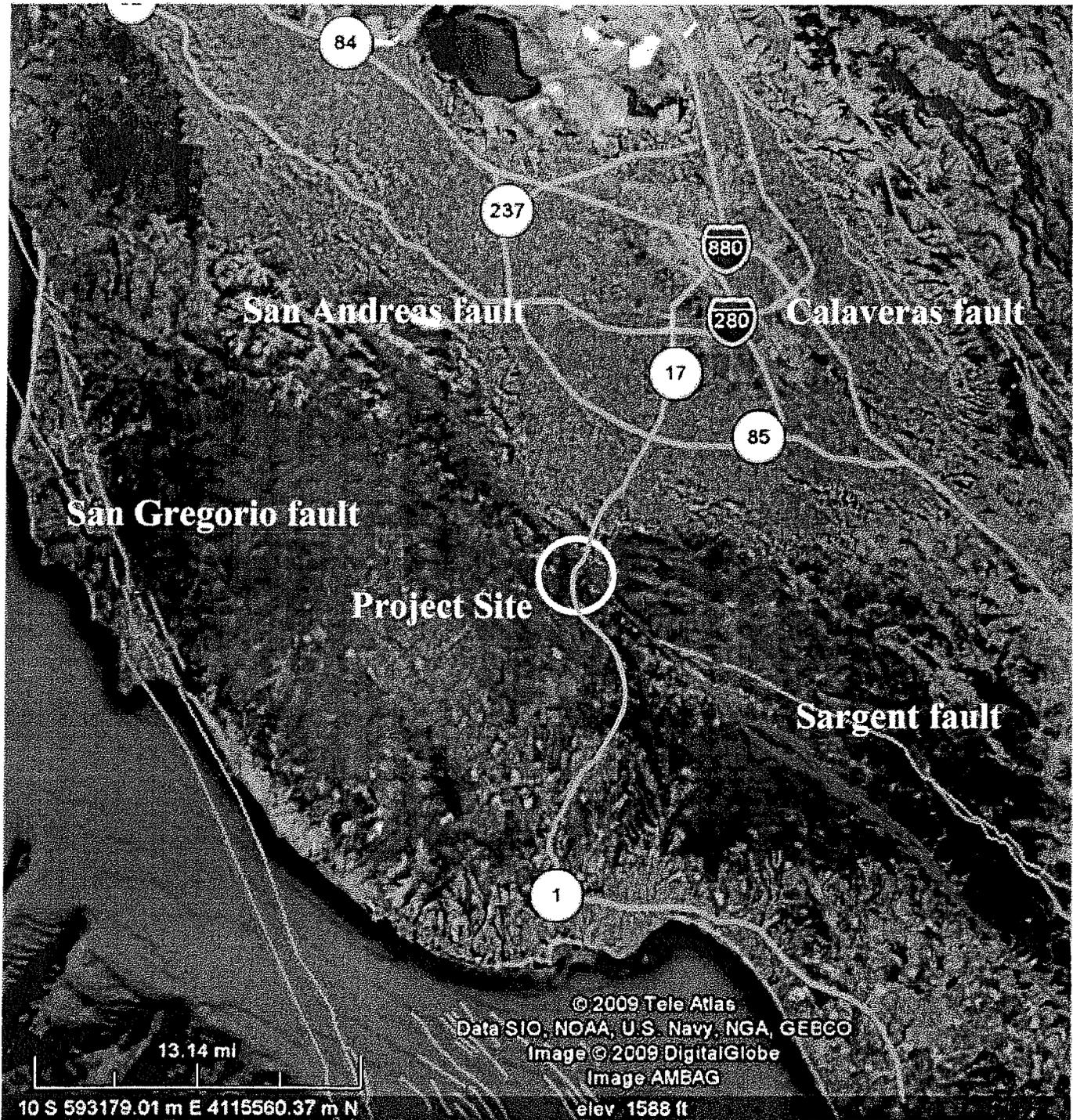
Reference: Wentworth, C.M., *et al*, 1999, Preliminary Geologic Map of the San Jose 30X60-Minute Quadrangle, California, USGS Open File Report 98-795



Figure 1: Geology Map

04-SCL-17
EA 04-264901

PM 1.55
August 2009



U.S. Geological Survey and California Geological Survey, 2006, Quaternary fault and fold database for the United States, 12/01/2008, from USGS web site:
<http://earthquakes.usgs.gov/regional/qfaults/>
 Base map from Google Earth 2008

- Faults with historic movement
- Faults with Holocene movement



Figure 2: Regional Fault Map
 04-SCL-17 PM 1.55
 EA 04-264901 August 200

Exhibit A

MOISTURE CONTENT DETERMINATION
(CTM 226)

