SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
0.9 MILES NORTH OF STATE HIGHWAY 46
NEAR BRIDGE NO. 49C-345
EAST OF CAMBRIA, CA
CONTRACT NO. 245R12B595

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COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

NOTICE AND INSTRUCTIONS TO BIDDERS

FOR

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
0.9 MILES NORTH OF STATE HIGHWAY 46
NEAR BRIDGE NO. 49C-345
EAST OF CAMBRIA, CA
CONTRACT NO. 245R12B595

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
NOTICE TO BIDDERS

Sealed proposals will be received at the office of the County Clerk, 1055 Monterey Street, Room D-120, San Luis Obispo, California 93408 until 3:00 P.M. on Thursday, _____, 20__, which bids will then be opened and declared at 3:15 o'clock P.M. on the above mentioned date at a public meeting at 1055 Monterey Street, Room D-120, by the County Clerk, for the following Public Works Project:

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
0.9 MILES NORTH OF STATE HIGHWAY 46
NEAR BRIDGE NO. 49C-345
EAST OF CAMBRIA, CA
CONTRACT NO. 245R12B595

Any bid received at the Office of the Clerk of the Board of Supervisors of the County of San Luis Obispo after 3:00 P.M. on the date specified above shall not be considered, and shall be returned to the bidder unopened.

Bids are required for the entire work described herein.

A bound copy of a reduced size set of the Project Plans, the Agreement, the General and Special Provisions, and blank forms suitable for use in bidding on said work may be obtained from the Department of Public Works, Room 207, County Government Center, San Luis Obispo, CA 93408 and may be purchased therefrom for ($15.30) fifteen dollars and thirty cents, (tax included), per bound copy, said purchase cost not to be refunded. No bid will be considered which is not on the forms herein provided. **A full size set of the Project Plans and cross sections, if available, are charged separately at the department's current rates and will be provided only upon request.**

Pursuant to the provisions of Section 1773 of the California Labor Code, the Board of Supervisors of the County of San Luis Obispo has obtained from the Director of the California Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work for the locality in which the work is to be performed for each needed craft, classification, or type of workman. Copies of said prevailing rate of per diem wages are on file in the Office of the Clerk of the Board of Supervisors and available at the California Department of Industrial Relations' web site address at: www.dir.ca.gov/DLSR/PWD.

Bidders are advised that any contractor who is awarded a public works project and intends to use a craft or classification not shown on the general prevailing wage determination may be required to pay the wage rate of that craft or classification most closely related to it as shown in the general determinations effective at the time of the call for bids.

Travel and Subsistence Payments shall be in accordance with Section 1773.1 of the Labor Code. Wage rates for holiday and overtime work shall be in accordance with Section 1773 of the Labor Code. Attention is directed to the provisions in Sections 1777.5, 1777.6, and

1777.7 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor. Attention is directed to the provisions in Section 1776 of the Labor Code concerning payroll records.

Attention is directed to the provisions in Sections 1810 – 1815 of the Labor Code concerning work hours.

The bidder's attention is directed to the provisions of Section 2-1.02, "Required Listing of Proposed Subcontractors," of the Special Provisions regarding the requirement that proposed subcontractors be listed in the bidder's proposal. A "DESIGNATION OF SUBCONTRACTORS" form for listing subcontractors, as required, is included in the section titled "Bid Proposal and Forms" of the Contract Documents. This form must be completed and submitted with bidder's bid proposal.

All bonds and endorsements thereto to be submitted pursuant to this contract shall be written by a company authorized to do surety business in the State of California with a minimum of a "B" rating and of adequate financial category as rated by the current edition of Best's Key Rating Guide as published by A.M. Best Company, Inc., Oldwick, New Jersey 08858.

Each bid must be accompanied by a form of bidder's security, namely cash, certified check, cashier's check, or bidder's bond, in the amount of ten percent (10%) of the total of the bid.

All addenda issued before the time in which to submit bids expires shall form a part of the Contract Documents and shall be covered in the bid. Bidders shall acknowledge and confirm receipt of each and every addendum in their bid proposal.

Within ten (10) calendar days, not including Saturdays, Sundays and legal holidays, after receipt of notice that the contract has been awarded, the successful bidder, shall execute a written contract with the County in the form prescribed herein.

At the time of execution of the contract, the successful bidder shall submit the certificates of insurance stipulated in Article 7 of the Agreement, and, in addition thereto, shall furnish a "Performance Bond" in the sum of one hundred percent (100%) of the contract bid to guarantee the performance of the contract, and a "Payment Bond" in the sum of one hundred percent (100%) of the contract bid. The bond forms are included in the section titled "Agreement" of the Contract Documents.

In accordance with San Luis Obispo County Code, Title 8, Health and Sanitation, Chapter 8.12, "Solid Waste Management", a project "Recycling Plan" and "Disposal Report" are required for this contract. The bidder's attention is directed to Sections 4-1.03, "Submittals", and 5-1.18, "Solid Waste Management" of the Special Provisions.

Attention is directed to the provisions of Section 5-1.07, "Measurement and Payment," of the Special Provisions permitting the substitution of equivalent securities for any moneys withheld to ensure performance of this contract. Said Section 5-1.07 is incorporated by reference in this invitation for bid as if fully set forth at length.

The Board of Supervisors reserves the right to reject any or all bids, and to waive discrepancies, irregularities, informalities or any other errors in the bids or bidding, if to do so seems to best serve the public interest. The right of Board of Supervisors to waive errors applies even if the Contract Documents state that a discrepancy, irregularity, informality or other error makes a bid nonresponsive, so long as the error does not constitute a material error.

The successful bidder must be licensed to perform the work in accordance with the laws of the State of California. Accordingly, the successful bidder shall possess a Class A general engineering contractor's license at the time this contract is awarded. In the alternative, the successful bidder shall possess a specialty contractor's license that permits the successful bidder to perform with his or her own organization contract work amounting to not less than 30% of the original total contract price and to subcontract the remaining work in accordance with Section 5-1.055, "Subcontracting," of the Amendments to the Standard Specifications. Failure of the bidder to be properly and adequately licensed shall constitute a failure to execute the contract and shall result in the forfeiture of the bidder's security.

BID PROTESTS

Any bid protest must be submitted in writing to the Department of Public Works, Room 207, County Government Center, 976 Osos Street, San Luis Obispo, CA 93408; Attention: Design Engineer before 5 p.m. of the 7th business day following bid opening.

The initial protest document shall contain a complete statement of the basis for the protest and all evidence and documents supporting the protest available to the protesting party. The protest shall refer to the specific portion of the document which forms the basis for the protest. The protest shall include the name, address and telephone number of the person representing the protesting party. The party filing the protest shall concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest which may be adversely affected by the outcome of the protest. Such parties shall include all other bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest. The County Board of Supervisors will issue a decision on the protest.

The procedure and time limits set forth in this section are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest and failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code Claim or legal proceedings.

SPECIAL INSTRUCTIONS TO BIDDERS: All bidder Requests for Information must be submitted no later than 3 days prior to the bid opening date. Requests submitted after said date may not be considered. Bidders should submit Requests for Information to the County during the bid period at the following website:

http://www.slocounty.ca.gov/PW/Design_Division/Projects_Out_To_Bid.htm

Attention is directed to Section 4-1.03, "Submittals," of the Special Provisions regarding the time period to submit the listed items upon receipt of the fully executed contract.

The Contractor's attention is directed to the requirements of Section 10-1.01 "Order of Work" of the Special Provisions. No road closure shall be allowed during the Templeton Unified School District's normal school year, which ends June 9, 2011 and starts again on August 23, 2011. In no event shall the road be closed for a time period exceeding five (5) consecutive weeks.

Bidders must satisfy themselves by personal examination of the location of the proposed work and by such other means as they prefer as to the actual conditions and requirements of the work, and shall not at any time after submission of the bid dispute, complain, or assert that there was any misunderstanding in regard to the nature or amount of work to be done.

By order of the Board of Supervisors County of San Luis Obispo made this _____day of _____, 20____.

County Clerk and Ex-officio Clerk
of the Board of Supervisors

By _____
Deputy Clerk

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

BID PROPOSAL AND FORMS

FOR

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
0.9 MILES NORTH OF STATE HIGHWAY 46
NEAR BRIDGE NO. 49C-345
EAST OF CAMBRIA, CA
CONTRACT NO. 245R12B595

BID PROPOSAL

TO: THE BOARD OF SUPERVISORS OF THE COUNTY OF SAN LUIS OBISPO, STATE OF CALIFORNIA:

Pursuant to and in compliance with your Notice to Bidders, the undersigned, as bidder, declares that the only person or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm or corporation; that he/she is aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self insurance in accordance with the provisions of that code, and he/she will comply with such provisions before commencing the performance of the work of this contract; that he/she has carefully examined the location of the proposed work, the annexed proposed form of contract, and he/she proposes, and agrees if this proposal is accepted, that he/she will contract with the Board of Supervisors of the County of San Luis Obispo in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other equipment needed, and to do all of the work and furnish all the materials specified in the contract, in the manner and the time therein prescribed, and according to the requirements of the Department of Public Works and Transportation as therein set forth, and that he/she will take in full payment therefor the following unit prices, to-wit:

SEE NEXT PAGE FOR BID PROPOSAL FORM

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
NEAR BRIDGE NO. 49C-345
EAST OF CAMBRIA, CALIFORNIA
CONTRACT NO. 245R12B595
BID PROPOSAL

ITEM NO.	CODE NO.	DESCRIPTION OF ITEM	APPROX. QUANTITY	UNIT OF MEASURE	UNIT PRICE (IN FIGURES) DOLLARS. CENTS	TOTAL AMOUNT DOLLARS. CENTS
1	074020	WATER POLLUTION CONTROL	1	LS		
2	120090	CONSTRUCTION AREA SIGNS	1	LS		
3	120100	TRAFFIC CONTROL SYSTEM	1	LS		
4	152390	RELOCATE ROADSIDE SIGN	1	EA		
5	160101	CLEARING AND GRUBBING	1	LS		
6	190101	ROADWAY EXCAVATION	2925	CY		
7	198001	IMPORTED BORROW	2290	CY		
8	198250A	GEOSYNTHETIC REINFORCEMENT - PRIMARY	1,780	SY		
9	198250B	GEOSYNTHETIC REINFORCEMENT - INTERMEDIATE	770	SY		
10	203016	EROSION CONTROL (TYPE D)	330	SY		
11	203034	ROLLED EROSION CONTROL PRODUCT	270	SY		
12	204017A	INSTALL ARROYO WILLOW ROOT BALLS	1	LS		
13	260201	CLASS 2 AGGREGATE BASE	157	CY		
14	390132	HOT MIX ASPHALT (TYPE A)	73	TONS		
15	394048	PLACE HOT MIX ASPHALT DIKE (TYPE E)	90	LF		
16	641107	18" PLASTIC PIPE	27	LF		
17	680285A	UNDERDRAIN SYSTEM	1	LS		
18	700640	36" CORRUGATED STEEL PIPE INLET (0.138" THICK)	1	EA		
19	721007	ROCK SLOPE PROTECTION (1/4 TON, METHOD B)	207	CY		
20	721011	ROCK SLOPE PROTECTION (BACKING NO. 2, METHOD B)	3	CY		
21	729010	ROCK SLOPE PROTECTION FABRIC	370	SY		
22	832012	METAL BEAM GUARD RAILING (7' WOOD POST)	30	LF		
23	839565	TERMINAL SYSTEM (TYPE SRT)	2	EA		
					TOTAL BID	

Bidder's Name: _____

Bidder represents that he/she has hereinabove set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose. In the case of unit basis items, the amount set forth under the "Total" column is the extension of the unit price bid on the basis of the approximate quantity for the item.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, provided, however, if the amount set forth as a unit price is ambiguous, unintelligible, or uncertain for any cause, or is omitted, or is the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

Bidder shall execute and submit with their proposal, each of the following:

- BIDDERS INFORMATION LIST
- DESIGNATION OF SUBCONTRACTORS
- BIDDER'S NON-COLLUSION DECLARATION (STATE FORM)
- BIDDER'S BOND

Bidder declares that he/she has read, and agrees to, the Special Provisions, including, without limitation, the provisions of Sections 1, 2, 3, 4, and 5 thereof.

Bidder shall list the name and address of each subcontractor to whom the bidder proposes to directly subcontract portions of the work as required by the provisions in Section 2-1.02, "Required Listing of Proposed Subcontractors," of these Special Provisions. The list of subcontractors shall also set forth the portion of work that will be done by each subcontractor listed. The "DESIGNATION OF SUBCONTRACTORS" form for listing the subcontractors is included in the section titled "Bid Proposal and Forms" of the Contract Documents.

Accompanying this bid proposal is a bidder's bond, cash, cashier's check, or a certified check, payable to the County of San Luis Obispo, for the sum of _____ _____ Dollars ($_____), said amount being at least ten percent (10%) of the total of the bid. The proceeds thereof shall become the property of the County of San Luis Obispo if the proposal is withdrawn after the time fixed in the Notice to Bidders for the opening of bids, or if, in case this bid is accepted by said Board of Supervisors and such bidder has received notice that the contract has been awarded to him/her, the undersigned shall fail within ten (10) calendar days, not including Saturdays, Sundays, and legal holidays, thereafter to execute a contract with the County and furnish the certificates of insurance and Payment and Performance bonds required by the Contract Documents. Otherwise, said guarantee, except a bidder's bond, will be returned to the undersigned.

This bid proposal may be withdrawn, in writing, prior to the time fixed in the Notice to Bidders for the opening of bids. It is understood and agreed that this bid proposal will not be withdrawn after the time fixed in the Notice to Bidders for the opening of bids. Bidders further agree that the failure of the County to open bids for this project exactly at the time fixed in said Notice shall not extend the time within which bids may be withdrawn.

The undersigned bidder will sign and deliver to the County of San Luis Obispo the written contract, together with the certificates of insurance and bonds described in the Notice to Bidders, within ten (10) calendar days, not including Saturday, Sundays, and legal holidays, after the undersigned has received notice that the contract has been awarded to him/her.

The undersigned, as bidder, declares that he/she is aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self insurance in accordance with the provisions of that code, and will comply with such provisions before commencing the performance of the work of this contract.

The bidder's execution of the signature portion of this bid proposal shall also constitute an endorsement and execution of those certifications, questionnaires, and assurances which are a part of this proposal.

ADDENDA: The undersigned acknowledges and confirms the receipt of **Addenda Nos.**

Addenda Number	Date
_____	_____
_____	_____
_____	_____

and agrees that said addenda are covered in the bid proposal and shall form a part of the Contract Documents.

IMPORTANT NOTICE:

If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a partnership, state true name of firm, also names of all individual co-partners composing firm; if bidder or other interested person is an individual, state first and last names in full.

_____

_____

Bidder warrants and represents that he/she is licensed in accordance with an Act providing for the registration of Contractors, License No. _____, Class _____, License Expiration Date _____. (Note: The successful bidder must possess the license classification specified in the Notice to Bidders upon award of this contract.)

Name of Bidder_____

Signature of Bidder_____

Printed Name and Title_____

Business Address_____

Telephone Number_____

Date_____

NOTICE. . . . . .If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contract in behalf of the corporation; if bidder is a partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts in behalf of the partnership; and if the bidder is an individual, his or her signature shall be placed above. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a Power of Attorney must be on file with the County prior to opening of bids or submitted with the bid; otherwise, the bid will be disregarded as irregular and unauthorized.

RETURN THIS FORM WITH YOUR BID PROPOSAL

BIDDERS INFORMATION LIST

All bidders/proposers are required to provide the following information for all DBE and non-DBE contractors, who provided a proposal, bid, quote, or were contacted by the proposed prime contractor. This information is required from the proposed prime contractor and shall be submitted with their bid proposal. The Department of Public Works will use this information to maintain and update a "Bidder's List" to assist in the overall annual Disadvantaged Business Enterprise (DBE) availability goal setting process required for Federal-aid projects. This information is also being made available to other local agencies for the same purpose. *To the extent permitted by law, all information submitted will be held in strict confidence and will not be shared without your consent except as noted above.*

Contractor: ☐ Prime Contractor ☐ Subcontractor ☐ Supplier ☐ Other: _____

Firm Name: _____ Phone: _____

Business Address: _____ Fax: _____

_____

License No.
and Classification _____ Years in Business: _____

Contact Person: _____

Is the firm currently certified as a DBE by Caltrans? ☐ No ☐ Yes Cert. Number: _____

Gross Annual Receipts for last year:
☐ less than $1 million ☐ less than $5 million ☐ less than $10 million
☐ less than $15 million ☐ more than $15 million

Type of work/ services/ materials provided for this job:
☐ Contractor ☐ Supplier ☐ Manufacturer ☐Trucking ☐ Broker
☐ Other (describe): _____

Contractor Specialty for this job:
☐ Roadway Construction (including signing, paving, and concrete) (237310)
☐ Roadway Painting/Striping (237310)
☐ Highway Lighting & Signal Installation (238210)
☐ Bridge Construction (237310)
☐ Tunnel Construction (237990)
☐ Water, Sewer, & Pipeline Construction (237110)
☐ Power & Communication Transmission Line (including conduit construction) (237130)
☐ Landscaping (561730)
☐ Irrigation (237110)
☐ Other Heavy Construction (including parks, reclamation, reservoir, water & sewer treatment facilities) (237990)
☐ Masonry (including retaining walls and foundations) (238140)
☐ Concrete Retaining Walls (238110)
☐ Building Construction (236210/236220)
☐ Other (describe): _____

- Copy sheet as needed

RETURN THIS FORM WITH YOUR BID PROPOSAL

DESIGNATION OF SUBCONTRACTORS

In compliance with the provisions of Sections 4100 et seq of the Public Contract Code of the State of California, and any amendments thereto, the undersigned bidder sets forth the following:

a. The name and location of the place of business of each subcontractor who will perform work or labor, or render service to the undersigned Prime Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the Prime Contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of one percent of the undersigned Prime Contractor's total bid or in the case of bids for the construction of streets and highways, including bridges, in excess of one-half of one percent or ten thousand dollars ($10,000), whichever is greater.*

b. The portion of the work which will be done by each such subcontractor. Only one subcontractor shall be listed for each such portion.

Bid Schedule Item and description of each Subcontractor's Portion of Work	Subcontractor	License No.	Address	Approximate Dollar Value for each Subcontractor's Portion of Work

By: _____

(Bidder's Signature/Printed Name and Title/Company Name)

*NOTE: When there is a failure to list a subcontractor, as required, the law provides that the Contractor agrees to do the work with his or her own forces. In such case, bidder must be authorized to perform said work. Any bid not complying with the provisions hereof may be rejected.

RETURN THIS FORM WITH YOUR BID PROPOSAL

BIDDER'S NON-COLLUSION DECLARATION (STATE FORM)

Bidder hereby states, under penalty of perjury, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____
(Name of Company)

By: _____

_____
Printed Name

_____
Title

Date: _____

RETURN THIS FORM WITH YOUR BID PROPOSAL

BIDDER'S BOND

KNOW ALL BY THESE PRESENTS:

That we, _____

_____

as Principal, and _____

_____,

as Surety, are held and firmly bound unto the County of San Luis Obispo, State of California (hereinafter called "County") in the penal sum of Ten Percent (10%) of the total aggregate amount of the bid of the Principal above named, submitted by said Principal to the County for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability of the Surety hereunder exceed the sum of _____

_____ ($_____).

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas a bid to County for certain construction specifically described as follows, for which bids are to be opened on _____, 20____, has been submitted by Principal to County for:

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
0.9 MILES NORTH OF STATE HIGHWAY 46
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CONTRACT NO. 245R12B595

Bidder's Bond

NOW, THEREFORE, if the aforesaid Principal shall not withdraw said bid after the time fixed in the Notice to Bidders for the opening of the same, and shall within ten (10) calendar days, not including Saturdays, Sundays, and legal holidays, after receipt of written notice that the contract has been awarded to him/her, enter into a written contract with County, in the prescribed form, in accordance with the bid as accepted, and file with the County the certificates of insurance as stipulated in Article 7 of the Agreement and the two bonds, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; otherwise, it shall remain in full force and effect, and the penal sum guaranteed by this bond shall be forfeited to the County.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of said contract or to the work to be performed thereunder or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

In the event suit is brought upon said bond by County and judgment is recovered, the Surety shall pay all costs incurred by County in such suit, including a reasonable attorney's fee to be fixed by the court. Death of the Principal shall not relieve Surety of its obligations hereunder.

Bidder's Bond

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____ day of_____, 20____.

_____ (Seal)

_____ (Seal)

_____ (Seal)
Principal

_____ (Seal)

_____ (Seal)

_____ (Seal)
Surety

_____

_____
Address

NOTE:

Signatures of those executing for Surety must be properly acknowledged.

Bidder's Bond

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

CONTRACT AGREEMENT

FOR

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
0.9 MILES NORTH OF STATE HIGHWAY 46
NEAR BRIDGE NO. 49C-345
EAST OF CAMBRIA, CA
CONTRACT NO. 245R12B595

COUNTY OF SAN LUIS OBISPO

AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20_____, between the County of San Luis Obispo, a political subdivision and county of the State of California, party of the first part, hereinafter called "County" and _____ _____ the party of the second part, hereinafter called "Contractor".

WITNESSETH, that for and in consideration of the mutual covenants and agreements hereinafter contained, the parties hereto agree as follows:

ARTICLE 1. That the Contractor will, at its own proper cost and expense, do all the work and furnish all the equipment and materials necessary to construct and complete in good and workmanlike manner to the satisfaction of the Board of Supervisors of said County, for

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
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all in strict accordance with the Contract Documents, including without limitation, the Project Plans, the Standard Specifications of the State of California, Department of Transportation, dated May 2006 (hereinafter called, "Standard Specifications"), the Standard Plans of the State of California, Department of Transportation, dated May 2006 (hereinafter called, "Standard Plans"), and the Special Provisions therefor, on file in the Department of Public Works and Transportation and the Office of the Clerk of the Board of Supervisors of the County of San Luis Obispo, State of California.

ARTICLE 2. This Agreement, together with the Notice and Instructions to Bidders, Bid Proposal and Forms, Standard Specifications, Standard Plans, the Special Provisions, including without limitation the Project Plans incorporated therein, and all addenda thereto, form the contract, and said documents by this reference become as fully a part of this Agreement as if set forth in full and are herein sometimes referred to as "Contract" or as "Contract Documents". The terms set forth below, when utilized in said documents, shall mean as follows:

PUBLIC WORKS DIRECTOR: Means the Director of Public Works and Transportation (hereinafter, also the Department of Public Works) of the County of San Luis Obispo, State of California, acting either directly or through properly authorized agent(s), acting within the scope of the particular duties delegated to them, including registered engineers employed by the Department of Public Works and Transportation.

COUNTY CLERK: Means the Clerk of the Board of Supervisors of the County of San Luis Obispo, State of California.

ARTICLE 3. The Contractor shall begin work within ten (10) calendar days not including Saturdays, Sundays, or legal holidays, from the date of receipt of the County's Notice to Contractor to Proceed, and the work to be accomplished under this contract shall be completed within the time limit provided in Section 4, "Prosecution and Progress of the Work", of the Special Provisions. Attention is directed to the provisions of said Section 4, "Prosecution and Progress of the Work", of the Special Provisions for the amount of liquidated damages.

ARTICLE 4. The total Contract price is the amount of the Contractor's bid as set forth in the award of the Contract approved by the County's Board of Supervisors. The Contractor will receive and accept and the County will pay the prices specified in the attached Bid Proposal, which is incorporated herein by reference, as full compensation for furnishing all labor, materials, and equipment for doing all the work contemplated and embraced in this Agreement. To the extent permitted by law, the Contractor assumes during the progress of the work and before its acceptance, any and all loss or damage arising out of the nature of the work aforesaid or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by the County; and assumes any and all expenses incurred by or in consequence of the suspension or discontinuance of work, for well and faithfully completing the work, and the whole thereof, in the manner and to the requirements of the Plans, Special Provisions, Standard Specifications, Standard Plans, and the Public Works Director.

ARTICLE 5. The Contractor's attention is directed to the provisions of Section 2-1.02, "Required Listing of Proposed Subcontractors," of the Special Provisions and the requirements contained therein.

Additionally, the Contractor's attention is directed to the provisions of the "Subletting and Subcontracting Fair Practices Act" set forth in Sections 4100-4114 of the Public Contract Code.

ARTICLE 6. The Contractor agrees that the Public Works Director shall decide as to the meaning of the Standard Specifications, Standard Plans, and Special Provisions for the work, including without limitation the Project Plans incorporated therein, where the same may be found to be obscure or in dispute and the decision shall be final. The Public Works Director shall have the right to correct any errors or omissions therein when such corrections are necessary to the proper fulfillment of the intention of the Special Provisions, Standard Specifications and Standard Plans; the action of such corrections is to take effect from the time said Public Works Director gives notice thereof to the Contractor.

ARTICLE 7.

INDEMNIFICATION

Contractor shall defend, indemnify and hold harmless the County, its officers, officials, employees, and volunteers from all claims, demands, damages, costs, expenses, judgments, attorney fees, or other losses that may be asserted by any person or entity, including Contractor, and that arise out of or are made in hereunder. The obligation to indemnify shall be effective and shall extend to all such claims or losses in their entirety. However, this indemnity will not extend to any claims or losses arising out of the sole negligence or willful misconduct of the County, its officers and employees.

INSURANCE REQUIREMENTS

Contractor, at its sole cost, shall purchase and maintain the insurance policies set forth below on all of its operations under this Agreement. All of the insurance companies providing insurance for Contractor shall have, and provide evidence of, an A.M. Best & Co. rating of A:VII or above, unless exception is granted by Risk Manager. Further, all policies shall be maintained for the full term of this Agreement and related warranty period if applicable.

(a) SCOPE AND LIMITS OF REQUIRED INSURANCE POLICIES

1. COMMERCIAL GENERAL LIABILITY

Policy shall include coverage at least as broad as set forth in Insurance Services Office Commercial General Liability Coverage (CG 00 01) with policy limits of not less than $2 million dollars combined single limit per occurrence. Policy shall be endorsed with the following specific language or contain equivalent language in the policy:

i.) The County of San Luis Obispo, its officers, officials, employees, and volunteers are named as an additional insured for all liability arising out of the operations by or on behalf of the named insured in the performance of this Agreement. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance as least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10 and CG 20 37 (if a later edition is used).

ii.) The insurance provided herein shall be considered primary coverage to the County of San Luis Obispo with respect to any insurance or self insured retention maintained by the County. Further, the County's insurance shall be considered excess insurance only and shall not be called upon to contribute to this insurance.

iii.) The policy shall not be cancelled or materially changed without first giving thirty days prior written notice to the County of San Luis Obispo, Department of Public Works.

2. **BUSINESS AUTOMOBILE POLICY**

Policy shall include coverage at least as broad as set forth in the liability section of Insurance Services Office Business Auto Coverage (CA 00 01) with policy limits of no less than $1 million dollars combined single limit for each occurrence. Said insurance shall include coverage for owned, non-owned, and hired vehicles. Policy shall be endorsed with the following specific language or contain equivalent language in the policy:

i.) The County of San Luis Obispo, its officers, officials, employees, and volunteers are named as an additional insured for all liability arising out of the operations by or on behalf of the named insured in the performance of this Agreement.

ii.) The policy shall not be cancelled or materially changed without first giving thirty days prior written notice to the County of San Luis Obispo, Department of Public Works.

3. **WORKERS' COMPENSATION / EMPLOYERS' LIABILITY INSURANCE**

i. Workers' Compensation: policy shall provide statutory limits as required by State of California. Policy shall be endorsed with the following specific language or contain equivalent language in the policy:

a. Contractor and its insurer shall waive all rights of subrogation against the County, its officers and employees for workers' compensation losses arising out of this Agreement.

b. The policy shall not be cancelled or materially changed without first giving thirty days prior written notice to the County of San Luis Obispo, Department of Public Works.

ii. Employer's Liability: policy shall provide $1 million dollars per accident for bodily injury or disease.

If the Contractor maintains higher limits than the minimum shown above, the County requires and shall be entitled to coverage for the higher limits maintained by the Contractor.

(b) **DEDUCTIBLES AND SELF-INSURANCE RETENTIONS**

All deductibles and/or self-insured retentions which apply to the insurance policies required herein will be declared in writing and approved by the County prior to commencement of this Agreement.

(c) **DOCUMENTATION**

Prior to commencement of work and annually thereafter for the term of this Agreement, Contractor will provide to the County of San Luis Obispo, Department of Public Works, Room 207, County Government Center, CA 93408, Attention Design Engineer, Contract No. 245R12B595, properly executed certificates of insurance clearly evidencing the coverage, limits, and endorsements specified in this Agreement. Further, at the County's request, the Contractor shall provide certified copies of the insurance policies within thirty days of request.

(d) **ABSENCE OF INSURANCE COVERAGE**

County may direct Contractor to immediately cease all activities with respect to this Agreement if it determines that Contractor fails to carry, in full force and effect, all insurance policies with coverage levels at or above the limits specified in this Agreement. Any delays or expense caused due to stopping of work and change of insurance shall be considered Contractor's delay and expense.

(e) **SPECIAL RISKS OR CIRCUMSTANCES**

The County reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

ARTICLE 8. Contractor shall defend, indemnify, and hold harmless the County, its officers, and employees from all claims, demands, damages, costs, expenses, judgments, attorney fees, liabilities, or other losses that may be asserted by any person or entity, and that arise out of or are made in connection with the acts or omissions relating to the performance of any duty, obligation, or work hereunder. The obligation to indemnify shall be effective and shall extend to all such claims and losses, in their entirety, even when such claims or losses arise from the comparative negligence of the County its officers and employees. However, this indemnity will not extend to any claims or losses arising out of the sole negligence or willful misconduct of the County, its officers and employees.

The preceding paragraph applies to any theory of recovery relating to said act or omission by the Contractor, or its agents, employees, or other independent contractors directly responsible to Contractor, including, but not limited to the following:

1. Violation of statute.

2. Professional malpractice.

3. Willful, intentional or other wrongful acts, or failures to act.

4. Negligence or recklessness.

5. Furnishing of defective or dangerous products.

6. Broad Form Property Damage (Including Completed Operations).

7. Premises Liability.

8. Strict Liability.

9. Inverse condemnation.

10. Violation of civil rights

11. Violation of any federal or state stature, regulation, or ruling resulting in a determination by the Internal Revenue Service, California Franchise Tax Board, or any other California entity responsible for collecting payroll taxes, when the Contractor is not an independent contractor.

Nothing contained in the foregoing indemnity provisions shall be construed to require the Contractor to indemnify the County, against any responsibility or liability in contravention of Civil Code 2782.

It is the intent of the parties to provide the County the fullest indemnification, defense, and "hold harmless" rights allowed under the law. If any word(s) contained herein are deemed by a court to be in contravention of applicable law, said word(s) shall be severed from this contract and the remaining language shall be given full force and effect.

ARTICLE 9. It is further stipulated and agreed that the Contractor shall keep himself/herself fully informed of all laws, ordinances, and regulations which do or may affect the conduct of the work, the materials used therein or persons engaged or employed thereupon and all such orders of bodies and tribunals having any jurisdiction over the same. If it be found that the Special Provisions or Standard Specifications for the work conflict with any such law, ordinance or regulation the Contractor shall immediately report same to the Public Works Director in writing. The Contractor shall at all times observe and comply with and shall cause all his/her agents, employees, and independent contractors hired by the Contractor to observe and comply with all such existing and future laws, ordinances, regulations, or decrees.

ARTICLE 10. It is mutually agreed between the parties hereto, that no certificate given or payments made under this contract, except the final payment, shall be evidence of the performance of this contract, either wholly or in part, against any claim of the Contractor. Final payment for the work performed under this contract shall not be made until the lapse of thirty-five (35) calendar days after the notice of completion of said work has been filed for record and no payment shall be construed to be an acceptance of any defective work or improper materials. The Contractor further agrees that acceptance by the Contractor of the final payment due under this contract, and the adjustment and payment of his/her bill rendered for any work done in accordance with any amendments of this Contract, shall be and shall operate as a release to the County of San Luis Obispo from any and all claims or liabilities on account of work performed under this Contract except claims or liabilities for which written notice of claim or protest has been filed with the Public Works Director. Besides guarantees required elsewhere, the Contractor shall and does hereby guarantee

all workmanship and material for a period of one year from and after both the date of acceptance of the work and the recordation of the notice of completion by the County and shall repair or replace any or all work and material, together with any other portions of the work which may be displaced in so doing, that in the opinion of the County is or becomes defective during the period of said guarantee without expense whatsoever to the County.

ARTICLE 11. The Contractor hereby declares that he/she has read the Contract Documents pertaining to the work to be accomplished hereunder, has carefully examined the plans and detail drawings of the work to be performed and fully understands the intent and meaning of the same.

ARTICLE 12. Attention is directed to the provisions in Sections 1777.5, 1777.6, and 1777.7 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor.

The Contractor and any subcontractor shall comply with the requirements of Sections 1777.5, 1777.6, and 1777.7 of the Labor Code in the employment of apprentices.

To insure compliance and complete understanding of the law relating to apprentices, and specifically the required ratio thereunder, each contractor or subcontractor should, where some question exists, contact the Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, California, or one of its branch offices prior to commencement of work on this contract. Responsibility for compliance with said Labor Code Sections lies with the prime contractor.

ARTICLE 13. Attention is directed to the provisions in Section 1776 of the Labor Code concerning Contractor and subcontractor payroll records.

The Contractor and any subcontractor shall comply with the requirements of Section 1776 of the Labor Code.

ARTICLE 14. During the performance of this contract, Contractor agrees to comply with all of the Equal Employment Opportunity provisions of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR Chapter 60), including the following:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoffs or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Department of Public Works setting forth the provisions of this nondiscrimination clause.

2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

3. The Contractor will send to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Department of Public Works, advising the said labor union or worker's representative of the Contractor's commitments under this Article 14 and shall post copies of the Notice in conspicuous places available to employees and applicants for employment.

4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations (41 CFR, Part 60) and relevant orders of the Secretary of Labor.

5. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the County of San Luis Obispo and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be cancelled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

7. The Contractor will include the provisions of this Article 14 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Public Works Director or the Secretary of Labor may direct as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that in the event a contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 15. Safety: All work conducted by the Contractor and/or subcontractors in the execution of this contract shall be in accordance with current CAL OSHA requirements. Full compensation for compliance with the provisions of this Article 15 shall be considered as included in the other items of work and no additional compensation will be allowed therefor.

IN WITNESS WHEREOF, the parties to these presents have hereunto set their hands the year and date first above written, being authorized thereto.

COUNTY OF SAN LUIS OBISPO

By: _____
Chairperson of the Board of Supervisors
County of San Luis Obispo

ATTEST:

_____
Clerk of the Board of Supervisors
of the County of San Luis Obispo

By:_____
Deputy Clerk

APPROVAL RECOMMENDED
PAAVO OGREN

By: Paavo Ogren
Director of Public Works

Date 4/4, 2011

APPROVED AS TO FORM AND
LEGAL EFFECT:
WARREN R. JENSEN
County Counsel

By: Patrick J. Foran

Date 3/29/2011

CONTRACTOR

_____

By:_____

_____
(Printed Name and Title)

Date Signed:
_____, 20__

By:_____

_____
(Printed Name and Title)

Date Signed:

_____, 20__

PERFORMANCE BOND

KNOW ALL BY THESE PRESENTS: That

WHEREAS, the Board of Supervisors of the County of San Luis Obispo, State of California, has awarded to _____

_____

(hereinafter designated as "Principal") a contract for _____

_____

_____

_____; and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract;

NOW, THEREFORE, we, the Principal and _____

_____, as Surety, are held and firmly bound unto the County of San Luis Obispo, (hereinafter called "County"), in the penal sum of

_____

($_____), lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above bounded Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements

in the said contract and any alteration thereof made as therein provided, on his/her or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless County, its officers, agents, and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force virtue and effect.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or additions to the terms of the contract or to the work or to the specifications.

In the event suit is brought upon this bond by County and judgment is recovered, Surety shall pay all costs incurred by County in such suit, including a reasonable attorney's fee to be fixed by the Court.

Death of the Principal shall not relieve Surety of its obligations hereunder.

Performance Bond

IN WITNESS WHEREOF, one identical counterpart of this instrument, which shall for all purposes be deemed an original thereof, has been duly executed by Principal and Surety above named, on the _____ day of_____, 20____.

_____ (Seal)

_____ (Seal)

_____ (Seal)
Principal

_____ (Seal)

_____ (Seal)

_____ (Seal)
Surety

_____

_____
Address

NOTE:

Signatures of those executing for Surety must be properly acknowledged.

Performance Bond

PAYMENT BOND

KNOW ALL BY THESE PRESENTS:

WHEREAS, the Board of Supervisors of the County of San Luis Obispo, State of California, and _____

_____ (hereinafter designated as "Principal") have entered into an agreement for _____

_____

_____

_____

which said Agreement, and all of the Contract Documents attached to or forming a part of said Agreement, are hereby referred to and made a part hereof; and

WHEREAS, pursuant to law, the Principal is required before entering upon the performance of the Work, to file a good and sufficient bond with the body by whom the contract is awarded, to secure claims to which reference is made in Sections 3247 through 3252, inclusive, of the Civil Code of California, and Sections 3181, 3110, 3111 and 3112 of the Civil Code of California,

NOW, THEREFORE, said Principal and the undersigned _____

_____

as corporate surety, are held and firmly bound unto the County of San Luis Obispo, and unto all laborers, materialmen, and other persons referred to in said statutes in the sum of

_____

($_____), lawful money of the United States for the payment of which sum well

and truly made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally by these presents.

The condition of this obligation is such that if the said Principal, his/her or its heirs, executors, administrators, successors or assigns, or subcontractors, shall fail to pay any of the persons named in Civil Code Section 3181, or amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal and his subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to such work and labor, that the surety herein will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, the said surety will pay a reasonable attorney's fee to be fixed by the court.

This bond shall inure to the benefit of any of the persons named in Civil Code Section 3181 as to give a right of action to such persons or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force, virtue, and effect.

Payment Bond

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or additions to the terms of the contract or to the work or to the specifications.

Death of the Principal shall not relieve Surety of its obligations hereunder.

IN WITNESS WHEREOF one identical counterpart of this instrument, which shall for all purposes be deemed an original thereof, has been duly executed by the Principal and Surety above named, on the _____ day of_____, 20____.

_____ (Seal)

_____ (Seal)

_____ (Seal)
Principal

_____ (Seal)

_____ (Seal)

_____ (Seal)
Surety

_____

_____
Address

NOTE:
Signatures of those executing for Surety must be properly acknowledged.

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

SPECIAL PROVISIONS

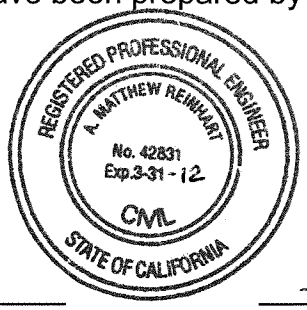
FOR

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
0.9 MILES NORTH OF STATE HIGHWAY 46
NEAR BRIDGE NO. 49C-345
EAST OF CAMBRIA, CA
CONTRACT NO. 245R12B595

CONTRACT NO. 245R12B595

The Special Provisions contained herein have been prepared by or under the direction of the following registered engineer(s):

PREPARED BY:



Matthew Reinhart
PROJECT ENGINEER

3/30/11
DATE

J. Jeff Bewerst
DESIGN ENGINEER

3/30/11
DATE

RECOMMENDED FOR APPROVAL AND ADVERTISING BY:

Dave Flynn
DEPUTY PUBLIC WORKS DIRECTOR

3/31/11
DATE

APPROVED BY:

Dave Flynn
PUBLIC WORKS DIRECTOR

4/4/2011
DATE

SECTION 1. SPECIFICATIONS AND PLANS

1-1.01 Specifications and Plans: The work embraced herein shall be done in accordance with the Standard Specifications of the State of California, Department of Transportation, dated May 2006 (hereinafter called, "Standard Specifications"), the Standard Plans of the State of California, Department of Transportation, dated May 2006 (hereinafter called, "Standard Plans"), insofar as they may apply and in accordance with these Contract Documents. Wherever State Agencies, Departments, or Officers are referred to in the above mentioned Standard Specifications and Standard Plans, the comparable County of San Luis Obispo Agency, Department, or Officer having jurisdiction shall be meant thereby for the purpose of these Contract Documents.

The County hereby elects under Public Contract Code § 20396 to have said applicable provisions of the Standard Specifications and Standard Plans referenced above, including those provisions modified by these Special Provisions, governed by the State Contract Act to the extent, and only to the extent, one or both of the following conditions is satisfied: (1) the applicable provisions of the Standard Specifications or Standard Plans expressly refer to the State Contract Act; or (2) the County would lack the authority to implement the applicable provisions of the Standard Specifications or Standard Plans absent the County's election to have the County's election to have the County's implementation of the provisions governed by the State Contract Act.

No amendment by the Department of Transportation to the Standard Specifications shall apply to these Contract Documents unless the amendment is expressly set forth in these Special Provisions.

In case of conflict between the Standard Specifications and the contract Special Provisions herein, the Special Provisions shall take precedence over such conflicting portions.

SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS

2-1.01 Proposal Requirements and Conditions: Attention is directed to the provisions in Section 2, "Proposal Requirements and Conditions," of the Standard Specifications and these Special Provisions.

The bidder's bond shall conform to the bond form in the section titled "Bid Proposal and Forms" of the Contract Documents and shall be properly filled out and executed. The bidder's bond form included in the Contract Documents may be used.

The following provisions for Section 2, "Proposal Requirements and Conditions," of the Standard Specifications are hereby modified as set forth hereafter.

Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work," of the Standard Specifications is hereby amended by modifying the first sentence of the 4th paragraph to read: "Inspection of such records may be made at the Department of Public Works and Transportation of the County of San Luis Obispo."

Section 2-1.05, "Proposal Forms" of the Standard Specifications, is hereby amended by substituting the words, "General and Special Provisions" for the words, "Proposal and Contract" in the first sentence of the 2nd paragraph and by substituting the words, "Notice to Bidders" for the words, "Notice to Contractors" in the first sentence of the 3rd paragraph. The 4th paragraph is hereby amended to read: "Proposal forms shall be obtained from the Department of Public Works and Transportation, County Government Center, San Luis Obispo, CA. 93408." The 5th paragraph is hereby deleted.

Section 2-1.07, "Proposal Guaranty" of the Standard Specifications, is hereby amended by substituting the words, "made payable to the County of San Luis Obispo" for the words, "made payable to the Director of Transportation" in the first paragraph. The 2nd paragraph is hereby amended by adding the following sentence, "The provisions of the Public Contract Code § 10181 are applicable to this contract." The first sentence of the last paragraph is hereby amended by substituting the words, "General and Special Provisions" for the words, "Proposal and Contract". The last sentence of the last paragraph is hereby deleted.

Section 2-1.08, "Withdrawal of Proposals" of the Standard Specifications, is hereby amended by substituting the words, "Office of the Clerk of the Board of Supervisors of the County of San Luis Obispo" for the words, "Office Engineer, Division of Construction" in the first sentence. The last sentence is hereby amended by modifying it to read: "Any bid received at the Office of the Clerk of the Board of Supervisors of the County of San Luis Obispo after the date and time specified in the Notice to Bidders shall not be considered and shall be returned to the bidder unopened nor may any bid be withdrawn after the time fixed in the public notice for the opening of bids."

Section 2-1.105, "Previous Disqualification, Removal or Other Prevention of Bidding", of the Standard Specifications, is hereby amended by deleting the first paragraph.

Section 2-1.108, "Compliance with Orders of the National Labor Relations Board", of the Standard Specifications, is hereby amended by modifying the last paragraph to read: "The statement required by said Section 10232 is included in the section titled "Bid Proposal and Forms" of the Contract Documents."

Section 2-1.11, "Ineligibility to Contract", of the Standard Specifications is hereby amended by modifying the last paragraph to read: "A form for the statement required by Section 10285.1 is included in the section titled "Bid Proposal and Forms" of the Contract Documents."

2-1.02 Required Listing of Proposed Subcontractors: The designated subcontractors listed in the bidder's proposal shall list therein the name and address of all subcontractors to whom the bidder proposes to subcontract portions of the work in an amount in excess of 1/2 of one percent of the total bid, or in the case of bids for the construction of streets and highways, including bridges, in excess of 1/2 of the one percent or $10,000, whichever is greater, in accordance with the Subletting and Subcontracting Fair Practices Act commencing with Section 4100 of the Public Contract Code. The bidder's attention is invited to other provisions of said Act related to the imposition of penalties for a failure to observe its provisions by using unauthorized subcontractors or by making unauthorized substitutions.

The "DESIGNATION OF SUBCONTRACTORS" form for the designation of subcontractors, as required herein, is included in the section titled "Bid Proposal and Forms" of the Contract Documents and shall be completely filled out, signed by the bidder, and submitted with the bid proposal.

SECTION 3. AWARD AND EXECUTION OF CONTRACT

3-1.01 Award of Contract: Attention is directed to the provisions of Section 3, "Award and Execution of Contract," of the Standard Specifications and these Special Provisions.

The award of contract, if it be awarded, will be to the lowest responsible bidder whose proposal complies with all of the requirements prescribed. Such award, if made, will be made within 45 calendar days after the opening of proposals.

If the lowest responsible bidder refuses or fails to execute the contract, the Board of Supervisors of the County of San Luis Obispo may award the contract to the second lowest responsible bidder. Such award, if made, will be made within 75 calendar days after the opening of proposals. If the second lowest responsible bidder refuses or fails to execute the contract, the Board of Supervisors of the County of San Luis Obispo may award the contract to the third lowest responsible bidder. Such award, if made, will be made within 105 calendar days after the opening of proposals. The periods of time specified above within which the award of contract may be made shall be subject to extension for such further period as may be agreed upon in writing between the County of San Luis Obispo and the bidder concerned.

3-1.02 Contract Bonds: The successful bidder shall furnish two (2) bonds:

1. The Payment bond to secure the claim payments of laborers, workers, mechanics, or materialmen providing goods, labor, or services under the contract. This bond shall be equal to one hundred percent (100%) of the total contract bid.
2. The Performance bond to guarantee the faithful performance of the contract. This bond shall be equal to one hundred percent (100%) of the total contract bid.

Forms for the two (2) required bonds are included in the section titled "Bid Proposal and Forms" of the Contract Documents.

Surety on said bonds must agree that death of the Contractor shall not relieve the surety of its obligation hereunder. The said surety, for the value received, must stipulate and agree that all alterations, extension of time, extra and additional work, and other changes authorized by these Specifications or any part of the contract may be made without securing consent of the surety on the contract bonds, and such actions shall not in any way affect the obligations of the surety on the bonds.

Attention is directed to the provisions in Section 6-1.075, "Guarantee," of the Amendments to the Standard Specifications.

3-1.03 Execution of Contract: The contract shall be signed by the successful bidder and returned, together with the contract bonds, copy of insurance policies, and Certificates of Insurance, with documents to verify any self insurance coverage within ten (10) calendar days, not including Saturdays, Sundays, and legal holidays, after the bidder has received the contract for execution.

The contract shall not be deemed executed by the successful bidder unless all of the above documents are received by the County with the signed contract within said time period. The bidder's security may be forfeited for failure to execute the contract within the time specified.

SECTION 4. PROSECUTION AND PROGRESS OF THE WORK

4-1.01 General: Attention is directed to the provisions in Section 8, "Prosecution and Progress," of the Standard Specifications and these Special Provisions.

The Contractor shall begin work within ten (10) working days from the date of receipt of the County's "Notice to Proceed."

This work shall be diligently prosecuted to completion before the expiration of 45 WORKING DAYS from the date of receipt of the County's "Notice to Proceed." The Contractor shall not begin work in advance of receiving the County's "Notice to Proceed."

4-1.02 Liquidated Damages: It is agreed by the parties to the contract that in the case all the work called for under the contract in all parts and requirements is not finished or completed within the number of working days as set forth in these Special Provisions, damage will be sustained by the County of San Luis Obispo, and that it is and will be impractical and extremely difficult to ascertain and determine the actual damage which the County will sustain in the event of and by reason of such delay; and it is therefore agreed that the Contractor will pay to the County of San Luis Obispo the sum of NINE HUNDRED TWENTY DOLLARS ($920.00) per day for each and every calendar days delay in finishing the work in excess of the number of working days prescribed above as liquidated and agreed damages; and the Contractor agrees to pay said liquidated damages herein provided for, and further agrees that the County may deduct the amount thereof from any moneys due or that may become due the Contractor under the contract.

The language in Sections 10253 through 10260 of the Public Contract Code are incorporated herein by reference as though fully set forth herein (with the word "Director" therein construed to mean the Public Works Director); provided, however, that prequalification of bidders shall not be required, and any references in said sections to prequalification of bidders are hereby deleted.

4-1.03 Submittals: The Contractor shall submit the following to the Engineer within ten (10) calendar days, not including Saturdays, Sundays, and legal holidays, of the Contractor's receipt of the fully executed contract:

- Storm Water Pollution Prevention Plan – 3 copies
- Recycling Plan
- Proposed Progress Schedule
- Identity of Project Safety Officer

The Contractor shall allow ten (10) days, not including Saturdays, Sundays, and legal holidays, for the Engineer's review. The Contractor shall revise and resubmit the submittal within 5 days, not including Saturdays, Sundays, and legal holidays, of receipt of the Engineer's comments. No claim will be allowed for

damages or extensions of time because of delays in work resulting from rejection of the submittals or from revisions and resubmittal of the submittals. The number of working days within which the Contractor must complete the work under this contract shall be reduced by 1 working day for each day the Contractor fails to submit or resubmit the required submittal to the Engineer within the prescribed time allowances.

The Engineer's review and approval shall not waive any contract requirements and shall not relieve the Contractor from complying with Federal, State and local laws, regulations, and requirements. No claim will be allowed for damages or extensions of time because of delays in work resulting from any documents submitted by Contractor to any federal, state, or local agency that are determined by such agency to be incomplete or not in compliance with any applicable laws, regulations or requirements.

4-1.04 Mandatory Pre-Construction Conference: Prior to the issuance of the "Notice to Proceed" a mandatory pre-construction conference will be held at the office of the Construction Engineer for the purpose of discussing with the Contractor the scope of work, contract drawings, specifications, existing conditions, materials to be ordered, equipment to be used, and all essential matters pertaining to the prosecution and the satisfactory completion of the project as required. The Contractor's representatives at this conference shall include major superintendents and shall include major subcontractors' representatives. So long as the County provides the Contractor at least 5 calendar days advance notice of the date and time of said conference. The number of working days within which the Contractor must complete the work under this contract shall be reduced by 1 working day for each day said conference is delayed by the Contractor's failure to attend the conference with the appropriate representatives.

A written record of attendance and items discussed will be made by the Engineer and a copy of the record kept in the Engineer's files. If for any reason a pre-construction conference is not held the Engineer will notify the Contractor in writing.

SECTION 5. GENERAL AND MISCELLANEOUS

5-1.01 Definitions and Terms: Attention is directed to the provisions in Section 1, "Definitions and Terms," of the Standard Specifications with the modifications as set forth hereafter.

Section 1-1.13, "Department," of the Standard Specifications is hereby amended to read: "The County of San Luis Obispo acting by and through its Department of Public Works and Transportation."

Section 1-1.15, "Director," of the Standard Specifications is hereby amended to read: "The Director of the Department of Public Works and Transportation of the County of San Luis Obispo."

Section 1-1.18, "Engineer," of the Standard Specifications is hereby amended to read: "Any duly authorized representative either employed by or contracting with the Department of Public Works and Transportation acting within the scope of the particular duties delegated to them."

Section 1-1.19, "Engineer's Estimate," of the Standard Specifications is hereby amended to read: "The contract bid form indicating the approximate quantities of work to be performed as contained in the Bid Proposal."

Section 1-1.26, "Liquidated Damages," of the Standard Specifications is hereby amended to read: "The amount prescribed in Section 4, "Prosecution and Progress of the Work," of the Special Provisions pursuant to Government Code Section 53069.85 to be paid to the County, or to be deducted from any payments due, or to become due, the Contractor for each day's delay in completing the whole or any specified portion of work beyond the time allowed in the Contract Documents."

Section 1-1.39, "State," of the Standard Specifications is hereby amended to read: "The State of California and its political subdivision, the County of San Luis Obispo."

Section 1-1.40, "State Contract Act," of the Standard Specifications is hereby amended to read: "Only those sections or provisions of Chapter 1 of Part 2 of Division 2 of the Public Contract Code (Section 10100 et seq.) which are specifically incorporated into this contract are applicable to this contract. All other sections and provisions of Chapter 1 of Part 2 of Division 2 of the Public Contract Code are not applicable to this contract and do not constitute a part hereof."

5-1.02 Scope of Work: Attention is directed to the provisions in Section 4, "Scope of Work," of the Standard Specifications with the modifications as set forth hereafter.

Section 4-1.03B(1), "Increases of More Than 25 Percent," of the Standard Specifications is amended by adding the following sentence to the last paragraph: "Additionally, such written request by the Contractor shall be accompanied by adequate, detailed data to support actual costs incurred."

Section 4-1.03B(2), "Decreases of More Than 25 Percent, " of the Standard Specifications is hereby amended by modifying the first sentence of the first paragraph to read: "Should the total pay quantity of any item of work required under the contract be less than 75 percent of the Engineer's Estimate therefor, the Engineer may reserve the right to make no adjustment in the corresponding unit price for that item if he/she so elects, except that an adjustment in compensation pursuant to this Section will be made if requested in writing by the Contractor. Additionally, such written request by the Contractor shall be accompanied by adequate, detailed data to support actual costs incurred."

Section 4-1.03D, "Extra Work," of the Standard Specifications is hereby amended by adding the following sentences to the 2nd paragraph: "All extra work shall be reported daily by the Contractor upon forms furnished by the Engineer, signed by both parties at the conclusion of each workday. Said daily extra work reports shall thereafter be considered the true record of the extra work performed and shall become the basis of payment therefor."

5-1.03 Control of Work: Attention is directed to Section 5, "Control of Work," of the Standard Specifications with the modifications as set forth hereafter.

Section 5-1.07, "Lines and Grades," of the Standard Specifications is hereby amended to read: "Stakes or marks will be set by the Engineer as the Engineer determines to be necessary to establish the lines and grades required for the completion of the work specified in these specifications, on the plans, and in the Special Provisions.

When the Contractor requests stakes or marks to be set, the Contractor shall notify the Engineer of the request in writing no less than three (3) working days in advance of starting operations that require their use. The Contractor shall also submit to the Engineer for acceptance, a tentative schedule of all anticipated staking requests for the initial thirty (30) working days of the contract. The Engineer shall determine if the staking request schedule is reasonable before recognizing any requests for stakes or marks to be set. Said schedule shall correlate with any order of work specified in the Contract Special Provisions. If any vegetation needs to be cleared or grubbed, as determined by the Engineer, before stakes or marks can be set, then the Contractor shall clear the obstructing vegetation for the proper placement of stakes or marks. The Engineer and the Contractor shall agree on the extent of vegetation removal necessary to prepare the work site for the setting of stakes or marks. Vegetation removal for the

preparation of the work site for the setting of stakes or marks shall be considered as included in the various items of work involved and no additional compensation will be allowed therefor. The Contractor will not be entitled to any compensation for any perceived delay, nor entitled to an extension of time for any perceived delay without due cause for the period between when the work site is deemed cleared by the Engineer and when the stakes or marks are set for use by the Contractor.

Stakes and marks set by the Engineer shall be carefully preserved by the Contractor. In case the stakes and marks are destroyed or damaged, the stakes and marks will be replaced or restored at the Engineer's earliest convenience. The Contractor will be charged $875.00 for each stake or mark replaced or restored which in the judgment of the Engineer had been carelessly or willfully destroyed or damaged by the Contractor's operations. This charge will be deducted from any moneys due or to become due the Contractor."

Section 5-1.116, "Differing Site Conditions," of the Amendments to the Standard Specifications is hereby amended by including the following language from Section 7104 of the Public Contract Code: "7104. Any public works contract of a local public entity which involves digging trenches or other excavations that extend deeper than four feet below the surface shall contain a clause which provides the following: (a) That the contractor shall promptly, and before the following conditions are disturbed, notify the public entity, in writing, of any: (1) Material that the contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law. (2) Subsurface or latent physical conditions at the site differing from those indicated. (3) Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract. (b) That the public entity shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the contractor's cost of, or the time required for, performance of any part of the work shall issue a change order under the procedures described in the contract. (c) That, in the event that a dispute arises between the public entity and the contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the contractor's cost of, or time required for, performance of any part of the work, the contractor shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. The contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties."

5-1.04 Prevailing Wage: Attention is directed to the provisions in Section 7-1.01A(2), "Prevailing Wage," of the Standard Specifications and these Special Provisions.

Pursuant to the provisions of Section 1773 of the California Labor Code, the Board of Supervisors of the County of San Luis Obispo has obtained from the Director of the California Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work for the locality in which the work is to be performed for each needed craft, classification, or type of workman. Copies of said prevailing rate of per diem wages are on file in the Office of the Clerk of the Board of Supervisors and available at the California Department of Industrial Relations' web site at:

www.dir.ca.gov/DLSR/PWD.

The wage rates determined by the Director of Industrial Relations refer to expiration dates. Prevailing wage determinations with a single asterisk after the expiration date are in effect on the date of advertisement for bids and are good for the life of the contract. Prevailing wage determinations with double asterisks after the expiration date indicate that the wage rate to be paid for work performed after this date has been determined. If work is to extend past this date, the new rate shall be paid and incorporated in the contract. The Contractor shall contact the Department of Industrial Relations as indicated in the wage rate determinations to obtain predetermined wage changes.

Pursuant to Section 1773.2 of the Labor Code, a copy of said general prevailing rates shall be posted by the Contractor in a prominent place at the site of the work.

Additionally, the Director of Industrial Relations has reserved the right to issue corrected wage determinations for certain crafts contained in the prevailing wage determinations applicable to this contract. These corrected prevailing wage rates shall apply to this contract in the same manner as if they had been published in the prevailing wage determinations applicable to this contract. These revisions to the general prevailing wage rates are on file at the Office of the Clerk of the Board of Supervisors and available at the California Department of Industrial Relations' web site at:

www.dir.ca.gov/DLSR/PWD.

Additionally, changes in general prevailing wage determinations which conform to Labor Code Section 1773.6 and Title 8 California Code of Regulations Section 16204 shall apply to the contract when issued by the Director of Industrial Relations at least ten (10) calendar days prior to the date of the Notice to Bidders for the project. Changes, if any, to the general prevailing wage rate will be on file at the Office of the Clerk of the Board of Supervisors and available at the California Department of Industrial Relations' web site at:

www.dir.ca.gov/DLSR/PWD.

5-1.05 Progress Schedule: Progress schedules will be required for this contract and shall conform to the provisions in Section 8-1.04, "Progress Schedules," of the Standard Specifications.

The Contractor shall submit to the Engineer a practicable progress schedule in conformance with the provisions in Section 4-1.03, Submittals," of these Special Provisions, and within 5 working days of the Engineer's written request at any other time.

5-1.06 Preservation of Property: Attention is directed to the provisions in Section 7-1.11, "Preservation of Property," of the Standard Specifications is hereby amended by adding the following to the end of the second paragraph: "Pursuant to Section 8771(b) of the California Business and Professions Code, existing survey monuments that control the location of subdivisions, tracts, boundaries, roads, streets, or highways, or provide survey control that are within or adjacent to the Contractor's operations, shall be located and referenced by or under the direction of a licensed land surveyor or registered civil engineer prior to the time when any streets, highways, other rights-of-way, or easements are improved, constructed, reconstructed, maintained, resurfaced, or relocated. In the event that any existing survey monument is disturbed in any way by the Contractor's operations as determined by a licensed land surveyor or registered civil engineer, they shall be reset accordingly and a corner record shall be filed with the county surveyor prior to the recording of a certificate of completion for the project. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in locating existing survey monuments by or under the direction of a licensed land surveyor or registered civil engineer, resetting any disturbed survey monument and filing a corner record, shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor."

5-1.07 Measurement and Payment: Attention is directed to the provisions in Section 9, "Measurement and Payment," of the Standard Specifications with the modifications as set forth hereafter.

The 13th paragraph of Section 9-1.01, "Measurement of Quantities," of the Standard Specifications shall be amended to read as follows: "Whenever pay quantities of materials are determined by weighing, the scales shall be operated by a weighmaster licensed in accordance with provisions of the California business and Professions Code, Division 5, Chapter 7. The contractor shall furnish a Public Weighmaster's certificate, or a private Weighmaster's certificate (load slip) with each load and a Daily Record of Platform Scale Weights. The Weighmaster's certificates shall be numbered consecutively to correspond with the Daily Record of Platform Scale Weights. The Daily Record of Platform Scale Weights shall be prepared using a form supplied by the County and shall be delivered to the Engineer at the end of each day. Contractor shall provide the County sufficient advance notice so as to enable a representative of the County to be present to witness the Weighing and check the Daily Record of Platform Scale Weights."

Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications is hereby amended by adding the following: "Additionally, the written notice of potential claim shall be submitted on Caltrans form CEM-6201 and shall be certified with reference to the California False Claims Act, Government Code Sections 12650-12655. The notice shall set forth the reasons for which the Contractor believes additional compensation will or may be due and the nature of the costs involved. Unless the amount of the potential claim has been stated in the written notice, the Contractor shall within 15 working days of submitting said notice, furnish an estimate of the cost of the affected work and impacts, if any, on project completion. Said estimate of costs may be changed or updated by the Contractor when conditions have changed.

When the affected work is completed, the Contractor shall submit substantiation of actual costs. Failure to do so shall be sufficient cause for denial of any claim subsequently filed on the basis of said notice of potential claim.

Should the Contractor, in conjunction with or subsequent to the assertion of a potential claim, request inspection and copying of documents or records in the possession of the County that pertain to the potential claim, the Contractor shall make its records of the project, as deemed by the County to be pertinent to the potential claim, available to the County for inspection and copying."

Section 9-1.05, "Stop Notices," of the Standard Specifications is hereby amended by adding the following statement: "Stop notice information may be obtained from the Department of Public Works and Transportation."

Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications is hereby amended to read: "Attention is directed to Section 9-1.06, "Partial Payments," of the Standard Specifications, to these Special Provisions and in particular to the retention provisions therein.

Upon the Contractor's request, the County will make payment to the Contractor of funds withheld to ensure performance of this contract if the Contractor, in accordance with Public Contract Code Section 22300, deposits in escrow with the County, or with a state or federally chartered bank in California securities equivalent to the amount withheld. Securities eligible for investment under this section shall include bank or savings and loan certificates of deposit, the securities enumerated in Government Code Section 16430, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the County. Upon satisfactory completion of the contract, the securities shall be returned to the Contractor. Alternatively, the Contractor may request that the County make payment of retention earned directly to the escrow agent as provided in subdivision (b) of Section 22300 of the Public Contract Code.