County : SCL Route : 17 P.M. : _____ E.A. : 04-264901 Job No. : 7916

Limits : _____ Date Calculated : 08/10/09 R.E. : Samuel Awad

Date Received : _____ Date Reported : AUG 11 2009 By : AU PAGE : 1 OF 1

HOLE	SAMPLE	DEPTH	TEST (MC/PI/MA/GRAD)	GROSS WEIGHT		TARE Weight	NET WEIGHT		MOISTURE	
				Wet	Dry		Wet	Dry	Weight	% Moisture
R-09-001	1	10'-11.5'	MC	626.6	553.1	338.3	288.3	214.8	73.5	34.2%
	2	15'-16.5'	MC	887.1	771.8	253.5	633.6	518.3	115.3	22.2%
	3	20'-21.5'	MC	615.5	560.0	99.3	516.2	460.7	55.5	12.0%
	4	25'-26.5'	MC	670.1	598.0	99.8	570.3	498.2	72.1	14.5%
	5	30'-31.5'	MC	669.0	578.4	101.0	568.0	477.4	90.6	19.0%
	6	35'-36.5'	MC	447.3	392.4	100.8	346.5	291.6	54.9	18.8%
	7	40'-40.5'	MC	539.4	480.6	101.0	438.4	379.6	58.8	15.5%
	8	45'-46.5'	MC	436.5	383.4	100.9	335.6	282.5	53.1	18.8%
	9	50'-51.5'	MC	512.9	465.7	98.5	414.4	367.2	47.2	12.9%
R-09-002	1	5'	MC	464.2	411.5	153.0	311.2	258.5	52.7	20.4%
	2	10'-11.5'	MC	423.8	395.4	159.2	264.6	236.2	28.4	12.0%
	3	15'-16.5'	MC	665.8	598.5	178.1	487.7	420.4	67.3	16.0%
	4	20'-21.5'	MC	746.1	665.2	157.2	588.9	508.0	80.9	15.9%
	5	25'-26.5'	MC	587.4	545.0	181.0	406.4	364.0	42.4	11.6%
	6	30'-31.5'	MC	486.4	456.9	156.5	329.9	300.4	29.5	9.8%
	7	35'-36.5'	MC	596.6	543.6	159.5	437.1	384.1	53.0	13.8%
	8	40'-41.5'	MC	631.1	569.5	157.4	473.7	412.1	61.6	14.9%

MC - Moisture Content PI - Plasticity Index MA - Mechanical Analysis
 MC Test Only - 230°F Oven; w/ PI and/or MA Tests - 140°F Oven; w/ AC Material - 100°F Oven

916-1P
 JUL 27 2009
 AUG 03 2009

CALC. BY: []
 APPROVED BY: []
 DATE REPORTED: []
 DISTRICT DIR. []
 OIS. MAT. S. []
 RESIDENT ENGINEER []
 CONSTRUCTION []

REPORT OF TESTS ON

Soil

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	SPECIFIC LIMITS SOUGHT	REPORT OF TESTS ON			
						SOURCE	CHARGE	ACTIVITY OR OBJECT	EXPERIMENTAL AUTHORITY
3									
2 1/2									
2									
1 1/2									
1									
3/4									
1/2									
3/8									
4									
B									
16									
30									
50									
100									
200									
500									
1000									
2000									
4000									
7500									

JUL 27 2009
 PRELIMINARY TESTS []
 PROCESS TESTS []
 ACCEPTANCE TESTS []
 INDEPENDENT TESTS []
 ASSURANCE TESTS []
 SPECIAL TESTS []
 SAMPLE SENT TO: []
 FOUNDATION
 Native Soil
 depth 5'-7"

GRAVING AS USED WAS OBTAINED AS FOLLOWS:
 % BY WT. % BY VOL. TEST NO. DESCRIPTION
 100% 100% 10001-1M (MUD)
 REMARKS: pH = 7.0-7.5
 spec's 5.16 (MUD)

TEST RESULTS	SPEC.	SP. A.N.	SP. B.N.	SP. C.N.	SP. D.N.
AS REC'D					
CRUSHED					
COMBINED					
GRADE					
100 REV.					
500 REV.					
REL. COMPACTIC					
DENSITY					
MOISTURE					
% REL. COMP.					

EXUDATION PRESSURE []
 AT EQUILIBRIUM []
 INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET) []
 RICHARD CHAN
 DISTRICT MATERIALS ENGINEER
 BRANCH CHIEF, MATERIALS B

7916-1P
 51-51K
 111 Grand Ave, Oakland CA
 DATE SAMPLED: 7/20/09
 BY: S. Award
 TITLE: 7E
 O.K. - SCL-17-PH 0.0/0.8
 O.K. - 26K 0.0/1
 MAIL TO SAME DESTINATION AS SAMPLE
 EXUDATION PRESSURE (PSI)

TEST NO. **Q1088-5P**

DATE RECEIVED **JUL 23 2009**
 DATE REPORTED **AUG 03 2009**

APPROVED BY _____
 CALC. BY _____

DISTRICT DIR _____
 RESIDENT ENGINEER _____
 CONSTRUCTION _____

DATE OF TRANSFORMATION _____
 LOCATION CARD _____
 CHAR. NO. _____

GRADING ANALYSIS

SIEVE	AS RECEIVED	RET. CR.	ADJ. OR COMB. GRADE	AS USED	SPECIF. LIMITS	SOUGHT
-------	-------------	----------	---------------------	---------	----------------	--------

REPORT OF TESTS ON

SOIL

IF CONTRACT USE CONTRACT ITEM	CHANGE	EXPENDITURE AUTHORIZATION	AMOUNT
SOURCE			
SPECIAL DESIGNATION (USE WHEN APPLICABLE)			
ACTIVITY OR OBJECT			

1	TEST SPECIMEN	A	B	C	D
2	DATE TESTED				
3	COMPACTOR FOOT PRESSURE P.S.I.				
4	INITIAL MOISTURE				
5	SOAK WATER ML				
6	WATER ADDED-ML (TOTAL)				
7	WATER ADDED				
8	MOISTURE AT COMPACTION				
9	WET WT. OF BRIOUETTE-GMS				
10	HEIGHT OF BRIOUETTE-INCHES				
11	DRY DENSITY OF BRIOUETTE-GM/CC				
12	STABILOMETER P _s AT 2000 LBS				
13	DISPLACEMENT				
14	R-VALUE BY STABILOMETER				
15	EXUDATION PRES. P.S.I.				
16	THICK. BY STAB FEET				
17	EXPANSION OAL READING				
18	THICK. BY EXP. PRESS. FEET				
19	R-VALUE BY EXPANSION				

GRADING AS USED WAS OBTAINED AS FOLLOWS:
 % BY WT. % BY VOL. TEST NO. DESCRIPTION

RESISTIVITY = 2.113
Speed: 1000 LBS (MID)

PH = 6.5 (MID)
Speed: 5.5 (MID)

REMARKS: _____

TEST RESULTS: _____

AS REC'D _____
 CRUSHED _____
 COMBINED _____
 GRADE _____
 100 REV _____
 500 REV _____

REL. COMPACTIO _____
 DENSITY _____
 IN PLACE _____
 MOISTURE _____
 % REL. COMP. _____

EXUDATION PRESSURE _____
 AT EQUILIBRIUM _____
 SPEC _____

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET) _____

TRAFFIC INDEX _____

GRAVEL EQUIVALENT FACTOR _____

EXUDATION PRESSURE _____

EXPANSION PRESSURE _____

AT EQUILIBRIUM _____

SPEC _____

INDICATED MINIMUM THICKNESS OF COVER FOR ABOVE CONDITIONS (FEET) _____

RICHARD CHAN
 DISTRICT MATERIALS ENGINEER
 BRANCH CHIEF MATERIALS B

PRELIMINARY TESTS _____
 FINISH TESTS _____
 ACCEPTANCE TESTS _____
 INDEPENDENT ASSURANCE TESTS _____
 SPECIAL TESTS _____

FOUNDATION

DEPTH: **11'-0" - 002' depth tests**

LOCATION OF SOURCE: **NATIVE SOIL**

THIS SAMPLE IS SHIPPED IN _____
 AND IS ONE OF _____ SAMPLES
 GROUP OF _____

DATE SAMPLED: **7/2/08**

TEST RESULTS REQUIRED: _____
 AVAILABLE: _____
 DATE NEEDED: _____

OWNER OR MANUFACTURER: _____
 PERMITS: _____

LABORATORY: **COLPAC**

DATE: **7/2/08**

BY: **S. AWARD**

DIST. CO. FILE NO. _____

OH - SON - 121/116 - PM 6.68

OH - 222301

1-185 - P 2015

MAIL TO SAME DESTINATION AS ABOVE

EXUDATION PRESSURE (PSI)