Each of the following conditions shall apply to the deposit of securities into escrow:

(a) The Contractor shall bear the expense of the County and the escrow agent (either the County or the bank) in connection with the escrow deposit made.
(b) Securities or certificates of deposit to be placed in escrow shall be of a value at least equivalent to the amounts of retention to be paid to the Contractor pursuant to this section.
(c) The value of any securities placed in escrow shall be based upon the market value of such securities as of the date the securities are deposited in escrow, and not upon the face value of the securities. Such securities shall be valued by the County, whose decision on valuation of the securities shall be final.
(d) The escrow agreement shall provide that the escrow agent must convert the securities deposited therein for cash, in whole or in part, to meet the defaults by the Contractor upon a unilateral demand for such conversion by the Public Works Director, and further that any amount so demanded shall be paid to the County upon said unilateral demand for payment.
(e) The Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.
(f) The Contractor shall enter into an escrow agreement satisfactory to the County, which agreement shall be substantially similar to the form set forth in Public Contract Code Section 22300. The Contractor shall obtain the written consent of the surety to such agreement. The Public Works Director is authorized to sign such escrow agreements on behalf of the County.

Section 9-1.07B, "Final Payments and Claims," of the Standard Specifications is hereby amended by deleting the introductory phrase "After acceptance by the Director," and inserting in its place the phrase: "After the Engineer makes a formal recommendation to the Director that the Public Works Department initiates the internal procedures that would allow the Board to accept the work at a future Board meeting,"

5-1.08 Determination of Disputes: Public Contract Code Sections 10240 through 10245.4 shall not be applicable to this contract. Section 9-1.10, "Arbitration," of the Standard Specifications is hereby deleted. All disputes and claims arising under or by virtue of this contract shall be directed to and be determined by the Public Works Director. The Public Works Director's determination of disputes and claims pursuant to these Special Provisions shall constitute the decision of the County.
The parties agree that to the extent Article 1.5 of the Public Contract Code (Public Contract Code Section 20104 et seq) is applicable to any claims made under this contract, nothing in Article 1.5 excuses Contractor's compliance with the claim procedures set forth in the Standard Specifications (as amended by these Contract Documents). Nothing in Article 1.5 extends the time limit or supercedes the notice requirements set forth in the Standard Specifications (as amended by these Contract Documents). The parties mutually agree that all information required of the Contractor under said Standard Specifications (as amended by these Contract Documents) is hereby incorporated into the requirements of Article 1.5.

Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3 of Division 2 of the Public Contract Code provides as follows:

Article 1.5 Resolution of Construction Claims

20104. (a) (1) This article applies to all public works claims of three hundred seventy-five thousand dollars ($375,000) or less which arise between a contractor and a local agency. (2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.

(b) (1) "Public work" has the same meaning as in Sections 3100 and 3106 of the Civil Code, except that "public work" does not include any work or improvement contracted for by the state or the Regents of the University of California. (2) "Claim" means a separate demand by the Contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the local agency.

(c) The provisions of this article or a summary thereof shall be set forth in the plans or specifications for any work which may give rise to a claim under this article.

(d) This article applies only to contracts entered into on or after January 1, 1991.

20104.2. For any claim subject to this article, the following requirements apply: (a) The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

(b) (1) For claims of less than fifty thousand dollars ($50,000), the local agency shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant. (2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant. (3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.

(c) (1) For claims of over fifty thousand dollars ($50,000) and less than or equal to three hundred seventy-five thousand dollars ($375,000), the local agency shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional

documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant. (2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant. (3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

(d) If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the local agency shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(e) Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

(f) This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

20104.4. The following procedures are established for all civil actions filed to resolve claims subject to this article:

(a) Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

(b) (1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration. (2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators, and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds. (3) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

(c) The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

20104.6. (a) No local agency shall fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in the contract.
(b) In any suit filed under Section 20104.4, the local agency shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

5-1.09 Audit of Records: The Contractor shall maintain and make available for examination and audit by the State Auditor General and/or duly authorized representatives of the State, County, or Federal Governments, all books, papers, accounting records, and other documents pertaining to the cost and performance of this contract.

The Contractor shall retain said books, papers, accounting records, and other documents for a period of three years after the date of final payment under this contract (Government Code Section 8546.7).

5-1.10 Contractor's Reports: The Contractor shall complete a daily report indicating location worked, total manpower per construction trade for each task, major equipment on site, each subcontractor's manpower and equipment, weather conditions, and other related information involved in the performance of the work. The daily report shall be completed on forms furnished by the Engineer and shall be submitted to the Engineer at the conclusion of each workday. The report shall comment on the daily progress and status of the work within each major component of the work.

5-1.11 Removal of Asbestos and Hazardous Substances: When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor reasonably believes to be asbestos or a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe. The Contractor shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In conformance with Section 25914.1 of the Health and Safety Code, removal of asbestos or hazardous substances including exploratory work to identify and determine the extent of the asbestos or hazardous substance will be performed by separate contract.

If delay of work in the area delays the current controlling operation, the delay will be considered a right of way delay and the Contractor will be compensated for the delay in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

5-1.12 Subcontracting: No subcontract releases the Contractor from the contract or relieves the Contractor of their responsibility for a subcontractor's work.

If the Contractor violates Public Contract Code §4100 et seq., the County may exercise the remedies provided under violates Public Contract Code §4100. The County may refer the violation to the Contractors State License Board as provided under Public Contract Code §4111.

The Contractor shall perform work equaling at least 30 percent of the value of the original total bid with the Contractor's own employees and equipment, owned or rented, with or without operators.

Each subcontract shall comply with the contract.

Each subcontractor shall have an active and valid State contractor's license with a classification appropriate for the work to be performed (Business and Professions Code, §7000 et seq.).

The Contractor shall submit copies of subcontracts upon request by the Engineer.

The Contractor shall submit a Subcontracting Request form prior to commencement of that portion of the work.

The Contractor shall not use a debarred subcontractor. Pursuant to the provisions in Section 1777.1 of the Labor Code, the Labor Commissioner publishes and distributes a list of contractors ineligible to perform work as a subcontractor on a public works project. This list of debarred contractors is available from the Department of Industrial Relations web site at:

http://www.dir.ca.gov/DLSE/Debar.html.

Upon request by the Engineer, the Contractor shall immediately remove and not again use a subcontractor who fails to prosecute the work satisfactorily.

5-1.13 Submittals: Submittals and shop drawings shall be supplied for all material and equipment items. The Contractor shall supply 5 copies of manufacturer's scaled, dimensioned shop drawings complete with all information required to describe the item and demonstrate compliance with contract drawings and these specifications. Neither fabrication nor onsite preparation shall be started before receipt of written review from the County.

Each submittal shall be sequentially numbered, dated, and appropriately titled with the specification number and description.

The Contractor's responsibility for errors, omissions, and deviations from the requirements of the contract documents in submittals is not relieved by the County's review. The County will require 10 days for submittal review. No claim will be allowed for damages or extensions of time because of delays in work resulting from rejection of material or from revisions and resubmittal of shop drawings, project data, or samples.

Full compensation for preparing submittals and shop drawings, as required, shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

5-1.14 Means and Methods: The Engineer will not have control over, be in charge of, nor be responsible for construction means, methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the work, since these are solely Contractor's responsibility, unless otherwise required by the Contract Documents.

5-1.15 Legal Address of the Contractor: Both the address given in the proposal and the Contractor's office in the vicinity of the work are hereby designated as places to either of which drawings, letters, notices, or other articles or communications to the Contractor may be mailed, transmitted electronically, or delivered. The mailing, electronic transmission, or delivery at either of these places shall be deemed sufficient notice thereof upon the Contractor.

Nothing herein contained shall be deemed to preclude the service of any drawing, letter, notice, article, or communication to, or upon, the Contractor or

Contractor's representative personally. The address named in the proposal may be changed at any time by written notice from the Contractor to the Engineer.

5-1.16 Weekly Progress Meetings: Weekly meetings shall be held at the project site to review the progress of the work and to discuss any problems which may have occurred. Meeting shall include the Engineer, inspectors, and the Contractor's foreman. The Contractor shall provide an updated schedule at the weekly meeting.

Full compensation for preparing updated schedules and attending the progress meetings, as required, shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

5-1.17 Government Code Claim Requirements: Nothing in these Contract Documents shall excuse a Contractor from fully complying with the requirements of Part 3 of division 3.6 of Title 1 of the Government Code (commencing with section 900). Said requirements must be complied with before filing any claim in any court of law, and are in addition to the other claims procedures set forth in the Contract Documents shall be considered a substitute or alternative procedure for complying with the requirements of Part 3 of Division 3.6 of Title 1 of the Government Code (commencing with section 900.)

5-1.18 Solid Waste Management: For the purpose of complying with San Luis Obispo County Code, Title 8, Health and Sanitation, Chapter 8.12, , "Solid Waste Management," the Contractor shall recycle at least 50% of the construction and demolition waste generated by the project.

The following is a list of IWMA-Certified Recycling Facilities:

C&D Recycling Facility at Cold Canyon Landfill	805-549-8332
C&D Recycling Facility at Chicago Grade Landfill	805-466-2985
North SLO County Recycling	805-434-0043
API (roll-off/debris box company)	805-928-8689
R&R (a roll-off/debris box company)	805-929-8000
Recycling Facility at the Paso Robles Landfill	805-238-2028
Santa Maria Transfer Station	805-922-9255
Bedford Enterprises/SMART	805-922-4977

The Contractor shall complete and sign the "RECYCLING PLAN" form in conformance with the provisions in Section 4-1.03, "Submittals," of these Special Provisions. This form must be submitted and approved prior to receiving the Notice to Proceed.

This form must show how at least 50% of the project construction and demolition waste will be recycled.

The Contractor shall maintain receipts or other documentation for any facility or site that received waste from the project.

The Contractor shall submit a complete and accurate "DISPOSAL REPORT" form with original receipts and supporting documentation. This form must be submitted and approved prior to receiving the Notice of Completion.

If the Contractor fails to submit the required information showing the 50% recycling goal was met, the County could impose a penalty equal to 2 percent of the total contract amount.

Full compensation for complying with these requirements shall be considered as included in the prices paid for the various items of work generating such construction and demolition waste and no additional compensation will be allowed therefor.

The following are copies of the "RECYCLING PLAN" and "DISPOSAL REPORT" forms:

RECYCLING PLAN FOR COUNTY PROJECTS

SECTION 1. PROJECT INFORMATION

Contract Title	Contractor Name	
	Contractor Phone	Contractor Fax
Contract Number	Street Address	
Total Contract Amount	City, State, Zip	
Print Name and Title	Signature	Date

SECTION 2. RECYCLING PLAN

	Before Construction (estimated tons)				
	Landfill	Recycling Facility		Reuse	
Materials	(Tons)	(Tons)	Location	(Tons)	Location
Cleared Vegetation					
Asphalt Concrete					
Concrete					
Metals (including spent equipment)					
Lumber					
Drywall					
Mixed Recyclables					
Trash					
Totals					
% Diversion					

Official Use Only

Recycling Plan Approved ☐	Recycling Plan Denied ☐
Information Required:	
Print Name and Title	Signature / Date

DISPOSAL REPORT FOR COUNTY PROJECTS

SECTION 1. PROJECT INFORMATION

Contract Title	Contractor Name	
	Contractor Phone	Contractor Fax
Contract Number	Street Address	
Total Contract Amount	City, State, Zip	

Contractor Certification: I certify under penalty of perjury that the information provided in this form is complete and accurate.

Print Name and Title	Signature	Date

SECTION 2. DISPOSAL REPORT

	After Construction (actual tons)				
	Landfill	Recycling Facility		Reuse	
Materials	(Tons)	(Tons)	Location	(Tons)	Location
Cleared Vegetation					
Asphalt Concrete					
Concrete					
Metals (including spent equipment)					
Lumber					
Drywall					
Mixed Recyclables					
Trash					
Totals					
% Diversion					

I have reviewed and approved the information submitted in this report for completeness

Resident Engineer's Name:	Signature:	Date:

Official Use Only

Disposal Report Approved ☐ Disposal Report Denied ☐

Information Required

Print Name and Title	Signature	Date

SECTION 6. (*BLANK*)

SECTION 7. (*BLANK*)

SECTION 8. *(BLANK)*

SECTION 9. DESCRIPTION OF WORK

Stabilize and rebuild approximately 60 foot long segment of a 35 foot high creek bank along Rocky Creek, adjacent to Santa Rosa Creek Road, about 0.9 miles north of Highway 46 in Paso Robles, California, including clearing and grubbing, tree removal, excavation, grading, rock slope protection, geosynthetic reinforced embankment, install willow root balls for rock slope protection, erosion control, hydroseeding, drainage pipe, asphalt pavement, metal beam guard rail, and roadside signs, and such other items or detail work not mentioned herein that are required by the Plans, the Standard Specifications and/or these Special Provisions shall be performed, constructed, furnished and/or installed.

SECTION 10. CONSTRUCTION DETAILS

10-1.01 ORDER OF WORK: Order of work shall conform to the provisions in Section 5-1.05, "Order of Work" of the Standard Specifications and these Special Provisions.

Attention is directed to Section 4-1.04, "Mandatory Pre-Construction Conference", of the Special Provisions regarding the number of working days.

After having received written notice to proceed and within the "Beginning of Work" stated time found in Section 4, "Prosecution and Progress of the Work", of these Special Provisions, Contractor shall install the required construction areas signs as the first item of site work. No other site work will be allowed until the placement of the construction area signs has been completed.

The permit rating for the bridge (49C-345) adjacent to the project site is "GGGGG" which can handle up to a 13-axle trailer with a Bonus Green Loading. The design live load is rated MS-18 or HS-20.

Attention is directed to Section 4-1.03 "Submittals" of the Special Provisions regarding the Contractor to submit the required submittals.

No road closure shall be allowed during the Templeton Unified School District's normal school year, which ends June 9 and starts again on August 23, 2011. In no event shall the road be closed for a time period exceeding five (5) consecutive weeks.

Instream work must be performed when the channel is dry. Conduct all work when the creek is dry and between July 1 and October 15 to minimize potential impacts to sensitive species.

The Contractor must pothole each and every underground utility line and buried facility within proximity to excavations to confirm the locations and, to identify any conflicts with the proposed construction. Submit a report indentifying each underground utility, including photos, information on depth and location. Confirmation of underground utility line locations relative to the buried facilities shall be reviewed, and adjusted if necessary, prior to commencement of excavation work.

Attention is directed to Section 5-1.03 of the Special Provision regarding notification to the Engineer for requesting stakes or marks to be set.

Construction Site Management, clearing and grubbing and earthwork activities will be subject to environmentally sensitive species monitoring per Section 10-1.08, "ENVIRONMENTALLY SENSITIVE AREA" of these Special Provisions. Notify the Engineer at least twenty (20) days before beginning any of these construction activities.

At those locations exposed to public traffic where guard railings or barriers are to be constructed, reconstructed, or removed and replaced, the Contractor shall schedule operations so that at the end of each working day there shall be no post holes open nor shall there be any railing or barrier posts installed without the blocks and rail elements assembled and mounted thereon.

Attention is direction Section 10-1.20 "EROSION CONTROL (TYPE D)" of the Special Provisions regarding the requirement that seeding associated with erosion control must be completed by November 15 of the year that construction occurs.

Payment for adhering to the order of work per this section shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

10-1.02 RELATIONS WITH CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
This project lies within the boundaries of the Central Coast Region Regional Water Quality Control Board (RWQCB).

This project shall comply with water quality standards as defined by Title 23, Section 3831(v) of the

California Code of Regulations and the following Special Provisions:

- All proposed mitigation, monitoring, and BMPs shall be implemented in the manner and at the time(s) described in the Water Quality Cert. #35007WQ02 dated 4/5/07 (see Attachment D for a copy).
- The discharge area of the project shall not exceed 0.006 acres.
- The discharge shall not do any of the following: (a) directly or indirectly destabilize a bed of a receiving water, (b) contribute to significant cumulative effects, (c) cause pollution, contamination, or nuisance (as defined by Water Code section 13050), (d) adversely affect candidate, threatened, or endangered species, (e) degrade water quality or beneficial uses, (f) be toxic, (g) include hazardous substances (as defined by Water Code section 13050) or designated waste (as defined by Water Code section 13173).
- Prior to implementation of any modifications to the project or mitigation measures, the RWQCB and other interested agencies shall be notified in writing.

The Contractor shall know and comply with provisions of Federal, State, and local regulations and requirements that govern the Contractor's operations and storm water and non-storm water discharges from the project site and areas of disturbance outside the project limits during construction. Attention is directed to Sections 7-1.01, "Laws to be Observed," 5-1.18, "Property and Facility Preservation," 7-1.12, "Indemnification and Insurance," and 9-1.07E(5), "Penalty Withholds," of the Standard Specifications.

The Contractor shall notify the Engineer immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or the Contractor's records pertaining to water pollution control work. The Contractor shall provide copies of correspondence, notices of violation, enforcement actions, or proposed fines by regulatory agencies to the Engineer.

Payment for compliance with "Relations with California Regional Water Quality Control Board" shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

10-1.03 FIRE PREVENTION: The Contractor shall cooperate with local fire prevention authorities in eliminating hazardous fire conditions. Construction personnel shall be educated on preventing the risk of fire in the area and to properly dispose of cigarettes at the project site. Construction personnel shall have shovels and a fire extinguisher on-site during all construction activities.

Payment for compliance with the requirements of "Fire Prevention" shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

10-1.04 STREAM DIVERSION: In the event surface water flow is encountered in the creek during construction, a Diversion and Dewatering Plan, along with the construction/work schedule, shall be submitted to the Engineer for review and approval by the CDFG prior to beginning any activities in the creek.

In the event surface water flow is encountered in the creek during construction, all instream activities shall be performed in isolation from surface water flow and in conformance with CDFG Streambed Alteration Agreement 2007-0020-R4 (see Attachments for copy of agreement). Surface water flow shall be diverted around the project area by using sheet piles, or cofferdams using native materials of washed cobble and gravel with plastic sheeting. Cofferdam materials and any plastic sheeting shall be removed from the project area when no longer needed.

Any equipment or structures placed in the active channel for water drafting, pumping or diversion shall be done in a manner that a) prevents pollution and/or siltation, b) provides flows to downstream reaches at all times to support aquatic life; c) provides flows of sufficient quality and quantity, and of appropriate temperature to support aquatic life, both above and below the diversion; and d) restores normal flows to the affected creek immediately upon completion of work at each location.

If the work site is temporarily dewatered by pumping, intakes shall be completely screened with wire mesh no larger than 0.5-millimeters to prevent aquatic species from entering the pump system. Water shall be released or pumped in a manner and at an appropriate rate to maintain unimpeded downstream flows

during construction.

Refer to Section 10-1.07, "CONSTRUCTION SITE MANAGEMENT" regarding Dewatering.

Payment for compliance with the requirements of "Stream Diversion" shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

10-1.05 TRENCH SAFETY: Attention is directed to Section 7-1.01E, "Trench Safety" of the Standard Specifications and these Special Provisions.

Contractor shall submit a detailed plan in advance of any trench excavation work as part of this contract showing the design of shoring, bracing, sloping or other provisions for worker protection from the potential hazard of caving ground resulting from excavation of any trench or trenches over five (5) feet in depth. The detailed plan must be prepared by a registered civil engineer or structural engineer if the design varies from the shoring system standards required by the Construction Safety Orders.

Payment for compliance with the requirements of "Trench Safety" shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

10-1.06 WATER POLLUTION CONTROL: Preparation and implementation of a Water Pollution Control Program shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications and these Special Provisions.

Plans to control erosion and stabilize areas subject to ground disturbance during construction shall be developed. A Water Pollution Control Program shall be prepared and implemented prior to commencement of project activities. The Plan shall include or be comprised of a statement of BMPs, winterization plan, etc. used to prevent pollution of surface water.

Contractor shall prepare and submit for the Engineer's approval a Water Pollution Control Program (WPCP) within 10 calendar days of receipt of the fully executed contract per the provisions of Section 4-1.03, "Submittals," of the Special Provisions. The Water Pollution Control Program shall also include measures to allow a prompt and effective response to any accidental spills.

The Contractor shall perform water pollution control work in conformance with the requirements in the Caltrans "Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual (March 2007). This manual is referred to as the "Preparation Manual". Copies of the Preparation Manual may be obtained from:

State of California
Department of Transportation
Publication Distribution Unit
1900 Royal Oaks Drive
Sacramento, California 95815
Telephone: (916) 445-3520

The Preparation Manual and other references for performing water pollution control work are available from the Caltrans Construction Storm Water and Water Pollution Control website at:

http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm

Before the start of job site activities, the Contractor shall provide training for project managers, supervisory personnel, and employees involved with water pollution control work. The training shall include:

A. Rules and regulations
B. Implementation and maintenance for:
    1. Temporary Soil Stabilization
    2. Temporary Sediment Control

3. Tracking Control
4. Wind Erosion Control

The Contractor shall designate in writing a Water Pollution Control Manager (WPCM). The Contractor shall submit a statement of qualifications describing the training, work history, and expertise of the proposed WPCM. The qualifications shall include either:

A. A minimum of 24 hours of Caltrans approved storm water management training described at Caltrans Construction Storm Water and Water Pollution Control web site.
B. Certification as a Certified Professional in Erosion and Sediment Control (CPESC).

The WPCM shall be:

A. Responsible for water pollution control work.
B. The primary contact for water pollution control work.
C. Have authority to mobilize crews to make immediate repairs to water pollution control practices.
D. Shall inform all workers the importance of preventing spills and train the Contractor's entire staff on the appropriate measures to take should a spill occur.

The Contractor may designate one manager to prepare the WPCP and a different manager to implement the plan. The WPCP preparer shall meet the training requirements for the WPCM.

WATER POLLUTION CONTROL PROGRAM

The Contractor shall submit a Water Pollution Control Program (WPCP) to the Engineer for approval. The WPCP shall conform to the requirements in the Preparation Manual and these special provisions.

Install and maintain appropriate erosion/sediment control measures throughout the duration of work activities.

The WPCP shall indentify storage, parking, and laydown areas and submit a map delineating these areas to the Engineer for review and approval.

The WPCP shall include water pollution control practices:

A. For storm water and non-storm water from areas outside of the job site related to construction activities for this contract such as:
    1. Staging areas.
    2. Storage yards.
    3. Access roads.
B. Appropriate for each season as described in "Implementation Requirements" of these special provisions.
C. Place suitable barriers along and above the dry creek bed to prevent loose soil from spilling into the drainage.
D. All standard BMPs shall be implemented to prevent the movement of sediment downstream. No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the waterways.

The WPCP shall include a schedule that:

A. Describes when work activities that could cause water pollution will be performed.
B. Identifies soil stabilization and sediment control practices for disturbed soil area.
C. Includes dates when these practices will be 25, 50, and 100 percent complete.
D. Shows 100 percent completion of these practices before the rainy season.

The WPCP shall include the following temporary water pollution control practices:

Temporary Sediment Control

1. Silt Fence
2. Fiber Roll
3. Erosion Control Blanket

Place silt fence or other suitable barriers along and above the dry creek bed to prevent loose soil from spilling into the drainage. If necessary, adjust erosion/sediment control measures to reflect work-area changes.

If there is a change in construction schedule or activities, the Contractor shall prepare an amendment to the WPCP to identify additional or revised water pollution control practices. The Contractor shall submit the amendment to the Engineer for review within 5 days. The Engineer will review the amendment within the same time allotted for the review of the initial submittal of the WPCP.

The Contractor shall not perform work that may cause water pollution until the WPCP has been approved by the Engineer. The Engineer's review and approval shall not waive any contract requirements and shall not relieve the Contractor from complying with Federal, State and local laws, regulations, and requirements.

If there is a change in construction schedule or activities, the Contractor shall prepare an amendment to the WPCP to identify additional or revised water pollution control practices. The Contractor shall submit the amendment to the Engineer for review within a time agreed to by the Engineer not to exceed the number of days specified for the initial submittal of the WPCP. The Engineer will review the amendment within the same time allotted for the review of the initial submittal of the WPCP.

The Contractor shall keep a copy of the approved WPCP at the job site. The WPCP shall be made available when requested by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests from the public shall be directed to the Engineer.

IMPLEMENTATION REQUIREMENTS

The Contractor's responsibility for WPCP implementation shall continue throughout any temporary suspension of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications.

If the Contractor or the Engineer identifies a deficiency in the implementation of the approved WPCP, the deficiency shall be corrected immediately, unless an agreed date for correction is approved in writing by the Engineer. The deficiency shall be corrected before the onset of precipitation. If the Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation, the County may correct the deficiency and deduct the cost of correcting deficiencies from payments.

Year Round

The Contractor shall monitor the weather forecast using the National Weather Service Forecast Office (http://www.srh.noaa.gov/) on a daily basis during the contract. The Contractor may use an alternative weather forecasting service if approved by the Engineer. Appropriate water pollution control practices shall be in place before precipitation.

The Contractor may discontinue earthwork operations for a disturbed area for up to 21 days and the disturbed soil area will still be considered active. When earthwork operations in the disturbed area have been completed, the Contractor shall implement appropriate water pollution control practices within 15 days or before predicted precipitation, whichever occurs first.

Rainy Season

Temporary sediment control practices conforming to these Special Provisions shall be in place during the rainy season between October 15 to April 15.

INSPECTION AND MAINTENANCE

The WPCM shall inspect and maintain the water pollution control practices identified in the WPCP as follows:

A. Before a forecasted storm
B. After precipitation that causes site runoff
C. At 24 hour intervals during extended precipitation
D. On a predetermined schedule, a minimum of once every 2 weeks outside of the defined rainy

season

The WPCM shall oversee the maintenance of the water pollution control practices.

The WPCM shall use the Storm Water Quality Construction Site Inspection Checklist provided in the Preparation Manual or an alternative inspection checklist provided by the Engineer. A copy of the completed site inspection checklist shall be submitted to the Engineer within 24 hours of finishing the inspection.

REPORTING REQUIREMENTS
If the Contractor identifies discharges into surface waters or drainage systems causing or potentially causing pollution or if the project receives a written notice or order from a regulatory agency, the Contractor shall immediately inform the Engineer. The Contractor shall submit a written report to the Engineer within 7 days of the discharge, notice, or order. The report shall include the following information:

A. The date, time, location, and nature of the operation, type of discharge and quantity, and the cause of the notice or order.
B. The water pollution control practices used before the discharge, or before receiving the notice or order.
C. The date of placement and type of additional or altered water pollution control practices placed after the discharge or after receiving the notice or order.
D. A maintenance schedule for affected water pollution control practices.

PAYMENT
During each estimate period the Contractor fails to conform to the provisions in this section, "Water Pollution Control," or fails to implement the water pollution control practices shown on the plans or specified elsewhere in these Special Provisions as items of work, the County will withhold 25 percent of the progress payment.

Withholds for failure to perform water pollution control work will be in addition to all other withholds provided for in the contract. The County will return performance-failure withholds in the progress payment following the correction for noncompliance.

The contract lump sum price paid for "**WATER POLLUTION CONTROL**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in control water pollution, including preparing, obtaining approval of, and amending the WPCP; reporting storm water and non-storm water discharges; the installation, inspection, maintenance, repair, removal of BMPs, and construction site management, and as specified in the Standard Specifications, these Special Provisions, and as directed by the Engineer.

Payments for WATER POLLUTION CONTROL PROGRAM" will be made as follows:

A. After the WPCP has been approved by the Engineer, up to 75 percent of the contract item price for "WATER POLLUTION CONTROL PROGRAM" will be included in the monthly progress estimate.
B. After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, payment for the remaining percentage of the contract item price for "WATER POLLUTION CONTROL PROGRAM" will be made in conformance with the provisions in Section 9-1.07A, "Payment Prior to Proposed Final Estimate" of the Standard Specifications.

Implementation of water pollution control practices in areas outside the County right of way not specifically provided for in the WPCP or in these Special Provisions will not be paid for.

10-1.07 CONSTRUCTION SITE MANAGEMENT: Prior to site disturbance, BMPs shall be implemented prior to, during, and following construction activities.

GENERAL
This work includes controlling potential sources of water pollution before they come in contact with storm water systems or watercourses. Work in this section will be subject to periodic biological monitoring.

Control material pollution and manage waste and non-storm water at the job site by implementing effective handling, storage, use, and disposal practices.

For information on documents under these Special Provisions, refer to the following Preparation Manual, Dewatering Guide, and BMP Manual.

Preparation Manual, Dewatering Guide, and BMP Manual are available from Caltrans Construction Storm Water and Water Pollution Control web site at:
http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm

Definitions
BMP Manual: The Department's Construction Site Best Management Practices (BMP) Manual.
Dewatering Guide: The Department's Field Guide to Construction Site Dewatering.
Minor spills: Small quantities of oil, gasoline, paint, or other material that are small enough to be controlled by a first responder upon discovery of the spill.
Preparation Manual: The Department's Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual.
Semi-significant spills: Spills that can be controlled by a first responder with help from other personnel.
Significant or hazardous spills: Spills that cannot be controlled by construction personnel.

Submit the following:
1. Material Safety Data Sheet (MSDS) at least 10 working days before material is used or stored
2. Monthly inventory records for material used or stored
3. Stormwater training:
   3.1. Include training dates and subject for employees and subcontractors with WPCP. Include dates and subject for ongoing training, including tailgate meetings.
   3.2. Employee training records:
      3.2.1. Within 5 days of WPCP approval for existing employees
      3.2.2. Within 5 days of training for new employees
      3.2.3. At least 5 days before subcontractors begin work for subcontractor's employees
4. Manifest forms for hazardous waste disposal within 5 days of transport and disposal
5. Copy of written approval to discharge into a sanitary sewer system at least 5 days before beginning discharge activities

Quality Control and Assurance
Train all employees and subcontractors in these subjects:
1. Material pollution prevention and control
2. Waste management
3. Non-storm water management
4. Identifying and handling hazardous substances
5. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances

Training must take place before starting work on this job. New employees must receive the complete training before starting work on this job. Conduct weekly meetings to discuss and reinforce spill prevention and control; material delivery, storage, use, and disposal; waste management; and non-storm water management procedures.

CONSTRUCTION

Spill Prevention and Control
A Spill Response Plan shall be included in the Water Pollution Control Program and shall be prepared and implemented to facilitate prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. All project-related spills of hazardous materials shall be cleaned up immediately. CDFG shall be notified immediately of any spills.

Carry spill kits in all construction vehicles to minimize potential for spills or leaks of hazardous materials into the creek or surrounding project areas.
Implement spill and leak prevention procedures for chemicals and hazardous substances stored on the job site.

As soon as it is safe, contain and clean up spills of petroleum products, sanitary and septic waste substances listed under CFR Title 40, Parts 110, 117, and 302.

Minor Spills: Clean up minor spills using these procedures:
1. Contain spread of the spill
2. Recover spilled material using absorption
3. Clean contaminated area
4. Dispose of contaminated material promptly and properly

Semi-significant Spills: Clean up semi-significant spills immediately using these procedures:
1. Contain spread of the spill
2. Recover spilled material using absorption where the spill occurs on paved or an impermeable surface
3. Contain the spill with an earthen dike and dig up contaminated soil for disposal where the spill occurs on soil
4. When the spill occurs during precipitation, cover the spill with plastic or other material to prevent contaminated runoff
5. Dispose of contaminated material promptly and properly

Significant or Hazardous Spills: Immediately notify qualified personnel of significant or hazardous spills. Take these steps:
1. Construction personnel must not attempt to cleanup the spill until qualified staff has arrived
2. Notify the Engineer and follow up with a written report
3. Obtain the services of a spills contractor or hazardous material team immediately
4. Notify the local emergency response team by dialing 911 and county officials at the emergency phone numbers kept on the job site
5. Notify the Governor's Office of Emergency Services Warning Center at (805) 852-7550
6. Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities under CFR Title 40, Parts 110, 119, and 302
7. Notify other agencies as appropriate, including:
    7.1. Fire Department
    7.2. Public Works Department
    7.3. Coast Guard
    7.4. Highway Patrol
    7.5. City Police or County Sheriff Department
    7.6. Department of Toxic Substances
    7.7. California Division of Oil and Gas
    7.8. Cal OSHA
    7.9. Regional Water Resources Control Board

Report minor, semi-significant, and significant spills to the WPC (Water Pollution Control) manager. WPC manager must notify the Engineer immediately. WPC manger must oversee and enforce proper spill prevention and control measures.

Prevent spills from entering storm water runoff before and during cleanup. Spills must not be buried or washed with water.

Keeps material or waste storage areas clean, well organized, and equipped with enough cleanup supplies for the material being stored.

Vehicle and Material Management
Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life.

As much as possible, restrict equipment to the existing roadway and/or ruderal areas to avoid disturbance to existing vegetation. Vehicles shall operate on existing roads, in the defined access routes, and the defined work area identified for this project.

Construction vehicle access to the stream banks shall be limited to predetermined ingress and egress corridors on existing roads. All other areas adjacent to the work site shall be considered an ESA and shall remain off-limits to construction equipment. Vehicle corridors and the ESA shall be identified and fenced/flagged as described above.

Vehicles shall not be operated in areas of surface water or in areas where riparian or aquatic species of plants are present, except as otherwise addressed in the streambed alteration agreement or without prior approval from CDFG.

Any staging or equipment/vehicle parking areas shall be free of combustible vegetation and work crews shall have shovels and a fire extinguisher on site during all construction activities.

Material must be delivered, used, and stored for this job in a way that minimizes or eliminates discharge of material into the air, storm drain systems, or watercourses.

Implement the practices described in this section while taking delivery of, using, or storing these materials:

1. Hazardous chemicals including:
    1.1. Acids
    1.2. Lime
    1.3. Glues
    1.4. Adhesives
    1.5. Paints
    1.6. Solvents
    1.7. Curing compounds
2. Soil stabilizers and binders
3. Fertilizers
4. Detergents
5. Plaster
6. Petroleum products including:
    6.1. Fuel
    6.2. Oil
    6.3. Grease
7. Asphalt components and concrete components
8. Pesticides and herbicides

Employees trained in emergency spill cleanup procedures must be present during unloading of hazardous materials or chemicals. If practical, use less hazardous products.

Material Storage

Use these storage procedures:

1. Store liquids, petroleum products, and substances listed in CFR Title 40, Parts 110, 117, and 302 in containers or drums approved by the United States Environmental Protection Agency, and place them in secondary containment facilities.
2. Secondary containment facilities must be impervious to the materials stored there for a minimum contact time of 72 hours.
3. Throughout the rainy season, cover secondary containment facilities during non-working days and when precipitation is predicted. Secondary containment facilities must be adequately ventilated.
4. Keep secondary containment facility free of accumulated rainwater or spills. After precipitation, or in the event of spills or leaks, collect accumulated liquid and place into drums within 24 hours. Handle these liquids as hazardous waste under "Hazardous Waste" unless testing determines them to be nonhazardous.
5. Do not store incompatible materials, such as chlorine and ammonia, in the same secondary containment facility.
6. Store materials in the original containers with the original product labels maintained in legible condition. Replace damaged or illegible labels immediately.

7. Secondary containment facility must have the capacity to contain precipitation from a 24-hour-long, 25-year storm; and 10 percent of the aggregate volume of all containers, or entire volume of the largest container within the facility, whichever is greater.
8. Store bagged or boxed material on pallets. Throughout the rainy season, protect bagged or boxed material from wind and rain during non-working days and while precipitation is predicted.
9. Provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas must be kept clean, well organized, and equipped with cleanup supplies appropriate for the materials being stored.
10. Repair or replace perimeter controls, containment structures, covers, and liners as necessary. Inspect storage areas before and after precipitation, and at least weekly during other times.

Stockpile Management
Spoil storage sites shall not be located within the creek, where spoil will be washed into the creek, or where it will cover aquatic or riparian vegetation.

As much as possible, restrict equipment to the existing roadway and/or ruderal areas to avoid disturbance to existing vegetation. Vehicles shall operate on existing roads, in the defined access routes, and the defined work area identified for this project.

Implement practices described in this section for managing stockpiles:
1. During the rainy season
2. During the non-rainy season when the National Weather Service predicts precipitation with a probability of at least 30 percent

Use these stockpile management procedures:
1. Reduce or eliminate potential air and water pollution from stockpiled material including soil, paving material, or pressure treated wood.
2. Locate stockpiles:
    2.1. If within the floodplain, at least 100 feet from concentrated flows of storm water, drainage courses, or inlets unless approved
    2.2. If outside the floodplain, at least 50 feet from concentrated flows of storm water, drainage courses, or inlets unless approved

Active and inactive soil stockpiles must be:
1. Covered with soil stabilization measures, plastic sheeting, or geosynthetic fabric
2. Surrounded with a linear sediment barrier

Portland cement concrete rubble, AC, HMA, AC and HMA rubble, aggregate base or aggregate sub-base stockpiles must be:
1. Covered with plastic sheeting, or geosynthetic fabric
2. Surrounded with a linear sediment barrier

Pressure treated wood stockpiles must be:
1. Placed on pallets
2. Covered with impermeable material

Cold mix asphalt concrete stockpiles must be:
1. Placed on impervious surface
2. Covered with impermeable material
3. Protected from run-on and runoff

If you discontinue adding or removing material for up to 21 days the stockpile is considered still active during that period.

Control wind erosion during the non-rainy season and dry weather under Section 10-1.11, "Dust Control" of these Special Provisions.

Repair or replace linear sediment barriers and covers as needed to keep them functioning properly. If

sediment accumulates to 1/3 of the linear sediment barrier height, remove sediment.

Waste Management
Project generated debris, materials and rubbish shall not be deposited in the creek and shall be removed from areas where such materials could be washed into the creek.

Raw cement, concrete or washings thereof, asphalt, drilling fluids or lubricants, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish or wildlife resulting from or disturbed by project-related activities, shall be prevented from contaminating the soil and/or entering "Waters of the State."

Project generated material and debris shall be removed from the project site. All project generated debris shall be disposed of in a legal manner.

Solid Waste
Remove all trash from the project area at the end of each day to avoid attracting wildlife.

WPC manager must monitor solid waste storage and disposal procedures on the job site.

The construction zone shall be kept free from litter by providing suitable disposal containers for trash and all construction-generated material wastes. These containers shall be emptied at regular intervals and the contents properly disposed.

Do not allow litter or debris to accumulate anywhere on the job site. Pick up and remove trash and debris from the job site everyday.

If practicable, recycle nonhazardous job site waste and excess material. If recycling is not practicable, disposal must comply with Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

Furnish enough closed-lid dumpsters of sufficient size to contain the solid waste generated by work activities. When refuse reaches the fill line, empty dumpsters. Dumpsters must be watertight. Do not wash out dumpsters at the job site. Furnish additional containers and more frequent pickup during the demolition phase of construction.

Solid waste includes:
1. Brick
2. Mortar
3. Timber
4. Metal scraps
5. Sawdust
6. Pipe
7. Electrical cuttings
8. Non-hazardous equipment parts
9. Styrofoam and other packaging materials
10. Vegetative material and plant containers from highway planting
11. Litter and smoking material, including litter generated randomly by the public
12. Other trash and debris

Furnish and use trash receptacles in the job site yard, field trailers, and locations where workers gather for lunch and breaks.

Hazardous Waste
Implement best management practices to avoid the release of pollutants associated with pavement and grinding operations into waterbodies. Act appropriately to prevent, contain, and clean up hazardous material spills.

Use hazardous waste management practices if waste is generated on the job site from these substances:

1. Petroleum products
2. Asphalt products
3. Concrete curing compound
4. Pesticides
5. Acids
6. Paints
7. Stains
8. Solvents
9. Wood preservatives
10. Roofing tar
11. Road flares
12. Lime
13. Glues and adhesives
14. Materials classified as hazardous by California Code of Regulations, Title 22, Division 4.5; or listed in CFR Title 40, Parts 110, 117, 261, or 302

WPC manager must oversee and enforce hazardous waste management practices. Minimize the production of hazardous materials and hazardous waste at the job site. If damaged, repair or replace perimeter controls, containment structures, and covers.

If hazardous material levels are unknown, use a laboratory certified by the Environmental Laboratory Accreditation Program (ELAP) under the California Department of Public Health (CDPH) to sample and test waste to determine safe methods for storage and disposal.

Separate potentially hazardous waste from nonhazardous waste at the job site. Hazardous waste must be handled, stored, and disposed of under California Code of Regulations, Title 22, Division 4.5, Section 66262.34; and in CFR Title 49, Parts 261, 262, and 263.

Store hazardous waste in sealed containers constructed and labeled with the contents and date accumulated under California Code of Regulations, Title 22, Division 4.5; and in CFR Title 49, Parts 172, 173, 178, and 179. Keep hazardous waste containers in temporary containment facilities under "Material Storage" of these Special Provisions.

Furnish containers with adequate storage volume at convenient locations for hazardous waste collection. Do not overfill hazardous waste containers. Do not mix hazardous wastes. Do not allow potentially hazardous waste to accumulate on the ground. Store containers of dry waste that are not watertight on pallets. Store hazardous waste away from storm drains, watercourses, moving vehicles, and equipment.

Clean water based or oil based paint from brushes or equipment within a contained area and in a way that does not contaminate soil, watercourses, or storm drain systems. Handle and dispose of these as hazardous waste: paints, thinners, solvents, residues, and sludges that cannot be recycled or reused. When thoroughly dry, dispose of these as solid waste: dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths.

Dispose of hazardous waste within 90 days of being generated. Use a licensed hazardous waste transporter to take hazardous waste to a Class I Disposal Site. Submit a copy of uniform hazardous waste manifest forms within 24 hours of transporting hazardous waste.

WPC manager must inspect these daily:
1. Storage areas for hazardous materials and wastes
2. Hazardous waste disposal and transporting activities
3. Hazardous material delivery and storage activities

Contaminated Soil
Identify contaminated soil from spills or leaks by noticing discoloration, odors, or differences in soil properties. Soil with evidence of contamination must be sampled and tested by a laboratory certified by ELAP. If levels of contamination are found to be hazardous, handle and dispose of the soil as hazardous

waste.

Prevent the flow of water, including ground water, from mixing with contaminated soil by using one or a combination of these measures:
1. Berms
2. Cofferdams
3. Grout curtains
4. Freeze walls
5. Concrete seal course

If water mixes with contaminated soil and becomes contaminated, sample and test the water using a laboratory certified by ELAP. If levels of contamination are found to be hazardous, handle and dispose of the water as hazardous waste.

Concrete Waste

Use practices to prevent the discharge of portland cement concrete, AC, or HMA waste into storm drain systems or watercourses.

Collect and dispose of portland cement concrete, AC, or HMA waste at locations where:
1. Concrete material, including grout, is used
2. Concrete dust and debris result from demolition
3. Sawcutting, coring, grinding, grooving, or hydro-concrete demolition of portland cement concrete, AC, or HMA creates a residue or slurry
4. Concrete truck or other concrete-coated equipment is cleaned at the job site

Sanitary and Septic Waste

Do not bury or discharge wastewater from sanitary or septic systems within County right of way. WPC manager must inspect sanitary or septic waste storage and monitor disposal procedures at least weekly. Sanitary facilities that discharge to the sanitary sewer system must be properly connected and free from leaks. Place sanitary facilities at least 50 feet away from storm drains, watercourse, and flow lines.

Obtain written approval from local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system, and submit a copy to the Engineer. Comply with local health agency provisions while using an on-site disposal system.

Liquid Waste

Use practices to prevent job site liquid waste from entering storm drain systems or watercourses. Liquid wastes include the following:
1. Drilling slurries or fluids
2. Grease-free or oil-free wastewater or rinse water
3. Dredgings, including liquid waste from drainage system cleaning
4. Liquid waste running off a surface including wash or rinse water
5. Other non-storm water liquids not covered by separate permits

Hold liquid waste in structurally sound, leak proof containers such as:
1. Roll-off bins
2. Portable tanks

Liquid waste containers must be of sufficient quantity and volume to prevent overflow, spills and leaks.

Store containers:
1. At least 50 feet from moving vehicles and equipment
2. If within the floodplain, at least 100 feet from concentrated flows of storm water, drainage courses, watercourses, or storm drain inlets unless approved
3. If outside the floodplain, at least 50 feet from concentrated flows of storm water, drainage courses, watercourses, or storm drain inlets unless approved

Remove and dispose of deposited solids from sediment traps under "Solid Waste" unless the Engineer authorizes another method.

Liquid waste may require testing to determine hazardous material content before disposal.

Drilling fluids and residue must be disposed of outside the highway right of way.
If an approved location is available within the job site, fluids and residue exempt under California Code of Regulations, Title 23, Section 2511(g) may be dried by evaporation in a leak proof container. Dispose of remaining solid waste under "Solid Waste" of these Special Provisions.

Non-Storm Water Management

Water Control and Conservation
Manage water used for work activities to prevent erosion or discharge of pollutants into storm drain systems or watercourses. Obtain approval before washing anything on the job site with water that could discharge into a storm drain system or watercourse. Report discharges immediately.

If water is used at the job site, implement water conservation practices. Inspect irrigation areas. Adjust watering schedules to prevent erosion, excess watering, or runoff. Shut off water source to broken lines, sprinklers, or valves, and repair breaks within 24 hours. If possible, reuse water from waterline flushing for landscape irrigation. Sweep and vacuum paved areas: do not wash with water.

Direct job site water runoff, including water from water line repair, to areas where it can infiltrate into the ground and not enter storm drain systems or watercourses. Do not allow spilled water to escape water truck filling areas. If possible, direct water from off-site sources around the job site. Minimize the contact of off-site water with job site water.

Illegal Connection and Discharge Detection and Reporting
Inspect the job site and the site perimeter before starting work for evidence of illegal connections, discharges, or dumping. After starting work, inspect the job site and perimeter on a daily schedule. When illegal connections, discharges, or dumping are discovered, notify the Engineer immediately. Take no further action unless ordered by the Engineer. Assume unlabeled or unidentifiable material is hazardous.

Look for the following evidence of illegal connections, discharges, or dumping:
1. Debris or trash piles
2. Staining or discoloration on pavement or soils
3. Pungent odors coming from drainage systems
4. Discoloration or oily sheen on water
5. Stains or residue in ditches, channels or drain boxes
6. Abnormal water flow during dry weather
7. Excessive sediment deposits
8. Nonstandard drainage junction structures
9. Broken concrete or other disturbances near junction structures

Vehicles and Equipment Cleaning
Limit vehicle and equipment cleaning or washing at the job site except what is necessary to control vehicle tracking or hazardous waste. Notify the Engineer before cleaning vehicles and equipment at the job site with soap, solvents, or steam. Contain and recycle or dispose of resulting waste under "Liquid Waste" or "Hazardous Waste" of these Special Provisions, whichever is applicable. Do not use diesel to clean vehicles or equipment, and minimize the use of solvents.
Clean or wash vehicles and equipment in a structure equipped with disposal facilities. If using a structure is not possible, vehicles and equipment must be cleaned or washed in an outside area:
1. Paved with AC, HMA, or portland cement concrete
2. Surrounded by a containment berm
3. Equipped with a sump to collect and dispose of wash water
4. If within the floodplain, located at least 100 feet from concentrated flows of storm water, drainage courses, watercourses, or storm drain inlets unless approved
5. If outside the floodplain, located at least 50 feet from concentrated flows of storm water, drainage courses, watercourses, or storm drain inlets unless approved

When washing vehicles or equipment with water, use as little water as possible. Hoses must be equipped with a positive shutoff valve

Discharge liquid from wash racks to a recycle system or to another approved system. Remove liquids and sediment as necessary.

WPC manger must inspect vehicle and equipment cleaning facilities:
1. Daily when vehicle and equipment cleaning occurs daily
2. Weekly when vehicle and equipment cleaning does not occur daily

Vehicle and Equipment Fueling and Maintenance
Fuel and maintain equipment in an appropriate staging area at least 75 feet from the stream channels and banks, or fuel within an area protected by secondary containment. Stationary equipment such as motors, pumps, generators, compressors, and welders located within or adjacent to the stream shall be positioned over drip-pans.

On a daily basis, check and maintain all equipment and vehicles that would be operated within the identified work area to ensure proper operation and avoid potential leaks or spills.

Equipment and vehicles shall be kept out of areas identified as wetlands and waters of the United States.

Servicing and fueling of vehicles shall be accomplished with the use of the following best management practices:
a. Servicing and fueling shall take place as far as practical from the creek. When fueling, tanks shall not be "topped off."
b. A secondary containment, such as a drain pan or drain cloth, shall be used when fueling to catch spills or leaks.
c. Fueling and servicing shall be done only in designated areas.
d. Employees and subcontractors shall be trained in proper fueling, servicing, and clean-up procedures.
e. All fluid spills shall be reported immediately.
f. Storage of hazardous materials shall be as far as practical from the creek.
g. A contingency plan for possible leaks and spills of hazardous materials into the creek shall be developed and implemented as appropriate.

If vehicle and equipment fueling and maintenance must be done on the job site, areas for these activities shall be approved by the Engineer and must be:
1. On level ground
2. Protected from stormwater run-on
3. If within the floodplain, located at least 100 feet from concentrated flows of storm water, drainage courses, watercourses, or storm drain inlets unless approved
4. If outside the floodplain, located at least 50 feet from concentrated flows of storm water, drainage courses, watercourses, or storm drain inlets unless approved

Use containment berms or dikes around the fueling and maintenance area. Keep adequate quantities of absorbent spill cleanup material and spill kits in the fueling and maintenance area and on fueling trucks. Dispose of spill cleanup material and kits immediately after use. Use drip pans or absorbent pads during fueling or maintenance.

Fueling or maintenance activities must not be left unattended. Fueling nozzles must be equipped with an automatic shutoff control. Vapor recovery fueling nozzles must be used where required by the Air Quality Management District. When not in use, nozzles must be secured upright. Do not top-off fuel tanks.

Recycle or properly dispose of used batteries and tires.

WPC manager must inspect vehicle and equipment maintenance and fueling areas:
1. Daily when vehicle and equipment maintenance and fueling occurs daily
2. Weekly when vehicle and equipment maintenance and fueling does not occur daily

WPC manager must inspect vehicles and equipment at the job site for leaks and spills on a daily schedule. Operators must inspect vehicles and equipment each day of use.

If leaks cannot be repaired immediately, remove the vehicle or equipment from the job site.

Material and Equipment Used Over Water
Place drip pans and absorbent pads under vehicles or equipment used over water. Keep an adequate supply of spill cleanup material with the vehicle or equipment. If the vehicle or equipment will be idle for more than one hour, place drip pans or plastic sheeting under vehicles or equipment on docks, barges, or other surfaces over water. Furnish watertight curbs or toe boards on barges, platforms, docks, or other surfaces over water to contain material, debris, and tools. Secure material to prevent spills or discharge into water due to wind.

Structure Removal Over or Adjacent to Water
Do not allow demolished material to enter storm water systems or watercourses. Use approved covers and platforms to collect debris. Use attachments on equipment to catch debris on small demolition activities. Empty debris catching devices daily and handle debris under "Waste Management" of these Special Provisions.

WPC manager must inspect demolition sites within 50 feet of storm water systems or watercourses daily.

Paving, Sealing, Sawcutting, and Grinding Activities
Prevent these materials from entering storm drain systems or water courses:

1. Cementitious material
2. Asphaltic material
3. Aggregate or screenings
4. Grinding or sawcutting residue
5. Pavement chunks
6. Shoulder backing
7. Methacrylate

Cover drainage inlets and use linear sediment barriers to protect downhill watercourses until paving, sealing, sawcutting, or grinding activities are completed and excess material has been removed. Cover drainage inlets and manholes during the application of seal coat, tack coat, slurry seal, or fog seal.

During the rainy season or when precipitation is predicted, limit paving, sawcutting, and grinding to places where runoff can be captured.

Do not start seal coat, tack coat, slurry seal, or fog seal activities when precipitation is predicted during application or curing period. Do not excavate material from existing roadways during precipitation.

Use a vacuum to remove slurry from sawcutting activities immediately after slurry is produced. Do not allow slurry to run onto lanes open to public traffic or off the pavement.

Collect residue from portland cement concrete grinding activities with a vacuum attachment on the grinding machine. Do not leave residue on pavement or allow residue to flow across pavement.

If approved, material excavated from existing roadways may be stockpiled under "Stockpile Management" of these special provisions.

Do not coat asphalt trucks and equipment with substances that contain soap, foaming agents, or toxic chemicals.

When paving equipment is not in use, park over drip pans or plastic sheeting with absorbent material to catch drips.

Dewatering
Dewatering consists of discharging accumulated storm water, ground water, or surface water from excavations or temporary containment facilities. Removal of water shall conform to the provisions in Section 19-3.04, "Water Control and Foundation Treatment," of the Standard Specifications.

Water from the excavation, if any, will be pumped to upland nonnative grassland where it will be filtered and contained to ensure that no silt-laden water enters the creek. Infiltrating groundwater removed from excavations shall be pumped to a temporary sediment basin before discharging back into the creek channel. The temporary sediment basin may be constructed of hay bales bound together by baling wire and an impermeable base, or by other means equally as effective and with prior approval from CDFG. Water from the temporary sediment basin shall be discharged in a manner as to not cause erosion of the creek bed.

Before removal of water, the Contractor shall submit a Dewatering and Discharge Plan to the Engineer in conformance with these Special Provisions.

1. At least 10 days before starting dewatering, submit a Dewatering and Discharge Plan under Section 5-1.02, "Plans and Working Drawings," and Section 7-1.01G "Water Pollution" of the Standard Specifications. Dewatering and Discharge Plan must include:
   1.1. Title sheet and table of contents
   1.2 Description of dewatering and discharge activities detailing locations, quantity of water, equipment, and discharge point
   1.3. Estimated schedule for dewatering and discharge (start and end dates, intermittent or continuous)
   1.4. Discharge alternatives such as dust control or percolation
   1.5. Visual monitoring procedures with inspection log
2. Conduct dewatering activities under the Field Guide for Construction Dewatering.
3. Ensure that dewatering discharge does not cause erosion, scour, or sedimentary deposits that impact natural bedding materials.
4. Discharge water within project limits. If water cannot be discharged within project limits due to site constraints, dispose of it in the same way specified for material in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.
5. Do not discharge storm water or non-storm water that has an odor, discoloration other than sediment, an oily sheen, or foam on the surface. Notify the Engineer immediately upon discovering any of those conditions.
6. WPC manager must inspect dewatering activities:
   6.1. Daily when dewatering work occurs daily
   6.2. Weekly when dewatering work does not occur daily

Payment for construction site management shall be considered as included in the contract lump sum price paid for "WATER POLLUTION CONTROL" and no additional compensation will be allowed therefor.

10-1.08 ENVIRONMENTALLY SENSITIVE AREA (ESA): Notify the Engineer before beginning any construction site management, clearing and grubbing or earthwork activities to allow the County enough time to complete the following:

- Clearly mark the boundaries of the proposed work area and identify the upstream and downstream limits of the minimum required work area and other encroachments into the stream including any restricted vehicle access corridors. All areas within the identified work area limits shall be considered ESA and shall not be disturbed. Advise all construction personnel to conduct work activities within the defined area.
- The County Biologist must conduct preconstruction surveys for sensitive wildlife species in or near the project area prior to the beginning of any work activities and at the beginning of each day that work activities continue.
- Submit request to USFWS at least fifteen (15) days prior to requesting approval to survey for, capture, and move California red-legged frogs from the work areas.
- The County Biologist shall permanently remove from within the project area any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes, to the maximum extent possible in compliance with the California Fish and Game Code.

Cease work and notify the Engineer if any federally-or state-listed species enter the work site. If any wildlife is encountered during the course of construction, said wildlife shall be allowed to leave the construction area unharmed.

The County Biologist shall have the authority to halt any action that might result in noncompliance with these Special Provisions. If work is stopped, the Corps and Service shall be notified immediately by the Service-approved biologist or on-site biological monitor.

If any State- or Federal-listed Threatened or Endangered species occur within the proposed work area or could be impacted by the work proposed, and thus "taken" as a result of project activities, required State and Federal threatened and endangered species permits or other written authorization must be obtained before proceeding with project activities.

On-site environmental training
Construction personnel shall attend an on-site environmental training conducted by the County to aid construction personnel in recognizing and avoiding sensitive species that may occur in the project area and the legal consequences of non-compliance. Training will include a description of the California red-legged frog and its habitat, the importance of the California red-legged frog and its habitat, the general measures that are being implemented to conserve the California red-legged frog as they relate to the project, and the boundaries within which the project may be accomplished.

California red-legged frogs
Well-defined survey and relocation procedures must be implemented by the County Biologists to avoid or minimize the take of California red-legged frogs during project activities.

If California red-legged frogs are found on site during work activities, County Biologist shall have the authority to halt activities until the California red-legged frogs are safely removed from the work area.

If California red-legged frogs are found, they must be moved to a predetermined, appropriate relocation site in the project area where dense vegetation is located immediately upstream of the action area. The County Biologist must be allowed sufficient time to move California red-legged frogs from a work are before work activities begin. Only the County Biologist may participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. The County Biologist shall be present at the work site until such time as all removal of California red-legged frogs, instruction of construction personnel, and habitat disturbance have been completed. After this time, the County will monitor on-site compliance with all minimization measures.

To ensure that diseases are not conveyed between work sites by the County Biologists, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force shall be followed at all times. All plastic buckets used either for immediate relocation or for holding California red-legged frogs must be disinfected after each use with a 70 percent ethanol solution, or a bleach solution, and rinsed with sterile water. Care must be taken so that all traces of the disinfectant are removed before entering any aquatic site. Each California red-legged frog to be relocated must be placed in a separate plastic bucket, which must be kept shaded and moist until the individual frog is released at the new site. In the unlikely event that California red-legged frog tadpoles are found at the site, they must be captured in a hand net or a two-pole seine net of 1/4-inch mesh and transferred to a bucket containing creek water until they are relocated to a new site. The relocation process must be implemented as quickly as possible.

If more than one California red-legged frog is found dead or injured, the Corps or the County must contact the USFWS immediately so they can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by the Corps and the County and the terms of conditions of the Biological Opinion (BO) have been and continue to be implemented.

Nesting Birds
To protect nesting birds, no construction shall occur between March 1 and August 1 unless the following surveys are completed by the County biologist.

Raptors: Survey for nesting activity of raptors within 500 feet of the construction site. Surveys shall be conducted at appropriate nesting times and concentrate on mature trees. If any active nests are observed, these nests and nest trees shall be designated an Environmentally Sensitive Area (ESA) and construction shall be suspended until the CDFG is consulted with for additional protective provisions.

Other Avian Species: Survey for nesting activity within 500 feet of the defined work area 2 to 3 weeks before construction begins. If any nesting activity is found, construction activities shall be suspended and CDFG shall be contacted and additional protective provisions, specific to each incident, shall be developed.

Fish
All constructed features shall be properly installed/constructed as to not cause a barrier to the natural movement of fish.

Any artificial obstruction constructed, maintained, or placed in operation, within the active channel, shall allow at all times sufficient water to pass downstream to maintain aquatic life below the obstruction.

Payment
Payment for furnishing labor, materials, tools, equipment, and incidentals, and for doing the work involved in notifying the Engineer prior to work, preventing "take" of federally-or state-listed species, attending environmental training, and as specified herein shall be considered as included in the contract unit price paid for the various contract items of work involved and no separate payment will be made therefor.

10-1.09 TEMPORARY FENCE (TYPE ESA): Prior to beginning work, the Contractor shall install "Temporary Fence (Type ESA)" at the driplines of the trees in the locations designated on the plans and as directed by the Engineer. Temporary fence (Type ESA) shall be furnished, installed, maintained, and later removed in conformance with these Special Provisions and as directed by the Engineer.

Materials
Used materials may be installed provided the used materials conform to these Special Provisions.

High Visibility Fabric
High visibility fabric shall be machine produced, orange colored mesh manufactured from polypropylene or polyethylene. High visibility fabric may be made of recycled materials. Materials shall not contain biodegradable filler materials that can degrade the physical or chemical characteristics of the finished fabric. High visibility fabric shall be fully stabilized, ultraviolet resistant, and shall be a minimum of 4 feet in width with a maximum mesh opening of 2" x 2". High visibility fabric shall be furnished in one continuous width and shall not be spliced to conform to the specified width dimension.

Posts
Posts for temporary fence (Type ESA) shall be of one of the following:

a. Wood posts shall be fir or pine, and shall have a minimum cross section of 2" x 2", and a minimum length of 5.25 feet. The end of the post to be embedded in the soil shall be pointed. Wood posts shall not be treated with wood preservative.
b. Steel posts shall have a "U", "T", "L", or other cross sectional shape that resists failure from lateral loads. Steel posts shall have a minimum weight of 0.75 pounds per linear foot and a minimum length of 5.25 feet. One end of the steel post shall be pointed and the other end shall have a high visibility colored top.

Fasteners
Fasteners for attaching high visibility fabric to the posts shall be as follows:

a. The high visibility fabric shall be attached to wooden posts with commercial quality nails or staples, or as recommended by the manufacturer or supplier.

b. Tie wire or locking plastic fasteners shall be used for attaching the high visibility fabric to steel posts. Maximum spacing of tie wire or fasteners shall be 24 inches along the length of the steel post.

Use when signs are required. Edit as needed. Include on plans a detail drawing of the sign with size, shape, text, color of text and background.

Installation

a. Temporary fence (Type ESA) shall be installed as follows:

b. All fence construction activities shall be conducted from outside the ESA as shown on the plans or as staked.
c. Posts shall be embedded in the soil a minimum of 16 inches. Post spacing shall be 8 feet maximum from center to center and shall at all times support the fence in a vertical position.
d. Temporary fence (Type ESA) shall be constructed prior to clearing and grubbing work, shall enclose the foliage canopy (drip line) of protected plants, and shall not encroach upon visible roots of the plants.
e. Delete if layout of Temporary Fence (Type ESA) is shown on the plans.
f. Temporary fence (Type ESA) shall be located so that it is visible, as determined by the Engineer.

When Type ESA temporary fence is no longer required, as determined by the Engineer, the temporary fence shall be removed and disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications, except when reused as provided in this section.

Holes caused by the removal of temporary fence (Type ESA) shall be backfilled in conformance with the provisions in Section 15-1.02, "Preservation of Property," of the Standard Specifications.

Maintenance

Temporary fence (Type ESA) that is damaged during the progress of the work shall be repaired or replaced by the Contractor the same day the damage occurs.

Full compensation for providing, placing, maintaining, and removing **"TEMPORARY FENCE (TYPE ESA)"** shall be considered as being included in the various items of work involved, and no separate payment shall be allowed therefore.

10-1.10 SAFETY AND HEALTH PROVISIONS: In addition to the provision in Section 5-1.10, "Removal of Asbestos and Hazardous Substances" of the Special Provisions, Safety and Health Provisions will be required for this contract and shall conform to the provisions in Section 7-1.06, "Safety and Health Provisions," of the Standard Specifications.

Payment for compliance with the requirements of the "Safety and Health Provisions", shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

10-1.11 PRESERVATION OF PROPERTY: Attention is directed to Sections 7-1.11 "Preservation of Property," 7-1.12 "Indemnification and Insurance," and Section 8-1.10 "Utility and Non-Highway Facilities" of the Standard Specifications.