Q1088-5P

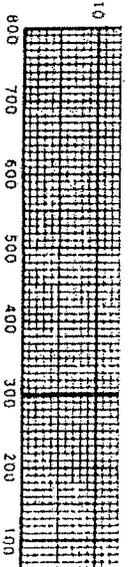
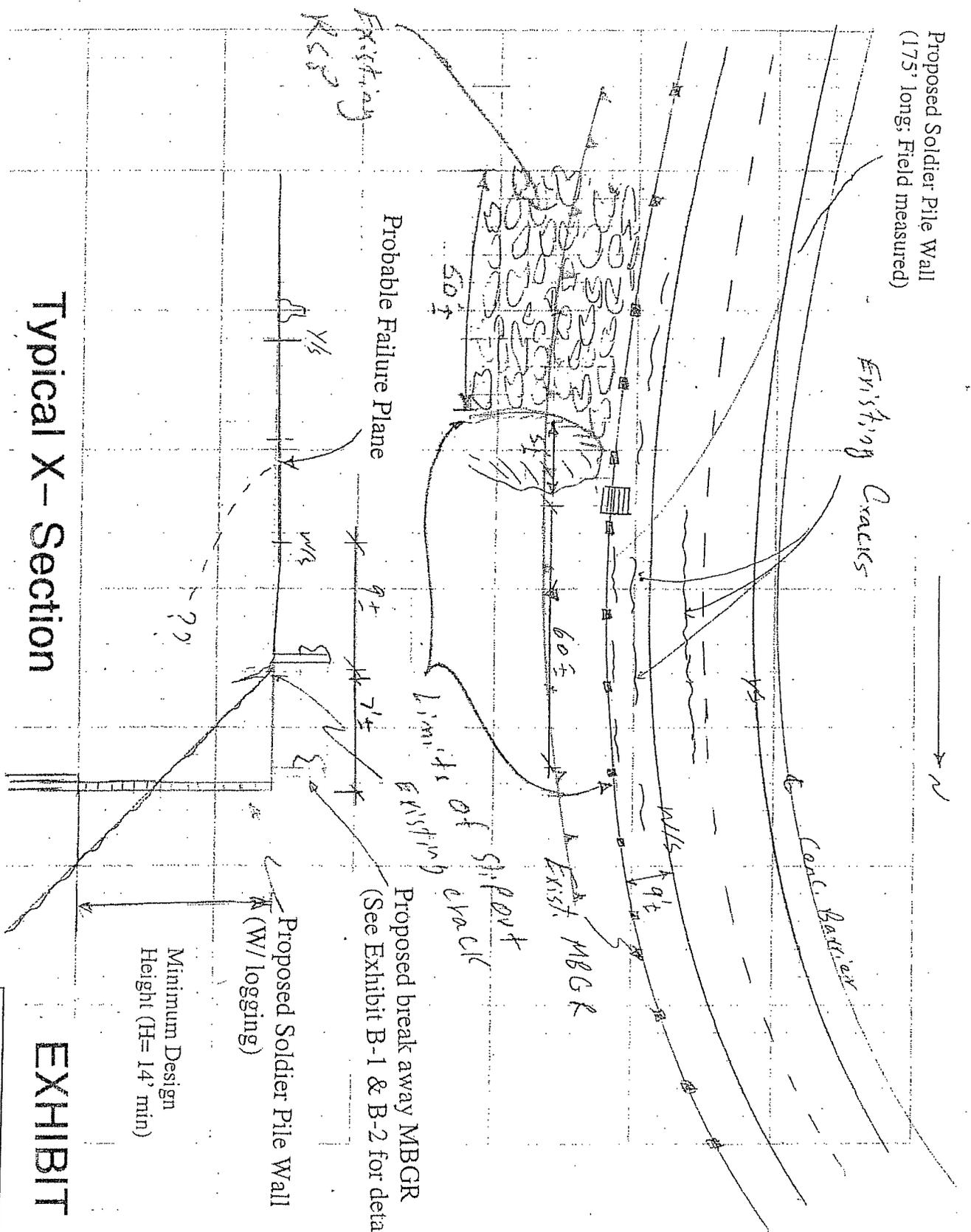


Exhibit B

Proposed Soldier Pile Wall
(175' long; Field measured)



Typical X- Section

Alternative 1 (Soldier Pile Wall w/wood lagging)

EXHIBIT B

04-SCL-17	PM 1.55
EA 04-264901 August	

Memorandum

*Flex your power!
Be energy efficient!*

To: MR. SHAWN ENJILY
District Branch Chief
Design South-Santa Clara "B"

Date: June 11, 2009

File: 4-SCL-17-PM 0.0/2.8
04- 264901
Wet Pavement Correction
Project

MZ *S.A*
From: M. ZABOLZADEH/S. AWAD
Transportation Engineer
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

H. Nikoui
HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject: Geotechnical Investigation at PM 1.55

Per your request dated May 12, 2009, we inspected the slipout below the roadway along the northbound side slope of Route 17 at PM 1.55 in Santa Clara County. A field meeting was held on May 14, 2009 with Geotechnical, Design, Geology and Traffic. For background of the slipout, refer to the attached memorandum dated November 20, 2008.

Based on our site visit, we observed the following:

- Within the limits of the slipout, Route 17 is constructed in cut/fill section of an existing hill with side slope of 1:1.
- There were longitudinal cracks (about 60 ft long) in Lane # 2 adjacent to the existing white stripe and in the 9 ft wide shoulder area. This suggests that the head scarp of the failure plane may be extended into Lane #2. The total length of the slipout along the existing MBGR is measured to be about 180 ft long. See Exhibit A.
- Relatively deep cracks (estimated 2 ft deep) were observed behind the existing AC dike.
- There was visible erosion on the side slope
- The existing MBGR and wood posts were leaning outward.

FOUNDATION REVIEW

DIVISION OF ENGINEERING SERVICES GEOTECHNICAL SERVICES

To: **Structure Design**

1. Preliminary Report
2. R.E. Pending File
3. Specifications & Estimates
4. File

Date: 2/25/2010

Geotechnical Services

1. GS (Sacramento)
2. GS

Retaining Wall @ PM 1.55
Structure Name

<u>04</u>	<u>SCL</u>	<u>17</u>	<u>1.55</u>
District	County	Route	Post Mile

District Project Development Shaw Engily
District Project Engineer

04-264901 37E0057
E.A. Number Structure Number

Foundation Report By: Mohammad Zabolzadeh/Sam Awad

Dated: 1/13/2010

Reviewed By: Muthanna Omran (OSD)

Mohammad Zabolzadeh (GS)

General Plan Dated: 01/24/2010

Foundation Plan Dated: 1/24/2010

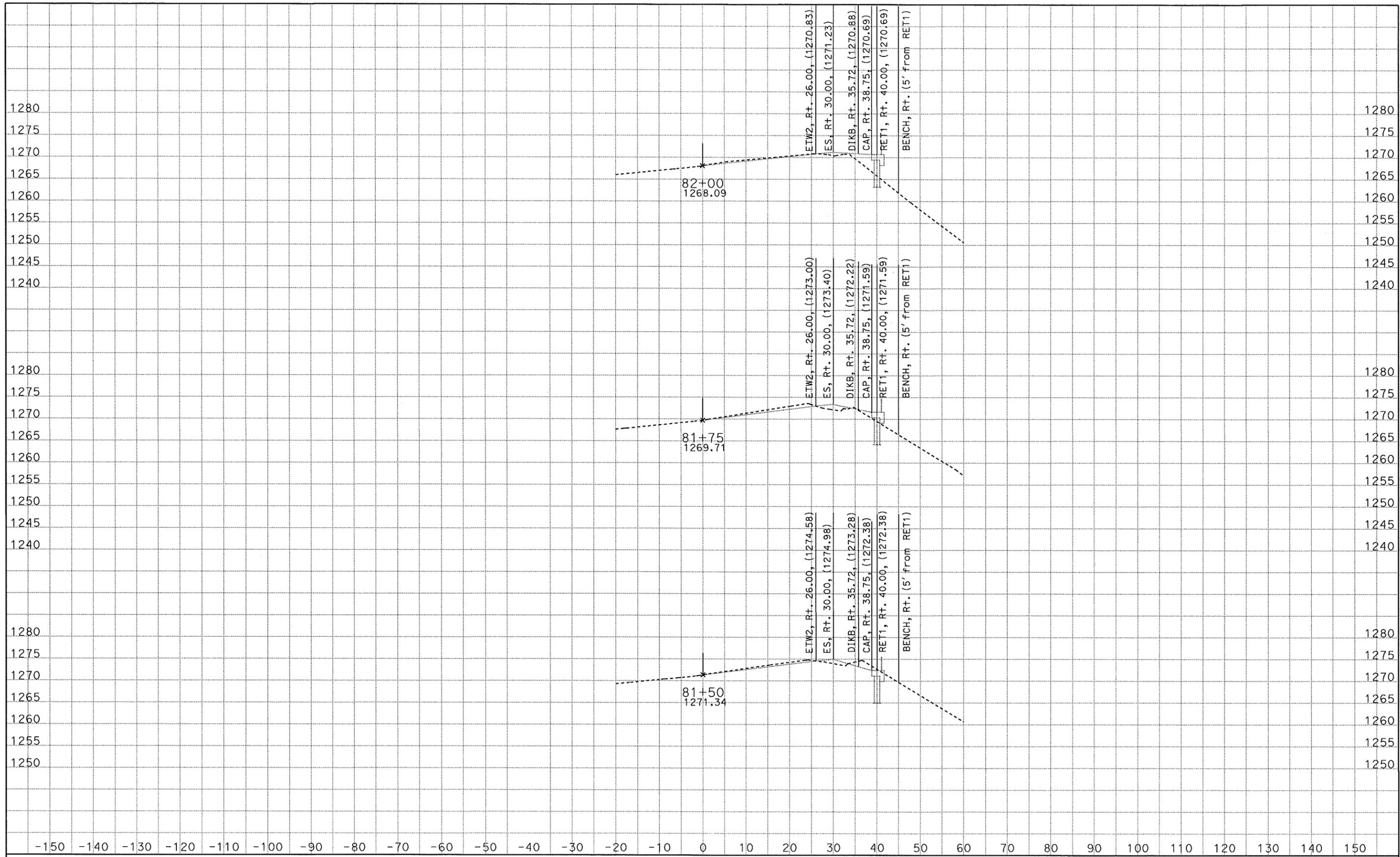
No changes. The following changes are necessary.

FOUNDATION CHECKLIST

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> Pile Types and Design Loads | <input type="checkbox"/> Footing Elevations, Design Loads, and Locations | <input checked="" type="checkbox"/> LOTB's |
| <input checked="" type="checkbox"/> Pile Lengths | <input type="checkbox"/> Seismic Data | <input type="checkbox"/> Fill Surcharge |
| <input checked="" type="checkbox"/> Predrilling | <input type="checkbox"/> Location of Adjacent Structures and Utilities | <input type="checkbox"/> Approach Paving Slabs |
| <input type="checkbox"/> Pile Load Test | <input checked="" type="checkbox"/> Stability of Cuts or Fills | <input type="checkbox"/> Scour |
| <input type="checkbox"/> Substitution of H Piles For | <input type="checkbox"/> Fill Time Delay | <input checked="" type="checkbox"/> Ground Water |
| <input type="checkbox"/> Concrete Piles <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Effect of Fills on Abutments and Bents | <input type="checkbox"/> Tremie Seals/Type D Excavation |

Mech. S. O. 16
Office of Structure Design Section No.