Persons who are under County or Contractor control shall not have firearms or pets; nor shall they engage in hunting or fishing.

Preservation of property will be paid for in the manner specified in Section 7-1.11, "Preservation of Property," of the Standard Specifications.

10-1.12 DUST CONTROL: Dust control shall conform to the provisions in Section 10, "Dust Control," of the Standard Specifications and these Special Provisions.

The Contractor shall prevent airborne dust from leaving the work site to the fullest extent possible. Any

and all stockpiles shall have measures to control dust during construction. All exposed ground areas resulting from the construction shall be planted with erosion control planting as soon as practical.

Control dust from all dirt stockpile areas; all trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer). Ensure that trucks and equipment leaving the site do not carry soil material onto adjacent paved roads; clean adjacent paved roads at the end of each day if visible soil material is carried from the site onto those roads.

Dust control will be paid for in the manner specified in Section 10, "Dust Control," of the Standard Specifications.

10-1.13 OBSTRUCTIONS: Attention is directed to Section 8-1.10, "Utility and Non-Highway Facilities," and Section 15, "Existing Highway Facilities," of the Standard Specifications and these Special Provisions.

The Contractor is responsible for maintaining the roadway for traffic at all times.

The following utility companies have existing facilities and/or services within the project limits:

Company Name	Contact	Phone Number
AT&T	Diane Vickers	(805) 546-7463

Please contact Underground Service Alert ("USA") at (800) 227-2600 a minimum of 48 hours prior to the start of construction. The Contractor shall be responsible to pothole and identify the locations of all existing utilities in the project limits prior to construction and shall notify the Engineer immediately if any conflicts are noted. The Contractor shall be responsible to protect and preserve the existing utilities in place.

Payment for furnishing labor, materials, tools, equipment, and incidentals, and for doing the work involved in locating, protecting, or repairing property as specified herein shall be considered as included in the contract unit price paid for the various contract items of work involved and no separate payment will be made therefor.

10-1.14 CONSTRUCTION AREA SIGNS: Attention is directed to the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these Special Provisions.

The Contractor shall furnish all sign panels, posts and hardware. The Contractor shall also erect and maintain all construction area signs shown on the plans as provided in these Special Provisions. The Contractor is responsible for having any underground utilities marked where sign posts will be placed. Construction area signs shall not be used until they are needed and when no longer needed, they shall be removed from the site of the work by the Contractor.

The base material of construction area signs shall not be plywood. Used sign panels, in good repair as determined by the Engineer, may be furnished. If determined by the Engineer, signs damaged by any cause shall be repaired or replaced by the Contractor at the Contractor's own expense.

The contract lump sum price paid for "**CONSTRUCTION AREA SIGNS**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in carrying out the provisions in Sections 7-1.08 and 7-1.09 of the Standard Specification as they relate to traffic-handling equipment and devices, complete in place, including portable message sign as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and no additional compensation will be allowed therefor.

10-1.15 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURES: A traffic control system shall consist of closing traffic lanes in accordance with the details shown in the Standard Plans and the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications.

The provisions in this section will not relieve the Contractor from the responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications.

One-way traffic shall be controlled through the project in accordance with the Standard Plan titled, "Traffic Control System for Lane Closure of Two Lane Conventional Highway," and these Special Provisions. If the Contractor utilizes a pilot car, radio contact with the personnel in the work area shall be provided by the Contractor and the maximum allowable speed of the pilot car through the traffic control zone shall be no more than 25 miles per hour.

If any component in the traffic control system is damaged, displaced or ceases to operate or function as specified, from any cause during the progress of the work, the Contractor shall immediately repair said component to its original condition, or replace said component, and shall restore the component to its original location.

When lane closures are made for work periods only, all components of the traffic control system, except portable delineators placed along open trenches or excavations adjacent to the traveled way, shall be removed from the traveled way, shoulder and auxiliary lanes at the end of each work period. If the Contractor so elects, the components of the traffic control system may be stored at selected central locations, approved by the Engineer, within the limits of the highway right of way.

Upon completion of the work requiring lane closure, all components of the traffic control system shall be removed from the site of the work by the Contractor.

When two lanes of traffic are closed, barricades and temporary railing shall be located at the following locations:

1) Station 7+90, install temporary railing (Type K, approximately 20 linear feet) across the entire width of the road
2) Station 15+80 install temporary railing (Type K, approximately 20 linear feet) across the entire width of the road
3) Type III barricades (total four) located as directed by the Engineer.

Type III barricades shall conform to Standard Plan A73C and Section 12-3.02 of the Standard Specifications. Temporary railing (Type K) shall conform to Section 12-3.08 of the Standard Specifications.

The contract lump sum price paid for, "**TRAFFIC CONTROL SYSTEM**" shall include full compensation for furnishing all labor, (except for flagging costs for the lane closures on two-lane highways), materials (including signs), tools, equipment and incidentals, and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the traffic control system, including barricades and temporary railing, as specified in the Standard Specifications and these Special Provisions and no additional compensation will be allowed therefor. Flagging costs for lane closures on two-lane highways will be paid for as provided in Section 12-2.02, "Flagging Costs," of the Standard Specifications.

Full compensation for furnishing and operating a pilot car (including driver, radio communications and any other equipment and labor required) shall be considered as included in the contract lump sum price paid for, "TRAFFIC CONTROL SYSTEM" and no additional compensation will be allowed therefor.

The adjustment provisions in Section 4-1.03, "Changes," of the Standard Specifications shall not apply to the item of, "TRAFFIC CONTROL SYSTEM". Adjustments in compensation for, "TRAFFIC CONTROL SYSTEM" will be made only for increased or decreased traffic control system components required by changes ordered by the Engineer and will be made on the basis of the cost of the increased or decreased component necessary. Such adjustment will be made on a force account basis as provided in Section 9-1.03, "Force Account Payment," of the Standard Specifications for increased work, and estimated on the same basis in the case of decreased work.

Any traffic control system that is required by work which is classed as extra work, as provided in Section 4-

1.03D, "Extra Work," of the Standard Specifications, will be paid for as part of said extra work.

10-1.16 MAINTAINING TRAFFIC: Attention is directed to the provisions of Section 7-1.08, "Public Convenience," Section 7-1.09, "Public Safety," and Section 12, Construction Area Traffic Control Devices," of the Standard Specifications and these Special Provisions.

During the times when men or equipment are actually working, a minimum of one 12-foot wide lane with flagging shall be provided for public traffic or as directed by the Engineer. Care shall be taken by the Contractor so that materials or equipment placed or parked within the County road right of way will not block access to any residences.

Closure is defined as the closure of a traffic lane. Closures shall conform to the provisions in "Traffic Control System for Lane Closure" of these special provisions. No work that would require a closure shall be performed without the approval of the Engineer. A written schedule of planned closures for the next week period, defined as Sunday noon through the following Sunday noon, shall be submitted by noon each Monday. A written schedule shall be submitted not less than 5 days before the anticipated start of any operation that will require a closure.

Traffic shall be allowed through the project site during construction and at the end of the work day as directed by the Engineer.

Maintaining traffic will be measured and paid for in the manner specified in Sections 7-1.08 and 7-1.09 of the Standard Specifications.

10-1.17 EXISTING HIGHWAY FACILITIES: The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these Special Provisions.

10-1.16a REMOVE ASPHALT CONCRETE SURFACING: The existing asphalt concrete surfacing to be removed shall be sawcut along the line as shown on the plans, broken up and removed. The saw cut shall be a neat vertical cut no less than 0.2-feet in depth. Care is to be taken for the surfacing that is to remain in place.

The asphalt concrete material removed shall be considered as excess material and disposed of in accordance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

The boundary of the area of the removed surfacing shall be marked by portable delineators. Payment for placing, relocating, maintaining and removing the portable delineators shall be considered as included in the contract item paid for, "TRAFFIC CONTROL SYSTEM," and no separate payment will be made therefore.

Full compensation for saw cutting, removing and disposing of the asphalt concrete surfacing shall be considered as included in the contract unit price paid by the cubic yard for, "**ROADWAY EXCAVATION**," and no additional compensation will be allowed therefor.

10-1.16b RELOCATE ROADSIDE SIGN: Existing roadside signs scheduled for relocation shall be relocated by the Contractor in their final location, or if necessary, temporarily mounted on type III barricades. The temporarily mounted signs shall be placed along the roadway during construction near their original locations and as approved by the Engineer.

The Contractor shall be responsible for the daily maintenance of the temporary mounted signs and barricades during construction. Signs that are damaged or unusable, as determined by the Engineer, shall be replaced by the Contractor, at the Contractor's own expense during their use as temporary roadside signs.

The signs shall be salvaged for reuse and set on new posts near in their final location as directed by the Engineer. If it determined by the Engineer that the salvaged sign cannot be reused, new roadside signs

(except guide signs) will be furnished by the County. This determination will be made just prior to final relocation to the permanent sign locations shown on the plans.

Full compensation for removing, maintaining, and relocating roadside signs, furnishing type II barricades, maintaining the temporary mounts, furnishing new sign posts and setting the signs in permanent locations shall be considered as included in the contract unit price paid for "**RELOCATE ROADSIDE SIGN**" and no separate payment will be made therefor.

10-1.18 CLEARING AND GRUBBING: Clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these Special Provisions.

Refer to Section 10-1.08 "Environmentally Sensitive Area" regarding requirements for having the County's Biologist present during clearing and grubbing activities. Notify the Engineer 20 days prior to Clearing and grubbing activities.

Remove debris in the creek bed that has accumulated in recent years (approximately 20 feet in diameter) located below the toe of creek bank. Removing the debris will help return the creek to its previous path and prevent erosion to the creek bank.

Prior to commencing grading operations in areas that will receive compacted fill, soil containing debris, landslide deposits, organics, vegetation, pavement, uncompacted fill, or other unsuitable materials, shall be removed. Structures and associated materials, not designed to withstand high seasonal flows, shall be removed to areas above the high-water mark before such flows occur.

Construction activities shall be planned to avoid trees and shrubs to the extent practicable. All existing vegetation, outside the areas to be cleared and grubbed, shall be protected from injury or damage resulting from the Contractor's activities.

The County will mark the trees to be removed and shall identify species damaged or removed during construction. A couple of trees, one 10" and one 30" diameter live oak, and shrubs shall be removed by the Contractor and no additional trees shall be removed unless approved by the Engineer..

Full compensation for clearing and grubbing, removing debris in the creek bed, disposing all trees, shrubs, and/or stumps which will be affected by the construction activities, and in accordance with the Standard Specifications, shall be considered as included in the contract lump sum price paid for, "**CLEARING AND GRUBBING**," and no additional compensation will be allowed therefor.

10-1.19 EARTHWORK: Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications, these Special Provisions, and the Geotechnical Engineering Report (see Attachment "Geotechnical Engineering Report").

This section describes excavations, trenching, bedding and backfilling, and testing for compaction for the construction of the roadway and drainage pipe as shown in the plans. For the geosynthetic reinforced embankment specifications, refer to Section 10-1.19, "GEOSYNTHETIC REINFORCED EMBANKMENT".

Earthwork activities will be subject to periodic biological monitoring. Attention is direction to Section 10-1.08 "ENVIRONMENTALLY SENSITIVE AREA" regarding notifying the Engineer before beginning any construction site management, clearing and grubbing, or earthwork activities.

Rock, gravel, and/or other materials shall not be imported into or moved within the creek except as otherwise addressed in the streambed alteration agreement (see Attachment for copy of agreement). Only on-site materials and clean imported fill shall be used to complete the project.

Construction excavations with a depth of greater than 2 feet that could trap wildlife shall be covered at the end of each work day, or shall be provided with wood or earthen escape ramps with a slope of not more than 3:1 to allow the wildlife to escape.

The temporary backslope shall be designed by the Contractor, additionally, the temporary backslope for the geosynthetic reinforced embankment shall be cut no steeper than 1:1. The geologic conditions exposed by the excavation shall be reviewed by the Contractor and Geotechnical Engineer during construction to further evaluate the stability and characteristics of the rock once it is exposed.

Site conditions, particularly on sloping ground adjacent to an open creek, are dynamic and should be considered in the operation and maintenance of the facility. Ongoing erosion, changes in drainage, and landsliding are some of the factors that should be reviewed on an ongoing basis.

The top of the adjacent stream banks, cut slopes, and other areas along Santa Rosa Creek Road contain areas of erosion and slope instability. Further instability and erosion along the route should be anticipated, especially as a result of periods of storm runoff or precipitation, ongoing weathering of the slope, earthquakes or other factors. Ongoing maintenance should be provided to help maintain the slope, reduce the potential for raveling or erosion along the face of the slope.

Local Topsoil
Excavate local topsoil (approximately top 2 feet) from areas to be excavated within the project right of way in compliance with Section 20-2.01 "Topsoil" of the Standard Specifications.

Local Topsoil Material
Local topsoil is topsoil excavated from within the right of way and is considered as selected material per Section 19-2.07 "Selected Material," of the Standard Specifications, additionally, is characterized as clayey soil and rock materials that are not considered suitable for construction of the geosynthetic reinforced embankment (GRE), and the Contractor shall breakdown the material into a soil-like state and remove oversized material prior to placing topsoil along the tops of slopes in connection with erosion control work. Loose rocks larger than 3 inches in maximum dimensions, debris, and large roots as determined by the Engineer, shall be removed and disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, unless otherwise permitted by the Engineer.

Local Topsoil Construction
Comply with Section 20-3.02, "Preparation," of the Standard Specifications. Spread topsoil to a uniform thickness over the fill embankment slopes in connection with erosion control work, and as directed by the Engineer.

Local topsoil obtained from within the project limits will be considered as selected material and will be measured and paid for in conformance with the provisions in Section 19-2.07, "Selected Material", and no additional compensation will be allowed therefor.

Roadway Excavation
Roadway excavation will be paid for as specified in these special provisions and in Sections 19-2, "Roadway Excavation," of the Standard Specifications and shall include removal of asphalt concrete surfacing per Section 10-1.16 "Existing Highway Facilities" of these Special Provisions.

Following clearing and grubbing, the Engineer shall review the exposed subgrade (and/or temporary construction slope) to confirm that the landslide materials are removed, and whether or not deepening or widening of the excavation is recommended prior to placing fill.

There are approximately 2,720 cubic yards of surplus excavated material. Surplus excavated material shall become the property of the Contractor and shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. The Contractor shall take material to a permitted disposal site, or provide proof of waiver from planning department for an exempt site.

Upon completion of the project, all temporarily disturbed areas shall be returned to original contours and hydroseeded per Section 10-1.20, "EROSION CONTROL (TYPE D)", of these Special Provisions. Depressions or disturbed areas left from clearing and grubbing shall be replaced with compacted fill.

Full compensation for excavation related to the new roadway, temporary stockpiling, the geosynthetic reinforced embankment, and disposing of the surplus or unsuitable material shall be considered as

included in the contract unit price paid per cubic yard for, "**ROADWAY EXCAVATION**", including remove asphalt concrete surfacing per Section 10-1.16 "Existing Highway Facilities" of these Special Provisions, and no additional compensation will be allowed therefor.

Backfill

Backfill shall consist of imported or on-site material. Backfill placement and grading operations shall be performed according to the grading recommendations of the Geotechnical Engineering Report.

Fill shall be limited to the minimal amount necessary to accomplish the proposed work. Excess fill material shall be moved off-site at project completion.

On-site soil or imported materials shall conform to the requirements where the material is being placed. Imported fill materials shall be reviewed and approved by the Engineer prior to being brought to the site.

Backfill must be free from:

1. Organic material
2. Shale, soft, or poor durability particles
3. Recycled materials such as trash, debris, corrosive, deleterious materials, glass, shredded tires portland cement concrete rubble, asphaltic concrete rubble, or other unsuitable materials as determined by the Engineer
4. Oversize rock (greater than 3 inches)

Backfill must comply with the requirements in the following 2 tables:

Sieve Size	Percent Passing	California Test No.
1-1/2"	100	202
3/4"	75 - 100	202
No. 4	20 - 100	202
No. 40	0 - 60	202
No. 200	0 - 50	202

Property	Requirement	California Test No.
Plasticity Index	20 max	204
pH	5 to 9	643

If you proposed to use backfill with grading size larger than specified, 3-inch maximum size may be allowed. For backfill grading size larger than specified, include test results and the installation damage reduction factor of each geosynthetic reinforcement with your LTDS calculations. Perform tests for installation damage reduction factors under FHWA-NHI-00-044, Section 5.1.

Imported Borrow

Imported Borrow shall conform to Section 19-3.06, "Structure Backfill," and to Section 19-7, "Borrow Excavation" of the Standard Specifications, and to these Special Provisions. Imported Borrow shall have a sand equivalent value of at least 30.

Imported borrow for this contract shall have a Resistance (R-value) of not less than 40. A grading permit may be required for removal of material from a private local borrow site. Costs to secure a grading permit shall be considered as included in the contract price paid per cubic yard for "IMPORTED BORROW" and no separate payment will be made therefor.

Imported borrow will be measured by the cubic yard and the quantity to be paid will be computed in the following manner:

The total quantity of material placed and compacted in embankments to the lines and grades shown on

the plans shall be computed in the manner specified for roadway excavations in Section 19-2.08 of the Standard Specifications. Material generated on-site by roadway, basin or structure excavations shall also be placed and compacted within embankments if deemed suitable and such material shall not be considered as "IMPORTED BORROW".

Backfill shall be considered as "**IMPORTED BORROW**" and will be measured in the manner specified herein and paid for at the contract price per cubic yard in place.

Compaction Testing
After the placing of backfill has been started, the Contractor shall proceed as soon as practicable with densification.

Fill and backfill materials shall be compacted to a minimum of 90 percent relative compaction, except that material placed below the pavement within the upper 3 feet of the fill shall be compacted to a minimum of 95 percent relative compaction.

Compaction requirements for trenches shall be in accordance with the County of San Luis Obispo Standard Drawing No. R-4 & R-4a and as directed by the Engineer. Compaction of trench backfill soils by jetting operations shall be subject to review by the Engineer. The water must have a free drainage path that will allow the water to dissipate very rapidly without causing erosion.

Compaction of native and fill soils, and backfill of excavations and trenches shall comply with Section 1704.7 "Soils" of the CBC.

Determination of the "relative compaction" shall be per the latest approved edition of ASTM Test Method D1557, or other methods approved by the Engineer. "Relative Compaction" is the ratio, expressed as a percentage, of the in place dry density to the laboratory maximum dry density.

A minimum of one compaction test is required to be taken in each utility trench for every 1.5 feet above the pipe for every 50 linear feet of trench, or fraction thereof. A minimum of three compaction tests are required to be taken in the AC pavement areas at subgrade and at aggregate base grade for every 1,000 square feet or fraction thereof.

The County will pay for the initial cost of all compaction tests. If the backfill compaction fails to meet the relative density requirements set forth herein, the Contractor shall pay for subsequent compaction tests at the rate of $25.00 per individual test.

The Contractor shall make all necessary excavations for compaction tests, as directed by the Engineer, and shall refill and recompact these excavations to the densities specified herein.

10-1.20 GEOSYNTHETIC REINFORCED EMBANKMENT (GRE)

This work shall consist of placing geosynthetic reinforcement between layers of compacted fill in accordance with the details shown on the plans, and associated drainage pipe and material. Work shall comply with Section 19, "Earthwork" and Section 88, "Geosynthetics" of the Standard Specifications, and these Special Provisions.

All structures and other constructed features shall be properly aligned and otherwise engineered, installed, and maintained, to assure resistance to washout, and to erosion of the creek bed, creek banks and/or fill and that they will not cause long-term ' changes in water flows that adversely modify the existing upstream or downstream creek bed/bank contours or increase sediment deposition.

MATERIALS

Geosynthetic Reinforcement
The geosynthetic reinforcement shall be used to improve surficial stability in the transition zones where slope inclinations are steeper than 2:1 and as shown on the plans, and shall consist of primary and intermediate reinforcement.

Only one type of primary geosynthetic reinforcement and one type of intermediate geosynthetic reinforcement material shall be used for an entire embankment, except as shown on the plans.

Primary reinforcement shall have a long term design strength (LTDS) of at least 3,000 pounds per foot in the machine direction as determined by Standard Practice GRI GG4a for stiff geogrids and GRI GG4b for flexible geogrids, respectively.

Intermediate geosynthetic reinforcement shall have a tensile strength at 5 percent strain of at least 500 pounds per foot in the machine and cross machine direction as determined by ASTM D6637.

Geosynthetic Reinforcement Type	Tensile Strength at 5% strain (lb/ft)	LTDS (lb/ft)
Primary	--	3,000 minimum
Intermediate	500 minimum	--

Tensile Strength for geosynthetic reinforcement shall be determined by the latest approved edition of ASTM D6637. The values for Primary Geosynthetic Reinforcement shall be minimum average roll values in the machine direction. The values for Intermediate Geosynthetic Reinforcement shall be minimum average roll values in the machine and cross machine directions. Tensar Prism® Foundation Improvement System, or approved equal.

Each roll must be labeled with:

1. Manufacturer's name
2. Production identification
3. Roll dimensions
4. Lot number
5. Date of manufacture

Geosynthetic reinforcement shall meet the following requirements:

1. Place geosynthetic reinforcement in areas as shown on the plans.
   Primary geosynthetic reinforcement:
   i. Three foot vertical spacing
   ii. 17-foot long embedment
   Intermediate geosynthetic reinforcement:
   i. One foot vertical spacing
   ii. 4-foot long embedment
2. Geosynthetic reinforcement shall consist of high density polyethylene, polypropylene, high density polypropylene sheets, high tenacity polyester yarn, fiber glass, or polyaramide.
3. Geosynthetic reinforcement consisting of high density polyethylene shall be manufactured from high density polyethylene (HDPE) which conforms to ASTM Designation: D 1248.
4. Geosynthetic reinforcement consisting of polypropylene or high-density polypropylene sheets shall meet the requirements of ASTM Designation: D 4101, Group 1/Class1/Grade 2.
5. Geosynthetic reinforcement consisting of high tenacity polyester yarn shall be manufactured from high tenacity polyester yarn as determined by ASTM Designation: D 629. In addition to meeting the requirements for geosynthetic, geogrid shall be encapsulated in an acrylic latex, PVC, polymer or similar coating; shall be sheathed in polyethylene; or shall be polyvinyl chloride impregnated.
6. Geosynthetic reinforcement consisting of polyaramide shall be manufactured from high tenacity polyester yarn as determined by ASTM Designation: D 629.
7. Geosynthetic reinforcement material shall be configured as a geogrid. Geogrid shall have a regular and defined open area. Geogrid shall provide pullout resistance from the soil by a combination of soils shearing friction on the plane surfaces parallel to the direction of shearing and soils bearing on transverse grid surfaces normal to the direction of grid movement.
8. The percentage of the open area for geogrids shall range from 50 to 90 percent of the total projection of a section of the material.
9. At the long term design strength in the machine direction, the maximum strain shall not exceed 5 percent.

10. Reduction factors applied to the ultimate strength are determined in accordance with GRI GG4a and GRI GG4b. The product of the reduction factors of less than 1.30 is not allowed. The reduction factor for creep shall be determined for a 75-year design life.
11. In the absence of specific test data, the default values of reduction factors (installation damage, creep, chemical degradation, biological degradation, and joint) as indicated in the Standard Practice GRI GG4a and GRI GG4b shall be applied to the calculations of the LTDS.
12. Geosynthetic reinforcement shall be resistant to naturally occurring alkaline and acidic soil conditions and to attack by bacteria.
13. Geosynthetic reinforcement shall be stabilized with at least 1 percent carbon black to be resistant to the effects of long-term exposure to ultra-violet rays.
14. In the absence of specific test data, the default values of reduction factors (installation damage, creep, chemical degradation, biological degradation, and joint) as indicated in the Standard Practice GRI GG4a and GRI GG4b shall be applied to the calculations of the LTDS.

A certificate of compliance shall be furnished to the Engineer in conformance with Section 6-1.07, "Certificate of Compliance," of the Standard Specifications a minimum of one week prior to placement of geosynthetic reinforcement. The Certificate of Compliance shall be prepared and signed by a representative of the manufacturer who is a California-registered Civil Engineer.

All test results used in the calculations of the LTDS shall be submitted to the Engineer no less than 15 working days prior to placement of the geosynthetic reinforcement. The calculation shall itemize each reduction factors. When splices are permitted by the Engineer, splice efficiency shall be accounted for in the calculations. All test results that contribute to the calculations of the LTDS shall be prepared and signed by a California-registered Civil Engineer.

DELIVERY, HANDLING, AND STORAGE

Geosynthetic reinforcement shall be furnished in an appropriate protective cover which shall protect it from ultraviolet radiation and from abrasion during shipping and handling. The Contractor shall check products upon delivery to assure that the Geosynthetic reinforcement received is dry and undamaged. Each roll shall be labeled with the manufacturer's name, production identification, roll dimensions, lot number, and date manufactured. Geosynthetic reinforcement shall be handled and stored in accordance with the manufacturer's recommendations. Geosynthetic rolls shall be protected from construction equipment, chemicals, sparks and flames, temperatures in excess of 70°C (160°F), and any other environmental conditions that may degrade physical properties. To prevent geosynthetic material from being saturated, if stored outdoors, the rolls shall be elevated from the ground surface or placed on a sacrificial sheet of plastic in an area where water will not accumulate. Geogrids, except for extruded grids, shall be protected with an opaque waterproof cover.

Geosynthetic reinforcement shall be measured by the square yard and will not include overlap. The contract unit price paid per square yard for "**GEOSYNTHETIC REINFORCEMENT - PRIMARY**" and "**GEOSYNTHETIC REINFORCEMENT - INTERMEDIATE**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in placing Geosynthetic reinforcement, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer, and no additional compensation will be allowed therefor.

Geosynthetic Reinforced Embankment Backfill

Geosynthetic Reinforced Embankment Backfill that is placed more than 2 feet horizontal from the finished slope face shall be per Section 10-1.18 "Earthwork", Section "Imported Borrow" of the Special Provisions.

Backfill placed within the outer 2 feet of the embankment shall be suitable for supporting the planned vegetation consisting of local topsoil soil or selected material, per Section 10-1.18 "Earthwork" of these special provisions, and as directed by the Engineer.

Arroyo Willow Root Balls

Submit request to Engineer three days prior to installing the willow root balls. The arroyo willow root balls will be provided and delivered to the site by the County. The Contractor shall install the root balls within one working day upon delivery of arroyo willow root balls.

The County shall furnish the arroyo willow root balls and deliver to the stockpile area at the jobsite as agreed upon with the Engineer and Contractor in advance. Full compensation for transporting the root balls from the stockpile location and installing the willow root balls as shown on the plans and as directed by the Engineer shall be considered as included in the contract lump sum price paid for "**INSTALL ARROYO WILLOW ROOT BALLS**" and no additional compensation will be allowed therefor.

Rock Slope Protection (1/4 Ton, Method B)

Rock shall be placed along the base of the slope to help protect the slope from stream bank erosion as shown on the plans and as directed by the Engineer. Rock slope protection shall conform to the provisions in Section 72, "Slope Protection," of the Standard Specifications and these Special Provisions. Rock slope protection shall be "1/4 Ton" using Method "B" Placement.

"**ROCK SLOPE PROTECTION (1/4 TON, METHOD B)**" for construction of the Geosynthetic Reinforced Embankment will be measured and paid for by the cubic yard in the manner specified in Section 72 of the Standard Specifications.

Underdrain System

The purpose of the underdrain system is to intercept groundwater flowing into the geosynthetic reinforced embankment. The underdrain system shall consist of coarse aggregate material, filter fabric, perforated pipe, and solid wall pipe as specified herein.

Specific measures shall be taken to avoid segregation of the material during transport and placement of the material at the site.

i. Coarse Aggregate Material
Coarse aggregate to be placed on the backslope behind the geosynthetic reinforced embankment as shown on the plans and around the perforated collector pipe of the subsurface drainage system (approximately 70 cubic yards total) shall conform to Section 68-1.025 of the Caltrans Standard Specifications for Class 2 permeable material. The aggregate placed on the backslope behind the geosynthetic reinforced embankment shall be 1- to 1½-inch rock. Pea gravel is to be placed around the collector pipe and shall conform to ASTM C-33 No. 8 coarse aggregate. The perforated pipe shall be encased in a minimum of one cubic foot of coarse aggregate material per foot of perforated pipe.

Coarse aggregate material shall be included in the contract lump sum price paid for "**UNDERDRAIN SYSTEM**" and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in installing coarse aggregate material complete in place, as shown on the plans, as specified in the Standard Specification, and these Special Provisions, and as directed by the Engineer.

ii. Filter Fabric for Coarse Aggregate
Engineering fabric (filter fabric) for separation of fines shall be placed around coarse aggregate material (approximately 445 sy). The filter fabric shall conform to the requirements of Section 88-1.03, Type Underdrain, of the Caltrans Standard Specifications for Filter Fabric.

Filter fabric for wrapping around coarse aggregate material shall be included in the contract lump sum price paid for "**UNDERDRAIN SYSTEM**" and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in installing filter fabric complete in place, as shown on the plans, as specified in the Standard Specification, and these Special Provisions, and as directed by the Engineer.

iii. Perforated Pipe

Perforated pipe (approximately 110 linear feet) shall be placed at the base of the coarse aggregate material for the collecting the subsurface flow and encased with coarse aggregate material and wrapped with filter fabric. The perforated pipe shall be 4" diameter and may be either:

1) PVC pipe conforming to the provisions in Section 68-1.02K "Perforated Plastic Pipe" of the Standard Specifications.
   or
2) Corrugated HDPE pipe with smooth interior surface conforming to AASHTO M252 and ASTM F2648, with AASHTO Class II Perforation Patterns. HDPE pipe shall be ADS N-12 (Dual Wall, perforated), Eagle Corr PE™ (Dual Wall, perforated), or approved equal.

Perforated pipe (4" diameter) shall be included in the contract lump sum price paid for "**UNDERDRAIN SYSTEM**" and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in installing perforated plastic pipe complete in place, including fittings and connection to the solid wall pipe as shown on the plans, as specified in the Standard Specification, and these Special Provisions, and as directed by the Engineer.

iv. Solid Wall Pipe

Solid wall pipe (approximately 20 linear feet) shall be placed at the low point of the underdrain system. The solid wall pipe shall be 4" diameter corrugated HDPE pipe with smooth interior surface conforming to AASHTO M252 and ASTM F2648. HDPE pipe shall be ADS N-12 (Dual Wall), Eagle Corr PE™ (Dual Wall), or approved equal. To prevent crushing the pipe, Contractor shall provide a 6" thick (minimum) concrete encasement around pipe at locations where the pipe comes in contact with the ¼ ton rock slope protection.

Concrete shall conform to the provisions in Section 90-10, "Minor Concrete," of the Standard Specifications and these Special Provisions. Minor concrete shall contain not less than 550 pounds of cementitious material per cubic yard. Payment for concrete placed shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

Solid wall pipe (4" diameter) shall be included in the contract lump sum price paid for "**UNDERDRAIN SYSTEM**" and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in installing perforated plastic pipe complete in place, including fittings, concrete encasement, and connection to perorated pipe as shown on the plans, as specified in the Standard Specification, and these Special Provisions, and as directed by the Engineer.

CONSTRUCTION

Subgrade Preparation

The Contractor shall prepare the grade that is to receive the layers of geosynthetic reinforcement to the compaction and elevation tolerances described in the Standard Specifications under Section 19-2.05, "Slopes," and these special provisions. The grade shall be smooth and free of loose or extraneous material and objects that may damage the geosynthetic reinforcement during installation. Relative compaction of not less than 90 percent shall be obtained in all material in embankment foundation for a minimum depth of 9 inches.

Geosynthetic Reinforcement Placement

Geosynthetic reinforcement shall be handled and placed in accordance with the manufacturer's recommendations and these special provisions. The geosynthetic reinforcement shall be placed level, wrinkle free, pulled taut, aligned, and secured before backfill placement to prevent the displacement during placement and compaction of fill.

Geosynthetic reinforcement shall be placed at the intervals, elevations, and for the minimum embedment length shown on the plans. Each layer of geosynthetic reinforcement shall not vary more than 0.5 feet from the theoretical horizontal plane established for that layer for the entire width and length of the reinforcement. During spreading and compacting of the backfill, a minimum fill thickness of 0.5 feet, or the

minimum thickness recommended by the manufacturer, is required prior to operation of vehicles over the reinforcement, and consistent with the determination of the LTDS.

The geosynthetic reinforcement material shall be placed with the direction of maximum strength perpendicular to the finished plane of the slope face. The Contractor shall verify correct orientation of the geosynthetic reinforcement.

Geosynthetic reinforcement must be:

1. Shall be placed (unrolled) into the grade to form a continuous mat
2. Where overlaps occur for convenience of placement, at least 3 inches of embankment backfill shall be placed between the overlapping layers of reinforcement so that reinforcement panels do not contact in overlaps. Spliced and sewn joints shall not be used for Primary Reinforcement in the direction of the working tensile stress, unless it is demonstrated that the connection meets the same strength requirements for long-term design strength as the intact reinforcement material
3. Secured with staples, pins, or small piles of backfill
4. Placed without wrinkles
5. Aligned with the primary strength direction perpendicular to slope contours
6. Spliced under manufacturer's recommendations
7. Butted edge-to-edge for straight slope contours
8. Butted edge-to-edge at the slope face and fanned out or overlapped into the backfill for curved slope contours

Cover geosynthetic reinforcement with backfill within the same work shift.

Place at least 6 inches of backfill on the geosynthetic reinforcement before operating or driving equipment or vehicles over it, except for equipment or vehicles used under the conditions specified below for spreading backfill.

Construction equipment shall not be operated or driven directly on the reinforcement. You may drive equipment or vehicles for spreading backfill directly on the geosynthetic reinforcement if:

1. You comply with manufacturer's recommendations
2. Vehicles have rubber tires
3. Traffic repetitions are minimized
4. Speed of less than 5 miles per hour is maintained
5. Sudden braking and sharp turning is avoided

Where guard railing posts will be placed at the top crest of the geosynthetic reinforced embankment and the geosynthetic reinforcement interferes with placement of posts, you may precut reinforcement of affected layers into cross-shaped patterns. The precutting dimensions must not exceed post dimensions by more than 2.5.

Do not extend geosynthetic reinforcement into pavement structural section.

If the geogrid reinforcement is damaged during construction, replace it or repair it, at the Contractor's expense, by placing additional reinforcement to cover the damaged area and:

1. Edges of geogrid perpendicular to slope alignment shall be overlapped for entire lengths by the smaller of: six aperture openings or 1 foot. Edges of geogrid parallel to slope alignment shall be joined using a mechanical connection described elsewhere in these special provisions.
2. Edges of geotextiles shall be overlapped a minimum of 1.5 feet meters on all sides.
3. The methods used to repair the damage shall by approved by the manufacturer without compromise to strength requirements for reinforcement

Backfill Placement and Compaction

Reinforced fill shall be placed from the slope face back toward the fill area to ensure that the reinforcement remains taut. The maximum loose thickness of each lift of embankment material shall not exceed 1 foot and shall be compacted to 90% Relative Compaction, except that fill placed within 3 feet of the grading plane shall be compacted to at least 95% Relative Compaction. Fill shall be placed

in a manner such that compacted material is placed beyond the finished slope face, and then trimmed to reveal compacted material at the finished grade.

Construct embankment slope under Section 19-2.05, "Slopes," of the Standard Specifications. At locations where compaction is accomplished with hand-operated equipment, fill shall be placed in horizontal layers not more than 0.5 feet in uncompacted thickness. Only hand-operated equipment shall be allowed within 3 feet of the front limit of geosynthetic reinforcement and underground structures.

Control of moisture in the fill shall be maintained to provide acceptable compaction. Disking and plowing is not allowed in the reinforced area.

10-1.21 EROSION CONTROL (TYPE D): Type D erosion control shall conform to the provisions in Section 20, "Erosion Control and Highway Planting," of the Standard Specifications and these Special Provisions.

The work shall consist of hydro-seeding erosion control material consisting of a mixture of stabilizing emulsion, fiber, seed, commercial fertilizer and water to embankment slopes and excavation slopes.

Stabilize and revegetate all areas of disturbed soil with appropriate indigenous native species. The County biologist shall ensure that the spread or introduction of invasive exotic plant species shall be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project areas shall be removed by the Contractor.

Seeding associated with site restoration must be complete by November 15 of the year that construction occurs.

Install and maintain appropriate temporary erosion and sediment control measures until revegetation is successful.

Roughen embankment slopes to receive erosion control materials by either trackwalking or rolling with a sheepsfoot roller. Trackwalk slopes by running track mounted equipment perpendicular to slope contours.

Full compensation for roughening is included in the contract price paid per cubic yard for roadway excavation and no additional compensation will be allowed.

All disturbed soils shall be stabilized to reduce erosion potential. Where suitable vegetation cannot reasonably be expected to become established, non-erodible material shall be used for such stabilization. Any installation of non-erodible material, not included in the original project description, shall be coordinated with CDFG. Coordination may include the negotiation of additional streambed alteration agreement provisions for this activity.

Seed shall consist of the following:

botanical name (Common Name)	Percentage (minimum) Purity	Percentage (minimum) Germination	Pounds Per Acre
brominus carinatus cucamonga	95	80	20
vulpia mucrostachys (Small Fescue)	90	60	8
trifolium gracilentum (Pinpoint Clover)	98	85	8

The erosion control materials shall be mixed and applied in the following approximate proportions:

Material	Per Acre (slope measurement)
Fiber	1,500 pounds
Seed	36 pounds
Commercial Fertilizer	400 pounds
Water	as needed for application
Stabilizing emulsion	as recommended by the manufacturer

Additionally, all work performed under this contract shall conform to the requirements of either the State of California Construction Safety Orders, or the federal Safety Codes, whichever is more stringent.

The contract price paid per square yard for "**EROSION CONTROL (TYPE D)**" shall include full compensation for furnishing all labor, seed, fertilizer, water, other materials, tools, equipment and incidentals, and for doing all the work involved in "EROSION CONTROL (TYPE D)" complete in place, as specified in the Standard Specifications and these Special Provisions and no additional compensation will be allowed therefor.

10-1.22 ROLLED EROSION CONTROL PRODUCT

GENERAL

Summary

This work includes installing rolled erosion control product. The face of the disturbed areas of the embankment shall be covered with erosion control per Standard Plan H53 of the Standard Specifications to assist in establishing vegetation on the slope.

Definitions

Rolled erosion control product (RECP): A degradable material manufactured or fabricated into rolls designed to reduce soil erosion and assist in the growth, establishment and protection of vegetation.

Submittals

Submit a Certificate of Compliance under Section 6-1.07, "Certificates of Compliance" of the Standard Specifications for:

1. Blanket
2. Fastener

MATERIALS

Blanket

Blanket must comply with the following:

1. Blanket must be a RECP.
2. Blanket Type: B.
2. Machine-made mat.
4. Minimum width: 72 inches.
5. Physical properties in Table A:

Table A

Type	Number Of Nets	Net Type	Matrix	Maximum "C" Factor [1]	Minimum Sheer Stress [2]	Functional Longevity (months)	Minimum Tensile Strength [3]
A	Double Net	Organic	70/20% (Straw/Fiber)	0.25	2.0	24	100
B	Double Net	Organic	100% Woven Coir (Coconut Fiber)	0.25	2.25	36	125
C	Double Net	Organic	Wood Excelsior [4]	0.25	2.0	36	100

Notes:

[1] Universal Soil Loss Equation (USLE) C-Factor for a 1.5:1 (H:V) unvegetated slope.
[2] lb/ft2 under ASTM D 6460.
[3] lb/ft under ASTM D 5035.
[4] 80 percent of the fiber 6 inches or longer.

Fasteners

Fasteners must be 6-inch biodegradable stakes.

Stakes must be manufactured from completely biodegradable substance derived from renewable agricultural resources leaving no residuals in the ground. Stakes must be T-shaped with a minimum 1.2-inch hooked head and 4-inch leg or 6-inch leg with serrations or barbs on its body.

MEASUREMENT AND PAYMENT

The quantity of rolled erosion control product (blanket) will be determined by the square yard from actual slope measurement of the area covered by the rolled erosion control product (blanket) excluding overlaps.

The contract price paid per square yard for **"ROLLED EROSION CONTROL PRODUCT"** includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in rolled erosion control product, complete in place, including fasteners, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.23 CLASS 2 AGGREGATE BASE: Aggregate base shall be Class 2 and shall conform to the provisions in Section 26, "Aggregate Subbases," of the Standard Specifications, Drawing Standard R-4 and R-4a of the County Special Provisions, and these Special Provisions.

Aggregate base shall be Class 2 and shall conform to the provisions in Section 26, "Aggregate Subbases," of the Standard Specifications and these Special Provisions.

Submit a Certificate of Compliance under Section 6-1.07, "Certificates of Compliance" of the Standard Specifications for

Payment for conforming to the requirements in this section shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

"**CLASS 2 AGGREGATE BASE**" will be measured and paid for by the cubic yard in the manner specified in Section 26, "Aggregate Bases," of the Standard Specifications.

Aggregate for pipe bedding shall be considered as included in the contract items of work involved and no separate payment will be made therefor.

10-1.24 HOT MIX ASPHALT (TYPE A): Hot Mix Asphalt (HMA) shall be Type A using the Method process and shall conform to the provisions in Section 39, "Hot Mix Asphalt," of the Standard Specifications and these Special Provisions.

The grade of asphalt binder to be mixed with aggregate for HMA Type A shall be Performance Grade PG 64-10 and shall conform to the provisions in Section 92, "Asphalts," of the State Standard Specifications

The aggregate for HMA Type A shall comply with the 1/2-inch maximum grading.

Smoothness: The first paragraph 39-1.12A is changed to read: "Determine HMA smoothness with a straightedge." Section 30-1.12C "Profilograph", of the Standard Specifications shall not apply. The fourth paragraph of Section 39-1.12D, "Smoothness Correction", is hereby modified to read: "After grinding, measure the ground HMA pavement surface with a 12-foot straightedge until the pavement is within specified tolerances. If straight edged pavement cannot be ground to within specified tolerances, remove and replace the pavement."

Compaction Testing: Relative density of HMA of 0.15 foot or more, and in widths 5 feet or more will be determined by nuclear gage in backscatter mode in accordance with California Test 375.

Section 39-1.04F, "Cores," of the Standard Specification is hereby deleted.

The fourth and fifth paragraphs of Section 39-2.03A, "Testing" of the Standard Specifications, are hereby modified to read:

"The Engineer determines the percent of maximum theoretical density of the HMA in 500 ton lots, using a calibrated nuclear gauge, with a minimum of ten tests per lot. The Engineer will provide the Contractor the final results of the nuclear gauge tests based on the maximum theoretical density of that day's production within 24 hours. If the maximum theoretical density results for any day's production are not available by the end of shift, the Engineer will provide the Contractor preliminary results based on the maximum theoretical density of a previous day's material.

If the relative compaction of any lot, based on the calibrated nuclear gauge, is less than 89%, or greater than 99%, the Contractor shall take two cores from each 500 ton lot at random locations designated by the Engineer, in accordance with the procedures specified above. The Engineer determines the percent of maximum theoretical density for each core by determining the core's density and dividing by the maximum theoretical density. The average percent of maximum theoretical density of the two cores will be considered final for determining removal and replacement requirements."

A tack coat of emulsified asphalt shall be applied to all exposed sawcut surfaces. The area shall be filled with fresh hot asphaltic concrete mix in lifts of the same depths as the adjacent area, then compacted by rolling to the specified surface density and smoothness.

"**HOT MIX ASPHALT (TYPE A)**" will be measured and paid for by the ton in the manner specified in Section 39, "Hot Mix Asphalt," of the Standard Specifications.

10-1.25 PLACE HOT MIX ASPHALT DIKE (TYPE E): Hot Mix Asphalt Dike (Type E) per County Standard Drawing C-3 installed at the locations shown on the project plans and shall conform to the provisions in Section 39, "Hot Mix Asphalt," of the Standard Specifications and these Special Provisions.

The asphalt binder for asphalt dikes shall be Performance Grade PG 70-10 and shall conform to the provisions in Section 92, "Asphalts," of the Standard Specifications.

Aggregate for hot mix asphalt dikes shall be 3/8" maximum.

Hot Mix Asphalt Dike (Type E) shall be measured and paid by the linear foot (measured horizontally) in the manner specified in Section 39, "Hot Mix Asphalt," of the Standard Specifications, in addition to the price paid for material involved under the contract price per ton for **"PLACE HOT MIX ASPHALT DIKE (TYPE E)**".

10-1.26 18" PLASTIC PIPE

Existing corrugated metal pipe (CMP) as shown on the plans shall be completely removed and disposed of. Full compensation for removing the existing CMP shall be considered as included in the contract unit price paid per linear foot for "18" PLASTIC PIPE" and no additional compensation will be allowed therefor..

Install new High Density Polyethylene (HDPE) pipe as shown on the plans. HDPE pipe shall be exterior corrugated high-density polyethylene pipe with a smooth interior wall and conform to the provisions in

Section 64, "Plastic Pipe," of the Standard Specifications and to AASHTO M-294-03. Installation and backfill shall conform to the requirements of Section 64-1.05 of the Standard Specifications.

HDPE shall be bell and spigot with gaskets, corrugated exterior and smooth interior wall pipe. Pipe material shall be PE 3408. The minimum wall thickness for pipe shall be in accordance with Table 6 of AWWA C906, for DR 17, maximum working pressure 100 psi. Acceptable products are ADS N-12, or approved equal.

Trench detail for the HDPE pipe shall conform to San Luis Obispo County Standard Drawing U-4 or U-4a. Excavation, trenching, bedding, and compaction activities for the full length of the new pipeline shall conform to Section 10-1.18 "Earthwork" of these Special Provisions.

Measurement shall be made along the centerline of pipe in the horizontal plane from the center of fitting to the center of fitting. When pipes are cut to fit a structure or slope, the quantity to be paid for will be the length of pipe necessary to be placed before cutting, measured in 2-ft increments.

The contract unit price paid per linear foot of "**18" PLASTIC PIPE**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in excavation, trenching, removal of water, bedding, backfill, compaction, disposing of displaced excavated material, installing HDPE pipe, fittings, elbows, grouting, connection to structures as shown on the plans, complete in place, including all appurtenant work and materials, as specified in the Standard Specifications, these Special Provisions, as directed by the Engineer, and no additional compensation will be allowed therefor.

10-1.27 CORRUGATED STEEL PIPE INLET

This work shall conform to the provisions in Section 70, "Miscellaneous Facilities," of the Standard Specifications and these Special Provisions. The corrugated steel pipe inlet shall conform to Drawing Standard D-2b of the San Luis Obispo County Public Improvement Standards, and Standard Plan D75A of the Standard Specifications, and as shown on the plans. No AC dike or overside drain is required.

The riser type shall be 36" corrugated metal pipe (0.138" thickness) conforming to the provisions in Section 66, "Corrugated Metal Pipe", of the Standard Specifications. No trash rack will be required.

Lid type shall be Type OMP per Standard Plan D75A of the Standard Specifications. No chain is required.

Corrugated metal pipe shall be coated and lined with polymerized asphalt per Section 66-1.03, "Protective Coatings, Linings and Paving" of the Standard Specifications.

No storm drain marker per Drawing Standard M-6 of the San Luis Obispo County Public Improvement Standards is required.

Quantities of "**36" CORRUGATED STEEL PIPE INLET**" to be paid for will be determined as units from actual count in place. The unit price for "**36" CORRUGATED STEEL PIPE INLET**" shall be paid in the manner specified in Section 70-1.05, of the Standard Specifications and these Special Provisions, and shall include pipe riser, lid, hardware, protective coating and lining, concrete foundation, structural backfill, and connection to outlet pipe.

10-1.28 ROCK SLOPE PROTECTION: Rock slope protection shall conform to the provisions in Section 72, "Slope Protection," of the Standard Specifications and these Special Provisions.

RSP (BACKING NO. 2, METHOD B)

Install rock slope protection at the drainage pipe outlets, along the toe of fill slopes greater than 2:1 in areas not protected by the geosynthetic reinforced embankment, and at the locations shown on the plans, and as directed by the Engineer. Rock slope protection at these locations shall be measured and paid for by the cubic yard for "**ROCK SLOPE PROTECTION (BACKING NO. 2, METHOD B)**" in the manner specified in Section 72, "Slope Protection", of the Standard Specifications. The contract unit price paid for "ROCK SLOPE PROTECTION (BACKING NO. 2, METHOD B)" shall also include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in

furnishing and placing rock slope protection fabric, complete in place, as shown on the plans, as specified in the Standard Specifications and the Special Provisions, and as directed by the Engineer.

RSP (1/4 TON, METHOD B)
Rock slope protection for construction of the geosynthetic reinforced embankment (GRE) shall be measured and paid for as specified in Section 10-1.19, "GEOSYNTHTIC REINFORCEMENT EMBANKMENT", paragraph "ROCK SLOPE PROTECTION (1/4 TON, METHOD B)" of the Special Provisions.

ROCK SLOPE PROTECTION FABRIC
Rock slope protection (RSP) fabric for both the RSP (Backing No. 2, Method B) and RSP (1/4 Ton, Method B) shall be Type B per Section 88-1.04 of the Standard Specifications and shall be considered as ROCK SLOPE PROTECTION FABRIC. "**ROCK SLOPE PROTECTION FABRIC**" will be measured and paid for by the square yard in the manner specified in Section 88-1.04 of the Standard Specifications.

10-1.29 METAL BEAM GUARD RAILING (7' WOOD POST): Metal beam guard railing shall be constructed in conformance with the provisions in Section 83-1, "Railings," of the Standard Specifications and these special provisions.

Attention is directed to "Order of Work" of these special provisions regarding the end of each work day.

Line posts shall be wood. Blocks shall be wood. "**METAL BEAM GUARD RAILING (7' WOOD POST)**" will be measured and paid for by the linear foot in the manner specified in Section 83-1.04 of the Standard Specifications.

10-1.30 TERMINAL SYSTEM (TYPE SRT): Terminal system (Type SRT) shall be furnished and installed as shown on the plans and in conformance with these special provisions.

Terminal system (Type SRT) shall be a SRT 350 Slotted Rail Terminal (8 post system) as manufactured by Trinity Industries, Inc., and shall include all the items detailed for terminal system (Type SRT) shown on the plans.

The Contractor shall provide the Engineer with a Certificate of Compliance from the manufacturer in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The Certificate of Compliance shall certify that terminal systems (Type SRT) conform to the contract plans and specifications, conform to the prequalified design and material requirements and were manufactured in conformance with the approved quality control program.

The terminal system (Type SRT) shall be installed in conformance with the manufacturer's installation instructions and these requirements. The steel foundation tubes with soil plates attached, shall be, at the Contractor's option, either driven, with or without pilot holes, or placed in drilled holes. Space around the steel foundation tubes shall be backfilled with selected earth, free of rock, placed in layers approximately 100 mm thick and each layer shall be moistened and thoroughly compacted. Wood terminal posts shall be inserted into the steel foundation tubes by hand. Before the wood terminal posts are inserted, the inside surfaces of the steel foundation tubes to receive the wood posts shall be coated with a grease which will not melt or run at a temperature of 65°C or less. The edges of the wood terminal posts may be slightly rounded to facilitate insertion of the post into the steel foundation tubes.

Surplus excavated material remaining after the terminal system (Type SRT) has been constructed shall be disposed of in a uniform manner along the adjacent roadway where designated by the Engineer.

The contract unit price paid per each "**TERMINAL SYSTEM (TYPE SRT)**" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in constructing the end anchor assemblies, complete in place, including but not limited to, excavation, excavating for concrete anchor holes, backfill and disposal of excess material, compaction, connecting the terminal system to new metal beam guard railing, drilling anchor plate bolt holes in rail elements, driving

steel foundation tubes, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and no additional compensation will be allowed therefor.

SECTION 11. AMENDMENTS TO STANDARD SPECIFICATIONS

AMENDMENTS ISSUE DATE: 11-30-10

SECTION 5 CONTORL OF WORK
(Issued 06-10-10)

Add:
5-1.055 SUBCONTRACTING

5-1.055A General

No subcontract releases you from the contract or relieves you of your responsibility for a subcontractor's work.

If you violate Pub Cont Code § 4100 et seq., the Department may exercise the remedies provided under Pub Cont Code § 4110. The Department may refer the violation to the Contractors State License Board as provided under Pub Cont Code § 4111.

Except for a building-construction non-federal-aid contract, perform work equaling at least 30 percent of the value of the original total bid with your employees and with equipment owned or rented by you, with or without operators.

Each subcontract must comply with the contract.

The Department encourages you to include a dispute resolution process in each subcontract.

Each subcontractor must have an active and valid State contractor's license with a classification appropriate for the work to be performed (Bus & Prof Code, § 7000 et seq.).

Submit copies of subcontracts upon request.

Before subcontracted work starts, submit a Subcontracting Request form.

Do not use a debarred contractor; a current list of debarred contractors is available at the Department of Industrial Relations' Web site.

Upon request, immediately remove and not again use a subcontractor who fails to prosecute the work satisfactorily.

Replace Section 5-1.116 with:

5-1.116 DIFFERING SITE CONDITIONS (23 CFR 635.109)

5-1.116A Contractor's Notification

Promptly notify the Engineer if you find either of the following:

1. Physical conditions differing materially from either of the following:

    1.1. Contract documents
    1.2. Job site examination

2. Physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract

Include details explaining the information you relied on and the material differences you discovered.
If you fail to notify the Engineer promptly, you waive the differing site condition claim for the period between your discovery of the differing site condition and your notification to the Engineer.
If you disturb the site after discovery and before the Engineer's investigation, you waive the differing site condition claim.

5-1.116B Engineer's Investigation and Decision

Upon your notification, the Engineer investigates job site conditions and:

1. Notifies you whether to resume affected work
2. Decides whether the condition differs materially and is cause for an adjustment of time, payment, or both

You may protest the Engineer's decision.

SECTION 6 CONTROL OF MATERIALS
(Issued 05-01-09)

Replace Section 6-1.05 with:

6-1.05 SPECIFIC BRAND OR TRADE NAME AND SUBSTITUTION

A reference to a specific brand or trade name establishes a quality standard and is not intended to limit competition. You may use a product that is equal to or better than the specified brand or trade name if approved.
Submit a substitution request within a time period that:

1. Follows Contract award
2. Allows 30 days for review
3. Causes no delay

Include substantiating data with the substitution request that proves the substitution:

1. Is of equal or better quality and suitability
2. Causes no delay in product delivery and installation

6-1.075 GUARANTEE

Guarantee the work remains free from substantial defects for 1 year after contract acceptance except for work parts for which you were relieved of maintenance and protection. Guarantee each of these relieved work parts for 1 year after the relief date.
The guarantee excludes damage or displacement caused by an event outside your control including:

1. Normal wear and tear
2. Improper operation
3. Insufficient maintenance
4. Abuse
5. Unauthorized change
6. Act of God

During the guarantee period, repair or replace each work portion having a substantial defect.
The Department does not pay for corrective work.
During corrective work activities, provide insurance coverage specified for coverage before contract acceptance.
The contract bonds must be in full force and effect until the later of:

1. Expiration of guarantee period
2. Completion of corrective work

If a warranty specification conflicts with Section 6-1.075, "Guarantee," comply with the warranty specification.
During the guarantee period, the Engineer monitors the completed work. If the Engineer finds work having a substantial defect, the Engineer lists work parts and furnishes you the list.
Within 10 days of receipt of the list, submit for authorization a detailed plan for correcting the work. Include a schedule that includes:

1. Start and completion dates
2. List of labor, equipment, materials, and any special services you plan to use
3. Work related to the corrective work, including traffic control and temporary and permanent pavement markings

The Engineer notifies you when the plan is authorized. Start corrective work and related work within 15 days of notice.
If the Engineer determines corrective work is urgently required to prevent injury or property damage:

1. The Engineer furnishes you a request to start emergency repair work and a list of parts requiring corrective work

2. Mobilize within 24 hours and start work
3. Submit a corrective work plan within 5 days of starting emergency repair work

If you fail to perform work as specified, the Department may perform the work and bill you.

SECTION 9 MEASUREMENT AND PAYMENT
(Issued 03-11-10)

9-1.03 FORCE ACCOUNT PAYMENT

9-1.03A General

For work paid by force account, the Engineer compares the Department's records to your daily force account work report. When you and the Engineer agree on the contents of the daily force account work reports, the Engineer accepts the report and the Department pays for the work. If the records differ, the Department pays for the work based only on the information shown on the Department's records.

If a subcontractor performs work at force account, accept an additional 10 percent markup to the total cost of that work paid at force account, including markups specified in Section 9-1.03, as reimbursement for additional administrative costs.

The markups specified in labor, materials, and equipment include compensation for all delay costs, overhead costs, and profit.

If an item's payment is adjusted for work-character changes, the Department excludes your cost of determining the adjustment.

Payment for owner-operated labor and equipment is made at the market-priced invoice submitted.

9-1.03B Labor

Labor payment is full compensation for the cost of labor used in the direct performance of the work plus a 35 percent markup. Force account labor payment consists of:

1. Employer payment to the worker for:

    1.1. Basic hourly wage
    1.2. Health and welfare
    1.3. Pension
    1.4. Vacation
    1.5. Training
    1.6. Other State and federal recognized fringe benefit payments

2. Labor surcharge percentage in Labor Surcharge and Equipment Rental Rates current during the work paid at force account for:

    2.1. Workers' compensation insurance
    2.2. Social security
    2.3. Medicare
    2.4. Federal unemployment insurance
    2.5. State unemployment insurance
    2.6. State training taxes

3. Subsistence and travel allowances paid to the workers
4. Employer payment to supervisors, if authorized

The 35 percent markup consists of payment for all overhead costs related to labor but not designated as costs of labor used in the direct performance of the work including:

1. Home office overhead
2. Field office overhead
3. Bond costs
4. Profit
5. Labor liability insurance

6. Other fixed or administrative costs that are not costs of labor used in the direct performance of the work

9-1.03C Materials

Material payment is full compensation for materials you furnish and use in the work. The Engineer determines the cost based on the material purchase price, including delivery charges, except:

1. A 15 percent markup is added.
2. Supplier discounts are subtracted whether you took them or not.
3. If the Engineer believes the material purchase prices are excessive, the Department pays the lowest current wholesale price for a similar material quantity.
4. If you procured the materials from a source you wholly or partially own, the determined cost is based on the lower of the:

    4.1. Price paid by the purchaser for similar materials from that source on Contract items
    4.2. Current wholesale price for those materials

5. If you do not submit a material cost record within 30 days of billing, the determined cost is based on the lowest wholesale price:

    5.1. During that period
    5.2. In the quantities used

9-1.03D Equipment Rental

9-1.03D(1) General

Equipment rental payment is full compensation for:

1. Rental equipment costs, including moving rental equipment to and from the site of work performed by change order using its own power.
2. Transport equipment costs for rental equipment that cannot be transported economically using its own power. No payment is made during transport for the transported equipment.
3. 15 percent markup.

If you want to return the equipment to a location other than its original location, the payment to move the equipment must not exceed the cost of returning the equipment to its original location. If you use the equipment for work other than work paid by force account, the transportation cost is included in the other work.
Before moving or loading the equipment, obtain authorization for the equipment rental's original location.
The Engineer determines rental costs:

1. Using rates in Labor Surcharge and Equipment Rental Rates:

    1.1. By classifying equipment using manufacturer's ratings and manufacturer-approved changes.
    1.2. Current during the work paid by force account.
    1.3. Regardless of equipment ownership; but the Department uses the rental document rates or minimum rental cost terms if:

        1.3.1. Rented from equipment business you do not own.
        1.3.2. The Labor Surcharge and Equipment Rental Rates hourly rate is $10.00 per hour or less.

2. Using rates established by the Engineer for equipment not listed in Labor Surcharge and Equipment Rental Rates. You may submit cost information that helps the Engineer establish the rental rate; but the Department uses the rental document rates or minimum rental cost terms if:

    2.1. Rented from equipment business you do not own.
    2.2. The Engineer establishes a rate of $10.00 per hour or less.

3. Using rates for transport equipment not exceeding the hourly rates charged by established haulers.

Equipment rental rates include the cost of:

1. Fuel
2. Oil
3. Lubrication
4. Supplies
5. Small tools that are not consumed by use
6. Necessary attachments
7. Repairs and maintenance
8. Depreciation
9. Storage
10. Insurance
11. Incidentals

The Department pays for small tools consumed by use. The Engineer determines payment for small tools consumed by use based on Contractor-submitted invoices.

9-1.03D(2) Equipment On the Job Site

For equipment on the job site at the time required to perform work paid by force account, the time paid is the time:

1. To move the equipment to the location of work paid by force account plus an equal amount of time to move the equipment to another location on the job site when the work paid by force account is completed
2. To load and unload equipment
3. Equipment is operated to perform work paid by force account and:

    3.1. Hourly rates are paid in 1/2-hour increments
    3.2 Daily rates are paid in 1/2-day increments

When rented equipment on the job site is used to perform work at force account not required by the original contract work, the Engineer may authorize rates in excess of those in Labor Surcharge and Equipment Rental Rates if:

1. You submit a request to use rented equipment
2. Equipment is not available from your owned equipment fleet or from your subcontractors
3. Rented equipment is from an independent rental company
4. Proposed equipment rental rate is reasonable
5. Engineer authorizes the equipment source and the rental rate before you use the equipment

The Department pays for fuel consumed during operation of rented equipment not included in the invoiced rental rate.

9-1.03D(3) Equipment Not On the Job Site Required for Original Contract Work

For equipment not on the job site at the time required to perform work paid by force account and required for original Contract work, the time paid is the time the equipment is operated to perform work paid by force account and the time to move the equipment to a location on the job site when the work paid by force account is completed.
The minimum total time paid is:

1. 1 day if daily rates are paid
2. 8 hours if hourly rates are paid

If daily rates are recorded, equipment:

1. Idled is paid as 1/2 day
2. Operated 4 hours or less is paid as 1/2 day
3. Operated 4 hours or more is paid as 1 day

If the minimum total time exceeds 8 hours and if hourly rates are listed, the Department rounds up hours operated to the nearest 1/2-hour increment and pays based on the following table. The table does not apply when equipment is not operated due to breakdowns; in which case rental hours are the hours the equipment was operated.