[Signature] 2/25/2010
Geotechnical Services



DATE: 5/10/2010

KC Project: 06035

File: D:\USERS\06035\cl4og.EAR

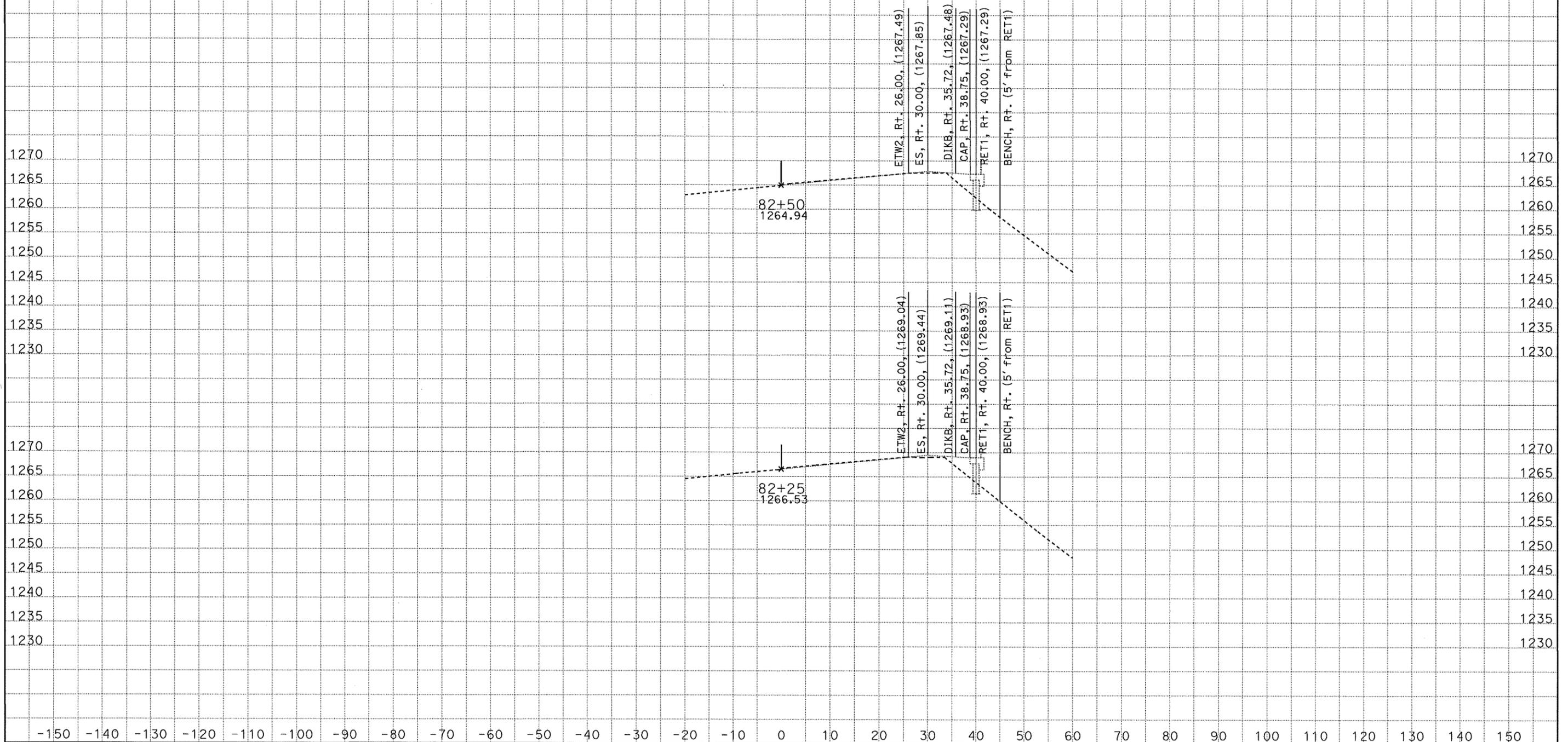
SCALE: 1" = 10' Horiz.
1" = 10' Vert.

All Dimensions are US Survey Feet

CL4
CROSS SECTIONS

SHEET 1 OF XXX

DESIGN STUDY ONLY



DATE: 5/10/2010
 KC Project: 06035

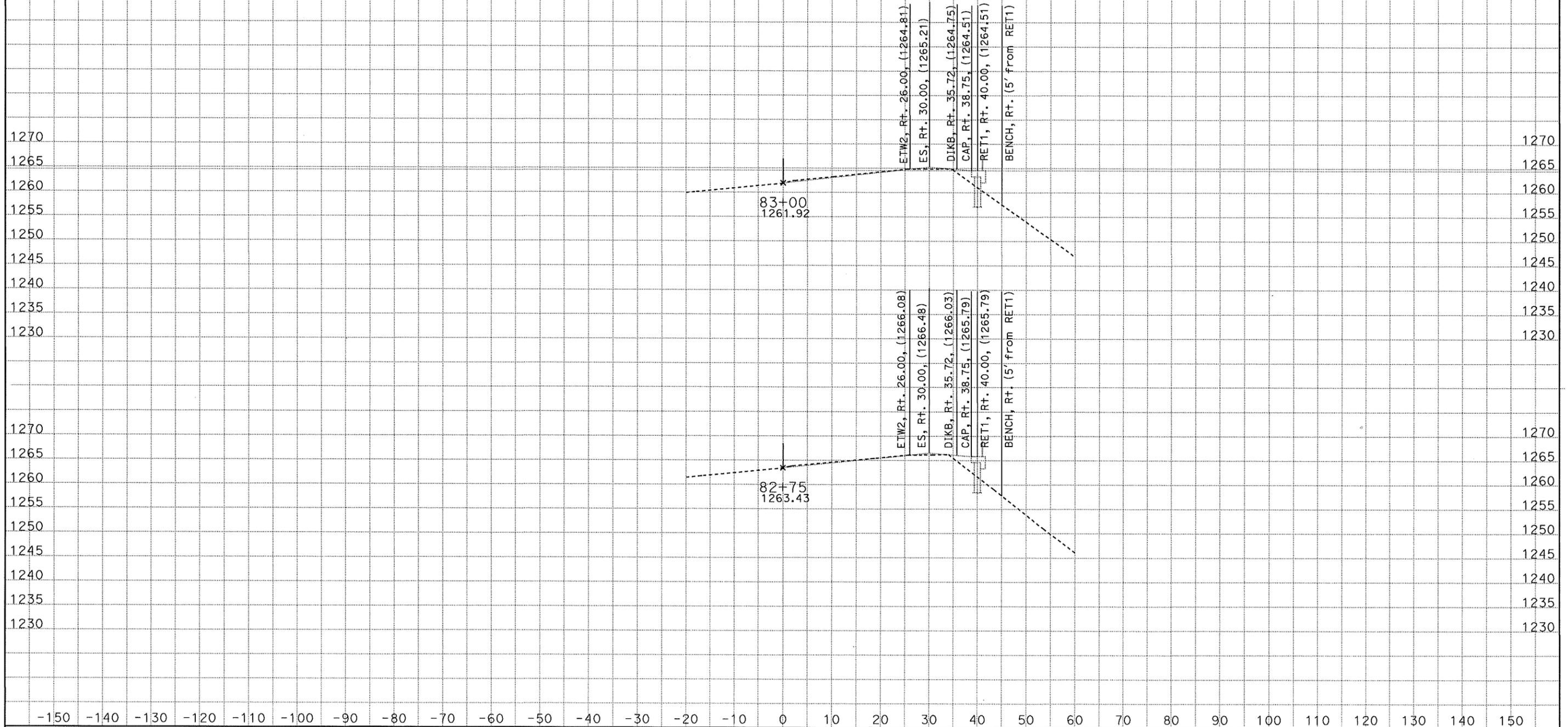
File: D:\USERS\06035\c14og.EAR

SCALE: 1" = 10' Horiz.
 1" = 10' Vert.

All Dimensions are US Survey Feet

CL4
CROSS SECTIONS
 SHEET 2 OF XXX

DESIGN STUDY ONLY



DATE: 5/10/2010
 KC Project: 06035

File: D:\USERS\06035\c14og.EAR

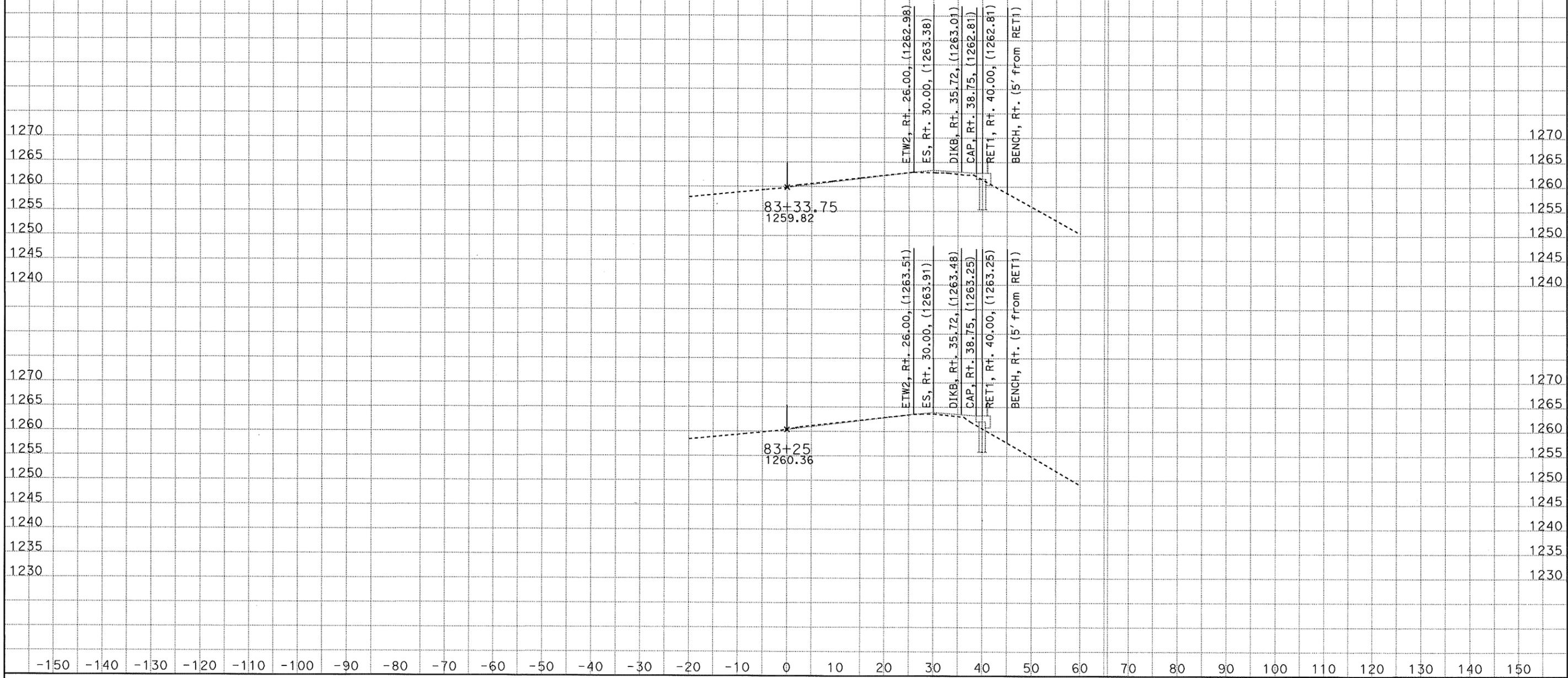
SCALE: 1" = 10' Horiz.
 1" = 10' Vert.