Equipment Rental Hours

Hours operated	Hours paid
0.0	4.00
0.5	4.25
1.0	4.50
1.5	4.75
2.0	5.00
2.5	5.25
3.0	5.50
3.5	5.75
4.0	6.00
4.5	6.25
5.0	6.50
5.5	6.75
6.0	7.00
6.5	7.25
7.0	7.5
7.5	7.75
≥8.0	hours used

9-1.03D(4) Equipment Not On the Job Site Not Required for Original Contract Work

For equipment not on the job site at the time required to perform work paid by force account and not required for original Contract work, the time paid is the time:

1. To move the equipment to the location of work paid by force account plus an equal amount of time to return the equipment to its source when the work paid by force account is completed
2. To load and unload equipment
3. Equipment is operated to perform work paid by force account

For this equipment, the Engineer may authorize rates in excess of those in Labor Surcharge and Equipment Rental Rates subject to the following:

1. Equipment is not available from your normal sources or from one of your subcontractors
2. Proposed equipment rental rate is reasonable
3. Engineer authorizes the equipment source and the rental rate before you use the equipment

9-1.03D(5) Non-Owner-Operated Dump Truck Rental

Submit the rental rate for non-owner-operated dump truck rental. The Engineer determines the payment rate. Payment for non-owner-operated dump truck rental is for the cost of renting a dump truck, including its driver. For the purpose of markup payment only, the non-owner-operated dump truck is rental equipment and the owner is a subcontractor.

SECTION 12 CONSTRUCTION AREA TRAFFIC CONTROL DEVICES
(Issued 11-07-08)

In Section 12-1.01 in the 2nd paragraph, replace the 1st sentence with:

Attention is directed to Part 6 of the California MUTCD.

Replace Section 12-2.01 with:

12-2.01 FLAGGERS

Flaggers while on duty and assigned to traffic control or to give warning to the public that the highway is under construction and of any dangerous conditions to be encountered as a result thereof, shall perform their duties and shall be provided with the necessary equipment in conformance with Part 6 of the California MUTCD. The equipment shall be furnished and kept clean and in good repair by the Contractor at the Contractor's expense.

All flaggers shall wear safety apparel meeting the requirements of ANSI/ISEA 107-2004 for Class 2 or 3 garment and complying with 71 Fed Reg 67792.

In Section 12-3.01 replace the 1st paragraph with:

In addition to the requirements in Part 6 of the California MUTCD, all devices used by the Contractor in the performance of the work shall conform to the provisions in this Section 12-3.

In Section 12-3.06 in the 1st paragraph, replace the 2nd sentence with:

Construction area signs are shown in or referred to in Part 6 of the California MUTCD.

In Section 12-3.06 in the 4th paragraph, replace the 1st sentence with:

All construction area signs shall conform to the dimensions, color and legend requirements of the plans, Part 6 of the California MUTCD and these specifications.

In Section 12-3.06 in the 8th paragraph, replace the 1st sentence with:

Used signs with the specified sheeting material will be considered satisfactory if they conform to the requirements for visibility and legibility and the colors conform to the requirements in Part 6 of the California MUTCD.

SECTION 14 (BLANK)
(Issued 06-05-09)

Replace Section 14 with:

SECTION 14 ENVIRONMENTAL STEWARDSHIP

14-1 GENERAL

14-1.01 GENERAL

Environmental stewardship includes both environmental compliance and environmental resource management.
If an ESA is shown on the plans:

1. The boundaries shown are approximate; the Department marks the exact boundaries on the ground
2. Do not enter the ESA unless authorized
3. If the ESA is breached, immediately:
   3.1. Secure the area and stop all operations within 60 feet of the ESA boundary
   3.2. Notify the Engineer
4. If the ESA is damaged, the Department determines what efforts are necessary to remedy the damage and who performs the remedy; you are responsible for remedies and charges.

14-2 CULTURAL RESOURCES

14-2.01 GENERAL

Reserved

14-2.02 ARCHAEOLOGICAL RESOURCES

If archaeological resources are discovered at the job site, do not disturb the resources and immediately:

1. Stop all work within a 60-foot radius of the discovery
2. Protect the discovery area
3. Notify the Engineer

The Department investigates. Do not take archaeological resources from the job site. Do not resume work within the discovery area until authorized.
If, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of an archaeological find, or investigation or recovery of archeological materials, you will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays."
If ordered, furnish resources to assist in the investigation or recovery of archaeological resources. This work

will be paid for as extra work as specified in Section 4-1.03D, "Extra Work."

14-2.03 ARCHAEOLOGICAL MONITORING AREA

Section 14-2.03 applies if an AMA is described in the Contract.
The Department assigns an archaeological monitor to monitor job site activities within the AMA. Do not work within the AMA unless the archeological monitor is present.
The Engineer and the Department archaeological monitor conduct an AMA location field review with you at least 5 business days before start of work. The Department marks the exact boundaries of the AMA on the ground.
If temporary fence (Type ESA) for an AMA is described in the Contract, install temporary fence (Type ESA) to define the boundaries of the AMA during the AMA location field review.
At least 5 business days before starting work within an AMA, submit a schedule of days and hours to be worked for the Engineer's approval. If you require changes in the schedule, submit an update for the Engineer's approval at least 5 business days before any changed work day.
If archaeological resources are discovered within an AMA, comply with Section 14-2.02, "Archaeological Resources."

14-2.04 HISTORIC STRUCTURES

Reserved

14-3 COMMUNITY IMPACTS AND ENVIRONMENTAL JUSTICE

Reserved

14-4 NATIVE AMERICAN CONCERNS

Reserved

14-5 AESTHETICS

Reserved

14-6 BIOLOGICAL RESOURCES

14-6.01 GENERAL

Reserved

14-6.02 BIRD PROTECTION

Protect migratory and nongame birds, their occupied nests, and their eggs.
The Department anticipates nesting or attempted nesting from February 15 to September 1.
The federal Migratory Bird Treaty Act, 16 USC § 703–711, and 50 CFR Pt 10 and Fish & Game Code §§ 3503, 3513, and 3800 protect migratory and nongame birds, their occupied nests, and their eggs.
The federal Endangered Species Act of 1973, 16 USC §§ 1531 and 1543, and the California Endangered Species Act, Fish & Game Code §§ 2050–2115.5, prohibit the take of listed species and protect occupied and unoccupied nests of threatened and endangered bird species.
The Bald and Golden Eagle Protection Act, 16 USC § 668, prohibits the destruction of bald and golden eagles and their occupied and unoccupied nests.
If migratory or nongame bird nests are discovered that may be adversely affected by construction activities or an injured or killed bird is found, immediately:

1. Stop all work within a 100-foot radius of the discovery.
2. Notify the Engineer.

The Department investigates. Do not resume work within the specified radius of the discovery until authorized.
When ordered, use exclusion devices, take nesting prevention measures, remove and dispose of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or perform any combination of these. This work will be paid for as extra work as specified in Section 4-1.03D, "Extra Work."
Prevent nest materials from falling into waterways.
Bird protection that causes a delay to the controlling activity is a condition unfavorable to the suitable prosecution of work as specified in Section 8-1.05, "Temporary Suspension of Work."

14-7 PALEONTOLOGICAL RESOURCES

If paleontological resources are discovered at the job site, do not disturb the material and immediately:

1. Stop all work within a 60-foot radius of the discovery
2. Protect the area
3. Notify the Engineer

The Department investigates and modifies the dimensions of the protected area if necessary. Do not take paleontological resources from the job site. Do not resume work within the specified radius of the discovery until authorized.

14-8 NOISE AND VIBRATION

14-8.01 GENERAL

Reserved

14-8.02 NOISE CONTROL

Do not exceed 86 dBa at 50 feet from the job site activities from 9 p.m. to 6 a.m.
Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.

14-9 AIR QUALITY

14-9.01 AIR POLLUTION CONTROL

Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including air pollution control rules, regulations, ordinances, and statutes provided in Govt Code § 11017 (Pub Cont Code § 10231).
Do not burn material to be disposed of.

14-9.02 DUST CONTROL

Prevent and alleviate dust by applying water, dust palliative, or both under Section 14-9.01.
Apply water under Section 17, "Watering."
Apply dust palliative under Section 18,"Dust Palliative."
If ordered, apply water, dust palliative, or both to control dust caused by public traffic. This work will be paid for as extra work as specified in Section 4-1.03D, "Extra Work."

14-10 SOLID WASTE DISPOSAL AND RECYCLING

14-10.01 SOLID WASTE DISPOSAL AND RECYCLING

Submit an annual Solid Waste Disposal and Recycling Report between January 1 and 15 for each year work is performed under the Contract at any time during the previous calendar year. Show the types and amounts of project-generated solid waste taken to or diverted from landfills or reused on the project from January 1 through December 31 of the previous calendar year.

Submit a final annual Solid Waste Disposal and Recycling Report within 5 business days after Contract acceptance. Show the types and amounts of project-generated solid waste taken to or diverted from landfills or reused on the project from January 1 to Contract acceptance.
For each failure to submit a completed form, the Department withholds $10,000.

14-11 HAZARDOUS WASTE AND CONTAMINATION

14-11.01 GENERAL

Reserved

14-11.02 ASBESTOS AND HAZARDOUS SUBSTANCES

Upon discovery, immediately stop working in and notify the Engineer of areas where asbestos or a hazardous substance is present if the:

1. Contractor reasonably believes the substance is asbestos as defined in Labor Code § 6501.7 or a hazardous substance as defined in Health & Safety Code §§ 25316 and 25317
2. Presence is not described in the Contract

3. Substance has not been made harmless

14-12 OTHER INTERAGENCY RELATIONS

Reserved

14-13 PAYMENT

Payment for work specified in Section 14 is included in the payment for the bid items involved unless:

1. Bid item for the work is shown in the verified Bid Item List
2. Work is specified as paid for as extra work

SECTION 19 EARTHWORK
(Issued 11-21-08)

Replace Section 19-1.02 with:

19-1.02 (BLANK)

Replace Section 19-1.03 with:

19-1.03 GRADE TOLERANCE

Immediately prior to placing subsequent layers of material thereon, the grading plane shall conform to one of the following:

A. When hot mix asphalt is to be placed on the grading plane, the grading plane at any point shall not vary more than 0.05 foot above or below the grade established by the Engineer.
B. When subbase or base material to be placed on the grading plane is to be paid for by the ton, the grading plane at any point shall not vary more than 0.10 foot above or below the grade established by the Engineer.
C. When the material to be placed on the grading plane is to be paid for by the cubic yard, the grading plane at any point shall be not more than 0.05 foot above the grade established by the Engineer.

In Section 19-3.025C replace the 1st paragraph with:

Cementitious material used in soil cement bedding shall conform to the provisions in Section 90-2.01, "Cementitious Materials." Supplementary cementitious material will not be required.

In Section 19-3.025C replace the 4th paragraph with:

The aggregate, cementitious material, and water shall be proportioned either by weight or by volume. Soil cement bedding shall contain not less than 282 pounds of cementitious material per cubic yard. The water content shall be sufficient to produce a fluid, workable mix that will flow and can be pumped without segregation of the aggregate while being placed.

In Section 19-3.062 replace the 1st paragraph with:

Slurry cement backfill shall consist of a fluid, workable mixture of aggregate, cementitious material, and water.

In Section 19-3.062 replace the 5th paragraph with:

Cementitious material shall conform to the provisions in Section 90-2.01, "Cementitious Materials." Supplementary cementitious material will not be required.

In Section 19-3.062 replace the 8th paragraph with:

The aggregate, cementitious material, and water shall be proportioned either by weight or by volume. Slurry cement backfill shall contain not less than 188 pounds of cementitious material per cubic yard. The water content shall be sufficient to produce a fluid, workable mix that will flow and can be pumped without segregation of the aggregate while being placed.

SECTION 20 EROSION CONTROL AND HIGHWAY PLANTING
(Issued 08-17-07)

Replace Section 20-2.03 with:

20-2.03 SOIL AMENDMENT

Soil amendment shall comply with the requirements in the California Food and Agricultural Code.
Soil amendment producers shall comply with the following:

1. Be fully permitted to produce compost as specified under the California Integrated Waste Management Board, Local Enforcement Agencies and any other State and Local Agencies that regulate Solid Waste Facilities. If exempt from State permitting requirements, the composting facility must certify that it follows guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.
2. Be a participant in United States Composting Council's Seal of Testing Assurance program.

Soil amendment shall be composted and may be derived from any single, or mixture of any of the following feedstock materials:

1. Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products
2. Biosolids
3. Manure
4. Mixed food waste

Soil amendment feedstock materials shall be composted to reduce weed seeds, pathogens and deleterious materials as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.
Soil amendment shall not be derived from mixed municipal solid waste and must be reasonably free of visible contaminates. Soil amendment must not contain paint, petroleum products, pesticides or any other chemical residues harmful to animal life or plant growth. Soil amendment must not possess objectionable odors.
Metal concentrations in soil amendment must not exceed the maximum metal concentrations listed in Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.
Soil amendment must comply with the following:

Physical/Chemical Requirements

Property	Test Method	Requirement
pH	*TMECC 04.11-A, Elastometric pH 1:5 Slurry Method, pH Units	6.0–8.0
Soluble Salts	TMECC 04.10-A, Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0-10.0
Moisture Content	TMECC 03.09-A, Total Solids & Moisture at 70+/- 5 deg C, % Wet Weight Basis	30–60
Organic Matter Content	TMECC 05.07-A, Loss-On-Ignition Organic Matter Method (LOI), % Dry Weight Basis	30–65
Maturity	TMECC 05.05-A, Germination and Vigor Seed Emergence Seedling Vigor % Relative to Positive Control	 80 or Above 80 or Above
Stability	TMECC 05.08-B, Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	8 or below
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	95% Passing 5/8 inch 70% Passing 3/8 inch
Pathogen	TMECC 07.01-B, Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	Pass

Pathogen	TMECC 07.01-B, Salmonella < 3 MPN/4 grams dry wt.	Pass
Physical Contaminants	TMECC 02.02-C, Man Made Inert Removal and Classification: Plastic, Glass and Metal, % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C, Man Made Inert Removal and Classification: Sharps (Sewing needles, straight pins and hypodermic needles), % > 4mm fraction	None Detected

*TMECC refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).

Prior to application, the Contractor shall provide the Engineer with a copy of the soil amendment producer's Compost Technical Data Sheet and a copy of the compost producers STA certification. The Compost Technical Data Sheet shall include laboratory analytical test results, directions for product use, and a list of product ingredients.
Prior to application, the Contractor shall provide the Engineer with a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.

In Section 20-2.10 delete the 8th, 9th, and 10th paragraphs.

In Section 20-3.04A delete the last paragraph.

Replace Section 20-4.055 with:

20-4.055 PRUNING

Pruning of plants shall be consistent with American National Standards Institute (ANSI), "Tree, Shrub and Other Woody Plant Maintenance Standard Practices," ANSI 300 (Part 1)-2001 and "Best Management Practices Tree Pruning," 2002 (ISBN 1-881956318), published by the International Society of Arboriculture, P.O. Boc 3129, Champaign, IL 61826.

SECTION 26 AGGREGATE BASES
(Issued 02-16-07)

In Section 26-1.02A replace the 1st paragraph with:

Aggregate must be clean and free from organic matter and other deleterious substances. Aggregate must consist of any combination of:

1. Broken stone
2. Crushed gravel
3. Natural rough surfaced gravel
4. Sand
5. Up to 100 percent of any combination of processed:

    5.1. Asphalt concrete
    5.2. Portland cement concrete
    5.3. Lean concrete base
    5.4. Cement treated base

In Section 26-1.02B replace the 1st paragraph with:

Aggregate must be clean and free from organic matter and other deleterious substances. Aggregate must consist of any combination of:

1. Broken stone
2. Crushed gravel
3. Natural rough surfaced gravel
4. Sand
5. Up to 100 percent of any combination of processed:

5.1. Asphalt concrete
5.2. Portland cement concrete
5.3. Lean concrete base
5.4. Cement treated base

SECTION 39 ASPHALT CONCRETE
(Issued 06-05-09)

Replace Section 39 with:
SECTION 39 HOT MIX ASPHALT

39-1 GENERAL

39-1.01 DESCRIPTION
Section 39 includes specifications for producing and placing hot mix asphalt (HMA) by mixing aggregate and asphalt binder at a mixing plant and spreading and compacting the HMA mixture.
The special provisions specify one or more type of HMA, including:

1. Type A
2. Type B
3. Open graded friction course (OGFC). OGFC includes hot mix asphalt (open graded), rubberized hot mix asphalt (open graded) (RHMA-O) and rubberized hot mix asphalt (open graded high binder) (RHMA-O-HB)
4. Rubberized hot mix asphalt (gap graded) (RHMA-G)

The special provisions specify the HMA construction process, including:

1. Standard
2. Method
3. Quality Control / Quality Assurance (QC / QA)

39-1.02 MATERIALS
39-1.02A Geosynthetic Pavement Interlayer
Geosynthetic pavement interlayer must comply with the specifications for pavement fabric or paving mat in Section 88-1.07, "Pavement Interlayer."

39-1.02B Tack Coat
Tack coat must comply with the specifications for asphaltic emulsion in Section 94, "Asphaltic Emulsion," or asphalt binder in Section 92, "Asphalts." Choose the type and grade.
Notify the Engineer if you dilute asphaltic emulsion with water. The weight ratio of added water to asphaltic emulsion must not exceed 1 to 1.
Measure added water either by weight or volume in compliance with the specifications for weighing, measuring, and metering devices under Section 9-1.01, "Measurement of Quantities," or you may use water meters from water districts, cities, or counties. If you measure water by volume, apply a conversion factor to determine the correct weight.
With each dilution, submit in writing:

1. The weight ratio of water to bituminous material in the original asphaltic emulsion
2. The weight of asphaltic emulsion before diluting
3. The weight of added water
4. The final dilution weight ratio of water to asphaltic emulsion

39-1.02C Asphalt Binder
Asphalt binder in HMA must comply with Section 92, "Asphalts," or Section 39-1.02D, "Asphalt Rubber Binder." The special provisions specify the grade.
Asphalt binder for geosynthetic pavement interlayer must comply with Section 92, "Asphalts." Choose from

Grades PG 64-10, PG 64-16, or PG 70-10.

39-1.02D Asphalt Rubber Binder

General

Use asphalt rubber binder in RHMA-G, RHMA-O, and RHMA-O-HB. Asphalt rubber binder must be a combination of:

1. Asphalt binder
2. Asphalt modifier
3. Crumb rubber modifier (CRM)

The combined asphalt binder and asphalt modifier must be 80.0 ± 2.0 percent by weight of the asphalt rubber binder.

Asphalt Modifier

Asphalt modifier must be a resinous, high flash point, and aromatic hydrocarbon, and comply with:

Asphalt Modifier for Asphalt Rubber Binder

Quality Characteristic	ASTM	Specification
Viscosity, m^2/s (x 10^{-6}) at 100 °C	D 445	X ± 3 [a]
Flash Point, CL.O.C., °C	D 92	207 minimum
Molecular Analysis		
Asphaltenes, percent by mass	D 2007	0.1 maximum
Aromatics, percent by mass	D 2007	55 minimum

Note:
[a] The symbol "X" is the proposed asphalt modifier viscosity. "X" must be between 19 and 36. A change in "X" requires a new asphalt rubber binder design.

Asphalt modifier must be from 2.0 percent to 6.0 percent by weight of the asphalt binder in the asphalt rubber binder.

Crumb Rubber Modifier

CRM consists of a ground or granulated combination of scrap tire CRM and high natural CRM. CRM must be 75.0 ± 2.0 percent scrap tire CRM and 25.0 ± 2.0 percent high natural CRM by total weight of CRM. Scrap tire CRM must be from any combination of automobile tires, truck tires, or tire buffings.
Sample and test scrap tire CRM and high natural CRM separately. CRM must comply with:

Crumb Rubber Modifier for Asphalt Rubber Binder

Quality Characteristic	Test Method	Specification
Scrap tire CRM gradation (% passing No. 8 sieve)	LP-10	100
High natural CRM gradation (% passing No. 10 sieve)	LP-10	100
Wire in CRM (% max.)	LP-10	0.01
Fabric in CRM (% max.)	LP-10	0.05
CRM particle length (inch max.) [a]	--	3/16
CRM specific gravity [a]	CT 208	1.1 – 1.2
Natural rubber content in high natural CRM (%) [a]	ASTM D 297	40.0 – 48.0

Note:
[a] Test at mix design and for Certificate of Compliance.

Only use CRM ground and granulated at ambient temperature. If steel and fiber are cryogenically separated, it must occur before grinding and granulating. Only use cryogenically produced CRM particles that can be ground or granulated and not pass through the grinder or granulator.
CRM must be dry, free-flowing particles that do not stick together. CRM must not cause foaming when combined with the asphalt binder and asphalt modifier. You may add calcium carbonate or talc up to 3 percent by weight of CRM.

Asphalt Rubber Binder Design and Profile

Submit in writing an asphalt rubber binder design and profile that complies with the asphalt rubber binder specifications. In the design, designate the asphalt, asphalt modifier, and CRM and their proportions. The profile must include the same component sources for the asphalt rubber binder used.

Design the asphalt rubber binder from testing you perform for each quality characteristic and for the reaction temperatures expected during production. The 24-hour (1,440-minute) interaction period determines the design profile. At a minimum, mix asphalt rubber binder components, take samples, and perform and record the following tests:

Asphalt Rubber Binder Reaction Design Profile

Test	Minutes of Reaction [a]							Limits
	45	60	90	120	240	360	1440	
Cone penetration @ 77 °F, 0.10-mm (ASTM D 217)	X[b]				X		X	25 - 70
Resilience @ 77 °F, percent rebound (ASTM D 5329)	X				X		X	18 min.
Field softening point, °F (ASTM D 36)	X				X		X	125 - 165
Viscosity, centipoises (LP-11)	X	X	X	X	X	X	X	1,500 - 4,000

Notes:

[a] Six hours (360 minutes) after CRM addition, reduce the oven temperature to 275 °F for a period of 16 hours. After the 16-hour (1320 minutes) cool-down after CRM addition, reheat the binder to the reaction temperature expected during production for sampling and testing at 24 hours (1440 minutes).

[b] "X" denotes required testing

Asphalt Rubber Binder

After interacting for a minimum of 45 minutes, asphalt rubber binder must comply with:

Asphalt Rubber Binder

Quality Characteristic	Test for Quality Control or Acceptance	Test Method	Specification	
			Minimum	Maximum
Cone penetration @ 77 °F, 0.10-mm	Acceptance	ASTM D 217	25	70
Resilience @ 77 °F, percent rebound	Acceptance	ASTM D 5329	18	--
Field softening point, °F	Acceptance	ASTM D 36	125	165
Viscosity @ 375 °F, centipoises	Quality Control	LP-11	1,500	4,000

39-1.02E Aggregate

Aggregate must be clean and free from deleterious substances. Aggregate:

1. Retained on the No. 4 sieve is coarse
2. Passing the No. 4 sieve is fine
3. Added and passing the No. 30 sieve is supplemental fine, including:

    3.1. Hydrated lime
    3.2. Portland cement
    3.3. Fines from dust collectors

The special provisions specify the aggregate gradation for each HMA type.

The specified aggregate gradation is before the addition of asphalt binder and includes supplemental fines. The Engineer tests for aggregate grading under California Test 202, modified by California Test 105 if there is a difference in specific gravity of 0.2 or more between the coarse and fine parts of different aggregate blends. Choose a sieve size target value (TV) within each target value limit presented in the aggregate gradation tables.

Aggregate Gradation
(Percentage Passing)
HMA Types A and B

3/4–inch HMA Types A and B

Sieve Sizes	Target Value Limits	Allowable Tolerance
1"	100	—
3/4"	90 - 100	TV ±5
1/2"	70 - 90	TV ±6
No. 4	45 - 55	TV ±7
No. 8	32 - 40	TV ±5
No. 30	12 - 21	TV ±4
No. 200	2 - 7	TV ±2

1/2–inch HMA Types A and B

Sieve Sizes	Target Value Limits	Allowable Tolerance
3/4"	100	—
1/2"	95 - 99	TV ±6
3/8"	75 - 95	TV ±6
No. 4	55 - 66	TV ±7
No. 8	38 - 49	TV ±5
No. 30	15 - 27	TV ±4
No. 200	2 - 8	TV ±2

3/8–inch HMA Types A and B

Sieve Sizes	Target Value Limits	Allowable Tolerance
1/2"	100	—
3/8"	95 - 100	TV ±6
No. 4	58 - 72	TV ±7
No. 8	34 - 48	TV ±6
No. 30	18 - 32	TV ±5
No. 200	2 - 9	TV ±2

No. 4 HMA Types A and B

Sieve Sizes	Target Value Limits	Allowable Tolerance
3/8"	100	—
No. 4	95 - 100	TV ±7
No. 8	72 - 77	TV ±7
No. 30	37 - 43	TV ±7
No. 200	2 - 12	TV ±4

Rubberized Hot Mix Asphalt - Gap Graded (RHMA-G)

3/4–inch RHMA-G

Sieve Sizes	Target Value Limits	Allowable Tolerance
1"	100	—
3/4"	95 - 100	TV ±5
1/2"	83 - 87	TV ±6
3/8"	65 - 70	TV ±6
No. 4	28 - 42	TV ±7
No. 8	14 - 22	TV ±5
No. 200	0 - 6	TV ±2

1/2–inch RHMA-G

Sieve Sizes	Target Value Limits	Allowable Tolerance
3/4"	100	—
1/2"	90 - 100	TV ±6
3/8"	83 - 87	TV ±6
No. 4	28 - 42	TV ±7
No. 8	14 - 22	TV ±5
No. 200	0 - 6	TV ±2

Open Graded Friction Course (OGFC)

1–inch OGFC

Sieve Sizes	Target Value Limits	Allowable Tolerance
1 1/2"	100	—
1"	99 - 100	TV ±5
3/4"	85 - 96	TV ±5
1/2"	55 - 71	TV ±6
No. 4	10 - 25	TV ±7
No. 8	6 - 16	TV ±5
No. 200	1 - 6	TV ±2

1/2–inch OGFC

Sieve Sizes	Target Value Limits	Allowable Tolerance
3/4"	100	—
1/2"	95 - 100	TV ±6
3/8"	78 - 89	TV ±6
No. 4	28 - 37	TV ±7
No. 8	7 - 18	TV ±5
No. 30	0 - 10	TV ±4
No. 200	0 - 3	TV ±2

3/8–inch OGFC

Sieve Sizes	Target Value Limits	Allowable Tolerance
1/2"	100	—
3/8"	90 - 100	TV ±6
No. 4	29 - 36	TV ±7
No. 8	7 - 18	TV ±6
No. 30	0 - 10	TV ±5
No. 200	0 - 3	TV ±2

Before the addition of asphalt binder and lime treatment, aggregate must comply with:

Aggregate Quality

Quality Characteristic	Test Method	HMA Type			
		A	B	RHMA-G	OGFC
Percent of crushed particles	CT 205				
Coarse aggregate (% min.)					
One fractured face		90	25	--	90
Two fractured faces		75	--	90	75
Fine aggregate (% min)					
(Passing No. 4 sieve and retained on No. 8 sieve.)					
One fractured face		70	20	70	90
Los Angeles Rattler (% max.)	CT 211				
Loss at 100 Rev.		12	--	12	12
Loss at 500 Rev.		45	50	40	40

Sand equivalent (min.) [a]	CT 217	47	42	47	--
Fine aggregate angularity (% min.) [b]	AASHTO T 304 Method A	45	45	45	--
Flat and elongated particles (% max. by weight @ 5:1)	ASTM D 4791	10	10	10	10

Notes:
[a] Reported value must be the average of 3 tests from a single sample.
[b] The Engineer waives this specification if HMA contains less than 10 percent of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

39-1.02F Reclaimed Asphalt Pavement

You may produce HMA using reclaimed asphalt pavement (RAP). HMA produced using RAP must comply with the specifications for HMA except aggregate quality specifications do not apply to RAP. You may substitute RAP aggregate for a part of the virgin aggregate in HMA in a quantity not exceeding 15.0 percent of the aggregate blend. Do not use RAP in OGFC and RHMA-G.
Assign the substitution rate of RAP aggregate for virgin aggregate with the job mix formula (JMF) submittal. The JMF must include the percent of RAP used. If you change your assigned RAP aggregate substitution rate by more than 5 percent (within the 15.0 percent limit), submit a new JMF.
Process RAP from asphalt concrete. You may process and stockpile RAP throughout the project's life. Prevent material contamination and segregation. Store RAP in stockpiles on smooth surfaces free of debris and organic material. Processed RAP stockpiles must consist only of homogeneous RAP.

39-1.03 HOT MIX ASPHALT MIX DESIGN REQUIREMENTS

39-1.03A General

A mix design consists of performing California Test 367 and laboratory procedures on combinations of aggregate gradations and asphalt binder contents to determine the optimum binder content (OBC) and HMA mixture qualities. If RAP is used, use Laboratory Procedure LP-9. The result of the mix design becomes the proposed JMF.
Use Form CEM-3512 to document aggregate quality and mix design data. Use Form CEM-3511 to present the JMF.
Laboratories testing aggregate qualities and preparing the mix design and JMF must be qualified under the Department's Independent Assurance Program. Take samples under California Test 125.
The Engineer reviews the aggregate qualities, mix design, and JMF and verifies and accepts the JMF.
You may change the JMF during production. Do not use the changed JMF until the Engineer accepts it. Except when adjusting the JMF in compliance with Section 39-1.03E, "Job Mix Formula Verification," perform a new mix design and submit in writing a new JMF submittal for changing any of the following:

1. Target asphalt binder percentage
2. Asphalt binder supplier
3. Asphalt rubber binder supplier
4. Component materials used in asphalt rubber binder or percentage of any component materials
5. Combined aggregate gradation
6. Aggregate sources
7. Substitution rate for RAP aggregate of more than 5 percent
8. Any material in the JMF

For OGFC, submit in writing a complete JMF submittal except asphalt binder content. The Engineer determines the asphalt binder content under California Test 368 within 20 days of your complete JMF submittal and provides you a Form CEM-3513.

39-1.03B Hot Mix Asphalt Mix Design

Perform a mix design that produces HMA in compliance with:

Hot Mix Asphalt Mix Design Requirements

Quality Characteristic	Test Method	HMA Type		
		A	B	RHMA-G
Air voids content (%)	CT 367[a]	4.0	4.0	Special Provisions

Voids in mineral aggregate (% min.)	LP-2			
No. 4 grading		17.0	17.0	--
3/8" grading		15.0	15.0	--
1/2" grading		14.0	14.0	18.0 – 23.0[b]
3/4" grading		13.0	13.0	18.0 – 23.0[b]
Voids filled with asphalt (%)	LP-3			
No. 4 grading		76.0 – 80.0	76.0 – 80.0	Note d
3/8" grading		73.0 – 76.0	73.0 – 76.0	
1/2" grading		65.0 – 75.0	65.0 – 75.0	
3/4" grading		65.0 – 75.0	65.0 – 75.0	
Dust proportion	LP-4			
No. 4 and 3/8" gradings		0.9 – 2.0	0.9 – 2.0	Note d
1/2" and 3/4" gradings		0.6 – 1.3	0.6 – 1.3	
Stabilometer value (min.) [c]	CT 366			
No. 4 and 3/8" gradings		30	30	--
1/2" and 3/4" gradings		37	35	23

Notes:

[a] Calculate the air voids content of each specimen using California Test 309 and Lab Procedure LP-1. Modify California Test 367, Paragraph C5, to use the exact air voids content specified in the selection of OBC.

[b] Voids in mineral aggregate for RHMA-G must be within this range.

[c] Modify California Test 304, Part 2.B.2.c: "After compaction in the compactor, cool to 140 °± 5 °F by allowing the briquettes to cool at room temperature for 0.5-hour, then place the briquettes in the oven at 140 °F for a minimum of 2 hours and not more than 3 hours."

[d] Report this value in the JMF submittal.

For stability and air voids content, prepare 3 briquettes at the OBC and test for compliance. Report the average of 3 tests. Prepare new briquettes and test if the range of stability for the 3 briquettes is more than 8 points. The average air void content may vary from the specified air void content by ±0.5 percent.
You may use the briquettes used for stability testing to determine bulk specific gravity under CT 308. If you use the same briquettes and tests using bulk specific gravity fail, you may prepare 3 new briquettes and determine a new bulk specific gravity.

39-1.03C Job Mix Formula Submittal

Each JMF submittal must consist of:

1. Proposed JMF on Form CEM-3511
2. Mix design documentation on Form CEM-3512 dated within 12 months of submittal
3. JMF verification on Form CEM-3513, if applicable
4. JMF renewal on Form CEM-3514, if applicable
5. Materials Safety Data Sheets (MSDS) for:
   - 5.1. Asphalt binder
   - 5.2. Base asphalt binder used in asphalt rubber binder
   - 5.3. CRM and asphalt modifier used in asphalt rubber binder
   - 5.4. Blended asphalt rubber binder mixture
   - 5.5. Supplemental fine aggregate except fines from dust collectors
   - 5.6. Antistrip additives

If the Engineer requests in writing, sample the following materials in the presence of the Engineer and place in labeled containers weighing no more than 50 pounds each:

1. Coarse, fine, and supplemental fine aggregate from stockpiles, cold feed belts, or hot bins. Samples must include at least 120 pounds for each coarse aggregate, 80 pounds for each fine aggregate, and 10 pounds for each type of supplemental fines. The Department combines these aggregate samples to comply with the JMF target values submitted on Form CEM-3511.
2. RAP from stockpiles or RAP system. Samples must be at least 60 pounds.
3. Asphalt binder from the binder supplier. Samples must be in two 1-quart cylindrical shaped cans with open top and friction lids.

4. Asphalt rubber binder with the components blended in the proportions to be used. Samples must be in four 1-quart cylindrical shaped cans with open top and friction lids.

Notify the Engineer in writing at least 2 business days before sampling materials. For aggregate and RAP, split the samples into at least 4 parts. Submit 3 parts to the Engineer and use 1 part for your testing.

39-1.03D Job Mix Formula Review

The Engineer reviews each mix design and proposed JMF within 5 business days from the complete JMF submittal. The review consists of reviewing the mix design procedures and comparing the proposed JMF with the specifications.
The Engineer may verify aggregate qualities during this review period.

39-1.03E Job Mix Formula Verification

If you cannot submit a Department-verified JMF on Form CEM-3513 dated within 12 months before HMA production, the Engineer verifies the JMF.
Based on your testing and production experience, you may submit on Form CEM-3511 an adjusted JMF before the Engineer's verification testing. JMF adjustments may include a change in the:

1. Asphalt binder content target value up to ±0.6 percent from the optimum binder content value submitted on Form CEM-3512 except do not adjust the target value for asphalt rubber binder for RHMA-G below 7.0 percent
2. Aggregate gradation target values within the target value limits specified in the aggregate gradation tables

For HMA Type A, Type B, and RHMA-G, the Engineer verifies the JMF from samples taken from HMA produced by the plant to be used. Notify the Engineer in writing at least 2 business days before sampling materials.
In the Engineer's presence and from the same production run, take samples of:

1. Aggregate
2. Asphalt binder
3. RAP
4. HMA

Sample aggregate from cold feed belts or hot bins. Sample RAP from the RAP system. Sample HMA under California Test 125 except if you request in writing and the Engineer approves, you may sample from any of the following locations:

1. The plant
2. A truck
3. A windrow
4. The paver hopper
5. The mat behind the paver

You may sample from a different project including a non-Department project if you make arrangements for the Engineer to be present during sampling.
For aggregate, RAP, and HMA, split the samples into at least 4 parts and label their containers. Submit 3 split parts to the Engineer and use 1 part for your testing.
The Engineer verifies each proposed JMF within 20 days of receiving verification samples. If you request in writing, the Engineer verifies RHMA-G quality requirements within 3 business days of sampling. Verification is testing for compliance with the specifications for:

1. Aggregate quality
2. Aggregate gradation (JMF TV ± tolerance)
3. Asphalt binder content (JMF TV ± tolerance)
4. HMA quality specified in the table Hot Mix Asphalt Mix Design Requirements except:

    4.1. Air voids content (design value ± 2.0 percent)
    4.2. Voids filled with asphalt (report only if an adjustment for asphalt binder content target value is less than or equal to ± 0.3 percent from OBC)

4.3. Dust proportion (report only if an adjustment for asphalt binder content target value is less than or equal to ± 0.3 percent from OBC)

The Engineer prepares 3 briquettes from a single split sample. To verify the JMF for stability and air voids content, the Engineer tests the 3 briquettes and reports the average of 3 tests. The Engineer prepares new briquettes if the range of stability for the 3 briquettes is more than 8 points.
The Engineer may use the briquettes used for stability testing to determine bulk specific gravity under CT 308. If the Engineer uses the same briquettes and the tests using bulk specific gravity fail, the Engineer prepares 3 new briquettes and determines a new bulk specific gravity.
If the Engineer verifies the JMF, the Engineer provides you a Form CEM-3513.
If the Engineer's tests on plant-produced samples do not verify the JMF, the Engineer notifies you in writing and you must submit a new JMF submittal or submit an adjusted JMF based on your testing. JMF adjustments may include a change in the:

1. Asphalt binder content target value up to ±0.6 percent from the optimum binder content value submitted on Form CEM-3512 except do not adjust the target value for asphalt rubber binder for RHMA-G below 7.0 percent
2. Aggregate gradation target values within the target value limits specified in the aggregate gradation tables

You may adjust the JMF only once due to a failed verification test. An adjusted JMF requires a new Form CEM-3511 and verification of a plant-produced sample.
The Engineer reverifies the JMF if HMA production has stopped for longer than 30 days and the verified JMF is older than 12 months.
For each HMA type and aggregate size specified, the Engineer verifies at the State's expense up to 2 proposed JMF including a JMF adjusted after verification failure. The Engineer deducts $3,000 from payments for each verification exceeding this limit. This deduction does not apply to verifications initiated by the Engineer or if a JMF expires while HMA production is stopped longer than 30 days.

39-1.03F Job Mix Formula Renewal

You may request a JMF renewal by submitting the following:

1. Proposed JMF on Form CEM-3511
2. A previously verified JMF documented on Form CEM-3513 dated within 12 months
3. Mix design documentation on Form CEM-3512 used for the previously verified JMF

If the Engineer requests in writing, sample the following materials in the presence of the Engineer and place in labeled containers weighing no more than 50 pounds each:

1. Coarse, fine, and supplemental fine aggregate from stockpiles, cold feed belts, or hot bins. Samples must include at least 120 pounds for each coarse aggregate, 80 pounds for each fine aggregate, and 10 pounds for each type of supplemental fines. The Department combines these aggregate samples to comply with the JMF target values submitted on Form CEM-3511.
2. RAP from stockpiles or RAP system. Samples must be at least 60 pounds.
3. Asphalt binder from the binder supplier. Samples must be in two 1-quart cylindrical shaped cans with open top and friction lids.
4. Asphalt rubber binder with the components blended in the proportions to be used. Samples must be in four 1-quart cylindrical shaped cans with open top and friction lids.

Notify the Engineer in writing at least 2 business days before sampling materials. For aggregate and RAP, split samples into at least 4 parts. Submit 3 parts to the Engineer and use 1 part for your testing.
The Engineer reviews each complete JMF renewal submittal within 5 business days.
The Engineer may verify aggregate qualities during this review period.
Notify the Engineer in writing at least 2 business days before sampling materials. For aggregate, RAP, and HMA, split the samples into at least 4 parts. Submit 3 parts to the Engineer and use 1 part for your testing.
The Engineer verifies the JMF renewal submittal under Section 39-1.03E, "Job Mix Formula Verification," except:

1. The Engineer retains samples until you provide test results for your part on Form CEM-3514.

2. The Engineer tests samples of materials obtained from the HMA production unit after you submit test results that comply with the specifications for the quality characteristics under Section 39-1.03E, "Job Mix Formula Verification."
3. The Engineer verifies each proposed JMF within 30 days of receiving verification samples.
4. You may not adjust the JMF due to a failed verification.
5. For each HMA type and aggregate gradation specified, the Engineer verifies at the State's expense 1 proposed JMF.

If the Engineer verifies the JMF renewal, the Engineer provides you a Form CEM-3513.

39-1.03G Job Mix Formula Acceptance

You may start HMA production if:

1. The Engineer's review of the JMF shows compliance with the specifications.
2. The Department has verified the JMF within 12 months before HMA production.
3. The Engineer accepts the verified JMF.

39-1.04 CONTRACTOR QUALITY CONTROL

39-1.04A General

Establish, maintain, and change a quality control system to ensure materials and work comply with the specifications. Submit quality control test results to the Engineer within 3 days of a request except when QC / QA is specified.
You must identify the HMA sampling location in your Quality Control Plan. During production, take samples under California Test 125 except if you request in writing and the Engineer approves, you may sample HMA from:

1. The plant
2. The truck
3. A windrow
4. The paver hopper
5. The mat behind the paver

39-1.04B Prepaving Conference

Meet with the Engineer at a prepaving conference at a mutually agreed time and place. Discuss methods of performing the production and paving work.

39-1.04C Asphalt Rubber Binder

Take asphalt rubber binder samples from the feed line connecting the asphalt rubber binder tank to the HMA plant. Sample and test asphalt rubber binder under Laboratory Procedure LP-11.
Test asphalt rubber binder for compliance with the viscosity specifications in Section 39-1.02, "Materials." During asphalt rubber binder production and HMA production using asphalt rubber binder, measure viscosity every hour with not

less than 1 reading for each asphalt rubber binder batch. Log measurements with corresponding time and asphalt rubber binder temperature. Submit the log daily in writing.

Submit a Certificate of Compliance under Section 6-1.07, "Certificates of Compliance." With the Certificate of Compliance, submit test results in writing for CRM and asphalt modifier with each truckload delivered to the HMA plant. A Certificate of Compliance for asphalt modifier must not represent more than 5,000 pounds. Use an AASHTO-certified laboratory for testing.
Sample and test gradation and wire and fabric content of CRM once per 10,000 pounds of scrap tire CRM and once per 3,400 pounds of high natural CRM. Sample and test scrap tire CRM and high natural CRM separately.
Submit certified weight slips in writing for the CRM and asphalt modifier furnished.

39-1.04D Aggregate

Determine the aggregate moisture content and RAP moisture content in continuous mixing plants at least twice a day during production and adjust the plant controller. Determine the RAP moisture content in batch mixing plants at least twice a day during production and adjust the plant controller.

39-1.04E Reclaimed Asphalt Pavement

Perform RAP quality control testing each day.
Sample RAP once daily and determine the RAP aggregate gradation under Laboratory Procedure LP-9 and submit the results to the Engineer in writing with the combined aggregate gradation.

39-1.04F Density Cores

To determine density for Standard and QC / QA projects, take 4-inch or 6-inch diameter density cores at least once every 5 business days. Take 1 density core for every 250 tons of HMA from random locations the Engineer designates. Take density cores in the Engineer's presence and backfill and compact holes with material authorized by the Engineer. Before submitting a density core to the Engineer, mark it with the density core's location and place it in a protective container.
If a density core is damaged, replace it with a density core taken within 1 foot longitudinally from the original density core. Relocate any density core located within 1 foot of a rumble strip to 1 foot transversely away from the rumble strip.

39-1.04G Briquettes

Prepare 3 briquettes for each stability and air voids content determination. Report the average of 3 tests. Prepare new briquettes and test if the range of stability for the 3 briquettes is more than 12 points.

You may use the briquettes used for stability testing to determine bulk specific gravity under CT 308. If you use these briquettes and tests using bulk specific gravity fail, you may prepare 3 new briquettes and determine a new bulk specific gravity.

39-1.05 ENGINEER'S ACCEPTANCE

The Engineer's acceptance of HMA is specified in the sections for each HMA construction process.
The Engineer samples materials for testing under California Test 125 and the applicable test method except samples may be taken from:

1. The plant from:

    1.1. A truck
    1.2. An automatic sampling device

2. The mat behind the paver

Sampling must be independent of Contractor quality control, statistically-based, and random.
If you request, the Engineer splits samples and provides you with a part.

The Engineer accepts HMA based on:

1. Accepted JMF
2. Accepted QCP for Standard and QC / QA
3. Compliance with the HMA Acceptance tables
4. Acceptance of a lot for QC / QA
5. Visual inspection

The Engineer prepares 3 briquettes for each stability and air voids content determination. The Engineer reports the average of 3 tests. The Engineer prepares new briquettes and test if the range of stability for the 3 briquettes is more than 8 points.
The Engineer may use the briquettes used for stability testing to determine bulk specific gravity under CT 308. If the Engineer uses the same briquettes and the tests using bulk specific gravity fail, the Engineer prepares 3 new briquettes and determines a new bulk specific gravity.

39-1.06 DISPUTE RESOLUTION

You and the Engineer must work together to avoid potential conflicts and to resolve disputes regarding test result discrepancies. Notify the Engineer in

writing within 5 days of receiving a test result if you dispute the test result.
If you or the Engineer dispute each other's test results, submit written quality control test results and copies of

paperwork including worksheets used to determine the disputed test results to the Engineer. An Independent Third Party (ITP) performs referee testing. Before the ITP participates in a dispute resolution, the ITP must be accredited under the Department's Independent Assurance Program. The ITP must be independent of the project. By mutual agreement, the ITP is chosen from:

1. A Department laboratory
2. A Department laboratory in a district or region not in the district or region the project is located
3. The Transportation Laboratory
4. A laboratory not currently employed by you or your HMA producer

If split quality control or acceptance samples are not available, the ITP uses any available material representing the disputed HMA for evaluation.

39-1.07 PRODUCTION START-UP EVALUATION

The Engineer evaluates HMA production and placement at production start-up.
Within the first 750 tons produced on the first day of HMA production, in the Engineer's presence and from the same production run, take samples of:

1. Aggregate
2. Asphalt binder
3. RAP
4. HMA

Sample aggregate from cold feed belts or hot bins. Take RAP samples from the RAP system. Sample HMA under California Test 125 except if you request in writing and the Engineer approves, you may sample HMA from:

1. The plant
2. The truck
3. A windrow
4. The paver hopper
5. The mat behind the paver

For aggregate, RAP, and HMA, split the samples into at least 4 parts and label their containers. Submit 3 split parts to the Engineer and keep 1 part.
For Standard and QC / QA projects, you and the Engineer must test the split samples and report test results in writing within 3 business days of sampling.

If you proceed before receipt of the test results, the Engineer may consider the HMA placed to be represented by these test results.
For Standard and QC / QA projects, take 4-inch or 6-inch diameter density cores within the first 750 tons on the first day of HMA production. For each density core, the Engineer reports the bulk specific gravity determined under California Test 308, Method A in addition to the percent of maximum theoretical density. You may test for in-place density at the density core locations and include them in your production tests for percent of maximum theoretical density.

39-1.08 PRODUCTION

39-1.08A General

Produce HMA in a batch mixing plant or a continuous mixing plant. Proportion aggregate by hot or cold feed control.
HMA plants must be Department-qualified. Before production, the HMA plant must have a current qualification under the Department's Materials Plant Quality Program.
During production, you may adjust:

1. Hot or cold feed proportion controls for virgin aggregate and RAP
2. The set point for asphalt binder content

39-1.08B Mixing

Mix HMA ingredients into a homogeneous mixture of coated aggregates.
Asphalt binder must be between 275 °F and 375 °F when mixed with aggregate.
Asphalt rubber binder must be between 375 °F and 425 °F when mixed with aggregate.

When mixed with asphalt binder, aggregate must not be more than 325 °F except aggregate for OGFC with unmodified asphalt binder must be not more than 275 °F. Aggregate temperature specifications do not apply when you use RAP.
HMA with or without RAP must not be more than 325 °F.

39-1.08C Asphalt Rubber Binder

Deliver scrap tire CRM and high natural CRM in separate bags.
Either proportion and mix asphalt binder, asphalt modifier, and CRM simultaneously or premix the asphalt binder and asphalt modifier before adding CRM. If you premix asphalt binder and asphalt modifier, mix them for at least 20 minutes. When you add CRM, the asphalt binder and asphalt modifier must be between 375 °F and 440 °F.
Do not use asphalt rubber binder during the first 45 minutes of the reaction period. During this period, the asphalt rubber binder mixture must be between 350 °F and the lower of 425 °F or 25 °F below the asphalt binder's flash point indicated in the MSDS.

If any asphalt rubber binder is not used within 4 hours after the reaction period, discontinue heating. If the asphalt rubber binder drops below 375 °F, reheat before use. If you add more scrap tire CRM to the reheated asphalt rubber binder, the binder must undergo a 45-minute reaction period. The added scrap tire CRM must not exceed 10 percent of the total asphalt rubber binder weight. Reheated and reacted asphalt rubber binder must comply with the viscosity specifications for asphalt rubber binder in Section 39-1.02, "Materials." Do not reheat asphalt rubber binder more than twice.

39-1.09 SUBGRADE, TACK COAT, AND GEOSYNTHETIC PAVEMENT INTERLAYER

39-1.09A General

Prepare subgrade or apply tack coat to surfaces receiving HMA. If specified, place geosynthetic pavement interlayer over a coat of asphalt binder.

39-1.09B Subgrade

Subgrade to receive HMA must comply with the compaction and elevation tolerance specifications in the sections for the material involved. Subgrade must be free of loose and extraneous material. If HMA is paved on existing base or pavement, remove loose paving particles, dirt, and other extraneous material by any means including flushing and sweeping.

39-1.09C Tack Coat

Apply tack coat:

1. To existing pavement including planed surfaces
2. Between HMA layers
3. To vertical surfaces of:

    3.1. Curbs
    3.2. Gutters
    3.3. Construction joints

Before placing HMA, apply tack coat in 1 application at the minimum residual rate specified for the condition of the underlying surface:

Tack Coat Application Rates for HMA Type A, Type B, and RHMA-G

HMA over:	Minimum Residual Rates (gallons per square yard)		
	CSS1/CSS1h, SS1/SS1h and QS1h/CQS1h Asphaltic Emulsion	CRS1/CRS2, RS1/RS2 and QS1/CQS1 Asphaltic Emulsion	Asphalt Binder and PMRS2/PMCRS2 and PMRS2h/PMCRS2h Asphaltic Emulsion
New HMA (between layers)	0.02	0.03	0.02
Existing AC and PCC pavement	0.03	0.04	0.03
Planed pavement	0.05	0.06	0.04

Tack Coat Application Rates for OGFC

OGFC over:	Minimum Residual Rates (gallons per square yard)		
	CSS1/CSS1h, SS1/SS1h and QS1h/CQS1h Asphaltic Emulsion	CRS1/CRS2, RS1/RS2 and QS1/CQS1 Asphaltic Emulsion	Asphalt Binder and PMRS2/PMCRS2 and PMRS2h/PMCRS2h Asphaltic Emulsion
New HMA	0.03	0.04	0.03
Existing AC and PCC pavement	0.05	0.06	0.04
Planed pavement	0.06	0.07	0.05

If you dilute asphaltic emulsion, mix until homogeneous before application.
Apply to vertical surfaces with a residual tack coat rate that will thoroughly coat the vertical face without running off.
If you request in writing and the Engineer authorizes, you may:

1. Change tack coat rates
2. Omit tack coat between layers of new HMA during the same work shift if:

    2.1. No dust, dirt, or extraneous material is present
    2.2. The surface is at least 140 °F

Immediately in advance of placing HMA, apply additional tack coat to damaged areas or where loose or extraneous material is removed.
Close areas receiving tack coat to traffic. Do not track tack coat onto pavement surfaces beyond the job site.
Asphalt binder tack coat must be between 285 °F and 350 °F when applied.

39-1.09D Geosynthetic Pavement Interlayer

Place geosynthetic pavement interlayer in compliance with the manufacturer's recommendations.
Before placing the geosynthetic pavement interlayer and asphalt binder:

1. Repair cracks 1/4 inch and wider, spalls, and holes in the pavement. The State pays for this repair work under Section 4-1.03D, "Extra Work."
2. Clean the pavement of loose and extraneous material.

Immediately before placing the interlayer, apply 0.25 gallon ± 0.03 gallon of asphalt binder per square yard of interlayer or until the fabric is saturated. Apply asphalt binder the width of the geosynthetic pavement interlayer plus 3 inches on each side. At interlayer overlaps, apply asphalt binder on the lower interlayer the same overlap distance as the upper interlayer.
Align and place the interlayer with no overlapping wrinkles, except a wrinkle that overlaps may remain if it is less than 1/2 inch thick. If the overlapping wrinkle is more than 1/2 inch thick, cut the wrinkle out and overlap the interlayer no more than 2 inches. The minimum HMA thickness over the interlayer must be 0.12 foot thick including conform tapers. Do not place the interlayer on a wet or frozen surface.
Overlap the interlayer borders between 2 inches and 4 inches. In the direction of paving, overlap the following roll with the preceding roll at any break.
You may use rolling equipment to correct distortions or wrinkles in the interlayer.
If asphalt binder tracked onto the interlayer or brought to the surface by construction equipment causes interlayer displacement, cover it with a small quantity of HMA.
Before placing HMA on the interlayer, do not expose the interlayer to:

1. Traffic except for crossings under traffic control and only after you place a small HMA quantity
2. Sharp turns from construction equipment
3. Damaging elements

Pave HMA on the interlayer during the same work shift.

39-1.10 SPREADING AND COMPACTING EQUIPMENT

Paving equipment for spreading must be:

1. Self-propelled
2. Mechanical

3. Equipped with a screed or strike-off assembly that can distribute HMA the full width of a traffic lane
4. Equipped with a full-width compacting device
5. Equipped with automatic screed controls and sensing devices that control the thickness, longitudinal grade, and transverse screed slope

Install and maintain grade and slope references.
The screed must produce a uniform HMA surface texture without tearing, shoving, or gouging.
The paver must not leave marks such as ridges and indentations unless you can eliminate them by rolling.

Rollers must be equipped with a system that prevents HMA from sticking to the wheels. You may use a parting agent that does not damage the HMA or impede the bonding of layers.
In areas inaccessible to spreading and compacting equipment:

1. Spread the HMA by any means to obtain the specified lines, grades and cross sections.
2. Use a pneumatic tamper, plate compactor, or equivalent to achieve thorough compaction.

39-1.11 TRANSPORTING, SPREADING, AND COMPACTING

Do not pave HMA on a wet pavement or frozen surface.
You may deposit HMA in a windrow and load it in the paver if:

1. Paver is equipped with a hopper that automatically feeds the screed
2. Loading equipment can pick up the windrowed material and deposit it in the paver hopper without damaging base material
3. Activities for deposit, pick-up, loading, and paving are continuous
4. HMA temperature in the windrow does not fall below 260 °F

You may pave HMA in 1 or more layers on areas less than 5 feet wide and outside the traveled way including shoulders. You may use mechanical equipment other than a paver for these areas. The equipment must produce a uniform smoothness and texture.
HMA handled, spread, or windrowed must not stain the finished surface of any improvement including pavement.
Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, or compactors.
HMA must be free of:

1. Segregation
2. Coarse or fine aggregate pockets
3. Hardened lumps

Longitudinal joints in the top layer must match specified lane edges. Alternate longitudinal joint offsets in lower layers at least 0.5 foot from each side of the specified lane edges. You may request in writing other longitudinal joint placement patterns.
Until the adjoining through lane's top layer has been paved, do not pave the top layer of:

1. Shoulders
2. Tapers
3. Transitions
4. Road connections
5. Driveways
6. Curve widenings
7. Chain control lanes
8. Turnouts
9. Turn pockets

If the number of lanes change, pave each through lane's top layer before paving a tapering lane's top layer. Simultaneous to paving a through lane's top layer, you may pave an adjoining area's top layer including shoulders. Do not operate spreading equipment on any area's top layer until completing final compaction.
If HMA (leveling) is specified, fill and level irregularities and ruts with HMA before spreading HMA over base, existing surfaces, or bridge decks. You may use mechanical equipment other than a paver for these areas. The equipment must produce a uniform smoothness and texture. HMA used to change an existing surface's

cross slope or profile is not HMA (leveling).
If placing HMA against the edge of existing pavement, sawcut or grind the pavement straight and vertical along the joint and remove extraneous material without damaging the surface remaining in place. If placing HMA against the edge of a longitudinal or transverse construction joint and the joint is damaged or not placed to a neat line, sawcut or grind the pavement straight and vertical along the joint and remove extraneous material without damaging the surface remaining in place. Repair or remove and replace damaged pavement at your expense.
Rolling must leave the completed surface compacted and smooth without tearing, cracking, or shoving. Complete finish rolling activities before the pavement surface temperature is:

1. Below 150 °F for HMA with unmodified binder
2. Below 140 °F for HMA with modified binder
3. Below 200 °F for RHMA-G

If a vibratory roller is used as a finish roller, turn the vibrator off.
Do not use a pneumatic tired roller to compact RHMA-G.
For Standard and QC/QA, if a 3/4-inch aggregate grading is specified, you may use a 1/2-inch aggregate grading if the specified paved thickness is from 0.15 foot to 0.20 foot thick.
Spread and compact HMA under Section 39-3.03, "Spreading and Compacting Equipment," and Section 39-3.04, "Transporting, Spreading, and Compacting," for any of the following:

1. Specified paved thickness is less than 0.15 foot.
2. Specified paved thickness is less than 0.20 foot and a 3/4-inch aggregate grading is specified and used.
3. You spread and compact at:

    3.1. Asphalt concrete surfacing replacement areas
    3.2. Leveling courses
    3.3. Areas the Engineer determines conventional compaction and compaction measurement methods are impeded

Do not allow traffic on new HMA pavement until its mid-depth temperature is below 160 °F.
If you request in writing and the Engineer authorizes, you may cool HMA Type A and Type B with water when rolling activities are complete. Apply water under Section 17, "Watering."
Spread sand at a rate between 1 pound and 2 pounds per square yard on new RHMA-G, RHMA-O, and RHMA-O-HB pavement when finish rolling is complete. Sand must be free of clay or organic matter. Sand must comply with Section 90-3.03, "Fine Aggregate Grading." Keep traffic off the pavement until spreading sand is complete.

39-1.12 SMOOTHNESS

39-1.12A General

Determine HMA smoothness with a profilograph and a straightedge.
Smoothness specifications do not apply to OGFC placed on existing pavement not constructed under the same project.
If portland cement concrete is placed on HMA:

1. Cold plane the HMA finished surface to within specified tolerances if it is higher than the grade specified by the Engineer.
2. Remove and replace HMA if the finished surface is lower than 0.05 foot below the grade specified by the Engineer.

39-1.12B Straightedge

The HMA pavement top layer must not vary from the lower edge of a 12-foot long straightedge:

1. More than 0.01 foot when the straight edge is laid parallel with the centerline
2. More than 0.02 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane
3. More than 0.02 foot when the straightedge is laid within 24 feet of a pavement conform

39-1.12C Profilograph

Under California Test 526, determine the zero (null) blanking band Profile Index (PI_0) and must-grinds on the top layer of HMA Type A, Type B, and RHMA-G pavement. Take 2 profiles within each traffic lane, 3 feet from and parallel with the edge of each lane.
A must-grind is a deviation of 0.3 inch or more in a length of 25 feet. You must correct must-grinds.
For OGFC, only determine must-grinds when placed over HMA constructed under the same project. The top layer of the underlying HMA must comply with the smoothness specifications before placing OGFC. Profile pavement in the Engineer's presence. Choose the time of profiling.
On tangents and horizontal curves with a centerline radius of curvature 2,000 feet or more, the PI_0 must be at most 3 inches per 0.1-mile section.
On horizontal curves with a centerline radius of curvature between 1,000 feet and 2,000 feet including pavement within the superelevation transitions, the PI_0 must be at most 6 inches per 0.1-mile section.
Before the Engineer accepts HMA pavement for smoothness, submit written final profilograms.
Submit 1 electronic copy of profile information in Microsoft Excel and 1 electronic copy of longitudinal pavement profiles in ".erd" format or other ProVAL compatible format to the Engineer and to:

Smoothness@dot.ca.gov

The following HMA pavement areas do not require a PI_0. You must measure these areas with a 12-foot straightedge and determine must-grinds with a profilograph:

1. New HMA with a total thickness less than or equal to 0.25 foot
2. HMA sections of city or county streets and roads, turn lanes and collector lanes that are less than 1,500 feet in length

The following HMA pavement areas do not require a PI_0. You must measure these areas with a 12-foot straightedge:

1. Horizontal curves with a centerline radius of curvature less than 1,000 feet including pavement within the superelevation transitions of those curves
2. Within 12 feet of a transverse joint separating the pavement from:

    2.1. Existing pavement not constructed under the same project
    2.2. A bridge deck or approach slab

3. Exit ramp termini, truck weigh stations, and weigh-in-motion areas
4. If steep grades and superelevation rates greater than 6 percent are present on:

    4.1. Ramps
    4.2. Connectors

5. Turn lanes
6. Areas within 15 feet of manholes or drainage transitions
7. Acceleration and deceleration lanes for at-grade intersections
8. Shoulders and miscellaneous areas
9. HMA pavement within 3 feet from and parallel to the construction joints formed between curbs, gutters, or existing pavement

39-1.12D Smoothness Correction

If the top layer of HMA Type A, Type B, or RHMA-G pavement does not comply with the smoothness specifications, grind the pavement to within tolerances, remove and replace it, or place a layer of HMA. The Engineer must authorize your choice of correction before the work begins.
Remove and replace the areas of OGFC not in compliance with the must-grind and straightedge specifications, except you may grind OGFC for correcting smoothness:

1. At a transverse joint separating the pavement from pavement not constructed under the same project
2. Within 12 feet of a transverse joint separating the pavement from a bridge deck or approach slab

Corrected HMA pavement areas must be uniform rectangles with edges:

1. Parallel to the nearest HMA pavement edge or lane line

2. Perpendicular to the pavement centerline

Measure the corrected HMA pavement surface with a profilograph and a 12-foot straightedge and correct the pavement to within specified tolerances. If a must-grind area or straightedged pavement cannot be corrected to within specified tolerances, remove and replace the pavement.
On ground areas not overlaid with OGFC, apply fog seal coat under Section 37-1, "Seal Coats."

39-1.13 MISCELLANEOUS AREAS AND DIKES

Miscellaneous areas are outside the traveled way and include:

1. Median areas not including inside shoulders
2. Island areas
3. Sidewalks
4. Gutters
5. Gutter flares
6. Ditches
7. Overside drains
8. Aprons at the ends of drainage structures

Spread miscellaneous areas in 1 layer and compact to the specified lines and grades.
For miscellaneous areas and dikes:

1. Do not submit a JMF.
2. Choose the 3/8-inch or 1/2-inch HMA Type A and Type B aggregate gradations.
3. Minimum asphalt binder content must be 6.8 percent for 3/8-inch aggregate and 6.0 percent for 1/2-inch aggregate. If you request in writing and the Engineer authorizes, you may reduce the minimum asphalt binder content.
4. Choose asphalt binder Grade PG 70-10 or the same grade specified for HMA.

39-2 STANDARD

39-2.01 DESCRIPTION

If HMA is specified as Standard, construct it under Section 39-1, "General," this Section 39-2, "Standard," and Section 39-5, "Measurement and Payment."

39-2.02 CONTRACTOR QUALITY CONTROL

39-2.02A Quality Control Plan

Establish, implement, and maintain a Quality Control Plan (QCP) for HMA. The QCP must describe the organization and procedures you will use to:

1. Control the quality characteristics
2. Determine when corrective actions are needed (action limits)
3. Implement corrective actions

When you submit the proposed JMF, submit the written QCP. You and the Engineer must discuss the QCP during the prepaving conference.
The QCP must address the elements affecting HMA quality including:

1. Aggregate
2. Asphalt binder
3. Additives
4. Production
5. Paving

The Engineer reviews each QCP within 5 business days from the submittal. Hold HMA production until the Engineer accepts the QCP in writing. The Engineer's QCP acceptance does not mean your compliance with the QCP will result in acceptable HMA. Section 39-1.05, "Engineer's Acceptance," specifies HMA acceptance.

39-2.02B Quality Control Testing

Perform sampling and testing at the specified frequency for the following quality characteristics:

Minimum Quality Control – Standard

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	HMA Type			
			A	B	RHMA-G	OGFC
Aggregate gradation[a]	CT 202	1 per 750 tons and any remaining part	JMF ± Tolerance[b]	JMF ± Tolerance[b]	JMF ± Tolerance[b]	JMF ± Tolerance[b]
Sand equivalent (min.)[c]	CT 217		47	42	47	--
Asphalt binder content (%)	CT 379 or 382		JMF ± 0.45	JMF ± 0.45	JMF ± 0.50	JMF ± 0.50
HMA moisture content (%, max.)	CT 226 or CT 370	1 per 2,500 tons but not less than 1 per paving day	1.0	1.0	1.0	1.0
Percent of maximum theoretical density (%)[d, e]	Quality control plan	2 per business day (min.)	91 - 97	91 - 97	91 - 97	--
Stabilometer value (min.)[c, f]	CT 366	One per 4,000 tons or 2 per 5 business days, which-ever is more				
No. 4 and 3/8" gradings			30	30	--	--
1/2" and 3/4" gradings			37	35	23	--
Air voids content (%)[c, g]	CT 367		4 ± 2	4 ± 2	Specification ± 2	--
Aggregate moisture content at continuous mixing plants and RAP moisture content at continuous mixing plants and batch mixing plants[h]	CT 226 or CT 370	2 per day during production	--	--	--	--
Percent of crushed particles coarse aggregate (%, min.)	CT 205	As necessary and designated in the QCP. At least once per project				
One fractured face			90	25	--	90
Two fractured faces			75	--	90	75
Fine aggregate (%, min)						
(Passing No. 4 sieve and retained on No. 8 sieve.) One fractured face			70	20	70	90

Los Angeles Rattler (%, max.) Loss at 100 rev. Loss at 500 rev.	CT 211		12 45	-- 50	12 40	12 40
Flat and elongated particles (%, max. by weight @ 5:1)	ASTM D 4791		Report only	Report only	Report only	Report only
Fine aggregate angularity (%, min.)	AASHTO T 304, Method A		45	45	45	--
Voids filled with asphalt (%)[i] No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-3		 76.0 – 80.0 73.0 – 76.0 65.0 – 75.0 65.0 – 75.0	 76.0 – 80.0 73.0 – 76.0 65.0 – 75.0 65.0 – 75.0	Report only	--
Voids in mineral aggregate (% min.)[i] No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-2		 17.0 15.0 14.0 13.0	 17.0 15.0 14.0 13.0	 -- -- 18.0 – 23.0[j] 18.0 – 23.0[j]	--
Dust proportion[i] No. 4 and 3/8" gradings 1/2" and 3/4" gradings	LP-4		 0.9 – 2.0 0.6 – 1.3	 0.9 – 2.0 0.6 – 1.3	Report only	--
Smoothness	Section 39-1.12	--	12-foot straightedge, must-grind, and PI_0	12-foot straightedge, must-grind, and PI_0	12-foot straightedge, must-grind, and PI_0	12-foot straightedge and must-grind
Asphalt rubber binder viscosity @ 350 °F, centipoises	Section 39-1.02D	Section 39-1.04C	--	--	1,500 – 4,000	1,500 – 4,000
Asphalt modifier	Section 39-1.02D	Section 39-1.04C	--	--	Section 39-1.02D	Section 39-1.02D
Crumb rubber modifier	Section 39-1.02D	Section 39-1.04C	--	--	Section 39-1.02D	Section 39-1.02D

Notes:

[a] Determine combined aggregate gradation containing RAP under Laboratory Procedure LP-9.

[b] The tolerances must comply with the allowable tolerances in Section 39-1.02E, "Aggregate."

[c] Report the average of 3 tests from a single split sample.

[d] Required for HMA Type A, Type B, and RHMA-G if the specified paved thickness is at least 0.15 foot.

[e] Determine maximum theoretical density (California Test 309) at the frequency specified for Test Maximum Density under California Test 375, Part 5.D.

[f] Modify California Test 304, Part 2.B.2.c: "After compaction in the mechanical compactor, cool to 140 °F ± 5 °F by allowing the briquettes to cool at room temperature for 0.5 hour, then place the briquettes in the oven at 140 °F for a minimum of 2 hours and not more than 3 hours."

[g] Determine the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

[h] For adjusting the plant controller at the HMA plant.

[i] Report only if the adjustment for asphalt binder content target value is less than or equal to ± 0.3 percent from OBC.

[j] Voids in mineral aggregate for RHMA-G must be within this range.

For any single quality characteristic except smoothness, if 2 consecutive quality control test results do not

comply with the action limits or specifications:

1. Stop production.
2. Notify the Engineer in writing.
3. Take corrective action.
4. Demonstrate compliance with the specifications before resuming production and placement on the State highway.

39-2.03 ENGINEER'S ACCEPTANCE

39-2.03A Testing

The Engineer samples for acceptance testing and tests for:

HMA Acceptance - Standard

Quality Characteristic				Test Method	HMA Type			
					A	B	RHMA-G	OGFC
Aggregate gradation [a]				CT 202	JMF ± Tolerance [c]	JMF ± Tolerance [c]	JMF ± Tolerance [c]	JMF ± Tolerance [c]
Sieve	3/4 "	1/2 "	3/8 "					
1/2"	X [b]							
3/8"		X						
No. 4			X					
No. 8	X	X	X					
No. 200	X	X	X					
Sand equivalent (min.) [d]				CT 217	47	42	47	--
Asphalt binder content (%)				CT 379 or 382	JMF ± 0.45	JMF ± 0.45	JMF ± 0.50	JMF ± 0.50
HMA moisture content (%, max.)				CT 226 or CT 370	1.0	1.0	1.0	1.0
Percent of maximum theoretical density (%) [e, f]				CT 375	91 – 97	91 – 97	91 – 97	--
Stabilometer value (min.) [d, g]				CT 366				
No. 4 and 3/8" gradings					30	30	--	--
1/2" and 3/4" gradings					37	35	23	--
Air voids content (%) [d, h]				CT 367	4 ± 2	4 ± 2	Specification ± 2	--
Percent of crushed particles				CT 205				
Coarse aggregate (%, min.)					90	25	--	90
One fractured face					75	--	90	75
Two fractured faces								
Fine aggregate (%, min)								
(Passing No. 4 sieve and retained on No. 8 sieve.)					70	20	70	90
One fractured face								
Percent of crushed particles				CT 205				
Coarse aggregate (%, min.)					90	25	--	90
One fractured face					75	--	90	75
Two fractured faces								

Los Angeles Rattler (%, max.) Loss at 100 rev. Loss at 500 rev.	CT 211	 12 45	 -- 50	 12 40	 12 40
Fine aggregate angularity (%, min.)	AASHTO T 304, Method A	45	45	45	--
Flat and elongated particles (%, max. by weight @ 5:1)	ASTM D 4791	Report only	Report only	Report only	Report only
Voids filled with asphalt (%)[i] No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-3	 76.0 – 80.0 73.0 – 76.0 65.0 – 75.0 65.0 – 75.0	 76.0 – 80.0 73.0 – 76.0 65.0 – 75.0 65.0 – 75.0	Report only	--
Voids in mineral aggregate (% min.)[i] No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-2	 17.0 15.0 14.0 13.0	 17.0 15.0 14.0 13.0	 -- -- 18.0 – 23.0[j] 18.0 – 23.0[j]	--
Dust proportion[i] No. 4 and 3/8" gradings 1/2" and 3/4" gradings	LP-4	 0.9 – 2.0 0.6 – 1.3	 0.9 – 2.0 0.6 – 1.3	Report only	--
Smoothness	Section 39-1.12	12-foot straightedge, must-grind, and PI_0	12-foot straightedge, must-grind, and PI_0	12-foot straightedge, must-grind, and PI_0	12-foot straightedge and must-grind
Asphalt binder	Various	Section 92	Section 92	Section 92	Section 92
Asphalt rubber binder	Various	--	--	Section 92-1.02(C) and Section 39-1.02D	Section 92-1.02(C) and Section 39-1.02D
Asphalt modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D
Crumb rubber modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D

[a] The Engineer determines combined aggregate gradations containing RAP under Laboratory Procedure LP-9.

[b] "X" denotes the sieves the Engineer considers for the specified aggregate gradation.

[c] The tolerances must comply with the allowable tolerances in Section 39-1.02E, "Aggregate."

[d] The Engineer reports the average of 3 tests from a single split sample.

[e] The Engineer determines percent of maximum theoretical density if the specified paved thickness is at least 0.15 foot under California Test 375 except the Engineer uses:

1. California Test 308, Method A, to determine in-place density of each density core instead of using the nuclear gauge in Part 4, "Determining In-Place Density By The Nuclear Density Device."
2. California Test 309 to determine maximum theoretical density instead of calculating test maximum density in Part 5, "Determining Test Maximum Density."

[f] The Engineer determines maximum theoretical density (California Test 309) at the frequency specified for Test Maximum Density under California Test 375, Part 5.D.

[g] Modify California Test 304, Part 2.B.2.c: "After compaction in the mechanical compactor, cool to 140 °F ±5 °F by allowing the briquettes to cool at room temperature for 0.5 hour, then place the briquettes in the oven at 140 °F for a minimum of 2 hours and not more than 3 hours."

[h] The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

[i] Report only if the adjustment for asphalt binder content target value is less than or equal to ± 0.3 percent from OBC.

[j] Voids in mineral aggregate for RHMA-G must be within this range.

No single test result may represent more than the smaller of 750 tons or 1 day's production.
For any single quality characteristic except smoothness, if 2 consecutive acceptance test results do not comply with the specifications:

1. Stop production.
2. Take corrective action.
3. In the Engineer's presence, take samples and split each sample into 4 parts. Test 1 part for compliance with the specifications and submit 3 parts to the Engineer. The Engineer tests 1 part for compliance with the specifications and reserves and stores 2 parts.
4. Demonstrate compliance with the specifications before resuming production and placement on the State highway.

The Engineer tests the density core you take from each 250 tons of HMA production. The Engineer determines the percent of maximum theoretical density for each density core by determining the density core's density and dividing by the maximum theoretical density.
If the specified total paved thickness is at least 0.15 foot and any layer is less than 0.15 foot, the Engineer determines the percent of maximum theoretical density from density cores taken from the final layer measured the full depth of the total paved HMA thickness.
For percent of maximum theoretical density, the Engineer determines a deduction for each test result outside the specifications in compliance with:

Reduced Payment Factors for Percent of Maximum Theoretical Density

HMA Type A and B and RHMA-G Percent of Maximum Theoretical Density	Reduced Payment Factor	HMA Type A and B and RHMA-G Percent of Maximum Theoretical Density	Reduced Payment Factor
91.0	0.0000	97.0	0.0000
90.9	0.0125	97.1	0.0125
90.8	0.0250	97.2	0.0250
90.7	0.0375	97.3	0.0375
90.6	0.0500	97.4	0.0500
90.5	0.0625	97.5	0.0625
90.4	0.0750	97.6	0.0750
90.3	0.0875	97.7	0.0875
90.2	0.1000	97.8	0.1000
90.1	0.1125	97.9	0.1125
90.0	0.1250	98.0	0.1250
89.9	0.1375	98.1	0.1375
89.8	0.1500	98.2	0.1500
89.7	0.1625	98.3	0.1625
89.6	0.1750	98.4	0.1750
89.5	0.1875	98.5	0.1875
89.4	0.2000	98.6	0.2000
89.3	0.2125	98.7	0.2125
89.2	0.2250	98.8	0.2250
89.1	0.2375	98.9	0.2375
89.0	0.2500	99.0	0.2500
< 89.0	Remove and Replace	> 99.0	Remove and Replace

39-2.04 TRANSPORTING, SPREADING, AND COMPACTING

Determine the number of rollers needed to obtain the specified density and surface finish.

39-3 METHOD

39-3.01 DESCRIPTION

If HMA is specified as Method, construct it under Section 39-1, "General," this Section 39-3, "Method," and Section 39-5, "Measurement and Payment."

39-3.02 ENGINEER'S ACCEPTANCE

39-3.02A Testing

The Engineer samples for acceptance testing and tests for:

HMA Acceptance - Method

Quality Characteristic	Test Method	HMA Type			
		A	B	RHMA-G	OGFC
Aggregate gradation [a]	CT 202	JMF ± Tolerance [b]	JMF ± Tolerance [b]	JMF ± Tolerance [b]	JMF ± Tolerance [b]
Sand equivalent (min.) [c]	CT 217	47	42	47	--
Asphalt binder content (%)	CT 379 or 382	JMF ± 0.45	JMF ± 0.45	JMF ± 0.50	JMF ± 0.50
HMA moisture content (%, max.)	CT 226 or CT 370	1.0	1.0	1.0	1.0
Stabilometer value (min.) [c, d]	CT 366				
No. 4 and 3/8" gradings		30	30	--	--
1/2" and 3/4" gradings		37	35	23	--
Percent of crushed particles	CT 205				
Coarse aggregate (% min.)					
One fractured face		90	25	--	90
Two fractured faces		75	--	90	75
Fine aggregate (% min) (Passing No. 4 sieve and retained on No. 8 sieve.)					
One fractured face		70	20	70	90
Los Angeles Rattler (% max.)	CT 211				
Loss at 100 rev.		12	--	12	12
Loss at 500 rev.		45	50	40	40
Air voids content (%) [c, e]	CT 367	4 ± 2	4 ± 2	Specification ± 2	--
Fine aggregate angularity (% min.)	AASHTO T 304, Method A	45	45	45	--
Flat and elongated particles (% max. by weight @ 5:1)	ASTM D 4791	Report only	Report only	Report only	Report only
Voids filled with asphalt (%) [f]	LP-3			Report only	
No. 4 grading		76.0 – 80.0	76.0 – 80.0		--
3/8" grading		73.0 – 76.0	73.0 – 76.0		
1/2" grading		65.0 – 75.0	65.0 – 75.0		
3/4" grading		65.0 – 75.0	65.0 – 75.0		
Voids in mineral aggregate (% min.) [f]	LP-2				
No. 4 grading		17.0	17.0	--	--
3/8" grading		15.0	15.0	--	
1/2" grading		14.0	14.0	18.0 – 23.0 [g]	
3/4" grading		13.0	13.0	18.0 – 23.0 [g]	

Dust proportion[f] No. 4 and 3/8" gradings 1/2" and 3/4" gradings	LP-4	 0.9 – 2.0 0.6 – 1.3	 0.9 – 2.0 0.6 – 1.3	Report only	--
Smoothness	Section 39-1.12	12-foot straightedge and must-grind	12-foot straightedge and must-grind	12-foot straightedge and must-grind	12-foot straightedge and must-grind
Asphalt binder	Various	Section 92	Section 92	Section 92	Section 92
Asphalt rubber binder	Various	--	--	Section 92-1.02(C) and Section 39-1.02D	Section 92-1.02(C) and Section 39-1.02D
Asphalt modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D
Crumb rubber modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D

[a] The Engineer determines combined aggregate gradations containing RAP under Laboratory Procedure LP-9.
[b] The tolerances must comply with the allowable tolerances in Section 39-1.02E, "Aggregate."
[c] The Engineer reports the average of 3 tests from a single split sample.
[d] Modify California Test 304, Part 2.B.2.c: "After compaction in the mechanical compactor, cool to 140 °F ±5 °F by allowing the briquettes to cool at room temperature for 0.5 hour, then place the briquettes in the oven at 140 °F for a minimum of 2 hours and not more than 3 hours."
[e] The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.
[f] Report only if the adjustment for asphalt binder content target value is less than or equal to ± 0.3 percent from OBC.
[g] Voids in mineral aggregate for RHMA-G must be within this range.

No single test result may represent more than the smaller of 750 tons or 1 day's production.
For any single quality characteristic except smoothness, if 2 consecutive acceptance test results do not comply with the specifications:

1. Stop production.
2. Take corrective action.
3. In the Engineer's presence, take samples and split each sample into 4 parts. Test 1 part for compliance with the specifications and submit 3 parts to the Engineer. The Engineer tests 1 part for compliance with the specifications and reserves and stores 2 parts.
4. Demonstrate compliance with the specifications before resuming production and placement on the State highway.

39-3.03 SPREADING AND COMPACTING EQUIPMENT

Each paver spreading HMA Type A and Type B must be followed by 3 rollers:

1. One vibratory roller specifically designed to compact HMA. The roller must be capable of at least 2,500 vibrations per minute and must be equipped with amplitude and frequency controls. The roller's gross static weight must be at least 7.5 tons.
2. One oscillating type pneumatic-tired roller at least 4 feet wide. Pneumatic tires must be of equal size, diameter, type, and ply. The tires must be inflated to 60 psi minimum and maintained so that the air pressure does not vary more than 5 psi.
3. One steel-tired, 2-axle tandem roller. The roller's gross static weight must be at least 7.5 tons.

Each roller must have a separate operator. Rollers must be self-propelled and reversible.
Compact RHMA-G under the specifications for compacting HMA Type A and Type B except do not use pneumatic-tired rollers.
Compact OGFC with steel-tired, 2-axle tandem rollers. If placing over 300 tons of OGFC per hour, use at least 3 rollers for each paver. If placing less than 300 tons of OGFC per hour, use at least 2 rollers for each paver. Each roller must weigh between 126 pounds to 172 pounds per linear inch of drum width. Turn the vibrator off.

39-3.04 TRANSPORTING, SPREADING, AND COMPACTING

Pave HMA in maximum 0.25-foot thick compacted layers.
If the surface to be paved is both in sunlight and shade, pavement surface temperatures are taken in the shade.
Spread HMA Type A and Type B only if atmospheric and surface temperatures are:

Minimum Atmospheric and Surface Temperatures

Compacted Layer Thickness, feet	Atmospheric,° F		Surface,° F	
	Unmodified Asphalt Binder	Modified Asphalt Binder[a]	Unmodified Asphalt Binder	Modified Asphalt Binder[a]
< 0.15	55	50	60	55
0.15 – 0.25	45	45	50	50

Note:
[a] Except asphalt rubber binder.

If the asphalt binder for HMA Type A and Type B is:

1. Unmodified asphalt binder, complete:

   1.1. First coverage of breakdown compaction before the surface temperature drops below 250 °F
   1.2. Breakdown and intermediate compaction before the surface temperature drops below 200 °F
   1.3. Finish compaction before the surface temperature drops below 150 °F

2. Modified asphalt binder, complete:

   2.1. First coverage of breakdown compaction before the surface temperature drops below 240 °F
   2.2. Breakdown and intermediate compaction before the surface temperature drops below 180 °F
   2.3. Finish compaction before the surface temperature drops below 140 °F

For RHMA-G:

1. Only spread and compact if the atmospheric temperature is at least 55 °F and the surface temperature is at least 60 °F.
2. Complete the first coverage of breakdown compaction before the surface temperature drops below 280 °F.
3. Complete breakdown and intermediate compaction before the surface temperature drops below 250 °F.
4. Complete finish compaction before the surface temperature drops below 200 °F.
5. If the atmospheric temperature is below 70 °F, cover loads in trucks with tarpaulins. The tarpaulins must completely cover the exposed load until you transfer the mixture to the paver's hopper or to the pavement surface.

For OGFC with unmodified asphalt binder:

1. Only spread and compact if the atmospheric temperature is at least 55 °F and the surface temperature is at least 60 °F.
2. Complete first coverage using 2 rollers before the surface temperature drops below 240 °F.
3. Complete all compaction before the surface temperature drops below 200 °F.
4. If the atmospheric temperature is below 70 °F, cover loads in trucks with tarpaulins. The tarpaulins must completely cover the exposed load until you transfer the mixture to the paver's hopper or to the pavement surface.

For OGFC with modified asphalt binder except asphalt rubber binder:

1. Only spread and compact if the atmospheric temperature is at least 50 °F and the surface temperature is at least 50 °F.
2. Complete first coverage using 2 rollers before the surface temperature drops below 240 °F.

3. Complete all compaction before the surface temperature drops below 180 °F.
4. If the atmospheric temperature is below 70 °F, cover loads in trucks with tarpaulins. The tarpaulins must completely cover the exposed load until you transfer the mixture to the paver's hopper or to the pavement surface.

For RHMA-O and RHMA-O-HB:

1. Only spread and compact if the atmospheric temperature is at least 55 °F and surface temperature is at least 60 °F.
2 Complete the 1st coverage using 2 rollers before the surface temperature drops below 280 °F.
3. Complete compaction before the surface temperature drops below 250 °F.
4. If the atmospheric temperature is below 70 °F, cover loads in trucks with tarpaulins. The tarpaulins must completely cover the exposed load until the mixture is transferred to the paver's hopper or to the pavement surface.

For RHMA-G and OGFC, tarpaulins are not required if the time from discharge to truck until transfer to the paver's hopper or the pavement surface is less than 30 minutes.
HMA compaction coverage is the number of passes needed to cover the paving width. A pass is 1 roller's movement parallel to the paving in either direction. Overlapping passes are part of the coverage being made and are not a subsequent coverage. Do not start a coverage until completing the prior coverage.
Start rolling at the lower edge and progress toward the highest part.
Perform breakdown compaction of each layer of HMA Type A, Type B, and RHMA-G with 3 coverages using a vibratory roller. The speed of the vibratory roller in miles per hour must not exceed the vibrations per minute divided by 1,000. If the HMA layer thickness is less than 0.08 foot, turn the vibrator off. The Engineer may order fewer coverages if the HMA layer thickness is less than 0.15 foot.
Perform intermediate compaction of each layer of HMA Type A and Type B with 3 coverages using a pneumatic-tired roller at a speed not to exceed 5 mph.
Perform finish compaction of HMA Type A, Type B, and RHMA-G with 1 coverage using a steel-tired roller.
Compact OGFC with 2 coverages using steel-tired rollers.

39-4 QUALITY CONTROL / QUALITY ASSURANCE

39-4.01 DESCRIPTION

If HMA is specified as Quality Control / Quality Assurance, construct it under Section 39-1, "General," this Section 39-4, "Quality Control / Quality Assurance," and Section 39-5, "Measurement and Payment."

39-4.02 GENERAL

The QC / QA construction process consists of:

1. Establishing, maintaining, and changing if needed a quality control system providing assurance the HMA complies with the specifications

2. Sampling and testing at specified intervals, or sublots, to demonstrate compliance and to control process
3. The Engineer sampling and testing at specified intervals to verify testing process and HMA quality
4. The Engineer using test results, statistical evaluation of verified quality control tests, and inspection to accept HMA for payment

A lot is a quantity of HMA. The Engineer designates a new lot when:

1. 20 sublots are complete
2. The JMF changes
3. Production stops for more than 30 days

Each lot consists of no more than 20 sublots. A sublot is 750 tons except HMA paved at day's end greater than 250 tons is a sublot. If HMA paved at day's end is less than 250 tons, you may either make this quantity a sublot or include it in the previous sublot's test results for statistical evaluation.

39-4.03 CONTRACTOR QUALITY CONTROL

39-4.03A General

Use a composite quality factor, QF_C, and individual quality factors, QF_{QCi}, to control your process and evaluate your quality control program. For quality characteristics without quality factors, use your quality control plan's action limits to control process.
Control HMA quality including:

1. Materials
2. Proportioning
3. Spreading and compacting
4. Finished roadway surface

Develop, implement, and maintain a quality control program that includes:

1. Inspection
2. Sampling
3. Testing

39-4.03B Quality Control Plan

With the JMF submittal, submit a written Quality Control Plan (QCP). The QCP must comply with the Department's Quality Control Manual for Hot Mix Asphalt Production and Placement. Discuss the QCP with the Engineer during the prepaving conference.
The Engineer reviews each QCP within 5 business days from the submittal.
Hold HMA production until the Engineer accepts the QCP in writing. The Engineer's QCP acceptance does not mean your compliance with the QCP will result in acceptable HMA. Section 39-1.05, "Engineer's Acceptance," specifies HMA acceptance.
The QCP must include the name and qualifications of a Quality Control Manager. The Quality Control Manager administers the QCP and during paving must be at the job site within 3 hours of receiving notice. The Quality Control Manager must not be any of the following on the project:

1. Foreman
2. Production or paving crewmember
3. Inspector
4. Tester

The QCP must include action limits and details of corrective action you will take if a test result for any quality characteristic falls outside an action limit.
As work progresses, you must submit a written QCP supplement to change quality control procedures, personnel, tester qualification status, or laboratory accreditation status.

39-4.03C Quality Control Inspection, Sampling, And Testing

Sample, test, inspect, and manage HMA quality control.
Provide a roadway inspector while HMA paving activities are in progress. Provide a plant inspector during HMA production.
Inspectors must comply with the Department's Quality Control Manual for Hot Mix Asphalt Production and Placement.
Provide a testing laboratory and personnel for quality control testing. Provide the Engineer unrestricted access to the quality control activities. Before providing services for the project, the Engineer reviews, accredits, and qualifies the testing laboratory and personnel under the Department's Independent Assurance Program.
The minimum random sampling and testing for quality control is:

Minimum Quality Control – QC / QA

Quality Characteristic	Test Method	Min-imum Sampl-ing and Testing Freque n-cy	HMA Type			Location of Samplin g	Max. Report-ing Time Allow-ance
			A	B	RHMA-G		
Aggregate gradation [a]	CT 202	1 per 750 tons	JMF ± Tolerance [b]	JMF ± Tolerance [b]	JMF ± Tolerance [b]	CT 125	24 hours
Asphalt binder content (%)	CT 379 or 382		JMF ±0.45	JMF ±0.45	JMF ±0.5	Loose Mix Behind Paver See CT 125	
Percent of maximum theoretical density (%) [c, d]	QC Plan		92 - 96	92 - 96	91 - 96	QC Plan	
Aggregate moisture content at continuous mixing plants and RAP moisture content at continuous mixing plants and batch mixing plants [e]	CT 226 or CT 370	2 per day during produc-tion	--	--	--	Stock-piles or cold feed belts	--
Sand equivalent (min.) [f]	CT 217	1 per 750 tons	47	42	47	CT 125	24 hours
HMA moisture content (%,max.)	CT 226 or CT 370	1 per 2,500 tons but not less than 1 per paving day	1.0	1.0	1.0	Loose Mix Behind Paver See CT 125	24 hours
Stabilometer Value (min.) [f, g] No. 4 and 3/8" gradings 1/2" and 3/4" gradings	CT 366	1 per 4,000 tons or 2 per 5 busi-ness days, which-ever is more	30 37	30 35	-- 23		48 hours
Air voids content (%) [f, h]	CT 367		4 ± 2	4 ± 2	Specifica-tion ± 2		

Percent of crushed particles coarse aggregate (% min.) One fractured face Two fractured faces Fine aggregate (% min) (Passing No. 4 sieve and retained on No. 8 sieve.) One fractured face	CT 205	As necessary and designated in QCP. At least once per project.	90 75 70	25 -- 20	-- 90 70	CT 125	48 hours
Los Angeles Rattler (% max.) Loss at 100 rev. Loss at 500 rev.	CT 211		12 45	-- 50	12 40	CT 125	
Fine aggregate angularity (% min.)	AASHTO T 304, Method A		45	45	45	CT 125	
Flat and elongated particle (% max. by weight @ 5:1)	ASTM D 4791		Report only	Report only	Report only	CT 125	
Voids filled with asphalt (%)[i] No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-3		76.0 – 80.0 73.0 – 76.0 65.0 – 75.0 65.0 – 75.0	76.0 – 80.0 73.0 – 76.0 65.0 – 75.0 65.0 – 75.0	Report only	LP-3	
Voids in mineral aggregate (% min.)[i] No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-2		17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0 – 23.0[j] 18.0 – 23.0[j]	LP-2	
Dust proportion[i] No. 4 and 3/8" gradings 1/2" and 3/4" gradings	LP-4		0.9 – 2.0 0.6 – 1.3	0.9 – 2.0 0.6 – 1.3	Report only	LP-4	
Smoothness	Section 39-1.12	--	12-foot straight-edge, must-grind, and PI_0	12-foot straight-edge, must-grind, and PI_0	12-foot straight-edge, must-grind, and PI_0	--	
Asphalt rubber binder viscosity @ 350 °F, centipoises	Section 39-1.02D	--	--	--	1,500 – 4,000	Section 39-1.02D	24 hours
Crumb rubber modifier	Section 39-1.02D	--	--	--	Section 39-1.02D	Section 39-1.02D	48 hours

Notes:

[a] Determine combined aggregate gradation containing RAP under Laboratory Procedure LP-9.
[b] The tolerances must comply with the allowable tolerances in Section 39-1.02E, "Aggregate."
[c] Required for HMA Type A, Type B, and RHMA-G if the specified paved thickness is at least 0.15 foot.
[d] Determine maximum theoretical density (California Test 309) at the frequency specified for test maximum density under California Test 375, Part 5 D.
[e] For adjusting the plant controller at the HMA plant.
[f] Report the average of 3 tests from a single split sample.
[g] Modify California Test 304, Part 2.B.2.c: "After compaction in the mechanical compactor, cool to 140 °F ± 5 °F by allowing the briquettes to cool at room temperature for 0.5 hour, then place the briquettes in the oven at 140 °F for a minimum of 2 hours and not more than 3 hours."
[h] Determine the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.
[i] Report only if the adjustment for asphalt binder content target value is less than or equal to ± 0.3 percent from OBC.
[j] Voids in mineral aggregate for RHMA-G must be within this range.

Within the specified reporting time, submit written test results including:

1. Sampling location, quantity, and time
2. Testing results
3. Supporting data and calculations

If test results for any quality characteristic are beyond the action limits in the QCP, take corrective actions. Document the corrective actions taken in the inspection records under Section 39-4.03E, "Records of Inspection and Testing."
Stop production, notify the Engineer in writing, take corrective action, and demonstrate compliance with the specifications before resuming production and placement on the State highway if:

1. A lot's composite quality factor, Q_{FC}, or an individual quality factor, QF_{QCi} for i = 3, 4, or 5, is below 0.90 determined under Section 39-4.03F, "Statistical Evaluation"
2. An individual quality factor, QF_{QCi} for i = 1 or 2, is below 0.75
3. Quality characteristics for which a quality factor, QF_{QCi}, is not determined has 2 consecutive acceptance or quality control tests not in compliance with the specifications.

39-4.03D Charts And Records

Record sampling and testing results for quality control on forms provided in the "Quality Control Manual for Hot Mix Asphalt," or on forms you submit with the QCP. The QCP must also include form posting locations and submittal times.
Submit quality control test results using the Department's statistical evaluation program, HMAPay, available at

www.dot.ca.gov/hq/construc/hma/index.htm

39-4.03E Records Of Inspection And Testing

During HMA production, submit in writing a daily:

1. HMA Construction Daily Record of Inspection. Also make this record available at the HMA plant and job site each day.
2. HMA Inspection and Testing Summary. Include in the summary:

    2.1. Test forms with the testers' signatures and Quality Control Manager's initials.
    2.2. Inspection forms with the inspectors' signatures and Quality Control Manager's initials.
    2.3. A list and explanation of deviations from the specifications or regular practices.
    2.4. A signed statement by the Quality Control Manager that says:

    "It is hereby certified that the information contained in this record is accurate, and that information, tests, or calculations documented herein comply with the specifications of the contract and the standards set forth in the testing procedures. Exceptions to this certification are documented as part of this record."

Retain for inspection the records generated as part of quality control including inspection, sampling, and testing for at least 3 years after final acceptance.

39-4.03F Statistical Evaluation

General

Determine a lot's composite quality factor, QF_C, and the individual quality factors, QF_{QCi}. Perform statistical evaluation calculations to determine these quality factors based on quality control test results for:

1. Aggregate gradation
2. Asphalt binder content
3. Percent of maximum theoretical density

The Engineer grants a waiver and you must use 1.0 as the individual quality factor for percent of maximum theoretical density, QF_{QC5}, for HMA paved in:

1. Areas where the specified paved thickness is less than 0.15 foot
2. Areas where the specified paved thickness is less than 0.20 foot and a 3/4-inch grading is specified and used
3. Dig outs
4. Leveling courses
5. Areas where, in the opinion of the Engineer, compaction or compaction measurement by conventional methods is impeded

Statistical Evaluation Calculations

Use the Variability-Unknown / Standard Deviation Method to determine the percentage of a lot not in compliance with the specifications. The number of significant figures used in the calculations must comply with AASHTO R-11, Absolute Method.
Determine the percentage of work not in compliance with the specification limits for each quality characteristic as follows:

1. Calculate the arithmetic mean ($\overline{X}$) of the test values

$$\overline{X} = \frac{\Sigma x}{n}$$

where:

x = individual test values
n = number of test values

2. Calculate the standard deviation

$$s = \sqrt{\frac{n\,(\Sigma x^2)-(\Sigma x)^2}{n(n-1)}}$$

where:

$\sum(x^2)$ = sum of the squares of individual test values
$(\sum x)^2$ = sum of the individual test values squared
n = number of test values

3. Calculate the upper quality index (Qu)

$$Q_u = \frac{USL - \overline{X}}{s}$$

where:

USL = target value plus the production tolerance or upper specification limit
s = standard deviation
$\overline{X}$ = arithmetic mean

4. Calculate the lower quality index (QL);

$$Q_L = \frac{\bar{X} - LSL}{s}$$

where:

LSL = target value minus production tolerance or lower specification limit
s = standard deviation
$\bar{X}$ = arithmetic mean

5. From the table, Upper Quality Index Q_U or Lower Quality Index Q_L, of this Section 39-4.03F, "Statistical Evaluation", determine P_U ;

where:

P_U = the estimated percentage of work outside the USL.
P_U = 0, when USL is not specified.

6. From the table, Upper Quality Index Q_U or Lower Quality Index Q_L, of this Section 39-4.03F, "Statistical Evaluation," determine P_L;

where:

P_L = the estimated percentage of work outside the LSL.
P_L = 0, when LSL is not specified.

7. Calculate the total estimated percentage of work outside the USL and LSL, percent defective

Percent defective = $P_U + P_L$

P_U and P_L are determined from:

P_U or P_L	**Upper Quality Index Q_U or Lower Quality Index Q_L**												
	Sample Size (n)												
	5	6	7	8	9	10-11	12-14	15-17	18-22	23-29	30-42	43-66	>66
0	1.72	1.88	1.99	2.07	2.13	2.20	2.28	2.34	2.39	2.44	2.48	2.51	2.56
1	1.64	1.75	1.82	1.88	1.91	1.96	2.01	2.04	2.07	2.09	2.12	2.14	2.16
2	1.58	1.66	1.72	1.75	1.78	1.81	1.84	1.87	1.89	1.91	1.93	1.94	1.95
3	1.52	1.59	1.63	1.66	1.68	1.71	1.73	1.75	1.76	1.78	1.79	1.80	1.81
4	1.47	1.52	1.56	1.58	1.60	1.62	1.64	1.65	1.66	1.67	1.68	1.69	1.70
5	1.42	1.47	1.49	1.51	1.52	1.54	1.55	1.56	1.57	1.58	1.59	1.59	1.60
6	1.38	1.41	1.43	1.45	1.46	1.47	1.48	1.49	1.50	1.50	1.51	1.51	1.52
7	1.33	1.36	1.38	1.39	1.40	1.41	1.41	1.42	1.43	1.43	1.44	1.44	1.44
8	1.29	1.31	1.33	1.33	1.34	1.35	1.35	1.36	1.36	1.37	1.37	1.37	1.38
9	1.25	1.27	1.28	1.28	1.29	1.29	1.30	1.30	1.30	1.31	1.31	1.31	1.31
10	1.21	1.23	1.23	1.24	1.24	1.24	1.25	1.25	1.25	1.25	1.25	1.26	1.26
11	1.18	1.18	1.19	1.19	1.19	1.19	1.20	1.20	1.20	1.20	1.20	1.20	1.20
12	1.14	1.14	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
13	1.10	1.10	1.10	1.10	1.10	1.10	1.11	1.11	1.11	1.11	1.11	1.11	1.11
14	1.07	1.07	1.07	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
15	1.03	1.03	1.03	1.03	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
16	1.00	0.99	0.99	0.99	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
17	0.97	0.96	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94	0.94	0.94
18	0.93	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90
19	0.90	0.89	0.88	0.88	0.88	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
20	0.87	0.86	0.85	0.85	0.84	0.84	0.84	0.83	0.83	0.83	0.83	0.83	0.83
21	0.84	0.82	0.82	0.81	0.81	0.81	0.80	0.80	0.80	0.80	0.80	0.80	0.79
22	0.81	0.79	0.79	0.78	0.78	0.77	0.77	0.77	0.76	0.76	0.76	0.76	0.76
23	0.77	0.76	0.75	0.75	0.74	0.74	0.74	0.73	0.73	0.73	0.73	0.73	0.73
24	0.74	0.73	0.72	0.72	0.71	0.71	0.70	0.70	0.70	0.70	0.70	0.70	0.70
25	0.71	0.70	0.69	0.69	0.68	0.68	0.67	0.67	0.67	0.67	0.67	0.67	0.66
26	0.68	0.67	0.67	0.65	0.65	0.65	0.64	0.64	0.64	0.64	0.64	0.64	0.63
27	0.65	0.64	0.63	0.62	0.62	0.62	0.61	0.61	0.61	0.61	0.61	0.61	0.60
28	0.62	0.61	0.60	0.59	0.59	0.59	0.58	0.58	0.58	0.58	0.58	0.58	0.57
29	0.59	0.58	0.57	0.57	0.56	0.56	0.55	0.55	0.55	0.55	0.55	0.55	0.54
30	0.56	0.55	0.54	0.54	0.53	0.53	0.52	0.52	0.52	0.52	0.52	0.52	0.52
31	0.53	0.52	0.51	0.51	0.50	0.50	0.50	0.49	0.49	0.49	0.49	0.49	0.49
32	0.50	0.49	0.48	0.48	0.48	0.47	0.47	0.47	0.46	0.46	0.46	0.46	0.46
33	0.47	0.48	0.45	0.45	0.45	0.44	0.44	0.44	0.44	0.43	0.43	0.43	0.43
34	0.45	0.43	0.43	0.42	0.42	0.42	0.41	0.41	0.41	0.41	0.41	0.41	0.40
35	0.42	0.40	0.40	0.39	0.39	0.39	0.38	0.38	0.38	0.38	0.38	0.38	0.38
36	0.39	0.38	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
37	0.36	0.35	0.34	0.34	0.34	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.32
38	0.33	0.32	0.32	0.31	0.31	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.30
39	0.30	0.30	0.29	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
40	0.28	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
41	0.25	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
42	0.23	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
43	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
44	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
45	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
46	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
47	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
48	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
49	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

1. If the value of Q_U or Q_L does not correspond to a value in the table, use the next lower value.
2. If Q_U or Q_L are negative values, P_U or P_L is equal to 100 minus the table value for P_U or P_L.

Quality Factor Determination

Determine individual quality factors, QF_{QCi}, using percent defective = $P_U + P_L$ and:

Quality Factors

Quality Factor	Maximum Allowable Percent Defective ($P_U + P_L$) Sample Size (n)												
	5	6	7	8	9	10-11	12-14	15-17	18-22	23-29	30-42	43-66	>66
1.05				0	0	0	0	0	0	0	0	0	0
1.04			0	1	3	5	4	4	4	3	3	3	3
1.03		0	2	4	6	8	7	7	6	5	5	4	4
1.02		1	3	6	9	11	10	9	8	7	7	6	6
1.01	0	2	5	8	11	13	12	11	10	9	8	8	7
1.00	22	20	18	17	16	15	14	13	12	11	10	9	8
0.99	24	22	20	19	18	17	16	15	14	13	11	10	9
0.98	26	24	22	21	20	19	18	16	15	14	13	12	10
0.97	28	26	24	23	22	21	19	18	17	16	14	13	12
0.96	30	28	26	25	24	22	21	19	18	17	16	14	13
0.95	32	29	28	26	25	24	22	21	20	18	17	16	14
0.94	33	31	29	28	27	25	24	22	21	20	18	17	15
0.93	35	33	31	29	28	27	25	24	22	21	20	18	16
0.92	37	34	32	31	30	28	27	25	24	22	21	19	18
0.91	38	36	34	32	31	30	28	26	25	24	22	21	19
0.90	39	37	35	34	33	31	29	28	26	25	23	22	20
0.89	41	38	37	35	34	32	31	29	28	26	25	23	21
0.88	42	40	38	36	35	34	32	30	29	27	26	24	22
0.87	43	41	39	38	37	35	33	32	30	29	27	25	23
0.86	45	42	41	39	38	36	34	33	31	30	28	26	24
0.85	46	44	42	40	39	38	36	34	33	31	29	28	25
0.84	47	45	43	42	40	39	37	35	34	32	30	29	27
0.83	49	46	44	43	42	40	38	36	35	33	31	30	28
0.82	50	47	46	44	43	41	39	38	36	34	33	31	29
0.81	51	49	47	45	44	42	41	39	37	36	34	32	30
0.80	52	50	48	46	45	44	42	40	38	37	35	33	31
0.79	54	51	49	48	46	45	43	41	39	38	36	34	32
0.78	55	52	50	49	48	46	44	42	41	39	37	35	33
0.77	56	54	52	50	49	47	45	43	42	40	38	36	34
0.76	57	55	53	51	50	48	46	44	43	41	39	37	35
0.75	58	56	54	52	51	49	47	46	44	42	40	38	36
	60	57	55	53	52	51	48	47	45	43	41	40	37
	61	58	56	55	53	52	50	48	46	44	43	41	38
Reject	62	59	57	56	54	53	51	49	47	45	44	42	39
	63	61	58	57	55	54	52	50	48	47	45	43	40
	64	62	60	58	57	55	53	51	49	48	46	44	41
Reject Values Greater Than Those Shown Above													

Notes:

1. To obtain a quality factor when the estimated percent outside specification limits from table, "Upper Quality Index Q_U or Lower Quality Index Q_L," does not correspond to a value in the table, use the next larger value.

Compute the composite of single quality factors, QF_C, for a lot using:

$$QF_C = \sum_{i=1}^{5} w_i \, QF_{QC_i}$$

where:

QF_C = the composite quality factor for the lot rounded to 2 decimal places.
QF_{QCi} = the quality factor for the individual quality characteristic.
w = the weighting factor listed in the table HMA Acceptance – QC / QA.
i = the quality characteristic index number in the table HMA Acceptance – QC / QA.

39-4.04 ENGINEER'S QUALITY ASSURANCE

39-4.04A General

The Engineer assures quality by:

1. Reviewing mix designs and proposed JMF
2. Inspecting procedures
3. Conducting oversight of quality control inspection and records
4. Verification sampling and testing during production and paving

39-4.04B Verification Sampling And Testing

General

The Engineer samples:

1. Aggregate to verify gradation
2. HMA to verify asphalt binder content

Verification

For aggregate gradation and asphalt binder content, the ratio of verification testing frequency to the minimum quality control testing frequency is 1:5. The Engineer performs at least 3 verification tests per lot.

Using the t-test, the Engineer compares quality control tests results for aggregate gradation and asphalt binder content with corresponding verification test results. The Engineer uses the average and standard deviation of up to 20 sequential sublots for the comparison. The Engineer uses production start-up evaluation tests to represent the first sublot. When there are less than 20 sequential sublots, the Engineer uses the maximum number of sequential sublots available. The 21st sublot becomes the 1st sublot (n = 1) in the next lot.

The t-value for a group of test data is computed as follows:

$$t = \frac{\left|\overline{X}_c - \overline{X}_v\right|}{S_p\sqrt{\frac{1}{n_c} + \frac{1}{n_v}}} \qquad \text{and} \qquad S_p^2 = \frac{S_c^2(n_c - 1) + S_v^2(n_v - 1)}{n_c + n_v - 2}$$

where:

n_c = Number of quality control tests (2 minimum, 20 maximum).
n_v = Number of verification tests (minimum of 1 required).
$\overline{X}_c$ = Mean of quality control tests.
$\overline{X}_v$ = Mean of verification tests.
S_p = Pooled standard deviation (When $n_v = 1$, $S_p = S_c$).
S_c = Standard deviation of quality control tests.
S_v = Standard deviation of verification tests (when $n_v > 1$).

The comparison of quality control test results and the verification test results is at a level of significance of α = 0.025. The Engineer computes t and compares it to the critical t-value, t_{crit}, from:

Critical T-Value

Degrees of freedom (n_c+n_v-2)	t_{crit} (for α = 0.025)	Degrees of freedom (n_c+n_v-2)	t_{crit} (for α = 0.025)
1	24.452	18	2.445
2	6.205	19	2.433
3	4.177	20	2.423
4	3.495	21	2.414
5	3.163	22	2.405

6	2.969	23	2.398
7	2.841	24	2.391
8	2.752	25	2.385
9	2.685	26	2.379
10	2.634	27	2.373
11	2.593	28	2.368
12	2.560	29	2.364
13	2.533	30	2.360
14	2.510	40	2.329
15	2.490	60	2.299
16	2.473	120	2.270
17	2.458	∞	2.241

If the t-value computed is less than or equal to t_{crit}, quality control test results are verified.
If the t-value computed is greater than t_{crit} and both $\overline{X}_v$ and $\overline{X}_c$ comply with acceptance specifications, the quality control tests are verified. You may continue to produce and place HMA with the following allowable differences:

1. $\left|\overline{X}_v - \overline{X}_c\right|$ ≤ 1.0 percent for any grading
2. $\left|\overline{X}_v - \overline{X}_c\right|$ ≤ 0.1 percent for asphalt binder content

If the t-value computed is greater than t_{crit} and the $\left|\overline{X}_v - \overline{X}_c\right|$ for grading and asphalt binder content are greater than the allowable differences, quality control test results are not verified and:

1. The Engineer notifies you in writing.
2. You and the Engineer must investigate why the difference exist.
3. If the reason for the difference cannot be found and corrected, the Engineer's test results are used for acceptance and pay.

39-4.05 ENGINEER'S ACCEPTANCE

39-4.05A Testing

The Engineer samples for acceptance testing and tests for:

HMA Acceptance – QC / QA

Index (i)	Quality Characteristic				Weighting Factor (w)	Test Method	HMA Type		
							A	B	RHMA-G
		Aggregate gradation [a]							
	Sieve	3/4"	1/2"	3/8"					
1	1/2"	X [b]	--	--	0.05	CT 202	JMF ± Tolerance [c]		
1	3/8"	--	X	--	0.05				
1	No. 4	--	--	X	0.05				
2	No. 8	X	X	X	0.10				
3	No. 200	X	X	X	0.15				
4	Asphalt binder content (%)				0.30	CT 379 or 382	JMF ± 0.45	JMF ± 0.45	JMF ± 0.5
5	Percent of maximum theoretical density (%) [d, e]				0.40	CT 375	92 – 96	92 – 96	91 – 96
	Sand equivalent (min.) [f]					CT 217	47	42	47

	Stabilometer value (min.) [f, g] No. 4 and 3/8" gradings 1/2" and 3/4" gradings		CT 366	 30 37	 30 35	 -- 23
	Air voids content (%)[f, h]		CT 367	4 ± 2	4 ± 2	Specification ± 2
	Percent of crushed particles coarse aggregate (% min.) One fractured face Two fractured faces Fine aggregate (% min) (Passing No. 4 sieve and retained on No. 8 sieve.) One fractured face		CT 205	 90 70 70	 25 -- 20	 -- 90 70
	HMA moisture content (%, max.)		CT 226 or CT 370	1.0	1.0	1.0
	Los Angeles Rattler (% max.) Loss at 100 rev. Loss at 500 rev.		CT 211	 12 45	 -- 50	 12 45
	Fine aggregate angularity (% min.)		AASHTO T 304, Method A	45	45	45
	Flat and elongated particle (% max. by weight @ 5:1)		ASTM D 4791	Report only	Report only	Report only
	Voids in mineral aggregate (% min.)[i] No. 4 grading 3/8" grading 1/2" grading 3/4" grading		LP-2	 17.0 15.0 14.0 13.0	 17.0 15.0 14.0 13.0	(Note j) -- -- 18.0 - 23.0 18.0 - 23.0
	Voids filled with asphalt (%)[i] No. 4 grading 3/8" grading 1/2" grading 3/4" grading		LP-3	 76.0 - 80.0 73.0 - 76.0 65.0 - 75.0 65.0 - 75.0	 76.0 - 80.0 73.0 - 76.0 65.0 - 75.0 65.0 - 75.0	Report only
	Dust proportion[i] No. 4 and 3/8" gradings 1/2" and 3/4" gradings		LP-4	 0.9 - 2.0 0.6 - 1.3	 0.9 – 2.0 0.6 – 1.3	Report only
	Smoothness		Section 39-1.12	12-foot straight-edge, must-grind, and PI_0	12-foot straight-edge, must-grind, and PI_0	12-foot straight-edge, must-grind, and PI_0
	Asphalt binder		Various	Section 92	Section 92	Section 92
	Asphalt rubber binder		Various	--	--	Section 92-1.02(C) and Section 39-1.02D
	Asphalt modifier		Various	--	--	Section 39-1.02D
	Crumb rubber modifier		Various	--	--	Section 39-1.02D

Notes:
[a] The Engineer determines combined aggregate gradations containing RAP under Laboratory Procedure LP-9.
[b] "X" denotes the sieves the Engineer considers for the specified aggregate gradation.
[c] The tolerances must comply with the allowable tolerances in Section 39-1.02E, "Aggregate."
[d] The Engineer determines percent of maximum theoretical density if the specified paved thickness is at least 0.15 foot under California Test 375 except the Engineer uses:

1. California Test 308, Method A, to determine in-place density of each density core instead of using the nuclear gauge in Part 4, "Determining In-Place Density By The Nuclear Density Device."
2. California Test 309 to determine maximum theoretical density instead of calculating test maximum density in Part 5, "Determining Test Maximum Density."

[e] The Engineer determines maximum theoretical density (California Test 309) at the frequency specified for Test Maximum Density under California Test 375, Part 5.D.
[f] The Engineer reports the average of 3 tests from a single split sample.
[g] Modify California Test 304, Part 2.B.2.c: "After compaction in the mechanical compactor, cool to 140 °F ± 5 °F by allowing the briquettes to cool at room temperature for 0.5 hour, then place the briquettes in the oven at 140 °F for a minimum of 2 hours and not more than 3 hours."
[h] The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.
[i] Report only if the adjustment for asphalt binder content target value is less than or equal to ± 0.3 percent from OBC.
[j] Voids in mineral aggregate for RHMA-G must be within this range.

The Engineer determines the percent of maximum theoretical density from the average density of 3 density cores you take from every 750 tons of production or part thereof divided by the maximum theoretical density. If the specified total paved thickness is at least 0.15 foot and any layer is less than 0.15 foot, the Engineer determines the percent of maximum theoretical density from density cores taken from the final layer measured the full depth of the total paved HMA thickness.
The Engineer stops production and terminates a lot if:

1. The lot's composite quality factor, Q_{FC}, or an individual quality factor, QF_{QCi} for i = 3, 4, or 5, is below 0.90 determined under Section 39-4.03F, "Statistical Evaluation"

2. An individual quality factor, QF_{QCi} for i = 1 or 2, is below 0.75
3. Quality characteristics for which a quality factor, QF_{QCi}, is not determined has 2 consecutive acceptance or quality control tests not in compliance with the specifications

For any single quality characteristic for which a quality factor, QF_{QCi}, is not determined, except smoothness, if 2 consecutive acceptance test results do not comply with specifications:

1. Stop production.
2. Take corrective action.
3. In the Engineer's presence, take samples and split each sample into 4 parts. Test 1 part for compliance with the specifications and submit 3 parts to the Engineer. The Engineer tests 1 part for compliance with the specifications and reserves and stores 2 parts.
4. Demonstrate compliance with the specifications before resuming production and placement on the State highway.

39-4.05B Statistical Evaluation, Determination Of Quality Factors And Acceptance

Statistical Evaluation and Determination of Quality Factors

To determine the individual quality factor, QF_{QCi}, for any quality factor i = 1 through 5 or a lot's composite quality factor, QF_C, for acceptance and payment adjustment, the Engineer uses the evaluation specifications under Section 39-4.03F, "Statistical Evaluation," and:

1. Verified quality control test results for aggregate gradation
2. Verified quality control test results for asphalt binder content
3. The Engineer's test results for percent of maximum theoretical density

Lot Acceptance Based on Quality Factors

The Engineer accepts a lot based on the quality factors determined for aggregate gradation and asphalt binder content, QF_{QCi} for i = 1 through 4, using the total number of verified quality control test result values and the total percent defective ($P_U + P_L$).
The Engineer accepts a lot based on the quality factor determined for maximum theoretical density, QF_{QC5}, using the total number of test result values from density cores and the total percent defective ($P_U + P_L$).
The Engineer calculates the quality factor for the lot, QF_C, which is a composite of weighted individual quality factors, QF_{QCi}, determined for each quality characteristic in the HMA Acceptance – QC / QA table in Section 39-4.05A, "Testing."
The Engineer accepts a lot based on quality factors if:

1. The current composite quality factor, QF_C, is 0.90 or greater
2. Each individual quality factor, QF_{QCi} for i = 3, 4, and 5, is 0.90 or greater
3. Each individual quality factor, QF_{QCi} for i = 1 and 2, is 0.75 or greater

No single quality characteristic test may represent more than the smaller of 750 tons or 1 day's production.

Payment Adjustment

If a lot is accepted, the Engineer adjusts payment with the following formula:

$$PA = \sum_{i=1}^{n} HMACP * wi * [QFQCi * (HMATT - WHMATTi) + WHMATTi] - (HMACP * HMATT)$$

where:

PA =	Payment adjustment rounded to 2 decimal places.
HMACP =	HMA contract price.
HMATT =	HMA total tons represented in the lot.
$WHMATT_i$ =	Total tons of waived quality characteristic HMA.
QF_{QCi} =	Running quality factor for the individual quality characteristic. QF_{QCi} for i = 1 through 4 must be from verified Contractor's QC results. QF_{QC5} must be determined from the Engineer's results on density cores taken for percent of maximum theoretical density determination.
w =	Weighting factor listed in the HMA acceptance table.
i =	Quality characteristic index number in the HMA acceptance table.

If the payment adjustment is a negative value, the Engineer deducts this amount from payment. If the payment adjustment is a positive value, the Engineer adds this amount to payment.
The 21st sublot becomes the 1st sublot (n = 1) in the next lot. When the 21st sequential sublot becomes the 1st sublot, the previous 20 sequential sublots become a lot for which the Engineer determines a quality factor. The Engineer uses this quality factor to pay for the HMA in the lot. If the next lot consists of less than 8 sublots, these sublots must be added to the previous lot for quality factor determination using 21 to 27 sublots.

39-4.05C Dispute Resolution

For a lot, if you or the Engineer dispute any quality factor, QF_{QCi}, or verification test result, every sublot in that lot must be retested.
Referee tests must be performed under the specifications for acceptance testing.
Any quality factor, QF_{QCi}, must be determined using the referee tests.
For any quality factor, QF_{QCi}, for i = 1 through 5, dispute resolution:

1. If the difference between the quality factors for QF_{QCi} using the referee test result and the disputed test result is less than or equal to 0.01, the original test result is correct.
2. If the difference between the quality factor for QF_{QCi} using the referee test result and the disputed test result is more than 0.01, the quality factor determined from the referee tests supersedes the previously determined quality factor.

39-5 MEASUREMENT AND PAYMENT

39-5.01 MEASUREMENT

The contract item for HMA is measured by weight. The weight of each HMA mixture designated in the

Engineer's Estimate must be the combined mixture weight.
If tack coat, asphalt binder, and asphaltic emulsion are paid with separate contract items, their contract items are measured under Section 92, "Asphalts," or Section 94, "Asphaltic Emulsions," as the case may be.
If recorded batch weights are printed automatically, the contract item for HMA is measured by using the printed batch weights, provided:

1. Total aggregate and supplemental fine aggregate weight per batch is printed. If supplemental fine aggregate is weighed cumulatively with the aggregate, the total aggregate batch weight must include the supplemental fine aggregate weight.
2. Total asphalt binder weight per batch is printed.
3. Each truckload's zero tolerance weight is printed before weighing the first batch and after weighing the last batch.
4. Time, date, mix number, load number and truck identification is correlated with a load slip.
5. A copy of the recorded batch weights is certified by a licensed weighmaster and submitted to the Engineer.

The contract item for placing HMA dike is measured by the linear foot along the completed length. The contract item for placing HMA in miscellaneous areas is measured as the in-place compacted area in square yards. In addition to the quantities measured on a linear foot or square yard basis, the HMA for dike and miscellaneous areas are measured by weight.
The contract item for geosynthetic pavement interlayer is measured by the square yard for the actual pavement area covered.

39-5.02 PAYMENT

The contract prices paid per ton for hot mix asphalt as designated in the Engineer's Estimate include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in constructing hot mix asphalt, complete in place, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer. If HMA is specified to comply with Section 39-4, "Quality Control / Quality Assurance," the Engineer adjusts payment under that section.
Full compensation for the Quality Control Plan and prepaving conference is included in the contract prices paid per ton for hot mix asphalt as designated in the Engineer's Estimate and no additional compensation will be allowed therefor.
Full compensation for performing and submitting mix designs and for Contractor sampling, testing, inspection, testing facilities, and preparation and submittal of results is included in the contract prices paid per ton for HMA as designated in the Engineer's Estimate and no additional compensation will be allowed therefor.
Full compensation for reclaimed asphalt pavement is included in the contract prices paid per ton for HMA as designated in the Engineer's Estimate and no additional compensation will be allowed therefor.
The contract price paid per ton for hot mix asphalt (leveling) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in hot mix asphalt (leveling), complete in place, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.
The State pays for HMA dike at the contract price per linear foot for place HMA dike and by the ton for HMA. The contract prices paid per linear foot for place hot mix asphalt dike as designated in the Engineer's Estimate include full compensation for furnishing all labor, tools, equipment, and incidentals, and for doing all the work involved in placing HMA dike, complete in place, including
excavation, backfill, and preparation of the area to receive the dike, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.
The State pays for HMA specified to be a miscellaneous area at the contract price per square yard for place hot mix asphalt (miscellaneous area) and per ton for hot mix asphalt. The contract price paid per square yard for place hot mix asphalt (miscellaneous area) includes full compensation for furnishing all labor, tools, equipment, and incidentals, and for doing all the work involved in placing HMA (miscellaneous area) complete in place, including excavation, backfill, and preparation of the area to receive HMA (miscellaneous area), as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.
If the Quality Control / Quality Assurance construction process is specified, HMA placed in dikes and miscellaneous areas is paid for at the contract price per ton for hot mix asphalt under Section 39-4, "Quality Control / Quality Assurance." Section 39-4.05B, "Statistical Evaluation, Determination of Quality Factors and Acceptance," does not apply to HMA placed in dikes and miscellaneous areas.
If there are no contract items for place hot mix asphalt dike and place hot mix asphalt (miscellaneous area) and the work is specified, full compensation for constructing HMA dikes and HMA (miscellaneous areas) including excavation, backfill, and preparation of the area to receive HMA dike or HMA (miscellaneous area)

is included in the contract price paid per ton for the hot mix asphalt designated in the Engineer's Estimate and no separate payment will be made therefor.
The contract price paid per square yard for geosynthetic pavement interlayer includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in placing geosynthetic pavement interlayer, complete in place, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.
The contract price paid per ton for paving asphalt (binder, geosynthetic pavement interlayer) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in applying paving asphalt (binder, geosynthetic pavement interlayer), complete in place, including spreading sand to cover exposed binder material, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.
Full compensation for small quantities of HMA placed on geosynthetic pavement interlayer to prevent displacement during construction is included in the contract price paid per ton for the HMA being paved over the interlayer and no separate payment will be made therefor.
The contract price paid per ton for tack coat includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in applying tack coat, complete in place, as shown on the
plans, as specified in these specifications and the special provisions, and as directed by the Engineer.
The Engineer does not adjust payment for increases or decreases in the quantities for tack coat, regardless of the reason for the increase or decrease. Section 4-1.03B, "Increased or Decreased Quantities," does not apply to the items for tack coat.
Full compensation for performing smoothness testing, submitting written and electronic copies of tests, and performing corrective work including applying fog seal coat is included in the contract price paid per ton for the HMA designated in the Engineer's Estimate and no separate payment will be made therefor.
Full compensation for spreading sand on RHMA-G, RHMA-O, and RHMA-O-HB surfaces and for sweeping and removing excess sand is included in the contract price paid per ton for rubberized hot mix asphalt as designated in the Engineer's Estimate and no separate payment will be made therefor.
If the Engineer fails to comply with a specification within a specified time, and if, in the opinion of the Engineer, work completion is delayed because of the failure, the Engineer adjusts payment and contract time under Section 8-1.09, "Right of Way Delays."
If the dispute resolution ITP determines the Engineer's test results are correct, the Engineer deducts the ITP's testing costs from payments. If the ITP determines your test results are correct, the State pays the ITP's testing costs.
If, in the Engineer's opinion, work completion is delayed because of incorrect Engineer test results, the Engineer adjusts payment and contract time under Section 8-1.09, "Right of Way Delays."

SECTION 64 PLASTIC PIPE
(Issued 06-05-09)

In Section 64-1.02 replace the 5th paragraph with:

HDPE compounds used in the manufacture of corrugated polyethylene pipe and fittings shall comply with AASHTO M 294 except that the mix shall contain not less than 2 nor greater than 4 percent well dispersed carbon black. HDPE compounds used in the manufacture of ribbed profile wall polyethylene pipe shall comply with ASTM F 894 except that Type E ultraviolet stabilizers shall not be allowed and carbon black shall be well dispersed in an amount not less than 2 percent nor greater than 4 percent.

Manufacturers of corrugated polyethylene pipe shall:

1. Participate in the National Transportation Product Evaluation Control Program (NTPEP) for each plant supplying corrugated polyethylene pipe and fittings for the project.
2. Conduct and maintain a quality control program under NTPEP.
3. Submit a copy to the Engineer of manufacturing plant audits and NTPEP test results from the current cycle of NTPEP testing for all pipe diameters supplied.

Type D corrugated polyethylene pipe is not allowed. Corrugated polyethylene pipe greater than 60 inches in nominal diameter is not allowed.

In Section 64-1.05 replace the 1st paragraph with:

Excavation, backfill, and shaped bedding shall comply with Section 19-3, "Structure Excavation and Backfill,"

except the following:

1. At locations where pipe is to be backfilled with concrete, the backfill shall comply with Section 64-1.06, "Concrete Backfill."
2. Corrugated polyethylene pipe that is greater than 48 inches in nominal diameter but not exceeding 60 inches in nominal diameter shall be backfilled with either controlled low strength material under the special provisions or slurry cement backfill under Section 19-3.062, "Slurry Cement Backfill."
3. Where cementitious or flowable backfill is used for structure backfill, the backfill shall be placed to a level not less than 12 inches above the crown of the pipe.