All Dimensions are US Survey Feet

CL4
CROSS SECTIONS

SHEET 3 OF XXX

DESIGN STUDY ONLY



DATE: 5/10/2010
 KC Project: 06035 File: D:\USERS\06035\c14og.EAR

SCALE: 1" = 10' Horiz.
 1" = 10' Vert.
 All Dimensions are US Survey Feet

CL4
CROSS SECTIONS
 SHEET 4 OF XXX

DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT
2211 Park Towne Circle, Suite 2
Sacramento, California 95825



Telephone (916) 574-2540
FAX (916) 574-2542

April 19, 2010

Department of Transportation
PO Box 496073
Oakland, CA 96049

Attention: R. Nashed

Subject: Underground Classification No's.: C168-085-10T thru C169-085-10T
Route 17 Improvements

Mr. Nashed:

The information provided to this office relative to the above project has been reviewed. On the basis of this analysis, Underground Classification of "Potentially Gassy with Special Conditions" has been assigned to the tunnels identified on your submittal. Please retain the original Classification for your records and deliver a true and correct copy of the Classification to the tunnel contractor(s) for posting at the job site.

When the contractor who will be performing the work is selected, please advise them to notify this office to schedule the mandated Prejob Conference with the Division prior to commencing any activity associated with boring of the tunnels.

Please be informed that whenever an employee enters any bore or shaft being constructed under 30 inches in diameter, the Mining and Tunneling Unit then has immediate jurisdiction over that job. Please contact the Mining and Tunneling Unit prior to entering such spaces.

If you have any questions on this subject, please contact this office at your earliest convenience.

Sincerely,

A handwritten signature in cursive script that reads "John R. Leahy".

John R. Leahy
Senior Engineer

cc: Ned McDougald
File



State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C168-085-10T

DEPARTMENT OF TRANSPORTATION

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

PO Box 496073, Oakland, California 96049

of

(MAILING ADDRESS)

ROUTE 17 IMPROVEMENTS – DS NO. 3

at

(LOCATION)

*** POTENTIALLY GASSY with Special Conditions***

has been classified as

(CLASSIFICATION)

as required by the California Labor Code Section 7955.

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

SPECIAL CONDITIONS

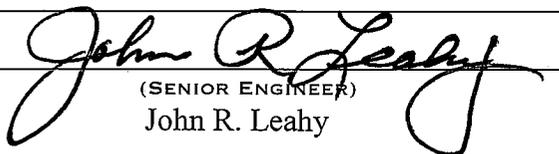
1. A Certified Gas Tester shall perform pre-entry and continuous monitoring of the underground environment to measure Oxygen and detect explosive, flammable, and toxic gasses whenever an employee is working in the underground environment.
2. Mechanical ventilation shall provide for continuous exhaust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

The 30-inch diameter by 119 feet long tunnel bore located under Route 17, at the intersection of Route 17 and Route 35 (Summit Road), Redwood Estates, Santa Clara County.

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

April 19, 2010

Date


(SENIOR ENGINEER)
John R. Leahy





State of California

Department of Industrial Relations

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
MINING AND TUNNELING UNIT

Underground Classification

C169-085-10T

DEPARTMENT OF TRANSPORTATION

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

of _____
PO Box 496073, Oakland, California 96049

(MAILING ADDRESS)

at _____
ROUTE 17 IMPROVEMENTS – DS NO. 62

(LOCATION)

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

(CLASSIFICATION)

as required by the California Labor Code Section 7955.

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

SPECIAL CONDITIONS

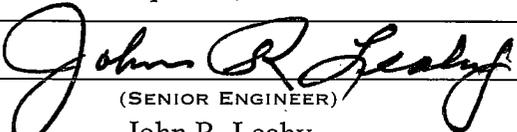
1. A Certified Gas Tester shall perform pre-entry and continuous monitoring of the underground environment to measure Oxygen and detect explosive, flammable, and toxic gasses whenever an employee is working in the underground environment.
2. Mechanical ventilation shall provide for continuous exhaust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

The 30-inch diameter by 78 feet long tunnel bore located under Route 17, approximately 0.42 miles south of the intersection of Route 17 and Brush Road, Redwood Estates, Santa Clara County.

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

April 19, 2010

Date _____



(SENIOR ENGINEER)
John R. Leahy