In Section 64-1.06 replace the 1st paragraph with:

At locations where pipe is to be backfilled with concrete as shown on the plans, the concrete backfill shall be constructed of minor concrete or Class 4 concrete conforming to the provisions in Section 90, "Portland Cement Concrete." Minor concrete shall contain not less than 380 pounds of cementitious material per cubic yard. The concrete to be used will be designated in the contract item or shown on the plans.

In Section 64-1.06 replace the 3rd paragraph with:

The surface of the concrete backfill shall be broomed with a heavy broom to produce a uniform rough surface if hot mix asphalt is to be placed directly thereon.

SECTION 66 CORRUGATED METAL PIPE
(Issued 07-31-07)

In Section 66-1.045 replace the 1st paragraph with:

At locations where pipe is to be backfilled with concrete as shown on the plans, the concrete backfill shall be constructed of minor concrete or Class 4 concrete conforming to the provisions in Section 90, "Portland Cement Concrete." Minor concrete shall contain not less than 380 pounds of cementitious material per cubic yard. The concrete to be used will be designated in the contract item or shown on the plans.

In Section 66-1.045 replace the 3rd paragraph with:

The surface of the concrete backfill shall be broomed with a heavy broom to produce a uniform rough surface if hot mix asphalt is to be placed directly thereon.

SECTION 68 SUBSURFACE DRAINS
(Issued 07-31-07)

In Section 68-3.02D replace the 1st and 2nd paragraphs with:

Concrete for splash pads shall be produced from minor concrete conforming to the provisions in Section 90-10, "Minor Concrete." Minor concrete shall contain not less than 470 pounds of cementitious material per cubic yard.

Mortar placed where edge drain outlets and vents connect to drainage pipe and existing drainage inlets shall conform to the provisions in Section 51-1.135, "Mortar."

In Section 68-3.03 replace the 13th paragraph with:

Cement treated permeable material, which is not covered with hot mix asphalt within 12 hours after compaction of the permeable material, shall be cured by either sprinkling the material with a fine spray of water every 4 hours during daylight hours or covering the material with a white polyethylene sheet, not less than 6 mils thick. The above curing requirements shall begin at 7:00 a.m. on the morning following compaction of the cement treated permeable material and continue for the next 72 hours or until the material is covered with hot mix asphalt, whichever is less. The cement treated permeable material shall not be sprayed with water during the first 12 hours after compacting, but may be covered with the polyethylene sheet during the first 12 hours or prior to the beginning of the cure period.

In Section 68-3.03 replace the 17th and 18th paragraphs with:

Hot mix asphalt for backfilling trenches in existing paved areas shall be produced from commercial quality aggregates and asphalt and mixed at a central mixing plant. The aggregate shall conform to the 3/4 inch grading, or the 1/2 inch grading for Type A and Type B hot mix asphalt specified in Section 39-1.02E,

"Aggregate." The amount of asphalt binder to be mixed with the aggregate shall be between 4 percent and 7 percent by weight of the dry aggregate, as determined by the Engineer.
Hot mix asphalt backfill shall be spread and compacted in approximately 2 equal layers by methods that will produce a hot mix asphalt surfacing of uniform smoothness, texture and density. Each layer shall be compacted before the temperature of the mixture drops below 250 °F. Prior to placing the hot mix asphalt backfill, a tack coat of asphaltic emulsion conforming to the provisions in Section 94, "Asphaltic Emulsions," shall be applied to the vertical edges of existing pavement at an approximate rate of 0.05 gallon per square yard.

In Section 68-3.03 replace the 20th paragraph with:

Type A pavement markers conforming to the details shown on the plans and the provisions in Section 85, "Pavement Markers," shall be placed on paved shoulders or dikes at outlet, vent and cleanout locations as directed by the Engineer. The waiting period for placing pavement markers on new hot mix asphalt surfacing will not apply.

Replace Section 68-3.05 with:

68-3.05 PAYMENT

The contract price paid per linear foot for plastic pipe (edge drain) of the size or sizes shown in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in installing edge drains complete in place, including excavation (and removal of any concrete deposits that may occur along the lower edge of the concrete pavement in Type 1 installations) and hot mix asphalt backfill for Type 1 edge drain installation, tack coat, filter fabric, and treated permeable material, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.

The contract price paid per linear foot for plastic pipe (edge drain outlet) of the size or sizes shown in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in installing edge drain outlets, vents and cleanouts complete in place, including outlet and vent covers, expansion plugs, pavement markers, concrete splash pads, connecting outlets and vents to drainage facilities, and excavation and backfill [aggregate base, hot mix asphalt, tack coat, and native material] for outlets, vents, and cleanouts to be installed in embankments and existing shoulders, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.

SECTION 70 MISCELLANEOUS FACILITIES

(Issued 11-30-10)

In Section 70-1.02C replace the 2nd paragraph with:

Precast concrete flared end sections shall conform to the requirements for Class III Reinforced Concrete Pipe in AASHTO Designation: M 170M. Cementitious materials and aggregate shall conform to the provisions in Section 90-2, "Materials," except that grading requirements shall not apply to the aggregate. Use of supplementary cementitious material shall conform to the requirements in AASHTO Designation: M 170. The area of steel reinforcement per linear foot of flared end section shall be at least equal to the minimum steel requirements for circular reinforcement in circular pipe for the internal diameter of the circular portion of the flared end section. The basis of acceptance of the precast concrete flared end section shall conform to the requirements of Section 5.1.2 of AASHTO Designation: M 170.

In Section 70-1.02H replace the 1st paragraph with:

Precast concrete pipe risers and pipe reducers, and precast concrete pipe sections, adjustment rings and tapered sections for pipe energy dissipators, pipe inlets and pipe manholes shall conform to the requirements in AASHTO Designation: M 199M/M 199, except that the cementitious material and aggregate shall conform to the provisions in Section 90-2, "Materials," except that grading requirements shall not apply to the aggregate. Use of supplementary cementitious material shall conform to the requirements in AASHTO Designation: M 170.

In Section 70-1.03 replace the 2nd paragraph with:

Cutoff walls for precast concrete flared end sections shall be constructed of minor concrete

conforming to the provisions in Section 90-10, "Minor Concrete." Minor concrete shall contain not less than 470 pounds of cementitious material per cubic yard.

SECTION 72 SLOPE PROTECTION
(Issued 03-13-09)

In Section 72-4.04 replace the 6th paragraph with:

Pervious backfill material, if required by the plans, shall be placed as shown. A securely tied sack containing one cubic foot of pervious backfill material shall be placed at each weep hole and drain hole. The sack material shall conform to the requirements for filter fabric in Section 88-1.02, "Filtration."

SECTION 83 RAILINGS AND BARRIERS
(Issued 04-03-09)

In Section 83-1.02 replace the 7th paragraph with:

Mortar shall conform to the provisions in Section 51-1.135, "Mortar," and shall consist of one part by volume of cementitious material and 3 parts of clean sand.

In Section 83-1.02B in the 24th paragraph in the 8th subparagraph, replace the 1st sentence with:

Anchor cable shall be 3/4 inch preformed, 6 x 19, wire strand core or independent wire rope core (IWRC), galvanized in conformance with the requirements in Federal Specification RR-W-410, right regular lay, manufactured of improved plow steel with a minimum breaking strength of 23 tons.

In Section 83-1.02E in the 6th paragraph, replace the 2nd sentence with:

Cable shall be galvanized in conformance with the requirements in Federal Specification RR-W-410.

In Section 83-1.02I replace the 5th paragraph with:

Where shown on the plans, cables used in the frame shall be 5/16 inch in diameter, wire rope, with a minimum breaking strength of 5,000 pounds and shall be galvanized in conformance with the requirements in Federal Specification RR-W-410.

In Section 83-1.02I replace the 14th paragraph with:

Chain link fabric shall be 11-gage conforming to one of the following:

1. AASHTO Designation: M181, Type I, Class C
2. AASHTO Designation: M181, Type IV, Class A
3. ASTM F 1345, Class 2

In Section 83-2.02D(1) replace the 5th paragraph with:

When concrete barriers are to be constructed on existing structures, the dowels shall be bonded in holes drilled in the existing concrete. Drilling of holes and bonding of dowels shall conform to the following:

1. The bonding materials shall be either magnesium phosphate concrete, modified high alumina based concrete or portland cement based concrete. Magnesium phosphate concrete shall be either single component (water activated) or dual component (with a prepackaged liquid activator). Modified high alumina based concrete and portland cement based concrete shall be water activated. Bonding materials shall conform to the following requirements:

Property	Test Method	Requirements
Compressive Strength		
at 3 hours, MPa	California Test 551	21 min.
at 24 hours, MPa	California Test 551	35 min.
Flexure Strength		
at 24 hours, MPa	California Test 551	3.5 min.
Bond Strength: at 24 hours		
SSD Concrete, MPa	California Test 551	2.1 min.
Dry Concrete, MPa	California Test 551	2.8 min.
Water Absorption, %	California Test 551	10 max.
Abrasion Resistance		
at 24 hours, grams	California Test 550	25 max.
Drying Shrinkage at 4 days, %	ASTM Designation: C 596	0.13 max.
Soluble Chlorides by weight, %	California Test 422	0.05 max.
Water Soluble Sulfates by weight, %	California Test 417	0.25 max.

2. Magnesium phosphate concrete shall be formulated for minimum initial set time of 15 minutes and minimum final set time of 25 minutes at 70° F. The materials, prior to use, shall be stored in a cool, dry environment.
3. Mix water used with water activated material shall conform to the provisions in Section 90-2.03, "Water."
4. The quantity of water for single component type or liquid activator (for dual component type) to be blended with the dry component, shall be within the limits recommended by the manufacturer and shall be the least amount required to produce a pourable batter.
5. Addition of retarders, when required and approved by the Engineer, shall be in conformance with the manufacturer's recommendations.
6. Before using concrete material that has not been previously approved, a minimum of 45 pounds shall be submitted to the Engineer for testing. The Contractor shall allow 45 days for the testing. Each shipment of concrete material that has been previously approved shall be accompanied by a Certificate of Compliance as provided in Section 6-1.07, "Certificates of Compliance."
7. Magnesium phosphate concrete shall not be mixed in containers or worked with tools containing zinc, cadmium, aluminum or copper metals. Modified high alumina based concrete shall not be mixed in containers or worked with tools containing aluminum.
8. The surface of any dowel coated with zinc or cadmium shall be coated with a colored lacquer before installation of the dowel. The lacquer shall be allowed to dry thoroughly before embedment of the dowels.
9. The holes shall be drilled by methods that will not shatter or damage the concrete adjacent to the hole. The diameter of the drilled hole shall be 1/2 inch larger than the nominal diameter of the dowels.
10. The drilled holes shall be clean and dry at the time of placing the bonding material and the steel dowels. Bonding material and dowel shall completely fill the drilled hole. The surface temperature shall be 40° F or above when the bonding material is placed.
11. After bonding, dowels shall remain undisturbed for a minimum of 3 hours or until the bonding material has reached a strength sufficient to support the dowels. Dowels that are improperly bonded, as determined by the Engineer, shall be removed. The holes shall be cleaned or new holes shall be drilled and the dowels replaced and securely bonded to the concrete. Removing, redrilling and replacing improperly bonded dowels shall be performed at the Contractor's expense. Modified high alumina based concrete and portland cement based concrete shall be cured in conformance with the provisions in Section 90-7.01B, "Curing Compound Method," of the Standard Specifications. Magnesium phosphate concrete shall not be cured.

In Section 83-2.02D(2) in the 1st paragraph, replace item b with:

b. If the 3/8-inch maximum size aggregate grading is used to construct extruded or slip-formed concrete barriers, the cementitious material content of the minor concrete shall be not less than 675 pounds per cubic yard.

In Section 83-2.02D(2) replace the 3rd paragraph with:

The concrete paving between the tops of the 2 walls of concrete barrier (Types 50E, 60E, 60GE, and 60SE) and the optional concrete slab at the base between the 2 walls of concrete barrier (Types 50E, 60E, 60GE, and 60SE) shall be constructed of minor concrete conforming to the provisions of Section 90-10, "Minor Concrete," except that the minor concrete shall contain not less than 505 pounds of cementitious material per cubic yard.

SECTION 88 ENGINEERING FABRICS
(Issued 06-05-09)

Replace Section 88 with:

SECTION 88 GEOSYNTHETICS

88-1.01 GENERAL

88-1.01A Summary

Section 88 includes specifications for geosynthetics. Geosynthetics are used for:

1. Filtration
2. Drainage
3. Reinforcement
4. Water pollution control
5. Channel and shore protection
6. Pavement interlayer
7. Separation and stabilization

88-1.01B Submittals

Submit:

1. Certificate of Compliance under Section 6-1.07, "Certificates of Compliance"
2. Samples representing each lot
3. Minimum average roll values (MARV)

Label submittals with the manufacturer's name and product information.

88-1.01C Quality Control and Assurance

Treat geosynthetics to resist degradation from exposure to sunlight. Using covers, protect geosynthetics from moisture, sunlight, and shipping and storage damage.

88-1.02 FILTRATION

88-1.02A Filter Fabric

Geosynthetics used for filter fabric must be permeable and nonwoven. Filter fabric must consist of 1 of the following:

1. Polyester
2. Polypropylene
3. Combined polyester and polypropylene

Filter fabric must comply with:

Filter Fabric

Property	ASTM	Specification		
		Class A	Class B	Class C
Grab breaking load, 1-inch grip, lb minimum in each direction	D 4632	157		
Apparent elongation, percent minimum in each direction	D 4632	50		
Hydraulic bursting strength, psi minimum	D 3786	210		
Ultraviolet resistance, percent minimum retained grab breaking load, 500 hr	D 4355	70		
Permittivity, sec^{-1} minimum	D 4491	0.5	0.2	0.1
Apparent opening size, average roll value, U.S. Standard sieve size maximum	D 4751	40	60	70

88-1.03 DRAINAGE

88-1.03A Geocomposite Wall Drain

Geocomposite wall drain must consist of a polymeric core with filter fabric integrally bonded to 1 or both sides of the core creating a stable drainage void.
Filter fabric must comply with Section 88-1.02, "Filtration."
Geocomposite wall drain must comply with:

Geocomposite Wall Drain

Property	ASTM	Specification
Thickness with fabric, inches maximum	--	2
Transmissivity, gradient = 1.0, normal stress = 5,000 psf, gal/min/ft	D 4716	4

88-1.04 REINFORCEMENT

88-1.04A Geotechnical Subsurface Reinforcement

General

Geosynthetic used for geotechnical subsurface reinforcement must be either of the following:

1. Geotextile
2. Geogrid

Geotextile permittivity must be at least 0.05 sec^{-1} determined under ASTM D 4491.
Geogrid must have a regular and defined open area. The open area must be from 50 to 90 percent of the total grid area.

Long Term Design Strength

Long Term Design Strength (LTDS) of geosynthetic reinforcement is the ultimate tensile strength in the primary strength direction divided by reduction factors. Calculate the LTDS from the guidelines in Geosynthetic Research Institute (GRI) Standard Practice GG4a, GRI GG4b, or GRI GT7.
The product of the appropriate reduction factors must be at least 1.30. Determine the reduction factor for creep using a 75-year design life for permanent applications and a 5-year design life for temporary applications. Determine the installation damage reduction factor based on the characteristics of the backfill materials used.
If test data is not available, use default values of reduction factors in the GRI Standard Practice to calculate LTDS.

Submit the LTDS and its supporting calculations at least 15 days before placing geosynthetic reinforcement. Do not install before the Engineer's approval. The LTDS must be signed by an engineer who is registered as a civil engineer in the State.

88-1.05 WATER POLLUTION CONTROL

Geosynthetics used for water pollution control must comply with:

Water Pollution Control Geosynthetics

Property	ASTM	Application				
		Silt Fence		Sediment Filter Bag	Gravel-Filled Bags	Temporary Cover
		Woven	Non-woven			
Grab breaking load, 1-inch grip, lb minimum in each direction	D 4632	120	120	255	205	200
Apparent elongation, percent minimum, in each direction	D 4632	15	50	--	--	50
Water flow rate, gallons per minute/square foot minimum and maximum average roll value	D 4491	10 - 100	100 - 150	80 - 200	80 - 150	75 - 120
Permittivity, sec^{-1} minimum	D 4491	0.1	1.1	1.0	0.2	1.0
Apparent opening size, inches maximum average roll value	D 4751	0.023	0.023	0.033	0.016	0.007
Ultraviolet resistance, percent minimum retained grab breaking load, 500 hr.	D 4355	70	70	70	70	70

88-1.06 CHANNEL AND SHORE PROTECTION

88-1.06A Rock Slope Protection

Rock slope protection (RSP) fabric must be a permeable, nonwoven, needle-punched geotextile. RSP fabric consists of 1 of the following:

1. Polyester
2. Polypropylene
3. Combined polyester and polypropylene

Polymers must be either virgin compounds or clean reworked material. Do not subject virgin compounds to use or processing other than required for initial manufacture. Clean reworked material must be previously processed material from the processor's own production that has been reground, pelletized, or solvated. RSP fabric must not consist of more than 20 percent by weight of clean reworked material. Do not use recycled materials from either post-consumer or post-industrial sources.

Class 8 or Class 10 RSP fabric must comply with:

Rock Slope Protection Fabric

Property	ASTM	Specification	
		Class 8	Class 10
Weight, oz/yd^2 minimum	D 5261	7.5	9.5
Grab breaking load, lb 1-inch grip, min. in each direction	D 4632	200	250
Apparent elongation, percent min., in each direction	D 4632	50	50
Permittivity, sec^{-1}, minimum	D 4491	1.0	0.70
Apparent opening size, U.S. Standard sieve size minimum and maximum	D 4751	70 - 100	70 - 100
Ultraviolet resistance, percent minimum retained grab breaking load, 500 hr.	D4355	70	70

88-1.07 PAVEMENT INTERLAYER

88-1.07A Paving Fabric

Geosynthetics used for paving fabric must be nonwoven. Paving fabric must comply with:

Geosynthetic Paving Fabric

Property	ASTM	Specification
Mass per unit area, oz/yd^2 minimum	D 5261	4.1
Grab breaking load, lb 1-inch grip, minimum, in each direction	D 4632	100
Apparent elongation, percent minimum in each direction	D 4632	50
Hydraulic bursting strength, psi minimum	D 3786	200
Melting point, °F minimum	D 276	325
Asphalt retention, gal/yd^2 minimum	D 6140	0.2

88-1.07B Paving Mat

Geosynthetics used for paving mat must be a nonwoven fiberglass and polyester hybrid material. Paving mat must comply with:

Geosynthetic Paving Mat

Property	ASTM	Specification
Breaking force, lb/2 inches minimum	D 5035	45
Ultimate elongation, percent maximum	D 5035	5
Mass per unit area, oz/ sq yd minimum	D 5261	3.7
Melting point, °F minimum	D 276	400
Asphalt retention, gal/yd^2 minimum	D 6140	0.10

88-1.07C Paving Grid

Geosynthetics used for paving grid must be a geopolymer material formed into a grid of integrally

connected elements with openings. Paving grid must comply with:

Geosynthetic Paving Grid

Property	Test	Specification		
		Class I	Class II	Class III
Tensile strength at ultimate, lb/in [a] minimum	ASTM D 6637	560 x 1,120	560	280
Aperture size, inch minimum	Calipered	0.5	0.5	0.5
Elongation, % maximum	ASTM D 6637	12	12	12
Mass per area, oz / sqyd minimum	ASTM D 5261	16	10	5.5
Melting point, °F minimum	ASTM D 276	325	325	325

Note:
[a] For Class I, machine direction x cross direction. For Class II and Class III, both directions.

88-1.07D Paving Geocomposite Grid

Paving geocomposite grid consists of paving grid specified under Section 88-1.07C, "Paving Grid," bonded or integrated with paving fabric specified under Section 88-1.07A, "Paving Fabric." Paving geocomposite grid must have a peel strength of at least 10 pounds per foot determined under ASTM D 413.

88-1.07E Geocomposite Strip Membrane

Geocomposite strip membrane must consist of various widths of strips manufactured from of asphaltic rubber and geosynthetics. Geocomposite strip membrane must comply with:

Geocomposite Strip Membrane

Property	ASTM	Specification
Strip tensile strength, lbs/inch minimum	D 882	50
Elongation at break, % minimum	D 882	50
Resistance to puncture, lbs. minimum	E 154	200
Permeance, perms maximum	E 96/E 96M	0.10
Pliability, 1/4 inch mandrel with sample conditioned at 25 °F	D 146	No cracks in fabric or bitumen
Melting point, °F	D 276	325

88-1.08 SEPARATION AND STABILIZATION

88-1.08A Subgrade Enhancement Geotextile

Subgrade enhancement geotextile must consist of either of the following:

1. Polyester
2. Polypropylene

Subgrade enhancement geotextile must comply with:

Subgrade Enhancement Geotextile

Property	ASTM	Specification [a]				
		Class A1	Class A2	Class B1	Class B2	Class B3
Elongation at break, %	D 4632	<50	≥50	<50	<50	≥50
Grab tensile strength, lb minimum	D4632	250	160	--	320	200
Wide width tensile strength at 5% strain, lb/ft minimum	D 4595	--	--	2,000	--	--
Wide width tensile strength at ultimate strength, lb/ft minimum	D 4595	--	--	4,800	--	--
Tear strength, lb minimum	D 4533	90	60	--	120	80
Puncture strength, lb minimum	D 6241	500	310	620	620	430
Permittivity, sec^{-1} minimum	D 4491	0.05	0.05	0.20	0.20	0.20
Apparent opening size, inches maximum	D 4751	0.012	0.012	0.024	0.012	0.012
Ultraviolet stability (retained strength after 500 hrs exposure), % minimum	D 4355	70	70	70	70	70

Notes:
[a] Specifications are based on minimum average roll value in the weaker principle direction except apparent opening size is based on maximum average roll value.

88-1.09 PAYMENT

The Department measures and pays for geosynthetics under the specifications requiring their use.

SECTION 92 ASPHALTS
(Issued 03-21-08)

Replace Section 92 with:

SECTION 92 ASPHALTS

92-1.01 DESCRIPTION

Asphalt is refined petroleum or a mixture of refined liquid asphalt and refined solid asphalt that are prepared from crude petroleum. Asphalt is:

1. Free from residues caused by the artificial distillation of coal, coal tar, or paraffin
2. Free from water
3. Homogeneous

92-1.02 MATERIALS

GENERAL

Furnish asphalt under the Department's "Certification Program for Suppliers of Asphalt." The Department maintains the program requirements, procedures, and a list of approved suppliers at:

http://www.dot.ca.gov/hq/esc/Translab/fpm/fpmcoc.htm

Transport, store, use, and dispose of asphalt safely.
Prevent the formation of carbonized particles caused by overheating asphalt during manufacturing or construction.

GRADES

Performance graded (PG) asphalt binder is:

Performance Graded Asphalt Binder

Property	AASHTO Test Method	Specification Grade PG 58-22 [a]	PG 64-10	PG 64-16	PG 64-28	PG 70-10
Original Binder						
Flash Point, Minimum °C	T 48	230	230	230	230	230
Solubility, Minimum % [b]	T 44	99	99	99	99	99
Viscosity at 135°C, [c]	T 316					
Maximum, Pa·s		3.0	3.0	3.0	3.0	3.0
Dynamic Shear,	T 315					
Test Temp. at 10 rad/s, °C		58	64	64	64	70
Minimum G*/sin(delta), kPa		1.00	1.00	1.00	1.00	1.00
RTFO Test, [e]	T 240					
Mass Loss, Maximum, %		1.00	1.00	1.00	1.00	1.00
RTFO Test Aged Binder						
Dynamic Shear,	T 315					
Test Temp. at 10 rad/s, °C		58	64	64	64	70
Minimum G*/sin(delta), kPa		2.20	2.20	2.20	2.20	2.20
Ductility at 25°C	T 51					
Minimum, cm		75	75	75	75	75
PAV [f] Aging,	R 28					
Temperature, °C		100	100	100	100	110
RTFO Test and PAV Aged Binder						
Dynamic Shear,	T 315					
Test Temp. at 10 rad/s, °C		22 [d]	31 [d]	28 [d]	22 [d]	34 [d]
Maximum G*sin(delta), kPa		5000	5000	5000	5000	5000
Creep Stiffness,	T 313					
Test Temperature, °C		-12	0	-6	-18	0
Maximum S-value, Mpa		300	300	300	300	300
Minimum M-value		0.300	0.300	0.300	0.300	0.300

Notes:

a Use as asphalt rubber base stock for high mountain and high desert area.

b The Engineer waives this specification if the supplier is a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt."

c. The Engineer waives this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.

d Test the sample at 3°C higher if it fails at the specified test temperature. G*sin(delta) remains 5000 kPa maximum.

e "RTFO Test" means the asphaltic residue obtained using the Rolling Thin Film Oven Test, AASHTO Test Method T 240 or ASTM Designation: D 2872. The residue from mass change determination may be used for other tests.

f. "PAV" means Pressurized Aging Vessel.

Performance graded polymer modified asphalt binder (PG Polymer Modified) is:

Performance Graded Polymer Modified Asphalt Binder [a]

Property	AASHTO Test Method	Specification Grade		
		PG 58-34 PM	PG 64-28 PM	PG 76-22 PM
Original Binder				
Flash Point, Minimum °C	T 48	230	230	230
Solubility, Minimum % [b]	T 44[c]	98.5	98.5	98.5
Viscosity at 135°C, [d] Maximum, Pa·s	T 316	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C	T 315	58	64	76
Minimum G*/sin(delta), kPa		1.00	1.00	1.00
RTFO Test , Mass Loss, Maximum, %	T 240	1.00	1.00	1.00
RTFO Test Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C	T 315	58	64	76
Minimum G*/sin(delta), kPa		2.20	2.20	2.20
Dynamic Shear, Test Temp. at 10 rad/s, °C	T 315	Note e	Note e	Note e
Maximum (delta), %		80	80	80
Elastic Recovery[f], Test Temp., °C	T 301	25	25	25
Minimum recovery, %		75	75	65
PAV[g] Aging, Temperature, °C	R 28	100	100	110
RTFO Test and PAV Aged Binder				
Dynamic Shear, Test Temp. at 10 rad/s, °C	T 315	16	22	31
Maximum G*sin(delta), kPa		5000	5000	5000
Creep Stiffness, Test Temperature, °C	T 313	-24	-18	-12
Maximum S-value, MPa		300	300	300
Minimum M-value		0.300	0.300	0.300

Notes:

a. Do not modify PG Polymer Modified using acid modification.
b. The Engineer waives this specification if the supplier is a Quality Supplier as defined by the Department's "Certification Program for Suppliers of Asphalt."
c. The Department allows ASTM D 5546 instead of AASHTO T 44
d. The Engineer waives this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.
e. Test temperature is the temperature at which G*/sin(delta) is 2.2 kPa. A graph of log G*/sin(delta) plotted against temperature may be used to determine the test temperature when G*/sin(delta) is 2.2 kPa. A graph of (delta) versus temperature may be used to determine delta at the temperature when G*/sin(delta) is 2.2 kPa. The Engineer also accepts direct measurement of (delta) at the temperature when G*/sin(delta) is 2.2 kPa.
f. Tests without a force ductility clamp may be performed.
g. "PAV" means Pressurized Aging Vessel.

SAMPLING

Provide a sampling device in the asphalt feed line connecting the plant storage tanks to the asphalt weighing system or spray bar. Make the sampling device accessible between 24 and 30 inches above the platform. Provide a receptacle for flushing the sampling device.
Include with the sampling device a valve:

1. Between 1/2 and 3/4 inch in diameter

2. Manufactured in a manner that a one-quart sample may be taken slowly at any time during plant operations
3. Maintained in good condition

Replace failed valves.
In the Engineer's presence, take 2 one-quart samples per operating day. Provide round, friction top, one-quart containers for storing samples.

92-1.03 EXECUTION

If asphalt is applied, you must comply with the heating and application specifications for liquid asphalt in Section 93, "Liquid Asphalts."

92-1.04 MEASUREMENT

If the contract work item for asphalt is paid by weight, the Department measures asphalt tons by complying with the specifications for weight determination of liquid asphalt in Section 93, "Liquid Asphalts."
The Engineer determines the asphalt weight from volumetric measurements if you:

1. Use a partial asphalt load
2. Use asphalt at a location other than a mixing plant and no scales within 20 miles are available and suitable
3. Deliver asphalt in either of the following:

    3.1. A calibrated truck with each tank accompanied by its measuring stick and calibration card
    3.2. A truck equipped with a calibrated thermometer that determines the asphalt temperature at the delivery time and with a vehicle tank meter complying with the specifications for weighing, measuring, and metering devices in Section 9-1.01, "Measurement of Quantities"

If you furnish hot mix asphalt from a mixing plant producing material for only one project, the Engineer determines the asphalt quantity by measuring the volume in the tank at the project's start and end provided the tank is calibrated and equipped with its measuring stick and calibration card.

The Engineer determines pay quantities from volumetric measurements as follows:

1. Before converting the volume to weight, the Engineer reduces the measured volume to that which the asphalt would occupy at 60 °F.
2. The Engineer uses 235 gallons per ton and 8.51 pounds per gallon for the average weight and volume for PG and PG Polymer Modified asphalt grades at 60 °F.
3. The Engineer uses the Conversion Table in Section 93, "Liquid Asphalts."

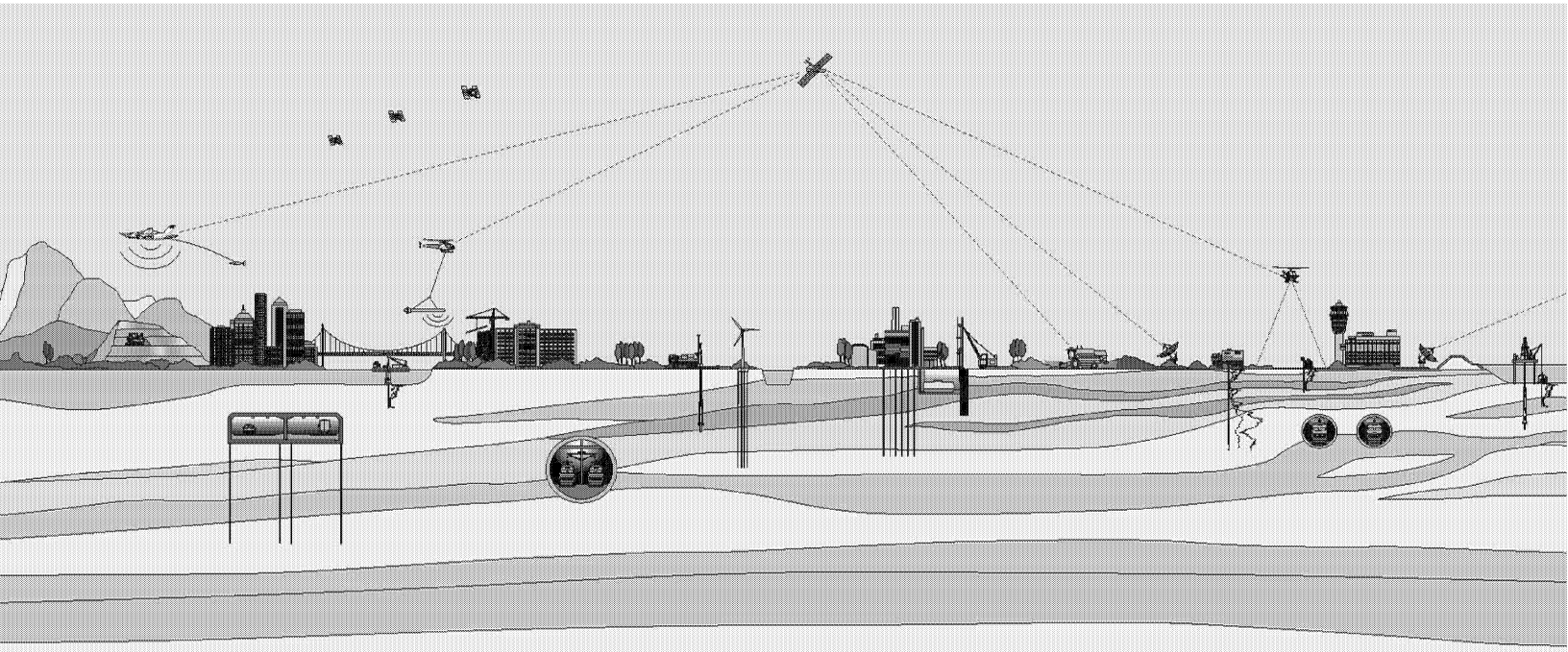
ATTACHMENT A
GEOTECHNICAL ENGINEERING REPORT

FUGRO WEST, INC.

GEOTECHNICAL REPORT
SANTA ROSA CREEK ROAD SLIP OUT
0.9 MILES WEST OF STATE ROUTE 46
SAN LUIS OBISPO COUNTY, CALIFORNIA

Prepared for:
San Luis Obispo County

March 30, 2010



FUGRO WEST, INC.

660 Clarion Court, Suite A
San Luis Obispo, California 93401
Tel: (805) 542-0797
Fax: (805) 542-9311

March 30, 2010
Project No. 3014.040

County of San Luis Obispo
Public Works Department
County Government Center, Room 207
San Luis Obispo, California 93408

Attention: Mr. Mike Britton

Subject: Geotechnical Report, Santa Rosa Creek Road, Slip out 0.9 miles north of State Route 46, San Luis Obispo County, California

Dear Mr. Britton:

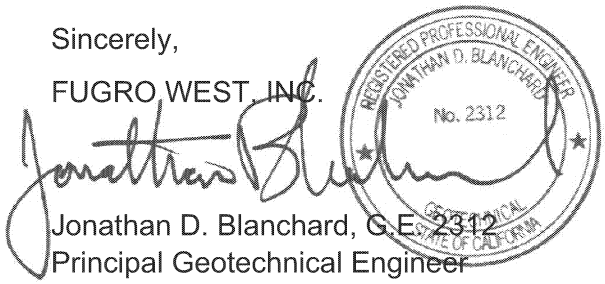
Fugro is pleased to submit this Geotechnical Report for the design of a repair that occurred on Santa Rosa Creek Road about 0.9 miles north of Highway 46 in San Luis Obispo County, California. The purpose of this report is to provide geotechnical recommendations for the restoration of the slope above Rocky Creek using geosynthetic reinforcement and rock slope protection. This report was prepared in accordance with the scope of services presented in our proposal dated February 25, 2010, and authorized by the County Blanket Purchase Order No. 25005649 dated March 5, 2010.

Conceptual alternatives to restore the slope were presented in our draft memorandum to the County dated March 10, 2010. The concept incorporating geosynthetic reinforcement and rock slope protection was selected during our meeting on March 23, 2010 because the team felt it is the most consist with the environmental documents for the project. This report presents data collected from our field exploration and laboratory testing programs, results of slope stability analyses, and recommendations for the design of the slope restoration.

Please contact the undersigned if you have questions regarding this report, or require additional information.

Sincerely,

FUGRO WEST, INC.



Jonathan D. Blanchard, G.E. 2312
Principal Geotechnical Engineer

Chad Stoehr
Staff Engineer II

Copies: 3 – Addressee, 1 PDF

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APPENDIX A – FIELD EXPLORATION LOGS

APPENDIX B – LABORATORY TEST RESULTS

APPENDIX C – SLOPE STABILITY RESULTS

1.0 SITE AND PROJECT DESCRIPTION

The project generally consists of repairs to a landslide that occurred on Santa Rosa Creek Road about 0.9 miles west of Highway 46. The location of the site relative to nearby streets and geographic landmarks is shown on Plate 1, Vicinity Map. The existing topography and layout of the site is shown on Plate 2, Field Exploration Plan.

1.1 EXISTING SITE

The existing site grades are shown on plans and cross sections provided by the County (2010). At this location Santa Rosa Creek Road is constructed along a northeast facing hillside above Rocky Creek. The roadway is paved with asphalt and graded with northbound side fills and south side cuts. In the vicinity of the slip out, the northbound side of the road is bordered by an approximately 35 feet high, relatively steep slope that is inclined to about 1.1h:1v (horizontal to vertical). The eastbound side of the road is cut into the hillside to height of approximately 30 feet. The cut slope is as steep as about ¾:1, but is locally eroded or has experienced instability that appears to have caused the slope face to flatten and become irregular. The grade of the road slopes down to the bridge at Rocky Creek. The grade of the roadway near the center of the slide (about Sta. 13+00) is elevation (el.) 1,335 feet with the corresponding water level of Rocky Creek at approximately el. 1,304 feet. Rocky Creek flows south through the site.

The slope within the slip-out is inclined to about ½:1 to near vertical. The head of the slide is at approximately the existing edge of pavement. At the time of our 2010 field exploration program and site visits, the upper approximately 1/3 of the slide area was covered with a tarp secured with cords and sandbags. An asphalt berm had been placed along the northbound shoulder through the slide area.

Approximately 1- to 2-inch wide tension cracks extending up to the edge of pavement were observed during our site visits. The cracks appear recent, and suggest that recent movement and likely extension of the instability of the slope has occurred in association with this winter's rain. The limits of the slide and observed instability were noted on the County (2010) topography (see Plate 2).

1.2 BACKGROUND

The County previously developed a concept to repair the instability at this location in 2005 (San Luis Obispo County 2005). The concept generally consisted of placing rock slope protection (RSP) along the base of the slope and reconstructing the slope using geosynthetic reinforced earth (GRE). The finished slope shown on the 2005 plan is shown inclined to ¾h:1v within the RSP and to ½h:1v within the GRE. The limits of the slide shown on the 2005 plan extends approximately 60 feet along the westerly bank of the creek. This plan is the basis for the currently approved Negative Declaration and supporting environmental permits for the project.

Fugro (2010) submitted a memo that presented a similar GRE concept and other conceptual alternatives to repair the slope. Based on consultations and a meeting with the

County on March 23, 2010, it was decided that the design of the repair should be similar to the concept and limits shown on the previous County (2005) plan to substantially conform to the environmental permits.

1.3 PROPOSED PROJECT

The proposed project will generally consist of reconstructing the slope as a GRE with RSP armoring placed along the toe of the slope to protect against stream bank erosion and scour. The slope will be approximately 30 to 35 feet in height and extend along approximately 120 feet of the stream bank based on survey measurements by the County (2010). The restored slope will be designed to match into the existing approximately 1.1h:1 slopes either side of the slide area. The RSP will extend at least above the elevation of the opposite stream bank.

2.0 WORK PERFORMED

2.1 PURPOSE

The purpose of this report is to provide recommendations for the design of the slope restoration. The primary geotechnical considerations that we evaluated for the project are characterization of the subsurface materials, alternatives to repair the slope, slope stability, and the design of the slope using geosynthetic reinforcement.

2.2 SCOPE OF WORK

To evaluate the geotechnical considerations for the project, we performed the following scope of work:

- Consulted with the County to review our approach to providing geotechnical services, and obtain background information, existing topography, cross sections, and previous plans available for use in our evaluation;
- Prepared a health and safety plan for our work, visited the site to mark the locations of the explorations and review site conditions, and contacted Underground Services Alert (USA) to review the locations relative to underground utilities;
- Performed a one-day field effort to drill a boring along the top of the slope to a depth of approximately 50 feet below the road surface, map various geologic features observed at the site, and obtain rock samples from outcrops in the project area;
- Performed laboratory tests on soil and rock samples recovered from the field exploration;
- Prepared a memorandum (Fugro 2010) to summarize geotechnical conditions at the site, characteristics of the observed slope instability, conditions that impact the project and existing roadway, and geotechnical alternatives to repair the slope along this stretch of the road;

- Evaluated the stability of the existing slope and proposed GRE slope repair concept as a basis for providing the recommendations in this report; and
- Prepared this Geotechnical Report, with supporting graphics and the data collected, for the design of the selected the concept to restore the slope using geosynthetic reinforcements and rock slope protection.

2.3 FIELD EXPLORATION

Field exploration consisted of drilling and sampling a hollow-stem-auger boring, collecting rock samples, and geologic mapping. The field exploration was performed on March 9, 2010. The log for the boring is presented in Appendix A. The boring and sample locations, discontinuity data collected, and selected geologic features observed at the site are shown on Plate 2.

2.3.1 Hollow Stem Auger Drilling and Rock Coring

The drilling subcontractor for the project was GeoSolutions of San Luis Obispo, California. GeoSolutions used a CME55 track-mounted drill rig equipped with 8-inch-diameter hollow-stem augers to advance the boring. The hollow stem auger was used to advance the boring to a depth of approximately 20 feet below the existing ground surface. The boring was then advanced to the total depth of 50 feet using rock coring.

During auguring, the boring was sampled using a 2-inch outside diameter standard penetration test (SPT) split-spoon sampler and a 3-inch outside diameter modified California split-spoon sampler. The SPT sampler was used without liners. The modified California sampler was used with brass liners. The samplers were driven into the materials at the bottom of the drill hole using a 140-pound automatic trip hammer with a 30-inch drop. The blow count (N-value) is the number of blows from the hammer that were needed to drive the sampler 1 foot after the sampler had been seated at least 6 inches into the material at the bottom of the hole. Bulk samples were collected from the drill cuttings retrieved from the auger flights. The sample intervals, N-values, a description of the subsurface conditions encountered and other field and laboratory data are presented on the logs of the borings in Appendix A.

Below 20 feet, the boring was sampled using a CME triple-tube NQ sized rock core system. The core barrel is run on a wireline system and was advanced using a diamond bit with drilling fluid delivered directly to the tip of the rock coring bit. Rock cores 1-7/8 inches in diameter were taken in 5-foot long runs. Rock quality designation (RQD) and percent recovery are noted on the boring log. Photographs for the rock core samples are also presented in Appendix A.

2.3.2 Block Samples

Block samples were taken by hand from various outcrops during the field exploration program. The samples were taken by collecting blocks of rock from the face of slopes, outcrops, or slide material where the rock was exposed. Descriptions of samples obtained are included in the laboratory results. The locations of the samples are noted on Plate 2.

2.3.3 Geologic Mapping

Geologic mapping consisted of noting selected geologic features observed at the site such as rock types at outcroppings, springs, limits of instability, and predominant bedding and joint discontinuities. Discontinuity measurements generally consist of using a hand-held compass to estimate the strike and dip of bedding and joint planes within the rock. The data collected is summarized graphically on Plate 2. The strike represents the orientation of the discontinuity plane in the horizontal direction. The dip represents the inclination and direction of that plane.

2.4 LABORATORY TESTING

Laboratory testing was performed on selected samples obtained during the field exploration. Laboratory tests for unit weight, moisture content, grain size, plasticity (Atterberg limits), direct shear strength, point load strength index for intact rock, and laboratory compaction (modified Proctor) were performed as part of this program. The tests were performed in general accordance with the applicable standards of ASTM. Results of laboratory testing are presented in Appendix B.

2.5 GENERAL CONDITIONS

Fugro prepared the conclusions, recommendations, and professional opinions of this report in accordance with the generally accepted geotechnical principles and practices at this time and location. This warranty is in lieu of all other warranties, either expressed or implied. This report was prepared for the exclusive use of the County of San Luis Obispo and their authorized agents only. It is not intended to address issues or conditions pertinent to other parties, projects or for other uses. The report and the drawings contained herein are not intended to act as construction drawings or specifications. Explorations and services have not been requested nor performed to assess the presence or absence of hazardous or toxic materials.

The scope of services did not include any environmental assessments for the presence or absence of hazardous/toxic materials in the soil, surface water, groundwater, or atmosphere. Any statements, or absence of statements, in this report or data presented herein regarding odors, unusual or suspicious items, or conditions observed are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous/toxic assessment.

Soil and rock deposits can vary in type, strength, and other geotechnical properties between points of observations and exploration. Additionally, groundwater and soil moisture conditions also can vary seasonally or for other reasons. Therefore, we do not and cannot have a complete knowledge of the subsurface conditions underlying the site. The conclusions and recommendations presented in this report are based upon the findings at the points of exploration, and interpolation and extrapolation of information between and beyond the points of observation, and are subject to confirmation based on the conditions revealed by construction.

3.0 SITE CONDITIONS

3.1 GEOLOGIC SETTING

The regional geology is mapped by Hall et al. (1979). Hall et al. mapped the hillside in the site vicinity as being underlain by sedimentary bedrock of the Toro Formation. Locally the bedrock surface is concealed by surficial sediments of artificial fill, colluvium, and landslide deposits. The Toro Formation is typically interbedded shale or claystone and sandstone. Alluvium is deposited along the creek. As exposed at the site, the rock is predominantly massive claystone that is locally interbedded with units of shale, sandstone and conglomerate. Hall et al mapped the Toro Formation as being in fault contact with units of serpentine and Franciscan Rocks upslope of the site. The fault appears to be a splay within the Oceanic Fault zone. The Oceanic fault is associated with the 2003 San Simeon Earthquake; however, no fault splays are shown as being mapped through the site.

3.2 SUBSURFACE CONDITIONS

Our description of the soil and groundwater conditions is based on the results of the field exploration and laboratory testing programs performed for this study. The locations of the explorations are shown on Plate 2 and the logs and corresponding field data are presented in Appendix A. The subsurface conditions encountered at the site consist of various surface sediments of artificial fill, colluvium and landslide deposits overlying Toro Formation bedrock. The area along the creek is underlain by alluvium. The predominant geologic units encountered at the site are described below.

Landslide Deposits (Qls): The predominant areas of landsliding and slope instability are noted on Plate 2. The subject landslide is located on the relatively steep northeast facing slope below the northbound shoulder of Santa Rosa Creek Road. The landslide deposits are generally talus deposited at the base of the landslide that was composed of displaced material from the artificial fill, colluvium and Toro Formation. Tension cracks observed adjacent to the road were used to approximate the limits of the landslide. There also appears to be a landslide within the creek bank adjacent to the south abutment of the Rocky Creek Bridge.

Slope instability such as erosion, rock fall, and slumping of materials is also present along the cut slope that borders the southbound shoulder of Santa Rosa Creek Road. The predominant area of slope instability noted on Plate 2, appears to be associated with erosion and displaced over burden soil (colluvium) that has wasted downslope as a result of a daylighting spring and seepage conditions on the slope.

Artificial Fill (Af). Artificial fill generally consists of pavement and embankment fill placed as part of the construction of Santa Rosa Creek Road. Artificial fill was encountered in DH-01 to approximately 4.5 below the road surface. The artificial fill consisted predominantly of lean clay and clayey sand with varying amounts of gravel. The gravel clasts were mostly subangular and are likely derived from the local bedrock and colluvium materials. The overlying pavement consisted of approximately 6 inches of asphalt over about 8 inches of a base material. The artificial fill was underlain by colluvium in DH-1.

Plasticity (Atterberg limits) tests performed on a bulk sample of clayey sand obtained from the artificial fill had a liquid limit of 36 and a plasticity index of 20. The laboratory compaction (modified Proctor) test performed on the same sample had a maximum dry unit weight of approximately 133 pounds per cubic foot (pcf) at an optimum moisture content of about 8 percent. The shear strength characteristics of the remolded material estimated from direct shear tests had a friction angle of approximately 28 degrees and a cohesion of approximately 800 pounds per square foot.

Colluvium (Qcol): Colluvium is generally displaced and eroded material that has been deposited downslope by gravity and erosion. Approximately 1.5 feet of colluvium was encountered below the artificial fill in DH-1 and was sampled on the slope surface at location X5 (see Plate 2). Colluvium was also locally exposed along the hillsides above and below Santa Rosa Creek Road. The colluvium generally consisted of very stiff to hard gravelly clay. The colluvium also contains rock fragments of sandstone and claystone ranging from cobble to boulder size material.

Laboratory tests performed on a sample of the colluvium had a dry unit weight of approximately 116 pcf and a corresponding moisture content of 13 percent. Plasticity (Atterberg limits) tests performed on a sample of clay obtained from the colluvium had a liquid limit of 37 and a plasticity index of 18.

Alluvium (Qa): Alluvium is deposited along the channel of Rocky Creek and likely underlies the flat lying areas east of the creek. The alluvium exposed along the creek is predominantly gravel, cobble and boulder sized materials. The clasts within the alluvium are mostly angular to subangular and range up to about 2 to 3 feet in size where exposed. The alluvium appears to pinch out against the west bank of the creek where bedrock was locally exposed in the creek banks.

Toro Formation (KJt). Toro Formation was encountered below the artificial fill and colluvium in DH-1 and is exposed at various locations along the road cut and creek banks at the site. The Toro Formation was encountered at approximately 6 feet below the road surface in DH-1 and was encountered to the total 50-foot depth of that exploration. As noted on the log for DH-1, the rock was very intensely to intensely fractured and water circulation was commonly lost during the coring. Losses of 100 to 300 gallons of water are noted on the log as being lost at various depths during the drilling. The Toro Formation generally consisted of two units: an upper oxidized olive brown rock and a less oxidized dark grey rock.

The oxidized unit of the Toro Formation was exposed along the roadside at the site and was encountered to approximately 18 feet in DH-1. The oxidized rock consisted predominantly of soft to moderately soft olive brown claystone and fine sandstone. The oxidized material is generally decomposed to intensely weathered and fractured at or near the surface of the rock. The oxidized unit was interbedded with sandstone and shale. Sand and soil deposits were observed along joints and fractures in the shallower units of the Toro Formation.

Dark grey, less oxidized, Toro Formation was encountered at approximately 18 feet below the road surface in DH-1 and was exposed along the downstream flank of the landslide

adjacent to Rocky Creek. The dark grey rock was generally very intensely to intensely fractured or sheared, moderately weathered, moderately hard claystone.

Bedding observed within the Toro Formation was observed within an outcrop adjacent to Rocky Creek. The bedding had a dip of approximately 42 degrees to the southwest, into the hillside, with a strike of N55W. A predominant set of joints was observed within the scarp of the upstream side of the landslide. The joint set appeared to be a controlling structure of the landslide feature and had a dip of approximately 56 degrees to the northeast, down slope, with a strike of N55W. A set of joints at the same location was observed to dip approximately 38 degrees southeast, into the hillside, with a strike of S65W. Our field measurements are shown on Plate 2.

The results of laboratory tests performed on samples of Toro Formation had dry unit weights ranging between approximately 126 to 150 pounds per cubic foot and moisture contents ranging between approximately 3 to 6 percent. Plasticity (Atterberg limits) tests performed on sediments of the claystone had a liquid limit of 32 and a plasticity index of 14 indicating the sediment is classified as “lean clay (CL)”.

Point load tests performed on block samples of the oxidized Toro Formation had compressive strengths ranging from approximately 98 to 4,200 pounds per square inch (psi) corresponding to extremely weak to medium strong rock. Point loading commonly resulted in failure along healed joint and discontinuities within the oxidized rock. Point load tests performed on core samples of the less oxidized Toro Formation had compressive strengths of 1,900 to 6,900 psi corresponding to weak to medium strong rock.

Joint strength was estimated from direct shear tests on samples of rock that were precut or secured to shear along the joint prior to testing. The shear strength along the precut and joint surfaces was estimated from the test as having a friction angle of approximately 19 to 27 degrees. The cohesion was “0” along the precut joint, and approximately 200 psf along the natural joint, which was slightly irregular.

3.3 GROUNDWATER

Groundwater was not encountered in DH-1 prior to adding water to the hole at 20 feet deep to begin rock coring. As noted on Plate 2, springs were observed daylighting along the base of the slope and ditch along the southbound shoulder of the road. Water was flowing in Rocky Creek at the time of our March 2010 field exploration program. The approximate limits of the water surface are noted on County (2010) topographic map. Stream flow, groundwater and soil moisture conditions will vary seasonally due to changes in runoff, storm conditions, rainfall and other factors.

4.0 SLOPE STABILITY ANALYSIS

Slope stability analyses were performed to evaluate the existing slope conditions relative to potential causes of failure to check the reasonableness of our slope model, and as a basis for providing recommendations for the design of the slope restoration using geosynthetic reinforced

earth. A cross section through approximately the center of the landslide, near Sta. 13+12, was selected for the analyses. The ground surface profile along the section was estimated using topography and cross section information provided by the County (2010). Slope stability analyses were performed for static loading and for pseudostatic (earthquake) loading conditions. The slopes were evaluated with respect to the stability criteria discussed below. Output and results from the stability analyses are presented in Appendix C.

4.1.1 Slope Stability Criteria

Slope stability criteria were selected in accordance with the State's Guidelines for Evaluating and Mitigating Seismic Hazards (CDMG 1997) and San Luis Obispo County. For the purpose of evaluating analytical results, slopes are considered stable when the estimated factor of safety is at least 1.5 under static loading conditions, and at least 1.1 under pseudostatic (earthquake) loading conditions when using a horizontal pseudostatic coefficient of 0.15. A factor of safety 1.0 represents the theoretical boundary below which a slope is no longer stable and experiences failure. Factors of safety greater than 1.0 are theoretically stable; however, a factor of safety of at least 1.5 is typically used to define stable slope conditions in practice to help account for uncertainties associated with characterizing subsurface conditions and limitations associated with the geotechnical analyses used to evaluate slope stability.

4.1.2 Analysis Methods

The slope stability analyses were performed using the computer program GSTABL7 with STEDwin, Version 2.005 (Gregory 2006). GSTABL7 was used to estimate factors of safety for slope stability under static and pseudostatic loading conditions. GSTABL7 requires the user to input the surface and subsurface profile boundaries; soil properties including unit weight (γ), friction angle (ϕ) and cohesion (c); groundwater levels; and the analysis method to be used.

For geosynthetic reinforced slope conditions, the user also inputs the bottom and top elevation of the reinforced portion of the slope, the length of reinforcing, the strength of geosynthetic material, and the vertical spacing between layers of reinforcement. The parameters for the geosynthetic reinforced slope are varied by the user to estimate the limits and strength of geosynthetic that will satisfy the slope stability criteria.

The soil properties and conditions used for our analyses are presented in Appendix C. Slope stability analyses were performed using the modified Bishop method to estimate factors of safety for circular failure surfaces. A key to the results of our slope stability analyses is presented on Plate C-1 in Appendix C.

4.1.3 Selection of Shear Strength Parameters

Effective shear strength parameters (ϕ and c) were selected for slope stability analyses based on laboratory direct shear tests, characterization of the rock mass, and assumed strength parameters for imported materials. Laboratory tests were performed on driven ring samples obtained from the field exploration program.

Anisotropic strength parameters (strength parameters defined in two directions in one type of material) were used to characterize the strength of the Toro Formation and account for predominant joint discontinuities within the rock that potentially influence the stability of the slope. For potential slip surfaces inclined between 45 and 65 degrees in the downslope direction, the strength of the material was considered cohesionless and the friction angle was estimated from pre-cut direct shear tests performed on a rock sample (ϕ = 19 degrees). For potential slip surfaces oriented outside of those limits (crossing the predominant joint sets), the rock mass strength of the Toro Formation was estimated using rock properties and Hoek-Brown classification. The Mohr-Coulomb fit (ϕ and c) were then estimated using the computer program RocLab (Rocscience 2007).

The selected strength properties were then used to analyze the existing and assumed previous slope conditions to check and essentially calibrate the slope stability for subsequent analyses. The shear strength parameters were then checked to estimate whether or the not the factors of safety estimated for the existing and previous slope conditions seemed reasonable: near 1 for the existing slope condition and less than 1 for the previous slope condition. Once calibrated, the slope stability model and selected parameters were used to analyze proposed slope conditions.

4.1.4 Groundwater Considerations

Groundwater was not encountered in the drill hole, however, groundwater was included in our analysis of the adjacent near-vertical slope to simulate groundwater seepage that may be occurring during storm events or periodically flows along joints or fractures within the rock. As discussed in this report, we observed springs on the slope above the roadway and water was flowing in the creek at the time of our exploration. A groundwater surface approximately along the boundary between the oxidized and less oxidized units of the Toro Formation was used for the analyses, although the groundwater movement and conditions within the Toro Formation are generally not known. The location of the groundwater table is noted on the slope stability analysis results that are included in Appendix C. The groundwater was assumed to be effectively drained for the analyses performed for the geosynthetic reinforced slope condition, as is recommended in this report.

4.1.5 Summary and Discussion of Slope Stability Results

The slope can be restored to a relatively stable condition using geosynthetic reinforcement as recommended in this report. The analyses were used to estimate the reinforcement needed to construct a 1h:1v geosynthetic reinforced earth slope to support the roadway. Detailed recommendations (the strength, length, spacing, backfill) for the design and placement of the reinforcement are provided in the subsequent sections of this report. The recommendations provide for the minimum estimated factors of safety used to define stable slope conditions under static and pseudostatic loads. A summary of the slope stability analyses is provided below. The results of these analyses are presented in Appendix C.

The observed instability of the existing slope appears to be influenced by erosion of the toe of the slope along Rocky Creek, the presence of adversely oriented joint sets within the Toro

Formation that weaken the rock mass relative to slope stability, and potential groundwater seepage or increased moisture conditions within the rock. Additionally, the upper portion of the slope appears to have been inclined to about 1.1h:1v within the overlying artificial fill and colluvium soil units. The approximately 1h:1 inclination is generally too steep and potentially unstable for a soil slope. The estimated factor of safety is approximately 0.9 for the previous slope condition considered (with the slope assumed to be inclined to about 1.1 prior to the slope failure along the section analyzed). The estimated factor of safety for the existing slope condition is approximately 1.06 (with the slope inclined to about 0.5h:1v to 1:1h:v along the section analyzed). The existing slope is considered potentially unstable, and the estimated failure surfaces associated with instability of the slope would likely extend into Santa Rosa Creek Road.

5.0 CONCLUSIONS AND RECOMMENDATIONS

We prepared the conclusions and recommendations for this report based on our geotechnical evaluation of the site conditions and discussions with the County.

5.1 SUMMARY OF FINDINGS

- Within the project limits, Santa Rosa Creek Road is constructed along a relatively steep northeast facing hillside above Rocky Creek. The road is constructed with upslope cuts and relatively shallow down hill fills that were been placed over the steep banks (inclined to about 1.1h:1v) of Rocky Creek.

- The hillside and roadway are underlain by fractured and weathered rock of the Toro Formation. The rock is compromised of claystone with interbedded shale and sandstone. The strength, quality and hardness of the rock are variable. Laboratory tests on intact rock specimens indicate an extremely weak to moderately strong formation.

- The observed instability of the slope below Santa Rosa Creek appears to be associated with erosion of the toe of the slope due to stream flow along Rocky Creek, adverse joint sets within the Toro Formation that weaken the rock relative to slope stability, and potentially unknown groundwater seepage and moisture conditions within the slope.

- The slope can be restored to a relatively stable condition using geosynthetic reinforcement as recommended in this report. We have provided recommendations to design the slope to an inclination of 1h:1v using geosynthetic reinforced earth to support the roadway. That face of the slope should be covered with erosion control matting to assist in establishing vegetation on the slope. Rock should be placed along the base of the slope help protect the slope from stream bank erosion. Detailed recommendations for the design and placement of the reinforcement are provided in the subsequent sections of this report.

- The temporary backslope should be designed by the contractor; however, based on limited slope stability analyses and the slope conditions observed at the site, we

suggest that the temporary backslope for the GRE be cut no steeper than 1:1, which is similar to the existing slope inclinations downslope of Santa Rosa Creek Road. The geologic conditions exposed by the excavation should be reviewed by the contractor and geotechnical professional during construction to further evaluate the stability and characteristics of the rock once it is exposed.

5.2 GRADING – GENERAL

5.2.1 Grading

Fill placement and grading operations should be performed according to the grading recommendations of this report. We recommend that, unless otherwise noted, fill and backfill materials be compacted to at least 90 percent relative compaction, as determined by the latest approved edition of ASTM Test Method D1557, except that material placed below the pavement within the upper 3 feet of the fill should be compacted to at least 95 percent relative compaction.

5.2.2 Suggested Material Specifications

The following presents suggested specifications for materials discussed or recommended in this report.

Compacted fill material shall consist of imported or on-site material free of organics, oversize rock (greater than 3 inches), trash, debris, corrosive, and other deleterious materials. Imported fill materials shall be reviewed by the geotechnical engineer prior to being brought to the site. On-site soil or imported materials shall conform to the requirements where the material is being placed.

Drainage material to be placed in subsurface drains shall conform to Section 68-1.025 of the Caltrans Standard Specifications for Class 2 permeable material. Specific measures shall be taken to avoid segregation of the material during transport and placement of the material at the site. Filter fabric shall not be within the limits of the geosynthetic reinforced embankment.

Geogrid Reinforcement, used to improve surficial stability in the transition zones where slope inclinations are steeper than 2:1, shall consist of primary and intermediate reinforcement. Primary reinforcement shall have a long term design strength (LTDS) of at least 3,000 pounds per foot in the machine direction as determined by the Geosynthetic Research Institute Test Method GG4. Intermediate geogrid reinforcement shall have a tensile strength at 5 percent strain of at least 500 pounds per foot in the machine and cross machine direction as determined by ASTM D6637. Geogrid shall be a regular network of integrally connected polymer tensile elements with aperture geometry sufficient to permit significant mechanical interlock with the surrounding soil. Geogrid shall obtain pullout resistance from the soil by a combination of shearing on the plane surfaces parallel to the direction of shearing and soil bearing on transverse grid surfaces normal to the direction of grid movement.

Geogrid shall meet the following requirements:

1. Geogrid shall have an open area between 50 and 90 percent.

2. At the long term design strength in the machine direction, the maximum strain shall not exceed 5 percent.

3. Geogrid shall be resistant to naturally occurring alkaline and acidic soil conditions and to attack by bacteria.

4. Geogrid shall be stabilized with at least 1 percent carbon black to be resistant to the effects of long-term exposure to ultra-violet rays.

Geotextile for separation (filter fabric) shall be placed around open-graded materials (pea gravel). The geotextile shall conform to the requirements of Section 88-1.03 of the Caltrans Standard Specifications for Filter Fabric-underdrains,.

Geotextile (filter fabric) to be placed below rock slope protection shall consist of geotextile that conforms to the requirements outlined in Section 88-1.04 of the Caltrans Standard Specifications for Rock Slope Protection Fabric.

Geosynthetic Reinforced Embankment Backfill placed more than 2 feet horizontal from the finished slope face shall consist of imported material conforming to Section 19-3.06, "Structure Backfill," of the Standard Specifications and shall have a sand equivalent value of at least 30. Backfill placed within the outer 2 feet of the embankment shall be onsite soil or material approved by Engineer suitable for supporting the planned vegetation.

Gravel to be placed around the collector pipe of the drainage system shall conform to ASTM C-33 No. 8 coarse aggregate (pea gravel). The gravel shall be enclosed in a filter fabric and be outlet to a solid pipe and discharged beyond the slope face.

5.2.3 Clearing and Grubbing

Prior to commencing grading operations in areas that will receive compacted fill, soil containing debris, landslide deposits, organics, pavement, uncompacted fill, or other unsuitable materials, should be removed. Depressions or disturbed areas left from the removal of such material should be replaced with compacted fill. Following the removal of the existing landslide debris, the geotechnical professional should review the exposed subgrade (and/or temporary construction slope) to confirm that the landslide materials are removed, and whether or not deepening or widening of the excavation is recommended prior to placing fill.

5.2.4 Fill Placement

In areas to receive the fill, soil exposed subgrade should be scarified to a depth of 9 inches, moisture conditioned, and compacted in-place to at least 90 percent relative compaction. If the subgrade is in rock, fill can be placed directly on the undisturbed subgrade material. Fill materials can then be placed to finished grade according to the recommendations of this report.

Fill should be placed and compacted to at least the minimum relative compaction recommended in this report. The moisture content of the fill should be between 2 percent below

to 2 percent above the optimum. Each layer should be spread evenly and should be thoroughly blade-mixed during the spreading to provide relative uniformity of material within each layer. Soft or yielding materials have relatively low strength and can compromise the stability of the embankment slope if left in place. We recommend that any soft or yielding materials encountered during fill placement be removed and be replaced with properly compacted fill material prior to placing the next layer. Fill materials should be mechanically compacted. Ponding or jetting should not be permitted. Rock, gravel and other oversized material, greater than 3 inches in diameter, should be removed from the fill material being placed. Rocks should not be nested and voids should be filled with compacted material.

When the moisture content of the fill material is below that sufficient to achieve the recommended compaction, water should be added to the fill. While water is being added, the fill should be bladed and mixed to provide relatively uniform moisture content throughout the material. When the moisture content of the fill material is excessive, the fill material should be aerated by blading or other methods. Fill should be spread in lifts no thicker than approximately 8 inches prior to being compacted. Fill and backfill materials may need to be placed in thinner lifts to achieve the recommended compaction with the equipment being used.

5.3 GEOSYNTHETIC REINFORCED EMBANKMENT

A geosynthetic reinforced embankment (GRE) can be used to restore the slope below Santa Rosa Creek Road. Prior to placing the GRE materials, the geotechnical professional should review the exposed rock and soil conditions exposed by construction. The purpose of the review is to check that potentially unstable landslide materials have been removed, to check bedding and joint orientations within the bedrock to evaluate if potentially unstable material is present, and to confirm that the subgrade is suitable for placement of the fill. The design of the temporary slope is the responsibility of the contractor. However, we recommend that the temporary slope behind the GRE be constructed no steeper than 1:1. The contractor should evaluate and design a suitable inclination for the temporary slope with consideration of the construction and worker safety in accordance with OSHA and other applicable requirements.

5.3.1 GRE Slope Design

A typical section and typical profile summarizing our recommendations for design of the GRE is presented on Plates 3a and 3b – Geosynthetic Reinforced Embankment Detail. To provide an estimated factor of safety of at least 1.5, we recommend that the slope be designed to a slope inclination of 1h:1v or flatter. The toe of the slope should catch on the existing embankment slope. The recommended reinforcement should be continued through the entire limits of the slope restoration.

The slope should be reinforced with primary and intermediate geosynthetic reinforcement conforming to the suggested materials recommendations in this report. Primary geogrid should be placed at 3-foot vertical intervals within the fill and be embedded at least 17 feet into the slope. Intermediate reinforcement should be placed at 1-foot vertical intervals between primary reinforcements and be embedded at least 4 feet into the slope. The same

geogrid spacing and layout should be used through the transition to the adjacent slopes either side of the repair.

The GRE should be initiated from a base key excavated at the base of slope, and below the estimated maximum scour depth along Rocky Creek. The base of the excavation should be scarified to a depth of 9 inches, moisture conditions and compacted in-place to at least 90 percent relative compaction.

Geogrid should comply with the suggested materials specifications of this report. The primary geogrid reinforcement should have a long term allowable design strength (LTDS) of at least 3,000 pounds per foot in the machine direction. The intermediate geogrid reinforcement should be biaxial material having a tensile strength at 5 percent strain of at least 500 pounds per foot in the machine and cross machine direction. Each layer of geogrid should be placed level on compacted fill with the machine direction running parallel to the face of the slope.

The first layer of intermediate reinforcement should be placed no more than 1 foot above the compacted subgrade within the toe key. The first layer of primary reinforcement should be placed no more than 3 feet above the compacted subgrade within the toe key. Geosynthetic reinforcement should be terminated at the grade of the finished 1h:1v slope. The fill for the slope should be overbuilt beyond the reinforcement, and then be cut back to expose compacted material and at the end of the reinforcements and slope face. A layer of permanent erosion control matting/blanket should be placed over the finished slope to protect against erosion and assist with establishing vegetation on the slope.

Geogrid Placement. Geosynthetic reinforcement should be placed level and laid such that the working tensile strength of the material is oriented perpendicular to the roadway centerline. Spliced and sewn joints should not be used in the direction of the working tensile stress, unless it is demonstrated that the connection meets the same strength requirements for long-term design strength as the intact reinforcement material.

Because the planned GRE slope is located on a horizontal curve, layers of geogrid placed perpendicular to the slope face will likely overlap with adjacent layers of reinforcement. A few inches of soil backfill should be placed between reinforcement layers where these overlaps in adjacent layers of reinforcement occur.

Drainage. A layer of drainage material should be placed on the backslope behind the GRE backfill material. The drain should extend upward from about the streambed elevation to 5 feet below finished grade (see Plate 3a). The purpose of the drain is to intercept groundwater flowing from the backslope into the GRE. A perforated collector pipe should be placed at the base of the drainage material. The collector pipe should be placed in 1 cubic foot of pea gravel per foot of drain. The pea gravel should be fully encased in a filter fabric. The subsequent drainage material should be placed such that a continuous 1-foot thick layer of the material is maintained against the temporary slope.

The backfill drain should outlet to a solid pipe. The pipe should discharge beyond the slope face. Splash blocks or rock should be provided at the pipe outlet to protect against

erosion. Drainage materials should conform to the suggested materials specifications in this report.

GRE Backfill. Fill for the GRE construction should consist of Structure Backfill placed according to the Standard Specifications. Embankment fill material should be compacted to at least 90 percent relative compaction, except that fill placed within 3 feet of finished grade should be compacted to at least 95 percent compaction. During spreading and compacting of the backfill material, at least 6 inches, measured vertically, of soil should be maintained between the geosynthetic reinforcement and construction equipment. Equipment or vehicles should not be operated or driven directly on the geosynthetic reinforcement, unless specifically permitted with supporting data supplied by the manufacturer. The face of the GRE slope should be prepared such that there is compacted material at the slope face. The contractor should submit the materials and methods to be used for construction of the GRE for review by the geotechnical professional in advance of construction.

Erosion Control. The outer 2 feet of the GRE fill should consist of onsite soil or material approved by Engineer that is suitable for supporting the planned vegetation. The face of the slope should be covered with a heavy nondegradable erosion control matting, unless the selected vegetation is capable of stabilizing the 1h:1v with degradable matting. Overlaps in the matting should be at least 2 feet with the upslope, upstream side of the overlap place above the downslope/downstream side of the fabric. The matting should be anchored and pinned to the slope according to the manufacturers recommendations. Matting placed near or below the anticipated flood levels should be material that is capable of tolerating stream flows. The type and thickness of the erosion matting should be approved by the Engineer and landscape designer. Landscaping and maintenance of slopes should be provided to assist vegetation to be established on slopes, and reduce the potential for erosion.

5.4 SURFACE DRAINAGE

Drainage should be provided such that surface water does not run over slopes or pond on pavements. It is our experience that a 2% slope is needed to provide positive drainage that can be easily graded and maintained. The top of slopes should be graded to direct drainage away from the slopes, or be provided with dikes and ditches that will direct surface water to controlled drainage structures. Concentrated flows and runoff should not be permitted to discharge onto slopes. Down drains, solid pipes, or lined ditches should be provided to carry water to the base of the slope. Energy dissipation and erosion control devices should be provided at the outlet of drainage pipes and in areas of concentrated flow and runoff to reduce the potential for erosion.

5.5 CONSTRUCTION CONSIDERATIONS

5.5.1 Excavation

Toro Formation claystone, sandstone and shale were encountered at the site as described in this report. The Toro Formation is of variable quality, fracturing, and strength. The formation will likely contain zones of extremely weak to strong rock based on the geologic

classification of the material. We expect that the rock can likely be excavated by ripping and excavating with typical heavy construction equipment.

5.5.2 Use of On-site Soil

On-site soil and rock materials are anticpated to consist of clayey soil and rock materials that are not considered suitable for construction of the GRE slope or specified materials. If approved in advance, the on-site soil may be suitable for placement as landscape material within the outer 2 feet of the GRE. The onsite formation will likely need to be processed and segregated to breakdown and remove oversized material into a soil-like state prior to use as compacted fill. The Toro Formation contains clay materials that can be sensitive to changes in moisture content and relatively difficult to compact. Proper control of the moisture and compaction layer thickness will be needed to achieve the recommended compaction.

5.6 OPERATIONS AND MAINTENANCE

Site conditions, particularly on sloping ground adjacent to an open creek, are dynamic and should be considered in the operation and maintenance of the facility. Ongoing erosion, changes in drainage, and landsliding are some of the factors that should be reviewed on an ongoing basis.

The top of the adjacent stream banks, cut slopes, and other areas along Santa Rosa Creek Road contain areas of erosion and slope instability. Further instability and erosion along the route should be anticipated, especially as a result of periods of storm runoff or precipitation, ongoing weathering of the slope, earthquakes or other factors. Ongoing maintenance should be provided to help maintain the slope, reduce the potential for raveling or erosion along the face of the slope.

6.0 CONTINUATION OF SERVICES

The geotechnical evaluation consists of an ongoing process involving the planning, design, and construction phases of the project. To provide this continued service, we recommend that the geotechnical engineer be provided the opportunity to review the project plans and specifications, and observe portions of the construction.

6.1 REVIEW OF PLANS AND SPECIFICATIONS

The geotechnical engineer should review the foundation and grading plans for the project. The purpose of the review is to evaluate if the plans and specifications were prepared in general accordance with the recommendations of this report.

6.2 GEOTECHNICAL OBSERVATION AND TESTING

Field exploration and site reconnaissance provides only a limited view of the geotechnical conditions of the site. Substantially more information will be revealed during the excavation and grading phases of the construction. Subsurface conditions, excavations and fill placement should be observed by the geotechnical professional during construction to evaluate

if the materials encountered during construction are consistent with those assumed for this report.

7.0 REFERENCES

California Division of Mines and Geology (1997), *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, Special Publication 117.

Fugro West, Inc. (2010), "Project Memorandum: Concept Alternatives, Santa Rosa Creek Road, Slip out at 0.9 miles west of State Route 46, San Luis Obispo County, California", prepared for County of San Luis Obispo, Project No. 3014.040, draft dated March 10.

Gregory, G. H. (2006), "GSTABL7 with STEDwin, Version 2.005", Gregory Geotechnical Software: Fort Worth, Texas.

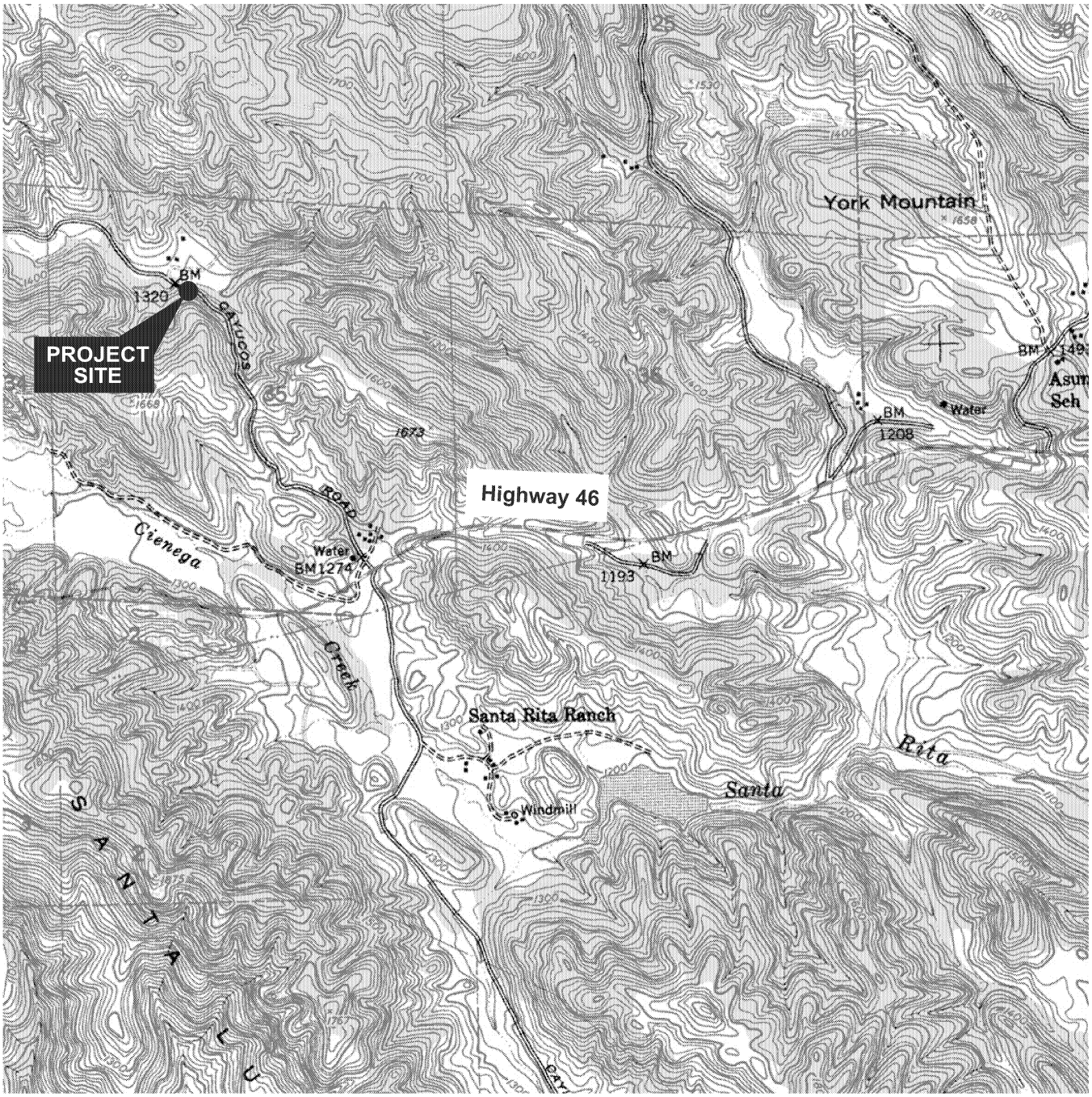
Hall, C.; Prior, S.; and Wiese, J. (1979). *Geologic Map of the San Luis Obispo-San Simeon Region*, California, U.S. Geological Survey Map I-1097, Scale: 1:48,000.

San Luis Obispo County (2005), "Roadway Slope Maintenance Plan, Santa Rosa Creek Road, Sheet 1 of 1, dated October 27.

San Luis Obispo County (2010), 10-scale and 20-scale topographic site plans and cross sections with print date of March 22. Stream flow analysis and stone weights per calculations dated March 4.

End of Text

PLATES



BASE MAP SOURCE: USGS 15' SE/4 Adelaida Quadrangle, 1979 (rev.).

NORTH

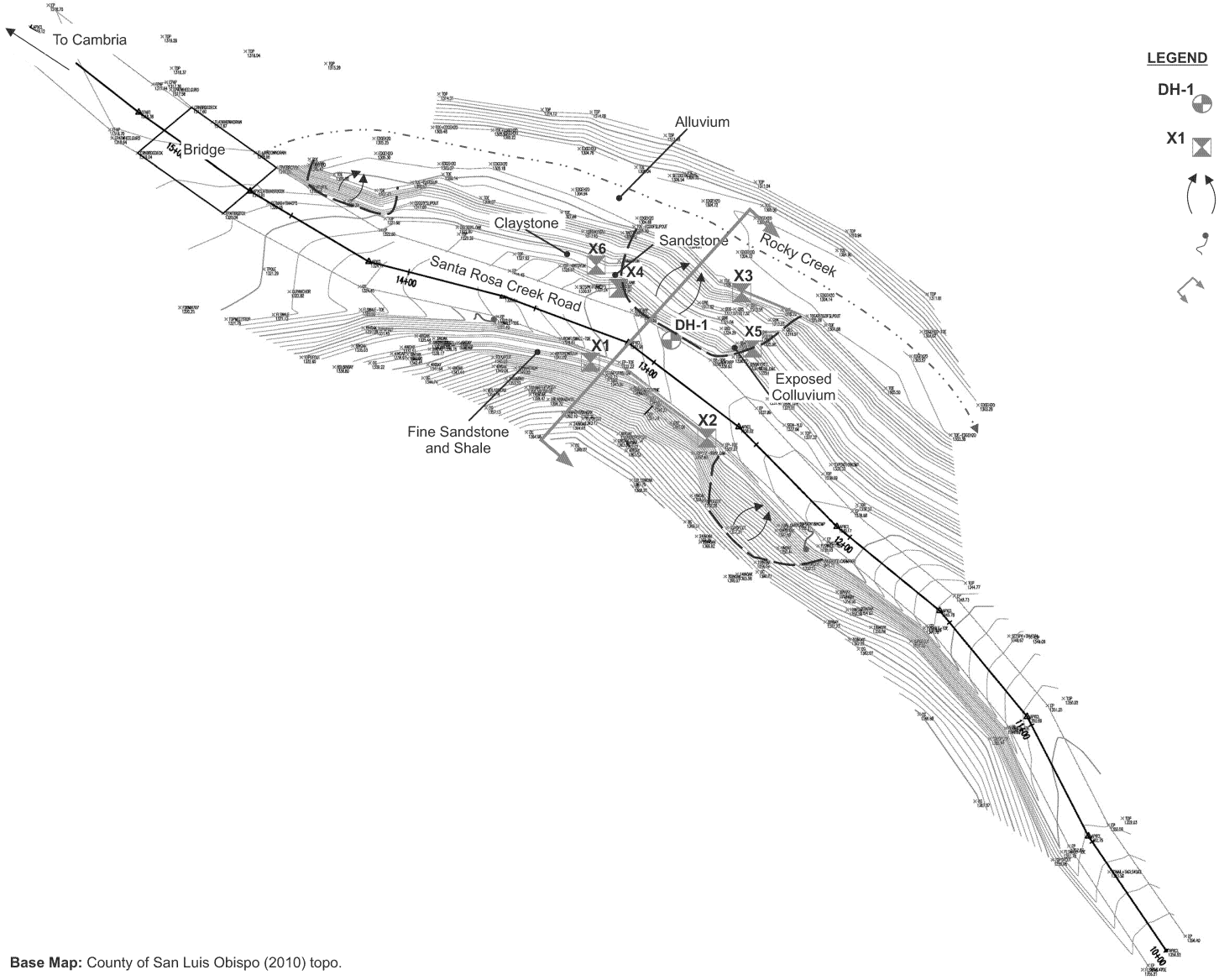
0 1000 2000

FEET

VICINITY MAP

Santa Rosa Creek Road
0.9 miles north of Highway 46
San Luis Obispo County, California

PLATE 1



LEGEND

DH-1 Fugro (2010) boring location

X1 Block sample from rock outcrop or exposure

Landslide or slope instability

Spring or seep

Cross section location used in slope stability analyses

All locations and dimensions are approximate.

Elevations shown are from an assumed datum and may differ from other maps or plans.

NORTH

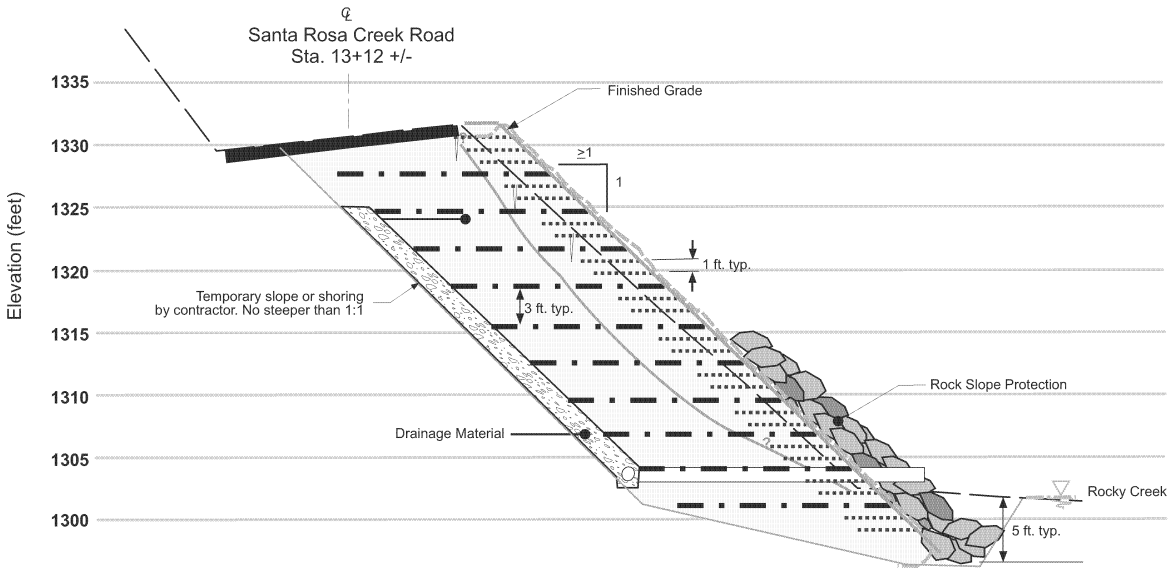
0 40

FEET

FIELD EXPLORATION PLAN
Santa Rosa Creek Road
0.9 miles north of Highway 46
San Luis Obispo County, California

Base Map: County of San Luis Obispo (2010) topo.

PLATE 2

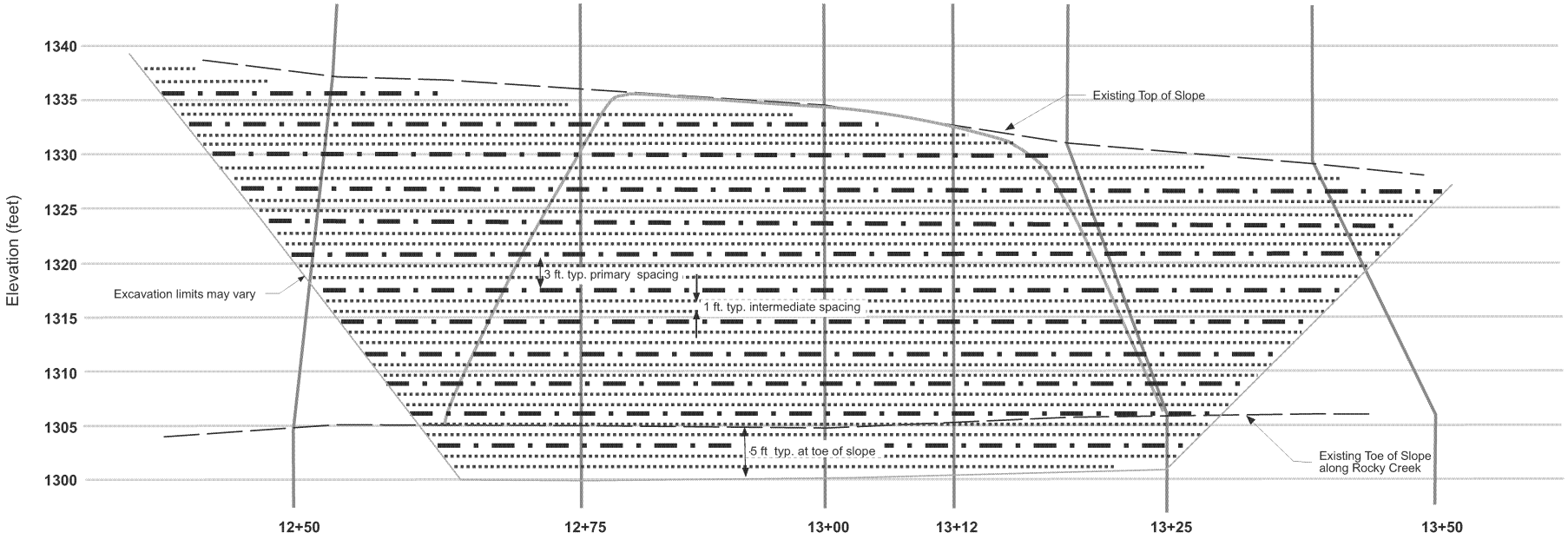


TYPICAL CROSS SECTION
1" = 10' +/-

Legend:
- Finished grade
- Assumed temporary slope
- Existing grade
- 17-foot long primary geogrid reinforcement
- 4-foot long Intermediate geogrid reinforcement
- Erosion control matting
- Drainage material
- Structure backfill
- Topsoil or onsite materials
- Assumed slide plane to be removed

GEOSYNTHETIC REINFORCED EMBANKMENT DETAIL
Santa Rosa Creek Road
0.9 miles north of Highway 46
San Luis Obispo County, California
PLATE 3a

Base Map: San Luis Obispo County topography (2010)



TYPICAL ELEVATION VIEW
1" = 10' +/-

Note: Station lines are offset to account for curvature along toe of slope

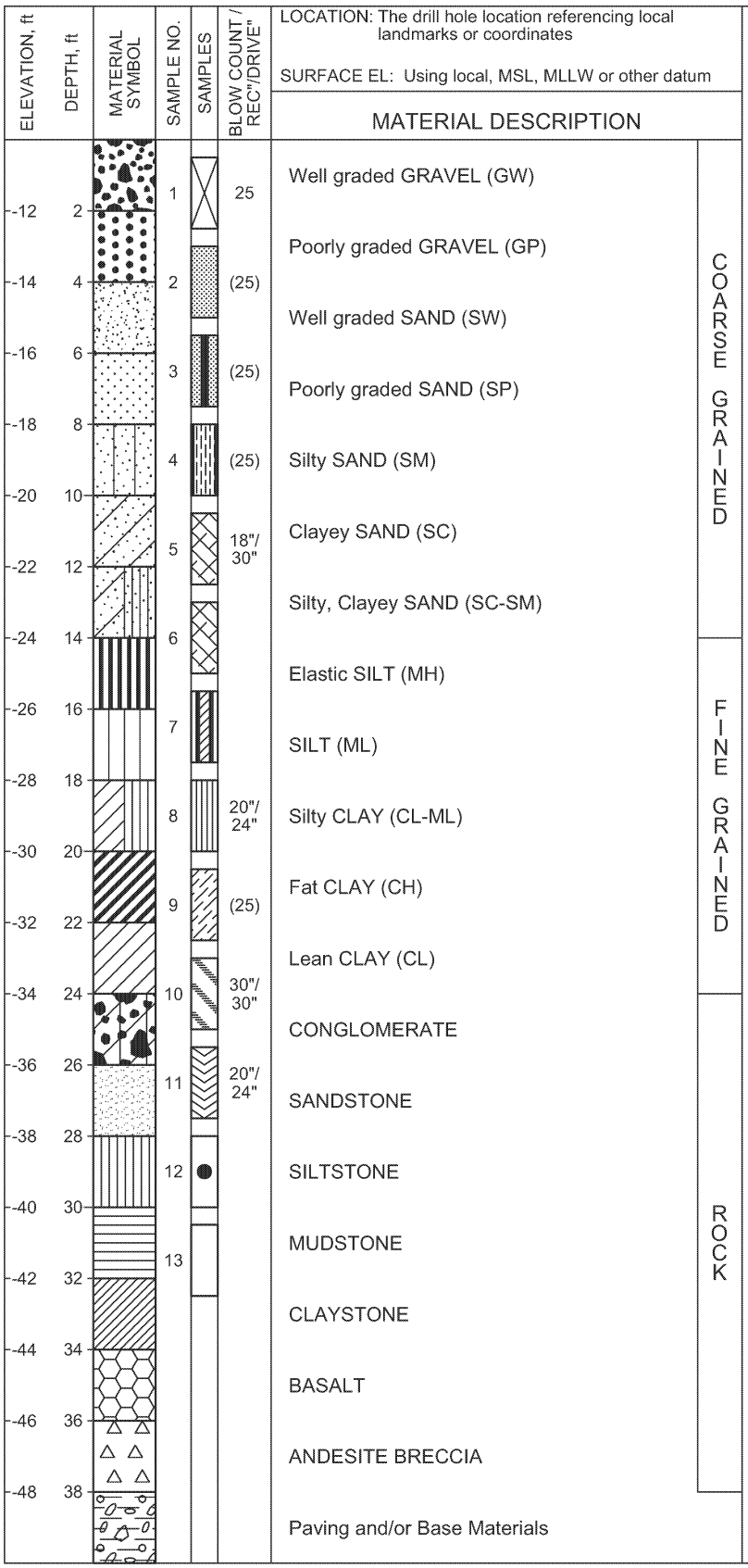
Legend:

- Assumed temporary slope/excavation limits
- Existing grade
- Primary geogrid reinforcement embedded 17 feet
- Intermediate geogrid reinforcement embedded 4 feet
- materials
- Assumed limits of landslide to be removed

GEOSYNTHETIC REINFORCED EMBANKMENT DETAIL
Santa Rosa Creek Road
0.9 miles north of Highway 46
San Luis Obispo County, California
PLATE 3b

Base Map: San Luis Obispo County topography (2010)

APPENDIX A



General Notes

Soil Texture Symbol

Sloped line in symbol column indicates transitional boundary

Samplers and sampler dimensions (unless otherwise noted in report text) are as follows:

Symbol for:	
1	SPT Sampler, driven 1-3/8" ID, 2" OD
2	CA Liner Sampler, driven 2-3/8" ID, 3" OD
3	CA Liner Sampler, disturbed 2-3/8" ID, 3" OD
4	Thin-walled Tube, pushed 2-7/8" ID, 3" OD
5	Bulk Bag Sample (from cuttings)
6	CA Liner Sampler, Bagged
7	Hand Auger Sample
8	Rock Core Sample
9	Pitcher Sample
10	Lexan Sample
11	Vibracore Sample
12	No Sample Recovered
13	Sonic Soil Core Sample

Sampler Driving Resistance

Number of blows with 140 lb. hammer, falling 30" to drive sampler 1 ft. after seating sampler 6"; for example,

Blows/ft	Description
25	25 blows drove sampler 12" after initial 6" of seating
86/11"	After driving sampler the initial 6" of seating, 36 blows drove sampler through the second 6" interval, and 50 blows drove the sampler 5" into the third interval
50/6"	50 blows drove sampler 6" after initial 6" of seating
Ref/3"	50 blows drove sampler 3" during initial 6" seating interval

Blow counts for California Liner Sampler shown in ( )

Length of sample symbol approximates recovery length

Classification of Soils per ASTM D2487 or D2488

Geologic Formation noted in bold font at the top of interpreted interval

Strength Legend

Q = Unconfined Compression
u = Unconsolidated Undrained Triaxial
t = Torvane
p = Pocket Penetrometer
m = Miniature Vane

Water Level Symbols

- Initial or perched water level
- Final ground water level
- Seepages encountered

Rock Quality Designation (RQD) is the sum of recovered core pieces greater than 4 inches divided by the length of the cored interval.

KEY TO TERMS & SYMBOLS USED ON LOGS

PLATE A-1

BEDDING SPACING	
Descriptor	**Thickness or Spacing**
Massive	> 10 ft
Very thickly bedded	3 to 10 ft
Thickly bedded	1 to 3 ft
Moderately bedded	3-5/8 inches to 1 ft
Thinly bedded	1-1/4 to 3-5/8 inches
Very thinly bedded	3/8 inch to 1-1/4 inches
Laminated	< 3/8 inch

WEATHERING DESCRIPTORS FOR INTACT ROCK

	Diagnostic Features					
	Chemical Weathering-Discoloration-Oxidation		Mechanical Weathering and Grain Boundary Conditions	Texture and Solutioning		
Descriptor	**Body of Rock**	**Fracture Surfaces**		**Texture**	**Solutioning**	**General Characteristics**
Fresh	No discoloration, not oxidized	No discoloration or oxidation	No separation, intact (tight)	No change	No solutioning	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull	Minor to complete discoloration or oxidation of most surfaces	No visible separation, intact (tight)	Preserved	Minor leaching of some soluble minerals may be noted	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty"; feldspar crystals are "cloudy"	All fracture surfaces are discolored or oxidized	Partial separation of boundaries visible	Generally preserved	Soluble minerals may be mostly leached	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in situ disaggregation (refer to grain boundary conditions)	All fracture surfaces are discolored or oxidized; surfaces are friable	Partial separation, rock is friable; in semi-arid conditions, granitics are disaggregated	Altered by chemical disintegration such as via hydration or argillation	Leaching of soluble minerals may be complete	Dull sound when struck with hammer; usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures or veinlets. Rock is significantly weakened.
Decomposed	Discolored of oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay		Complete separation of grain boundaries (disaggregated)	Resembles a soil; partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes".

Note: Combination descriptors (such as "slightly weathered to fresh") are used where equal distribution of both weathering characteristics is present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, combination descriptors should not be used where significant identifiable zones can be delineated. Only two adjacent descriptors shall be combined. "Very intensely weathered" is the combination descriptor for "decomposed to intensely weathered".

RELATIVE STRENGTH OF INTACT ROCK	
Descriptor	**Uniaxial Compressive Strength (psi)**
Extremely Strong	> 30,000
Very Strong	14,500 - 30,000
Strong	7,000 - 14,500
Medium Strong	3,500 - 7,000
Weak	700 - 3,500
Very Weak	150 - 700
Extremely Weak	< 150

CORE RECOVERY CALCULATION (%)

$$\frac{\Sigma \text{ Length of the recovered core pieces (in.)}}{\text{Total length of core run (in.)}} \times 100$$

RQD CALCULATION (%)

$$\frac{\Sigma \text{ Length of intact core pieces} > 4 \text{ in.}}{\text{Total length of core run (in.)}} \times 100$$

ROCK HARDNESS	
Descriptor	**Criteria**
Extremely Hard	Specimen cannot be scratched with pocket knife or sharp pick; can only be chipped with repeated heavy hammer blows
Very hard	Specimen cannot be scratched with pocket knife or sharp pick; breaks with repeated heavy hammer blows
Hard	Specimen can be scratched with pocket knife or sharp pick with heavy pressure; heavy hammer blows required to break specimen
Moderately Hard	Specimen can be scratched with pocket knife or sharp pick with light or moderate pressure; breaks with moderate hammer blows
Moderately Soft	Specimen can be grooved 1/6 in. with pocket knife or sharp pick with moderate or heavy pressure; breaks with light hammer blow or heavy hand pressure
Soft	Specimen can be grooved or gouged with pocket knife or sharp pick with light pressure, breaks with light to moderate hand pressure
Very Soft	Specimen can be readily indented, grooved, or gouged with fingernail, or carved with pocket knife; breaks with light hand pressure

FRACTURE DENSITY	
Descriptor	**Criteria**
Unfractured	No fractures
Very Slightly Fractured	Lengths greater 3 ft
Slightly Fractured	Lengths from 1 to 3 ft, few lengths outside that range
Moderately Fractured	Lengths mostly in range of 4 in. to 1 ft, with most lengths about 8 in.
Intensely Fractured	Lengths average from 1 in. to 4 in. with scattered fragmented intervals with lengths less than 4 in.
Very Intensely Fractured	Mostly chips and fragments with few scattered short core lengths

Reference: Caltrans (2007) Soil and Rock Logging Manual, Fig. 5-16.

TERMS AND DEFINITIONS USED FOR ROCK

Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE A-2

LOCATION: Approximately 4' southwest of top of slope, approximately 12' southeast of western tarp edge

SURFACE EL: 2553 ft +/- (rel. Surveyor's topographical (assumed) datum)

ELEVATION, ft	DEPTH, ft	CORE/SAMPLE NO.	SAMPLERS	BLOW COUNT OR CORE RECOVERY-RQD %	MATERIAL DESCRIPTION	UNIT WET WEIGHT, pcf	UNIT DRY WEIGHT, pcf	WATER CONTENT, %	% PASSING #200 SIEVE	LIQUID LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, S_u, ksf
2552	0	A			**ARTIFICIAL FILL (af)** 6" asphalt pavement over 8" base		120	11	34	36	20	
					Lean CLAY (CL): olive brown, moist, approximately 25% coarse sand to fine subangular gravel, claystone gravel clasts							
2550	2											
	4											
2548		1A		(40)	**COLLUVIUM (Qcol)** Gravelly lean CLAY (CL): very stiff to hard, olive brown, moist, approximately 45% fine subangular gravel	131	116	13		37	18	
	6				**TORO FORMATION (KJf)**							
2546					CLAYSTONE (Rx): olive brown, intensely weathered to decomposed, very soft, very intensely fractured, oxidation staining on all surfaces							
	8											
2544					CLAYSTONE (Rx): olive brown, intensely weathered, moderately soft to soft, discolored/oxidized fracture surfaces, with polished fracture surfaces, moist							
	10	2A		89/10")	- interbed of silty SAND with gravel (SM), reddish brown, moist, decomposed fine subangular gravel, sandstone gravel clasts		120	6				
2542												
	12											
2540												
	14											
2538		3A		(50/2")		134	126	6				
	16											
2536												
	18				CLAYSTONE (Rx): dark gray, moderately weathered, moderately hard, micaceous							
2534												
	20	4A R1		(50/2") 20%- 0%								
2532												
	22											
2530		R1A								32	14	
	24											
2528		R2		10%- 0%	- lost approximately 300 gallons of water in drilling fluid circulation							
	26											
2526												
	28											
2524												
	30	R2A R3		17%- 0%	- joint dipping at approximately 12°, dull planar surface, very intensely fractured, wet, massive, lost approximately 300 gallons of water in drilling fluid circulation							
2522												
	32											
2520		R3A										

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

COMPLETION DEPTH: 50.0 ft
DEPTH TO WATER: Not Encountered
BACKFILLED WITH: Cuttings/Concrete
DRILLING DATE: March 9, 2010

DRILLING METHOD: 8-inch-dia. Hollow Stem Auger, 1-7/8" NQ Rock Core
HAMMER TYPE: Automatic Trip
DRILLED BY: GeoSolutions, Inc.
LOGGED BY: G Eckrich
CHECKED BY: J Blanchard

LOG OF BORING NO. DH-1

Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE A-3a

LOCATION: Approximately 4' southwest of top of slope, approximately 12' southeast of western tarp edge

SURFACE EL: 2553 ft +/- (rel. Surveyor's topographical (assumed) datum)

ELEVATION, ft	DEPTH, ft	CORE/SAMPLE NO.	BLOW COUNT OR CORE RECOVERY-RQD %	MATERIAL DESCRIPTION	UNIT WET WEIGHT, pcf	UNIT DRY WEIGHT, pcf	WATER CONTENT, %	% PASSING #200 SIEVE	LIQUID LIMIT, %	PLASTICITY INDEX, %	UNDRAINED SHEAR STRENGTH, S_u, ksf
2518	36	R4	30%-0%	- approximately 3" seam of gravelly fat CLAY (CH), lost approximately 300 gallons of water in drilling fluid circulation							
2516	38	R4A R4B									
2514	40	R5 R5A	33%-0%	- shear dipping at 45° to subvertical, irregular slickened surface							
2512	42										
2510	44	R5B R5C		- lost approximately 150 gallons of water in drilling fluid circulation	154	150	3				
2508	46	R6	30%-0%	- approximately 1/2" seam of fat CLAY (CH) lost approximately 150 gallons of water in drilling fluid circulation							
2506	48										
2504	50			- two joints dipping at approximately 30°, smooth planar surfaces - approximately 1/2" seam of fat CLAY (CH), slickensided - shear dipping at 40°, smooth planar surface							
2502	52										
2500	54			Note: No groundwater encountered to 20 feet. Water added below 20 feet to assist with rock coring.							
2498	56										
2496	58										
2494	60										
2492	62										
2490	64										
2488	66										
2486											

The log and data presented are a simplification of actual conditions encountered at the time of drilling at the drilled location. Subsurface conditions may differ at other locations and with the passage of time.

COMPLETION DEPTH: 50.0 ft
DEPTH TO WATER: Not Encountered
BACKFILLED WITH: Cuttings/Concrete
DRILLING DATE: March 9, 2010

DRILLING METHOD: 8-inch-dia. Hollow Stem Auger, 1-7/8" NQ Rock Core
HAMMER TYPE: Automatic Trip
DRILLED BY: GeoSolutions, Inc.
LOGGED BY: G Eckrich
CHECKED BY: J Blanchard

LOG OF BORING NO. DH-1

Santa Rosa Creek Road Slipout
San Luis Obispo County, California

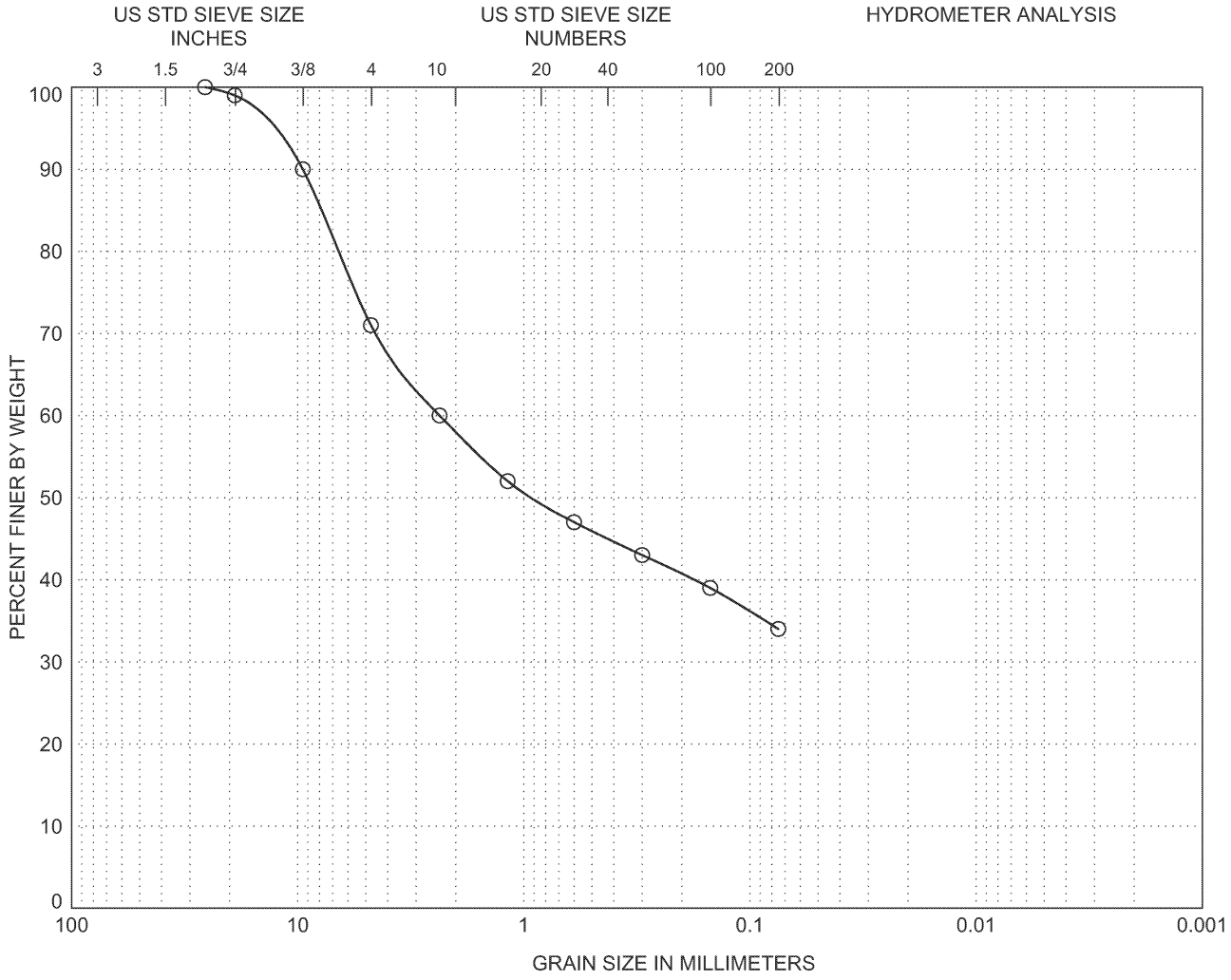
PLATE A-3b

Reference: Drilling of DH-01 occurred on March 9, 2010. See boring logs and report for description and information on cores.

ROCK CORE PHOTOS for DH-01
Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE A-4

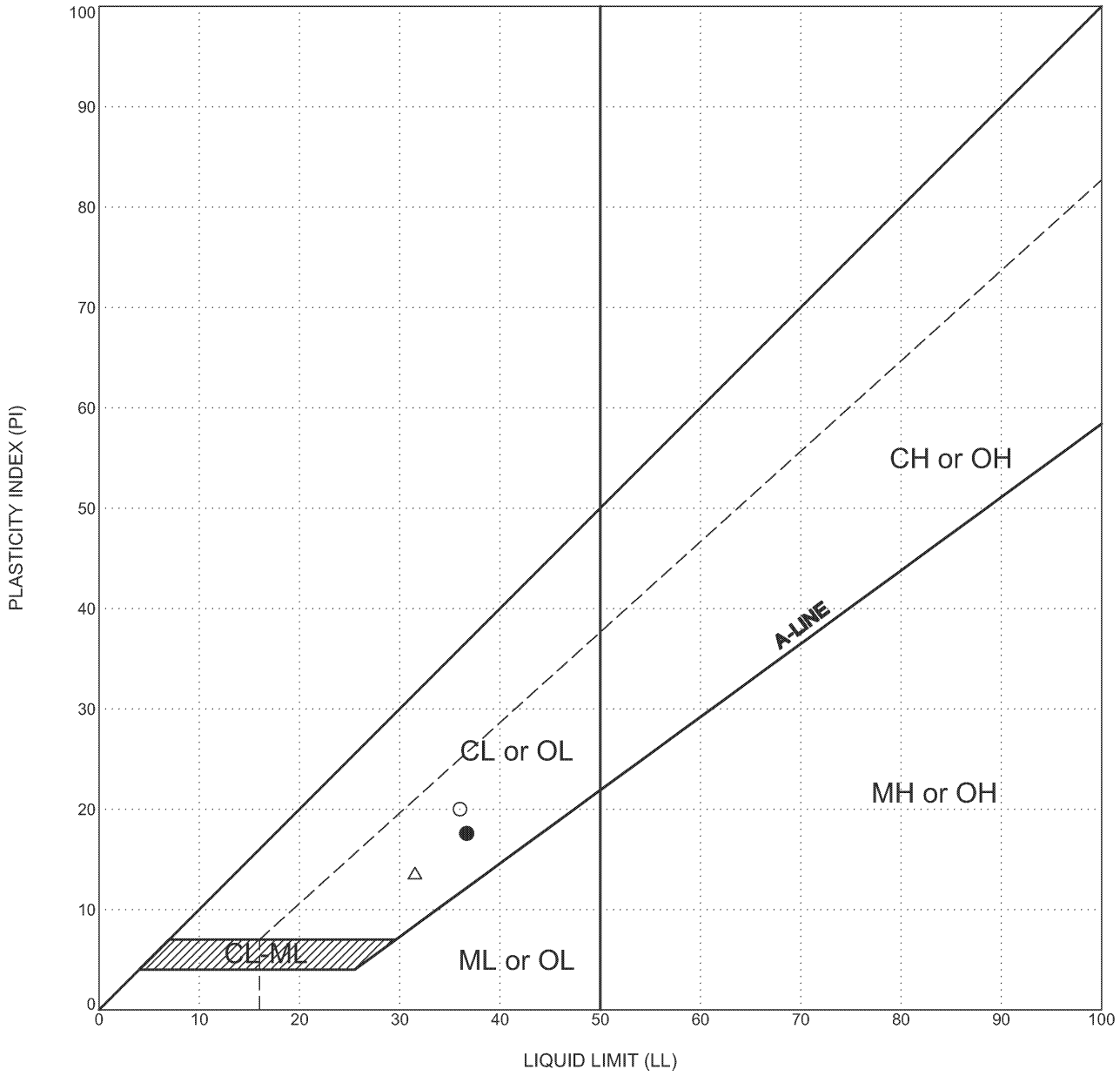
APPENDIX B



LEGEND (location)	(depth,ft)	CLASSIFICATION	Cc	Cu
○ DH-1	0.0	Clayey SAND with gravel (SC)		

GRAIN SIZE CURVES
Santa Rosa Creek Road Slipout
San Luis Obispo County, California

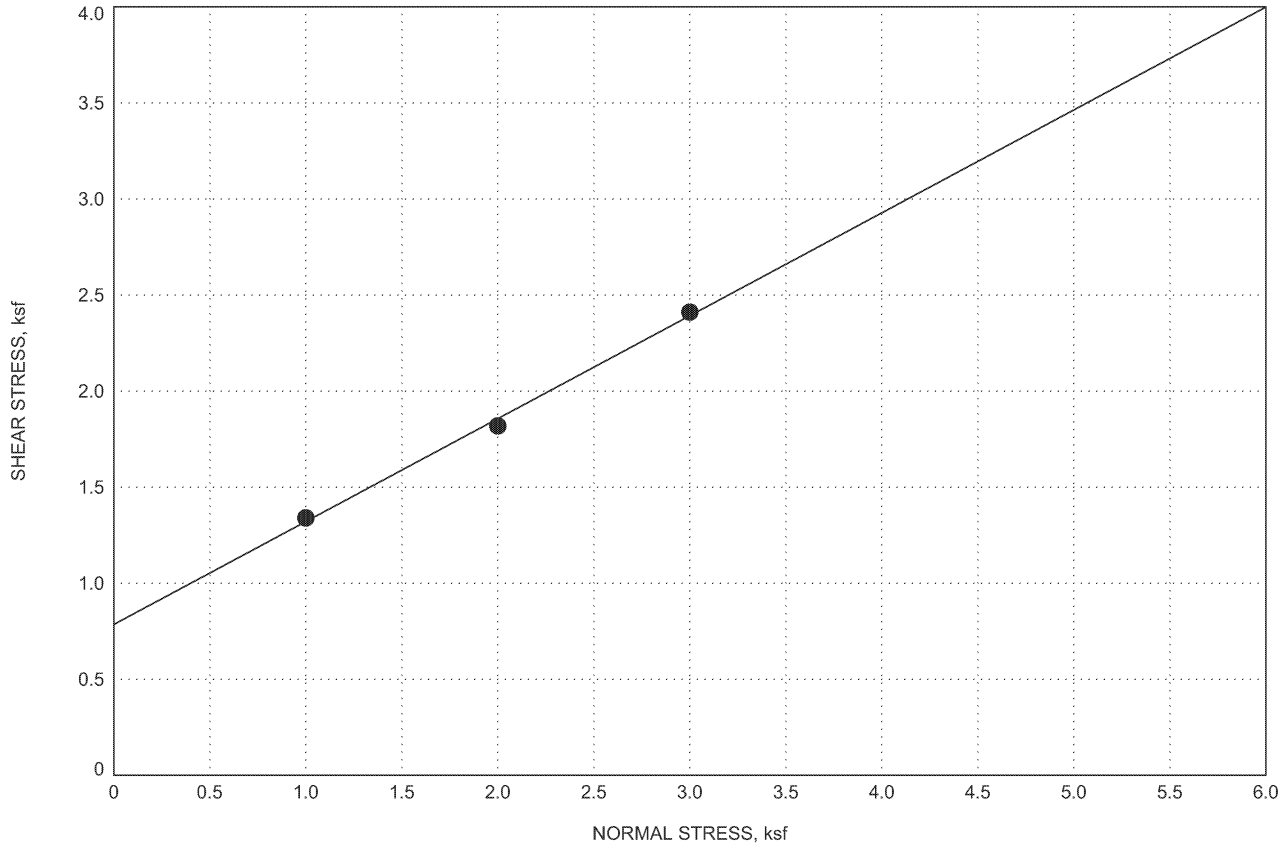
PLATE B-1



LEGEND	location	depth, ft	CLASSIFICATION	ATTERBERG LIMITS TEST RESULTS LIQUID LIMIT(LL)	PLASTIC LIMIT(PL)	PLASTICITY INDEX (PI)
○	DH-1	0.0	Clayey SAND with gravel (SC)	36	16	20
●	DH-1	5.0	Lean CLAY (CL)	37	19	18
△	DH-1	23.0	CLAYSTONE (Cx), "Lean CLAY (CL)"	32	18	14

PLASTICITY CHART
Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE B-2

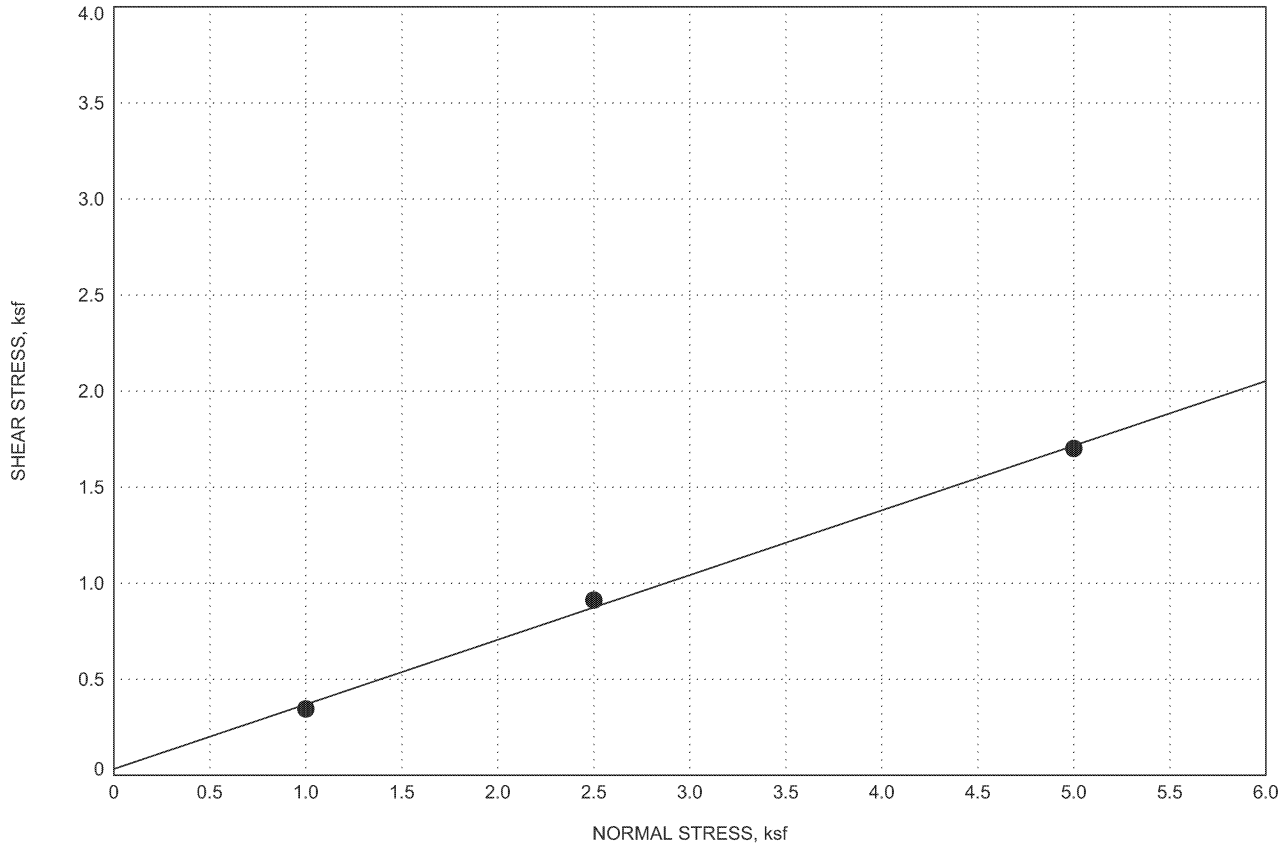


COHESION, ksf	0.8
ANGLE OF INTERNAL FRICTION, deg	28
LOCATION	DH-1
DEPTH, ft	0
MOISTURE CONTENT, %	11
UNIT DRY WEIGHT, pcf	120
MATERIAL DESCRIPTION	Clayey SAND with gravel (SC)
SAMPLE CONDITION	Remold

DIRECT SHEAR TEST RESULTS

Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE B-3a

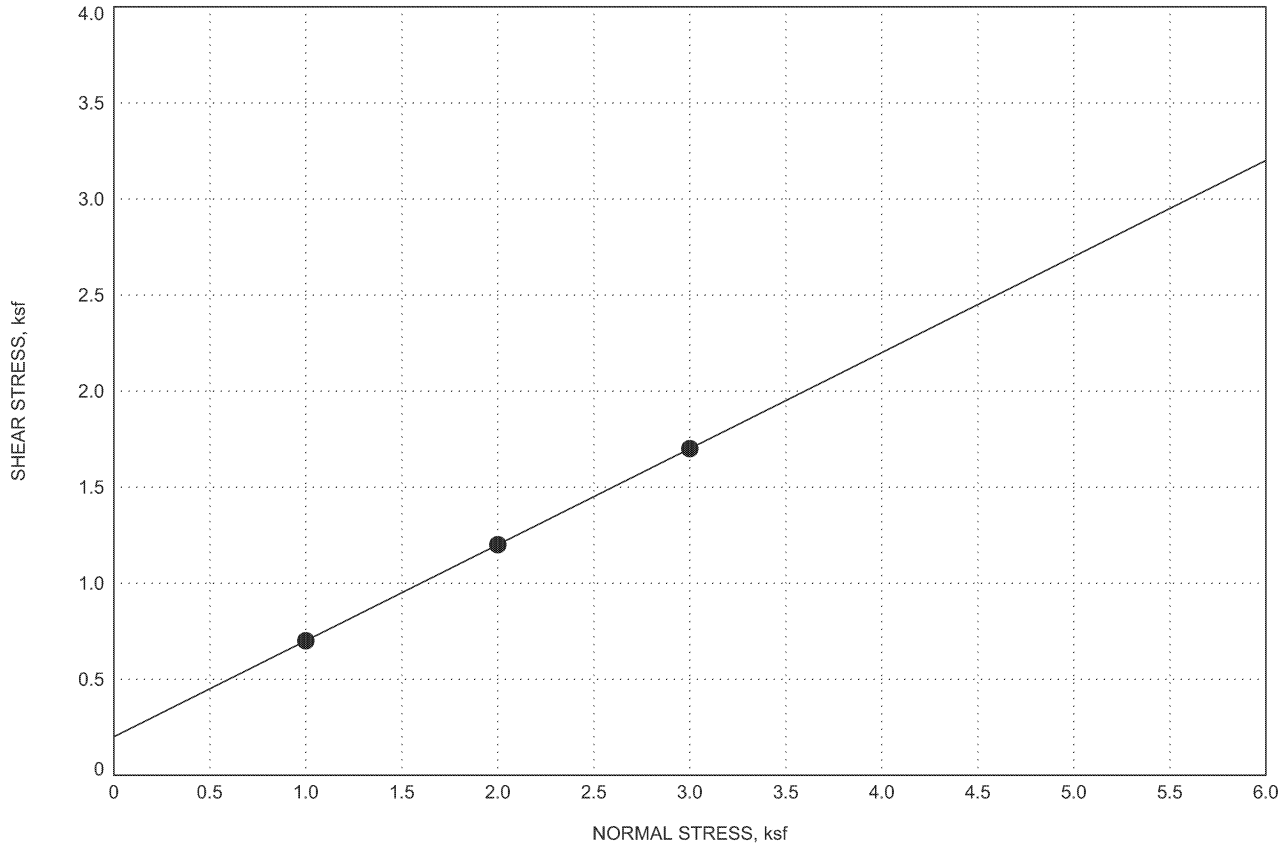


COHESION, ksf	0.0
ANGLE OF INTERNAL FRICTION, deg	19
LOCATION	DH-1
DEPTH, ft	10
MOISTURE CONTENT, %	6
UNIT DRY WEIGHT, pcf	120
MATERIAL DESCRIPTION	CLAYSTONE (Cx), "Lean CLAY (CL)"
SAMPLE CONDITION	Ring - Precut shear plane

DIRECT SHEAR TEST RESULTS

Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE B-3b

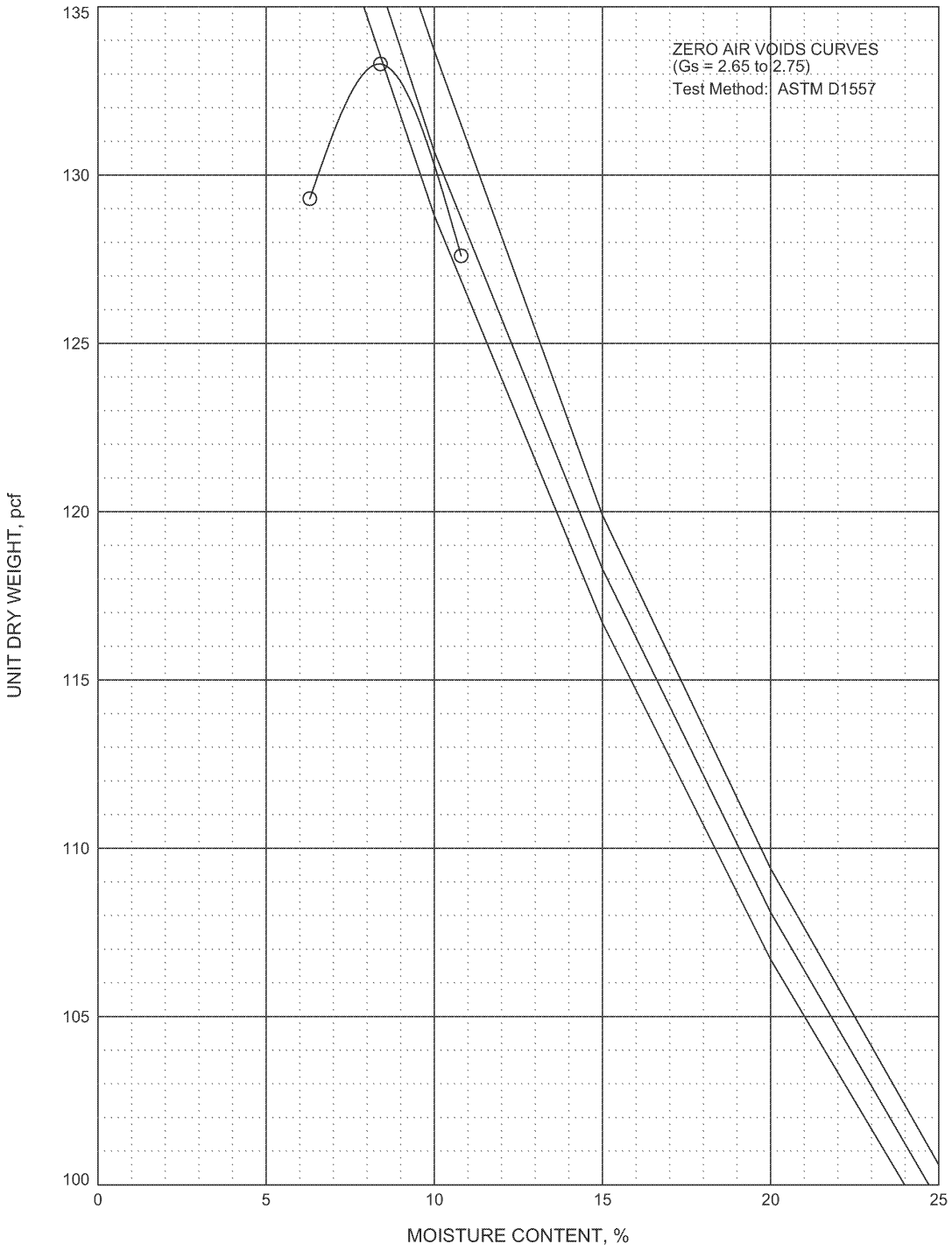


COHESION, ksf	0.2
ANGLE OF INTERNAL FRICTION, deg	27
LOCATION	DH-1
DEPTH, ft	43
MOISTURE CONTENT, %	
UNIT DRY WEIGHT, pcf	
MATERIAL DESCRIPTION	CLAYSTONE (Cx), "Lean CLAY (CL)"
SAMPLE CONDITION	Ring Sample

DIRECT SHEAR TEST RESULTS

Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE B-3c



LEGEND	(location)	(depth), ft	CLASSIFICATION	MAXIMUM UNIT DRY WEIGHT, pcf	OPTIMUM WATER CONTENT, %
○	DH-1	0.0	Clayey SAND with gravel (SC)	133.3	8.4

COMPACTION TEST RESULTS

Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE B-4

SAMPLE ID

Boring Number	x1
Sample Number	x1
Depth (ft)	0.0
Break Date	12 Mar, 2010
Sample Description	CLAYSTONE (Cx), "Lean CLAY (CL)": dark grayish brown, moderately weathered, moderately hard, moderately to intensely fractured
Moisture Condition	As Recovered

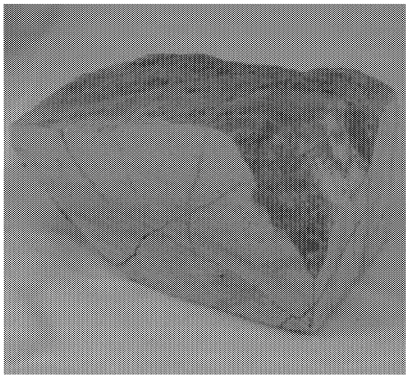
TEST INFORMATION

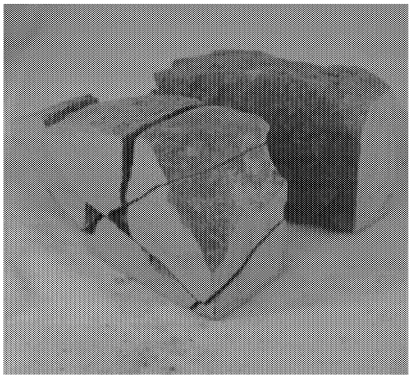
Specimen Type	Irregular Lump
Length, L (in)	1.283
Depth, D (in)	1.373
Width, W_1 (in)	1.534
Width, W_2 (in)	1.556
Area, A (in^2)	2.12
D^2_e (in^2)	2.70
Size Corr. Factor, F	0.92

TEST SUMMARY

Load at Failure, F (lbs)	90
Uncorrected PLI, I_s (psi)	33
Size Corrected PLI, $I_{s(50)}$ (psi)	31
Compressive Strength σ_c (psi)	800

Test Method: ASTM D5731
Remarks: Structural failure along discontinuity.





SAMPLE ID

Boring Number	x2
Sample Number	x2
Depth (ft)	0.0
Break Date	12 Mar, 2010
Sample Description	SANDSTONE (Sx), "Clayey SAND (SC)": brown, moderately weathered, moderately hard, moderately fractured
Moisture Condition	As Recovered

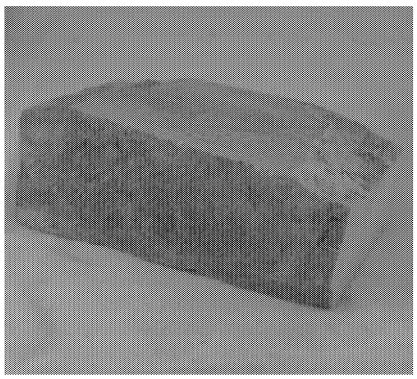
TEST INFORMATION

Specimen Type	Irregular Lump
Length, L (in)	1.460
Depth, D (in)	1.184
Width, W_1 (in)	1.641
Width, W_2 (in)	1.411
Area, A (in^2)	1.81
D^2_e (in^2)	2.30
Size Corr. Factor, F	0.89

TEST SUMMARY

Load at Failure, F (lbs)	400
Uncorrected PLI, I_s (psi)	174
Size Corrected PLI, $I_{s(50)}$ (psi)	155
Compressive Strength σ_c (psi)	4200

Test Method: ASTM D5731
Remarks:



POINT LOAD STRENGTH INDEX OF ROCK

Santa Rosa Creek Road Slipout
San Luis Obispo County

SAMPLE ID

Boring Number	x3
Sample Number	x3
Depth (ft)	0.0
Break Date	12 Mar, 2010
Sample Description	CLAYSTONE (Cx), "Lean CLAY (CL)": dark grayish brown, moderately weathered, moderately hard, moderately to intensely fractured
Moisture Condition	As Recovered

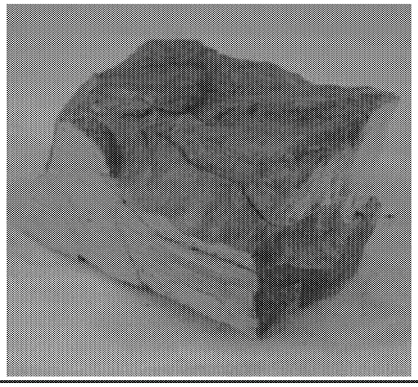
TEST INFORMATION

Specimen Type	Irregular Lump
Length, L (in)	1.106
Depth, D (in)	1.184
Width, W_1 (in)	1.466
Width, W_2 (in)	1.593
Area, A (in^2)	1.81
D^2_e (in^2)	2.31
Size Corr. Factor, F	0.89

TEST SUMMARY

Load at Failure, F (lbs)	50
Uncorrected PLI, I_s (psi)	22
Size Corrected PLI, $I_{s(50)}$ (psi)	19
Compressive Strength σ_c (psi)	520

Test Method: ASTM D5731
Remarks: Structural failure along discontinuity.



SAMPLE ID

Boring Number	x4
Sample Number	x4
Depth (ft)	0.0
Break Date	12 Mar, 2010
Sample Description	CLAYSTONE (Cx), "Lean CLAY (CL)": dark grayish brown, moderately weathered, moderately hard, moderately fractured
Moisture Condition	As Recovered

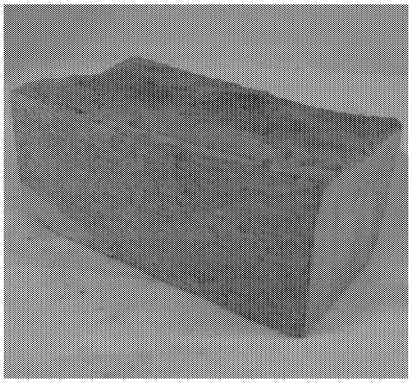
TEST INFORMATION

Specimen Type	Irregular Lump
Length, L (in)	1.389
Depth, D (in)	1.285
Width, W_1 (in)	1.522
Width, W_2 (in)	1.468
Area, A (in^2)	1.92
D^2_e (in^2)	2.45
Size Corr. Factor, F	0.90

TEST SUMMARY

Load at Failure, F (lbs)	10
Uncorrected PLI, I_s (psi)	4
Size Corrected PLI, $I_{s(50)}$ (psi)	4
Compressive Strength σ_c (psi)	98

Test Method: ASTM D5731
Remarks: Structural failure along discontinuity.



POINT LOAD STRENGTH INDEX OF ROCK

Santa Rosa Creek Road Slipout
San Luis Obispo County

SAMPLE ID

Boring Number	x6
Sample Number	x6
Depth (ft)	0.0
Break Date	12 Mar, 2010
Sample Description	CLAYSTONE (Cx), "Lean CLAY (CL)": dark grayish brown, moderately weathered, moderately hard, moderately to intensely fractured
Moisture Condition	As Recovered

TEST INFORMATION

Specimen Type	Irregular Lump
Length, L (in)	1.417
Depth, D (in)	1.180
Width, W_1 (in)	1.489
Width, W_2 (in)	1.560
Area, A (in^2)	1.80
D^2_e (in^2)	2.29
Size Corr. Factor, F	0.89

TEST SUMMARY

Load at Failure, F (lbs)	60
Uncorrected PLI, I_s (psi)	26
Size Corrected PLI, $I_{s(50)}$ (psi)	23
Compressive Strength σ_c (psi)	630

Test Method: ASTM D5731

Remarks: Structural failure along discontinuity.

POINT LOAD STRENGTH INDEX OF ROCK

Santa Rosa Creek Road Slipout
San Luis Obispo County

SAMPLE ID

Boring Number	DH-01
Sample Number	R1A
Depth (ft)	23.0
Break Date	11 Mar, 2010
Sample Description	CLAYSTONE (Cx), "Lean CLAY (CL)": bluish gray, fresh, hard, moderately fractured
Moisture Condition	As Recovered

TEST INFORMATION

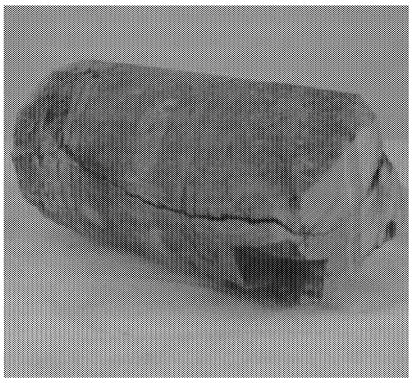
Specimen Type	Diametral
Length, L (in)	1.478
Depth, D (in)	1.762
D^2_e (in^2)	3.10
Size Corr. Factor, F	0.95

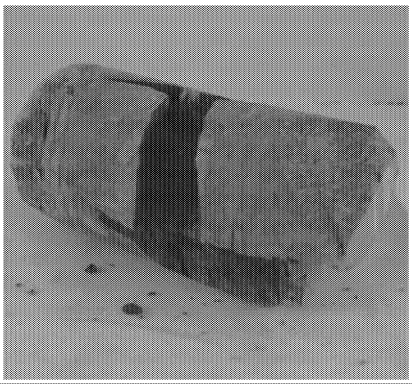
TEST SUMMARY

Load at Failure, F (lbs)	250
Uncorrected PLI, I_s (psi)	81
Size Corrected PLI, $I_{s(50)}$ (psi)	77
Compressive Strength σ_c (psi)	1900

Test Method: ASTM D5731

Remarks: Invalid break geometry. Structural failure along discontinuity.





POINT LOAD STRENGTH INDEX OF ROCK

Santa Rosa Creek Road Slipout
San Luis Obispo County

SAMPLE ID

Boring Number	DH-01
Sample Number	R5B
Depth (ft)	43.0
Break Date	15 Mar, 2010
Sample Description	CLAYSTONE (Cx), "Lean CLAY (CL)": bluish gray, fresh, hard, moderately fractured
Moisture Condition	As Recovered

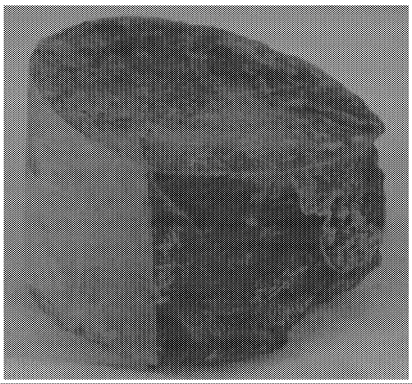
TEST INFORMATION

Specimen Type	Axial
Height, D (in)	1.112
Diameter, W (in)	1.768
Area, A (in^2)	1.97
D^2_e (in^2)	2.50
Size Corr. Factor, F	0.91

TEST SUMMARY

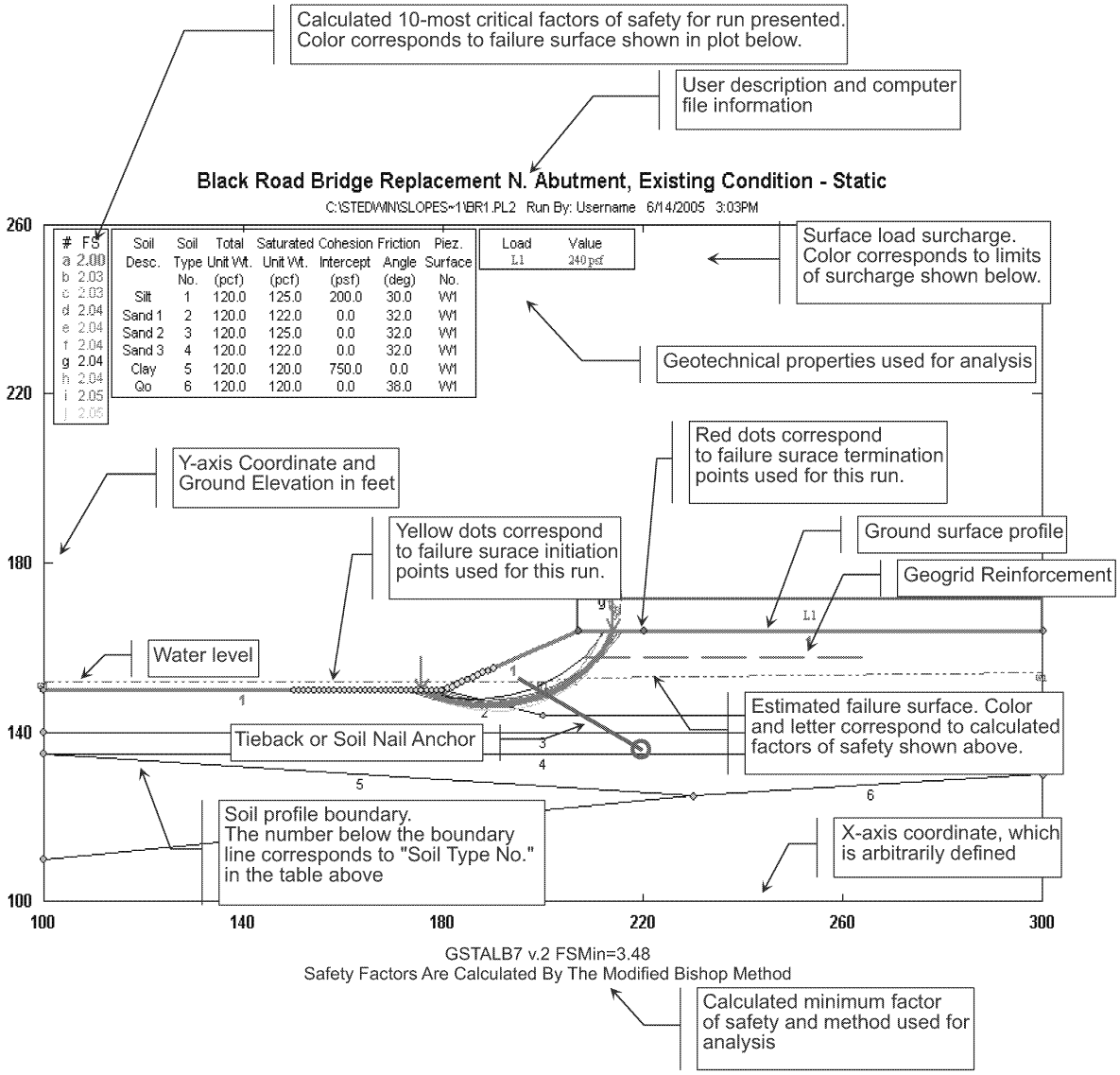
Load at Failure, F (lbs)	720
Uncorrected PLI, I_s (psi)	288
Size Corrected PLI, $I_{s(50)}$ (psi)	261
Compressive Strength σ_c (psi)	6900

Test Method: ASTM D5731
Remarks:



POINT LOAD STRENGTH INDEX OF ROCK
Santa Rosa Creek Road Slipout
San Luis Obispo County

APPENDIX C



Notes:

1. Plots are shown for run with least calculated factor of safety. Additional termination and initiation limits may have been considered. Typically over 100 surfaces are calculated for each run.

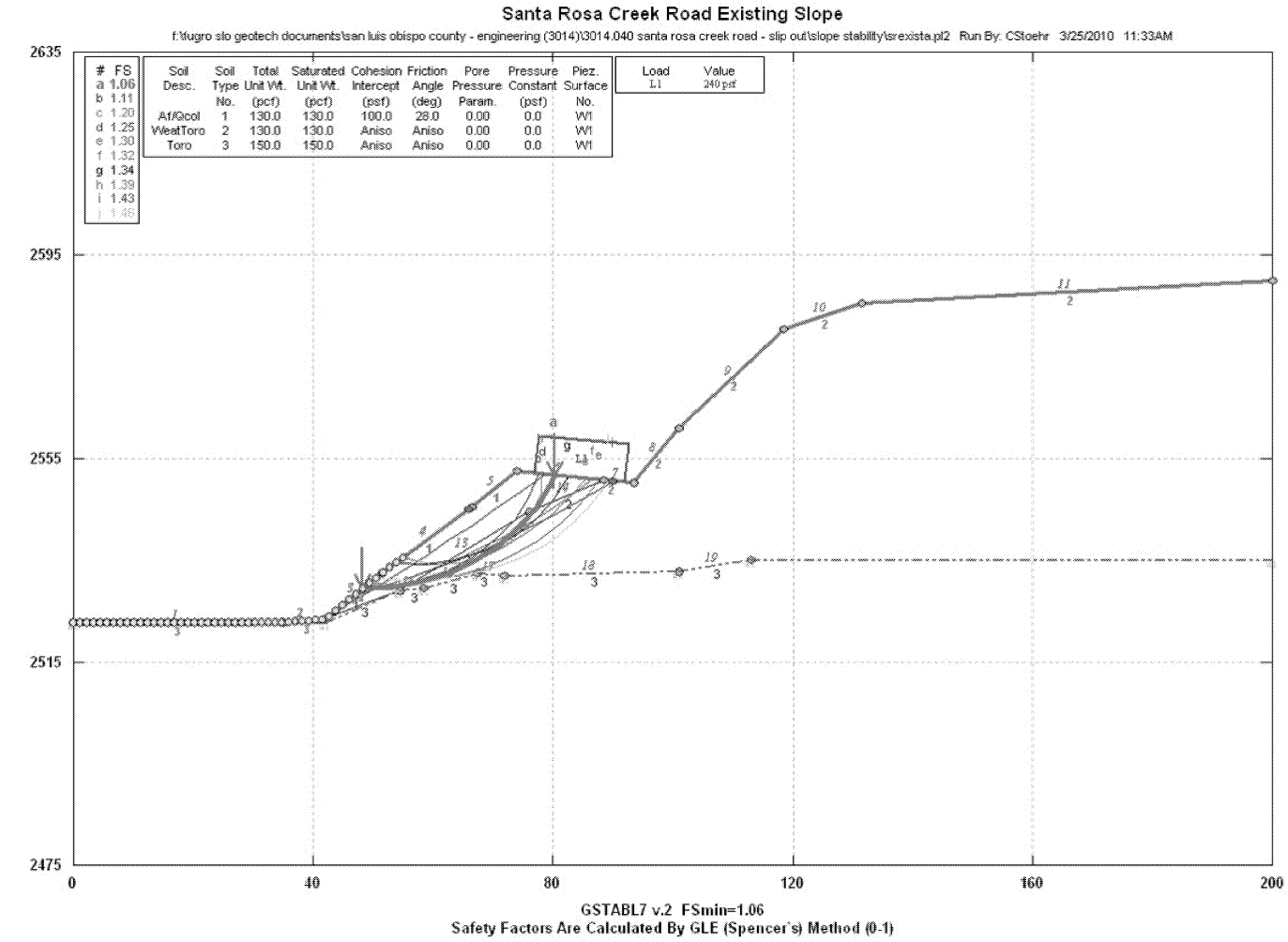
2. Discussion of the results and methodology is provided in the text of the report.

3. The surface and subsurface boundaries are approximate and represent only a generalization of interpreted and inferred subsurface conditions estimated from limited points of exploration.

KEY TO SLOPE STABILITY PLOTS

Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE C-1



ESTIMATED FACTORS OF SAFETY

Static Loading Condition: 1.06

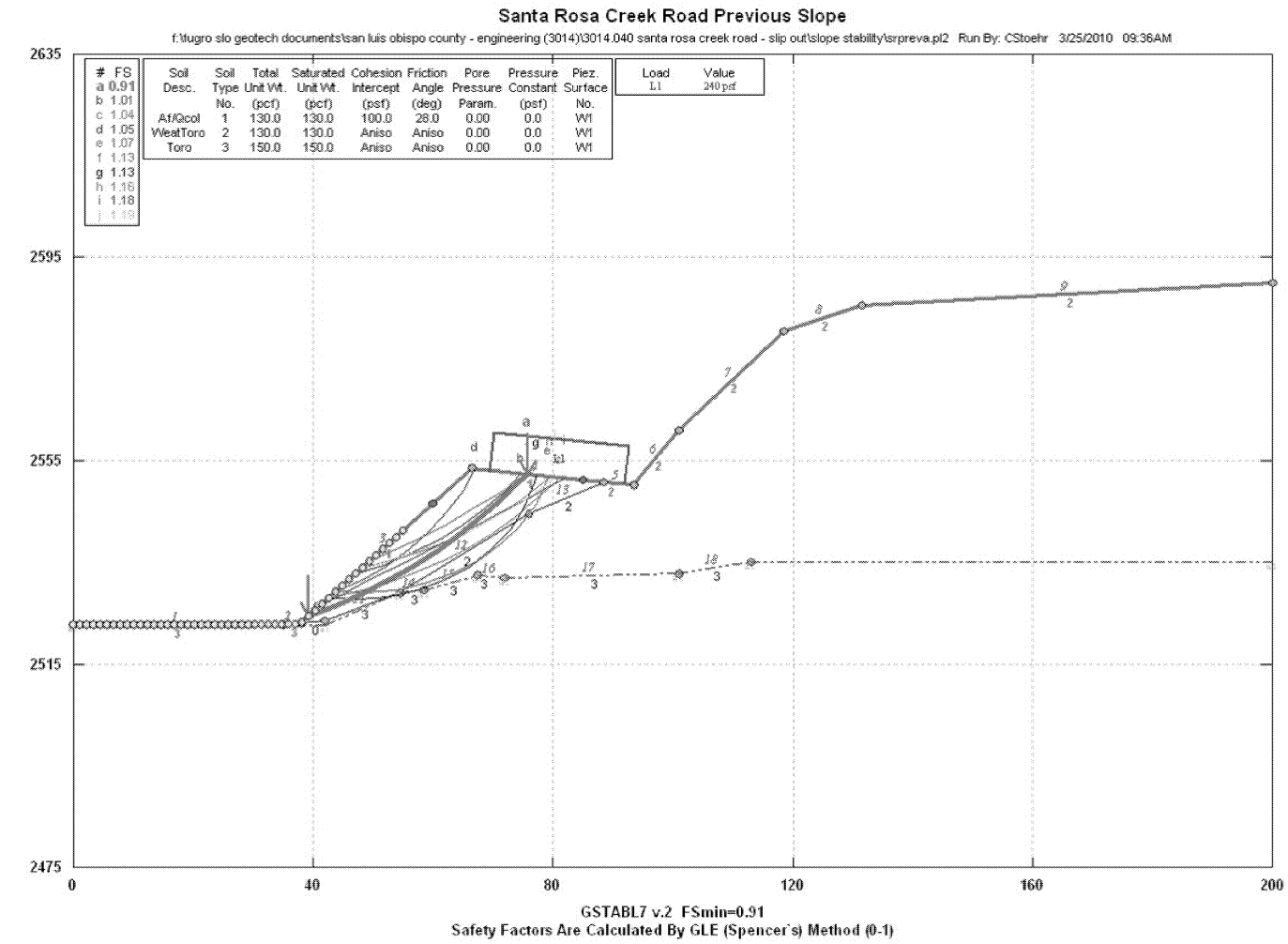
Pseudostatic Loading Condition: –

Pseudostatic Coefficient: –

Condition: Existing Slope

SLOPE STABILITY PLOT - EXISTING SLOPE
Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE C-2



ESTIMATED FACTORS OF SAFETY

Static Loading Condition: 0.91

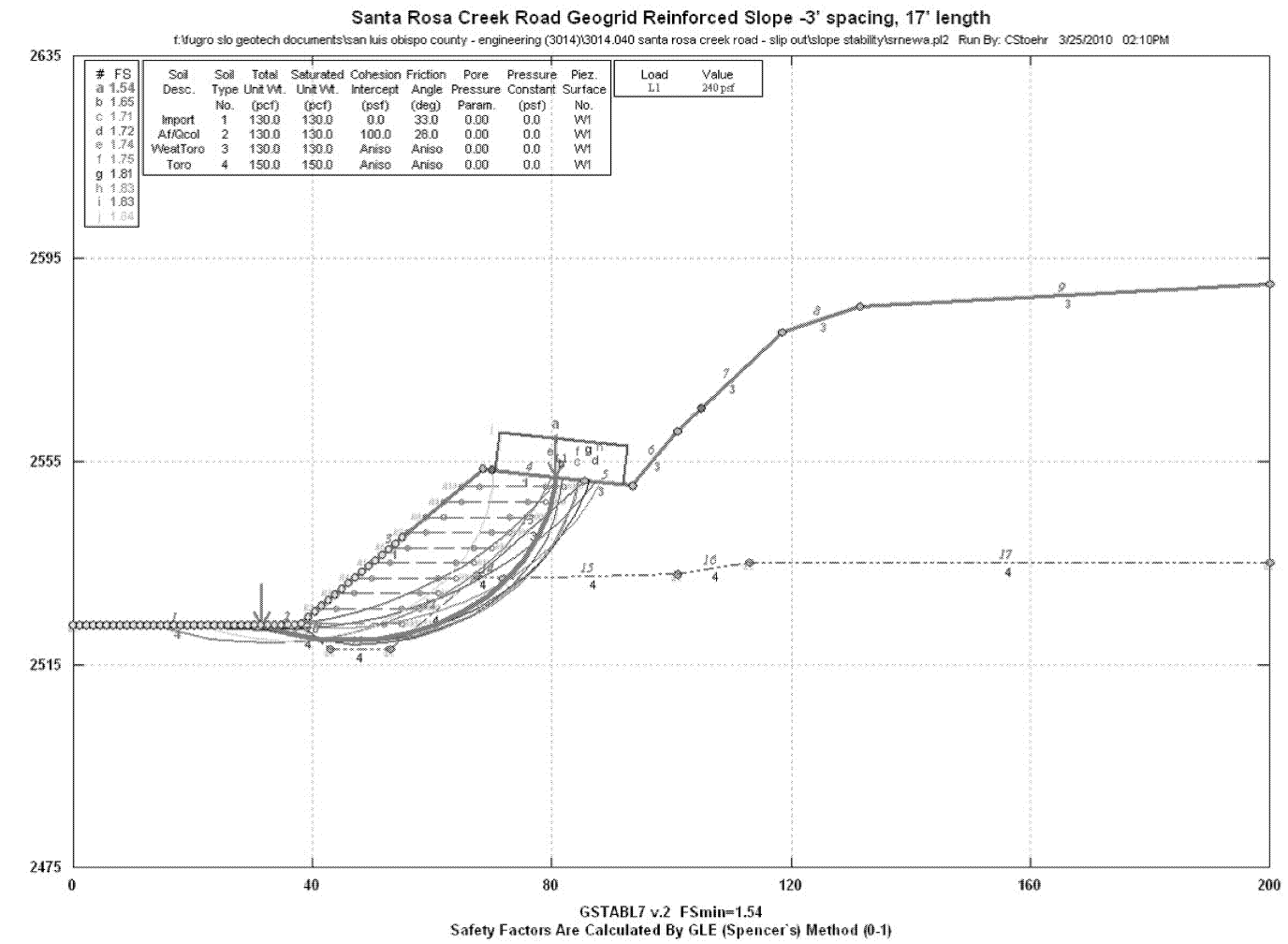
Pseudostatic Loading Condition: –

Pseudostatic Coefficient: –

Condition: Assumed Previous Slope

SLOPE STABILITY PLOT - PREVIOUS SLOPE CONDITION
Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE C-3



GSTABL7

ESTIMATED FACTORS OF SAFETY

Static Loading Condition: 1.54

Pseudostatic Loading Condition: 1.21

Pseudostatic Coefficient: 0.15

Condition: 1:1 GRE, L = 17', Sv = 3'

SLOPE STABILITY PLOT - 1:1 GEOSYNTHETIC REINFORCED SLOPE CONDITION
Santa Rosa Creek Road Slipout
San Luis Obispo County, California

PLATE C-4

ATTACHMENT B
ENVIRONMENTAL PERMIT SUMMARY FORM

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS
Paavo Ogren, Director
County Government Center, Room 207 · San Luis Obispo CA 93408 · (805) 781-5252
Fax (805) 781-1229 email address: pwd@co.slo.ca.us

ENVIRONMENTAL PERMIT SUMMARY FORM

Date: February 2, 2010

To: Dan Erdman + Jeff Werst

From: John Farhar, Environmental Programs Division

Subject: **Environmental Review & Permit Status for the Santa Rosa Creek Road Bank Stabilization Project located east of the community of Cambria; ED05-169 (245R12B501)**

The environmental review and regulatory permit processes for the above referenced project are complete. The following is a summary of the environmental requirements for the project:

Permit	Status	Expiration	Attachments ?
CEQA Review	Mitigated Negative Declaration dated 10/12/06	----	X
NEPA Review	N/A		
Coastal Permit	N/A		
CZMA	N/A		
CDFG 1601	Agreement No. 2007-0020-R4 dated 5/6/08	4/21/2013	X
USACOE 404	File No. 2007-400302S dated 1/20/10	1/20/2012	X
NMFS ESA	N/A		
USFWS ESA	8-8-09-F-11 dated 6/9/09	----	
RWQCB 401	Water Quality Cert. # 35007WQ02 dated 4/5/07	----	X
NPDES	N/A		

******* A COPY OF THIS PERMIT SUMMARY FORM AND ALL OF ITS ATTACHMENTS MUST BE ON THE WORK SITE WHEN ANY WORK IS UNDERWAY**

Project Timeframe Summary			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
	When creek is dry **or** 7/1 – 10/15	Conduct all work when the creek is dry or July 1 – October 15 to minimize potential impacts to sensitive species.	CEQA RWQCB CDFG
	11/15	Seeding associated with site restoration must be complete by November 15 of the year that construction occurs.	CDFG

Project Timeframe Limits			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
	3/1-8/1	To protect nesting birds, no construction shall be completed from March 1 through August 1 unless the following surveys are completed by a qualified biologist: Raptors: Survey for nesting activity of raptors within 500 feet of the construction site. Surveys shall be conducted at appropriate nesting times and concentrate on mature trees. If any active nests are observed, these nests and nest trees shall be designated an Environmentally Sensitive Area (ESA) and construction shall be suspended until the CDFG is consulted with for additional protective provisions. Other Avian Species: Survey for nesting activity within 500 feet of the defined work area 2 to 3 weeks before construction begins. If any nesting activity is found, construction activities shall be suspended and CDFG shall be contacted and additional protective provisions, specific to each incident, shall be developed.	CDFG

Summary Project Timeframe
Based on the above work windows, the basic work window for this project is from 7/1 to 10/15.

******* A COPY OF THIS PERMIT SUMMARY FORM AND ALL OF ITS ATTACHMENTS MUST BE ON THE WORK SITE WHEN ANY WORK IS UNDERWAY**

The special environmental conditions for this project are:			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
	PRE-CONSTRUCTION	Conduct on-site environmental training to aid workers in recognizing and avoiding sensitive species that may occur in the project area and the legal consequences of non-compliance.	CEQA CDFG
	PRE-CONSTRUCTION	Before any construction activities begin on a project, a Service-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the California red-legged frog and its habitat, the importance of the California red-legged frog and its habitat, the general measures that are being implemented to conserve the California red-legged frog as they relate to the project, and the boundaries within which the project may be accomplished. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.	USFWS
	PRE-CONSTRUCTION	A Service-approved biologist shall be present at the work site until such time as all removal of California red-legged frogs, instruction of workers, and habitat disturbance have been completed. After this time, the contractor or permittee shall designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist shall ensure that this individual receives training outlined above in measure 3 and in the identification of California red-legged frogs. The monitor and the Service-approved biologist shall have the authority to halt any action that might result in impacts that exceed the levels anticipated by the Corps and Service during review of the proposed action. If work is stopped, the Corps and Service shall be notified immediately by the Service-approved biologist or on-site biological monitor.	USFWS
	PRE-CONSTRUCTION	Prior to implementation of any modifications to the project or mitigation measures, the RWQCB and other interested agencies shall be notified in writing.	RWQCB
	PRE-CONSTRUCTION	When known, the construction/work schedule shall be provided to CDFG (mail, or fax to (559) 243-4020, with reference to streambed alteration agreement 2007-0020-R4) prior to beginning any activities.	CDFG
	PRE-CONSTRUCTION	In the event surface water flow is encountered in the creek during project activities, a Diversion and Dewatering Plan shall be submitted to CDFG.	CDFG
	PRE-CONSTRUCTION	Plans to control erosion and stabilize areas subject to ground disturbance during construction shall be developed. A Construction Period Erosion Prevention and Contingency Plan shall be prepared and implemented prior to commencement of project activities. The Plan may include or be comprised of a statement of BMPs, winterization plan, etc. used to prevent pollution of surface water.	CDFG
	PRE-CONSTRUCTION	A Spill Response Plan shall be prepared and implemented to facilitate prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. The cleanup of all spilled materials shall begin immediately. CDFG shall be notified immediately of any spills.	CDFG USFWS
	PRE-CONSTRUCTION	Clearly mark the boundaries of the proposed work area and identify the upstream and downstream limits of the minimum required work area and other encroachments into the stream including any required vehicle access corridors. All areas within the identified work area limits shall be considered ESA and shall not be disturbed.	CEQA CDFG USFWS

******* A COPY OF THIS PERMIT SUMMARY FORM AND ALL OF ITS ATTACHMENTS MUST BE ON THE WORK SITE WHEN ANY WORK IS UNDERWAY**

The special environmental conditions for this project are:			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
		Flagging/fencing shall be maintained in good repair for the duration of the Project. Advise all construction personnel to conduct work activities within the defined area.	
	PRE-CONSTRUCTION	Install and maintain appropriate erosion/sediment control measures throughout the duration of work activities. Place silt fence or other suitable barriers along and above the dry creek bed to prevent loose soil from spilling into the drainage. If necessary, adjust erosion/sediment control measures to reflect work-area changes.	CEQA
	PRE-CONSTRUCTION	Retain a biological monitor to monitor construction work and to inspect the installation and removal of erosion/sediment control devices if applicable.	CEQA
	PRE-CONSTRUCTION	The County must request USFWS approval of any biologist it wishes to employ to survey for, capture, and move California red-legged frogs from work areas. The request must be in writing and be received by the Service at least 15 days prior to any such activities being conducted.	USFWS
	PRE-CONSTRUCTION	The biologist must conduct one daytime survey at the project area prior to the beginning of any work activities and at the beginning of each day that work activities continue. If California red-legged frogs are found, they must be moved to a predetermined, appropriate relocation site. The Service-approved biologist must be allowed sufficient time to move California red-legged frogs from a work are before work activities begin. If California red-legged frogs are found on site during work activities, the Service-approved biologist must have the authority to halt activities until the California red-legged frogs are safely removed from the work area. Only Service-approved biologists may participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.	USFWS
	PRE- + DURING CONSTRUCTION	All proposed mitigation, monitoring, and BMPs shall be implemented in the manner and at the time(s) described in the application package.	RWQCB
	PRE- + DURING CONSTRUCTION	All standard BMPs shall be implemented to prevent the movement of sediment downstream. No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the waterways.	ACOE
	PRE- + DURING CONSTRUCTION	Retain a qualified biologist to conduct preconstruction surveys for sensitive wildlife species in or near the project area.	CEQA
	PRE- + DURING CONSTRUCTION	If any State- or Federal-listed Threatened or Endangered species occur within the proposed work area or could be impacted by the work proposed, and thus "taken" as a result of project activities, required State and Federal threatened and endangered species permits or other written authorization must be obtained before proceeding with project activities.	CDFG
	PRE- + DURING CONSTRUCTION	Only qualified biologists, authorized by the Service, may survey for, capture, and move California red-legged frogs from work areas.	USFWS
	PRE- + DURING CONSTRUCTION	Well-defined survey and relocation procedures must be implemented by authorized biologists to avoid or minimize the take of California red-legged frogs during project activities.	USFWS
	PRE- + DURING CONSTRUCTION	A Service-approved biologist must relocate California red-legged frogs found in the project area to dense vegetation immediately upstream of the action area.	USFWS

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The special environmental conditions for this project are:			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
	PRE- + DURING CONSTRUCTION	To ensure that diseases are not conveyed between work sites by Service-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force must be followed at all times. A copy of the code of practice is attached. All plastic buckets used either for immediate relocation or for holding California red-legged frogs must be disinfected after each use with a 70 percent ethanol solution, or a bleach solution, and rinsed with sterile water. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic site.	USFWS
	PRE- + DURING CONSTRUCTION	Each California red-legged frog to be relocated must be placed in a separate plastic bucket, which must be kept shaded and moist until the individual frog is released at the new site. In the unlikely event that California red-legged frog tadpoles are found at the site, they must be captured in a hand net or a two-pole seine net of 1/4-inch mesh and transferred to a bucket containing creek water until they are relocated to a new site. The relocation process must be implemented as quickly as possible.	USFWS
	PRE- + DURING CONSTRUCTION	If more than one California red-legged frog is found dead or injured, the Corps or the County must contact the USFWS immediately so they can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by the Corps and the County and the terms of conditions of the BO have been and continue to be implemented.	USFWS
	DURING CONSTRUCTION	As much as possible, restrict equipment to the existing roadway and/or ruderal areas to avoid disturbance to existing vegetation. Vehicles shall operate on existing roads, in the defined access routes, and the defined work area identified for this project.	CEQA CDFG
	DURING CONSTRUCTION	Construction vehicle access to the stream banks shall be limited to predetermined ingress and egress corridors on existing roads. All other areas adjacent to the work site shall be considered an ESA and shall remain off-limits to construction equipment. Vehicle corridors and the ESA shall be identified and fenced/flagged as described above.	CDFG
	DURING CONSTRUCTION	Vehicles shall not be operated in areas of surface water or in areas where riparian or aquatic species of plants are present, except as otherwise addressed in the streambed alteration agreement or without prior approval from CDFG.	CDFG
	DURING CONSTRUCTION	Carry spill kits in all construction vehicles to minimize potential for spills or leaks of hazardous materials into the creek or surrounding project areas.	CEQA
	DURING CONSTRUCTION	Control dust from all dirt stockpile areas; all trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer).	CEQA
	DURING CONSTRUCTION	Ensure that trucks and equipment leaving the site do not carry soil material onto adjacent paved roads; clean adjacent paved roads at the end of each day if visible soil material is carried from the site onto those roads.	CEQA
	DURING CONSTRUCTION	Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life.	CDFG

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The special environmental conditions for this project are:			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
	DURING CONSTRUCTION	A Service-approved biologist shall ensure that the spread or introduction of invasive exotic plant species shall be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project areas shall be removed.	USFWS
	DURING CONSTRUCTION	A Service-approved biologist shall permanently remove from within the project area any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes, to the maximum extent possible. The permittee shall have the responsibility to ensure that their activities are in compliance with the California Fish and Game Code.	USFWS
	DURING CONSTRUCTION	Fuel and maintain equipment in an appropriate staging area at least 75 feet from the stream channels and banks, or fuel within an area protected by secondary containment. Stationary equipment such as motors, pumps, generators, compressors, and welders located within or adjacent to the stream shall be positioned over drip-pans.	CEQA CDFG USFWS
	DURING CONSTRUCTION	Implement best management practices to avoid the release of pollutants associated with pavement and grinding operations into waterbodies. Act appropriately to prevent, contain, and clean up hazardous material spills.	CEQA CDFG
	DURING CONSTRUCTION	Remove all trash from the project area at the end of each day to avoid attracting wildlife.	CEQA USFWS
	DURING CONSTRUCTION	Cease work and notify the appropriate agency for consultation if any federally- or state-listed species enter the work site.	CEQA CDFG
	DURING CONSTRUCTION	If any wildlife is encountered during the course of construction, said wildlife shall be allowed to leave the construction area unharmed.	CDFG
	DURING CONSTRUCTION	Construction excavations with a depth of greater than 2 feet that could trap wildlife shall be covered at the end of each work day, or shall be provided with wood or earthen escape ramps with a slope of not more than 3:1 to allow the wildlife to escape.	CDFG
	DURING CONSTRUCTION	The work crew will have shovels and a fire extinguisher on-site during all construction activities.	CEQA
	DURING CONSTRUCTION	The work crew will be educated to the risk of fire in the area and to proper disposal of cigarettes at the project site.	CEQA
	DURING CONSTRUCTION	Instream work must be performed when the channel is dry.	CDFG
	DURING CONSTRUCTION	In the event surface water flow is encountered in the creek during project activities, all instream activities shall be performed in isolation from surface water flow. Surface water flow shall be diverted around the project area by using sheet piles, or cofferdams using native materials of washed cobble and gravel with plastic sheeting. Cofferdam materials and any plastic sheeting shall be removed from the project area.	CDFG
	DURING CONSTRUCTION	If the work site is temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 0.5-millimeters to prevent aquatic species from entering the pump system. Water shall be released or pumped in a manner and at an appropriate rate to maintain unimpeded downstream flows during construction.	CEQA USFWS
	DURING CONSTRUCTION	All constructed features shall be properly installed/constructed as to not cause a barrier to the natural movement of fish.	CDFG

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Continued special environmental conditions for this project:			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
	DURING CONSTRUCTION	Any artificial obstruction constructed, maintained, or placed in operation, within the active channel, shall allow at all times sufficient water to pass downstream to maintain aquatic life below the obstruction.	CDFG
	DURING CONSTRUCTION	The discharge area of the project shall not exceed 0.006 acres.	RWQCB
	DURING CONSTRUCTION	The discharge shall not do any of the following: (a) directly or indirectly destabilize a bed of a receiving water, (b) contribute to significant cumulative effects, (c) cause pollution, contamination, or nuisance (as defined by Water Code section 13050), (d) adversely affect candidate, threatened, or endangered species, (e) degrade water quality or beneficial uses, (f) be toxic, (g) include hazardous substances (as defined by Water Code section 13050) or designated waste (as defined by Water Code section 13173).	RWQCB
	DURING CONSTRUCTION	Project generated debris, materials and rubbish shall not be deposited in the creek and shall be removed from areas where such materials could be washed into the creek.	CDFG
	DURING CONSTRUCTION	Raw cement, concrete or washings thereof, asphalt, drilling fluids or lubricants, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish or wildlife resulting from or disturbed by project-related activities, shall be prevented from contaminating the soil and/or entering "Waters of the State."	CDFG
	DURING CONSTRUCTION	Spoil storage sites shall not be located within the creek, where spoil will be washed into the creek, or where it will cover aquatic or riparian vegetation.	CDFG
	DURING CONSTRUCTION	Any dewatering of excavations shall be done in a manner that prevents pollution and/or siltation of downstream reaches. Infiltrating groundwater removed from excavations shall be pumped to a temporary sediment basin before discharging back into the creek channel. The temporary sediment basin may be constructed of hay bales bound together by baling wire and an impermeable base, or by other means equally as effective and with prior approval from CDFG. Water from the temporary sediment basin shall be discharged in a manner as to not cause erosion of the creekbed.	CDFG CEQA
	DURING CONSTRUCTION	Any equipment or structures placed in the active channel for water drafting, pumping or diversion shall be done in a manner that a) prevents pollution and/or siltation, b) provides flows to downstream reaches at all times to support aquatic life; c) provides flows of sufficient quality and quantity, and of appropriate temperature to support aquatic life, both above and below the diversion; and d) restores normal flows to the affected creek immediately upon completion of work at each location.	CDFG USFWS
	DURING CONSTRUCTION	Fill shall be limited to the minimal amount necessary to accomplish the agreed activities. Excess fill material shall be moved off-site at project completion.	CDFG

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Continued special environmental conditions for this project:			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
	DURING CONSTRUCTION	All structures and other constructed features shall be properly aligned and otherwise engineered, installed, and maintained, to assure resistance to washout, and to erosion of the creek bed, creek banks and/or fill and that they will not cause long-term ' changes in water flows that adversely modify the existing upstream or downstream creek bed/bank contours or increase sediment deposition.	CDFG
	DURING CONSTRUCTION	CDFG shall be Immediately notified in writing if monitoring reveals that any of the protective measures were not implemented during the period indicated in this program or if it is anticipated that measures will not be implemented within the time period specified. Immediately notify CDFG if any of the protective measures are not providing the level of protection that is appropriate for the impact that is occurring, and recommendations, if any, for alternative protective measures. This includes any erosion detected in the project area.	CDFG
	DURING CONSTRUCTION	Rock, gravel, and/or other materials shall not be imported into or moved within the creek except as otherwise addressed in the streambed alteration agreement. Only on-site materials and clean imported fill' shall be used to complete the project.	CDFG
	DURING CONSTRUCTION	Structures and associated materials, not designed to withstand high seasonal flows, shall be removed to areas above the high-water mark before such flows occur.	CDFG
	DURING CONSTRUCTION	Project generated material and debris shall be removed from the project site. All project generated debris shall be disposed of in a legal manner.	CDFG
	DURING + POST CONSTRUCTION	All disturbed soils shall be stabilized to reduce erosion potential. Where suitable vegetation cannot reasonably be expected to become established, non-erodible material shall be used for such stabilization. Any installation of non-erodible material, not included in the original project description, shall be coordinated with CDFG. Coordination may include the negotiation of additional streambed alteration agreement provisions for this activity.	CDFG
	DURING + POST CONSTRUCTION	Install and maintain appropriate temporary erosion and sediment control measures until revegetation is successful.	CEQA
	POST CONSTRUCTION	Stabilize and revegetate all areas of disturbed soil with appropriate indigenous native species.	CEQA RWQCB CDFG
	POST CONSTRUCTION	Site restoration shall include compensation for removed trees. This compensation shall include identifying species damaged or removed during project activities and describing, how, where, and when replacement shrubs and trees will be planted. Riparian trees (i.e., willow, cottonwood, poplar, alder, ash, etc.) and shrubs shall be replaced in-kind and on-site, at a ratio of 4:1, and planted in the nearest suitable location to the area where they were removed. Measures to be taken (i.e., irrigation methods if necessary, and maintenance) will be proposed to ensure a performance criteria of 70 percent survival of planted trees for a period of three (3) consecutive years, and an additional two (2) years without assistance.	CDFG

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Continued special environmental conditions for this project:			
Crew Leader Initials	***Timing***	***Requirement***	***Agency***
	POST CONSTRUCTION	Site restoration shall include seeding and mulching of exposed slopes, or stream banks not revegetated with riparian shrubs or trees, with a blend of a minimum of three (3) locally native grass species. One or two sterile non-native perennial grass species may be added to the seed mix provided that amount does not exceed 25 percent of the total seed mix by count. Locally native wildflower and/or shrub seeds may also be included in the seed mix.	CDFG USFWS
	POST CONSTRUCTION	A final project report shall be submitted within 30 days after the project is completed. The final report shall summarize the project construction, including any problems relating to the protective measures of the streambed alteration agreement. "Before and after" photo documentation of the project site shall be required.	CDFG
	POST CONSTRUCTION	A post construction report shall be submitted 45 days after the conclusion of construction activities. The report shall document construction activities and contain as-built drawings (if different from drawings submitted with application) and include before and after photos.	ACOE
	POST CONSTRUCTION	Native riparian shrubs and trees, and oak trees with trunks greater than or equal to four (4) inches diameter at breast height, if removed during project activities, shall be mitigated for by implementation of a Revegetation Plan described in the post construction requirements. This Plan shall be submitted to CDFG in December of each year until the performance criteria described in the CDFG revegetation requirement is met. The report shall assess the revegetation status, effectiveness of maintenance methods, whether or not the revegetation is expected to achieve the performance criteria, and shall propose additional measures that will be taken to achieve the performance criteria during the next year. Photo documentation of monitoring and maintenance for each year shall be part of the annual reports.	CDFG
	POST CONSTRUCTION	A seed mixture shall be submitted to CDFG for approval prior to application. At the discretion of CDFG, all exposed areas where seeding is considered unsuccessful after 90 days shall receive appropriate soil preparation and a second application of seeding, straw, or mulch as soon as is practical on a date mutually agreed upon.	CDFG

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Addendum to the Mitigated Negative Declaration
for the County of San Luis Obispo
Santa Rosa Creek Road Bank Stabilization Project
ED 05-361 (2425R12B596)

Background

In November, 2006, the San Luis Obispo County Environmental Coordinator completed the Draft Mitigated Negative Declaration ("MND") for the proposed Santa Rosa Creek Road Bank Stabilization Project ("Project") and published public notice of the County's intent to adopt an MND for the Project, pursuant to the requirements of the California Environmental Quality Act. At a public hearing conducted on December 12, 2006, the San Luis Obispo County Board of Supervisors approved the MND.

Following approval of the MND, the County has continued the process of completing design work for the Project and has identified constructability concerns given the steep slopes and narrow roadway. These circumstances prompted subsequent geotechnical analysis that resulted in a recommendation that the entire roadway section be excavated to permit access to the lower slope area and reconstructed to strengthen the repaired roadway. This determination resulted in the following project change,

"Traffic Control: Project activities will require the temporary closure of the road, at the project site, for no more than six weeks. Traffic will be rerouted accordingly back through Cambria, or to Highway 46. Notification signage will be posted two weeks prior to the road closure and emergency services personnel will be notified appropriately."

This change constitutes a minor modification of the project description contained in the November 2006 MND. This Addendum addresses whether or not the Project, as modified, has the potential to result in a previously undisclosed significant effect on the environment.

The California Environmental Quality Act (CEQA) defines a "significant effect on the environment" as a "substantial, or potentially substantial, adverse change in the environment." The Project, as proposed, would not result in any impacts to previously undisclosed resources.

Effects of the Change in the Project Description

The modification to the project will permit construction of the bank stabilization repairs without requiring equipment to access the creek channel directly. The road closure will require the County to follow standard procedures for such closures including posting signage ahead of time to notify the public of the closure and notifying emergency service agencies as well.

Conclusion

The Project, as modified, would not result in any significant impacts on the environment. Further, the approved MND originally issued in November, 2006 is still adequate because the changes to the Project are minor and would not result in any new significant impacts.

Prepared by:

Mark Hutchinson — 5.27.10 Date
Environmental Programs Manager, Department of Public Works

Approved by:

Ellen Carroll — 5.26.2010 Date
Ellen Carroll, Environmental Coordinator

ATTACHMENT C
CALIFORNIA DEPARTMENT OF FISH & GAME

AGREEMENT

California Fish and Game Code Section 1602
Stream Alteration Agreement No. 2007-0020-R4
Rocky Creek - San Luis Obispo County

Parties:

California Department of Fish and Game
Central Region
1234 East Shaw Avenue
Fresno, California 93710

Glen Priddy, Deputy Director
County of San Luis Obispo
Department of Public Works
County Government Center, Room 207
San Luis Obispo, California 93408

WHEREAS:

1. Mr. Glen Priddy, representing the County of San Luis Obispo (jointly referred to as the "Operator"), on January 29, 2007, notified ("Notification" No. 2007-0020-R4) the Department of Fish and Game (Department) of their intent to divert or obstruct the natural flow of, or change the bed or banks of, or use materials from Rocky Creek in San Luis Obispo County, waters over which the Department asserts jurisdiction pursuant to Division 2, Chapter 6 of the California Fish and Game Code.

2. The Operator may not commence any activity that is subject to Fish and Game Code Sections 1600 et seq. until the Department has found that such Project shall not substantially adversely affect an existing fish or wildlife resource or until the Department's proposals, or the decisions of a panel of arbitrators, have been incorporated into such projects.

3. Fish and Game Code Sections 1600 et seq. make provisions for the negotiation of agreements regarding the delineation and definition of appropriate activities, Project modifications and/or specific measures necessary to protect fish and wildlife resources.

4. The Department has determined that without the mitigative features identified in this Agreement, the activities proposed in the Notification could substantially adversely affect fish and wildlife.

NOW THEREFORE, IT IS AGREED THAT:

1. The receipt of this document ("Agreement"), by the Operator, satisfies the Department's requirement to notify the Operator of the existence of an existing fish and wildlife resource that may be substantially adversely affected by the Project that is described in the Notification.

2. The contents of this Agreement constitute the Department's proposals as to measures necessary to protect fish and wildlife resources, and satisfy the Department's requirement to submit these proposals to the Operator.

3. The signature of the Operator's representative on this Agreement constitutes the Operator's commitment to incorporate Department's proposals into the Project described in the Notification.

4. This Agreement does not exempt the Operator from complying with all other applicable local, State and Federal law, or other legal obligations.

5. This Agreement, alone, does not constitute or imply the approval or endorsement of a Project, or of specific Project features, by the Department of Fish and Game, beyond the Department's limited scope of responsibility, established by Code Sections 1600 et seq. This Agreement does not therefore assure concurrence, by the Department, with the issuance of permits from this or any other agency. Independent review and recommendations shall be provided by the Department as appropriate on those projects where local, State or Federal permits or environmental reports are required.

6. This Agreement does not authorize the "take" (hunt, pursue, catch, capture, kill or attempt) of State-listed threatened or endangered species. If the Operator, in the performance of the agreed work, discovers the presence of a listed species in the Project work area, work shall stop immediately. The Operator shall not resume activities authorized by this Agreement until such time as valid "take" permits are obtained from the Department pursuant to Fish and Game Code Sections 2081(a) and 2081(b) as appropriate.

7. To the extent that Provisions of this Agreement provide for the diversion of water, they are agreed to with the understanding that Operator possesses the legal right to so divert such water.

8. To the extent that the Provisions of this Agreement provide for activities that require the Operator to trespass on another owner's property, they are agreed to with the understanding that the Operator possesses the legal right to so trespass.

9. To the extent that the Provisions of this Agreement provide for activities that are subject to the authority of other public agencies, said activities are agreed to with the understanding that all appropriate permits and authorizations shall be obtained prior to commencing agreed activities.

10. All Provisions of this Agreement remain in force throughout the term of the Agreement. Any Provision of the Agreement may be amended at any time, provided such amendment is

agreed to in writing by both parties. Mutually approved amendments become part of the original Agreement and are subject to all previously negotiated Provisions. The Agreement may be terminated by either party, subject to 30 days written notification.

11. The Operator shall provide a copy of the Agreement to the Project supervisors and all contractors and subcontractors. Copies of the Agreement shall be available at work sites during all periods of active work and shall be presented to Department personnel upon demand.

12. The Operator agrees to provide the Department access to the Project site at any time to ensure compliance with the terms, conditions, and Provisions of this Agreement.

13. The Operator and any contractor or subcontractor, working on activities covered by this Agreement, are jointly and separately liable for compliance with the Provisions of this Agreement. Any violation of the Provisions of this Agreement is cause to stop all work immediately until the problem is reconciled. Failure to comply with the Provisions and requirements of this Agreement may result in prosecution.

14. The Operator assumes responsibility for the restoration of any fish and wildlife habitat which may be impaired or damaged either directly or, incidental to the Project, as a result of failure to properly implement or complete the mitigative features of this Agreement, or from activities which were not included in the Operator's Notification.

15. It is understood that the Department enters into this Agreement for purposes of establishing protective features for fish and wildlife, in the event that a Project is implemented. The decision to proceed with the Project is the sole responsibility of the Operator, and is not required by this Agreement. It is agreed that all liability and/or incurred costs, related to or arising out of the Operator's Project and the fish and wildlife protective conditions of this Agreement, remain the sole responsibility of the Operator. The Operator agrees to hold harmless and defend the Department of Fish and Game against any related claim made by any party or parties for personal injury or other damage.

16. The terms, conditions, and Provisions contained herein constitute the limit of activities agreed to and resolved by this Agreement. The signing of this Agreement does not imply that the Operator is precluded from doing other activities at the site. However, activities not specifically agreed to and resolved by this Agreement are subject to separate notification pursuant to Fish and Game Code Sections 1600 et seq.

California Environmental Quality Act (CEQA) Compliance: The Operator's concurrence signature on this Agreement serves as confirmation to the Department that the activities conducted under the terms of this Agreement are consistent with the Project as described in the Mitigated Negative Declaration (State Clearinghouse No. 2006101100) prepared by the County of San Luis Obispo (County) for the Santa Rosa Creek Road Bank Stabilization Project. A Mitigated Negative Declaration regarding the Project was approved by the County as Lead

Agency, on December 12, 2006. A copy of the Proposed Mitigated Negative Declaration and Notice of Determination for the Project was provided with the Section 1602 Notification. The Department, as a CEQA Responsible Agency, shall make findings and submit a Notice of Determination to the State Clearinghouse upon signing this Agreement.

This Agreement contains a Monitoring and Reporting Program (MRP), to incorporate monitoring and reporting requirements for the activities authorized in this Agreement.

Project Location: The work authorized by this Agreement will occur within or adjacent to Rocky Creek (Figure 1), within Section 35 of Township 27 South, Range 10 East, MDB&M. More specifically, work will occur along Santa Rosa Creek Road, 1 mile north of Highway 46 in San Luis Obispo County. Unless changes are submitted and approved by the Department, the Project shall be built in the location indicated on the maps/drawings that were submitted with the Notification.

Project Description: The Operator's Notification includes Fish and Game Notification Form FG2023, Initial Study, plan drawings, location maps, photographs, and other submitted information. The Notification comprises the Operator's Project description, and it is used as the basis for establishing the protective Provisions that are included in this Agreement. Any changes or additions to the Project as described in the Notification shall require additional consultation and protective Provisions. The Department's CEQA Determination is based upon the Operator's commitment to full implementation of the Provisions of this Agreement. The Operator has proposed to rebuild and stabilize an approximate 60-foot section of eroded bank, which is undermining the roadway. The following activities are authorized by this Agreement.

- Placing 540 tons of rock slope protection along the toe of the slope, extending five feet below and ten feet above, the existing bed elevation

- Incorporating dirt fill for willow plantings within the rock slope interstices

- Installing welded wire forms beneath reinforced backfill and topsoil for stabilization above the lateral extent of the rock slope protection

- Hydro-seeding the reconstructed slope with an erosion-control mix consisting of stabilizing emulsion, fiber, seed, and water

Plant and Animal Species of Concern: This Agreement is intended to minimize and mitigate adverse impacts to the wildlife resources that may occupy the Project area within Rocky Creek and the immediate adjacent habitat. Special-status species that could potentially be impacted are the California red-legged frog (*Rana aurora draytonii*), Coast Range newt (*Taricha torosa torosa*), western spadefoot (*Spea hammondii*), southwestern pond turtle (*Actinemys marmorata pallida*), shining navarretia (*Navarretia nigelliformis ssp. radians*), Kellog's horkelia (*Horkelia cuneata ssp. sericea*), as well as other birds, mammals, fish, reptiles, amphibians, invertebrates and plants that comprise the local ecosystem.

1 Figure 1

PROVISIONS:

General

1. Agreed activities within the streams may commence after the Department has signed this Agreement and pre-Project Provisions and protective features are implemented. This Agreement shall remain in effect for five (5) years beginning on the date signed by the Department. If the Project is not completed prior to the expiration date defined above, the Operator shall contact the Department to negotiate a new expiration date and any new requirements.

2. When known, the Operator shall provide a construction/work schedule to the Department (mail, or fax to (559) 243-4020, with reference to Agreement 2007-0020-R4 prior) to beginning any activities covered by this Agreement. The Operator shall also notify the Department upon the completion of the activities covered by this Agreement.

3. Prior to starting any activity within the stream, all workers shall have received training from the Operator on the contents of this Agreement, the resources at stake, and the legal consequences of non-compliance.

4. Any native vegetation damaged or removed incidental to Project activities, shall be subject to compensatory mitigation as described in the Restoration provisions below. Any such mitigation shall be implemented by the Operator above and beyond any restoration proposed in the Notification and shall be incorporated into any monitoring plan proposed by the Operator.

Flagging/Fencing

5. Within the stream corridors, the Operator shall identify the upstream and downstream limits of the minimum required work area, the Project footprint, and other encroachments into the stream including any required vehicle access corridors. These limits shall be identified by the Operator prior to construction. All areas within the identified work area limits shall be considered Environmentally Sensitive Areas (ESA) and shall not be disturbed. Flagging/fencing shall be maintained in good repair for the duration of the Project.

Listed/Sensitive Species

6. This Agreement does not allow for the "take," or "incidental take," of any State-listed or Federal-listed threatened or endangered species.

7. The Operator affirms that no "take" of listed species will occur as a result of this Project and will take prudent measures to ensure that all "take" is avoided. The Operator acknowledges that they fully understand that they do not have State "incidental take" authority. If any State- or Federal-listed Threatened or Endangered species occur within the proposed work area or could be impacted by the work proposed, and thus "taken" as a result of Project activities, the Operator is responsible for obtaining and complying with required State and Federal threatened and endangered species permits or other written authorization before proceeding with this Project.

8. Liability for any "take," or "incidental take," of such listed species remains the separate responsibility of the Operator for the duration of the Project.

9. The Operator shall immediately notify the Department of the discovery of any such rare, threatened, or endangered species prior to and/or during construction.

Wildlife

10. If any wildlife is encountered during the course of construction, said wildlife shall be allowed to leave the construction area unharmed.

11. Construction excavations with a depth of greater than 2 feet that could trap wildlife shall be covered at the end of each work day, or shall be provided with wood or earthen escape ramps with a slope of not more than 3:1 to allow the wildlife to escape.

Aquatic Species

12. Ground disturbing activities in potential California red-legged frog (CRLF) habitat shall be conducted when the channel is dry, or shall be restricted to the period between July 1 and October 15. The Operator shall minimize instream construction activities to the maximum extent while still allowing the completion of Project goals.

13. All instream Project activities shall be performed in isolation from surface water flow (see Diversion and Dewatering). Surface water flow shall be diverted around the Project area by using sheet piles, or cofferdams using native materials of washed cobble and gravel with plastic sheeting. No sand, silts or clays shall be placed in the channel. Cofferdam materials and any plastic sheeting shall be removed from the Project area.

14. If the work site is temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 0.5-millimeters to prevent aquatic species from entering the pump system. Water shall be released or pumped in a manner and at an appropriate rate to maintain unimpeded downstream flows during construction.

Birds

15. To protect nesting birds, no construction shall be completed from March 1 through August 1 unless the following surveys are completed by a qualified biologist.

Raptors: Survey for nesting activity of raptors within 500 feet of the construction site. Surveys shall be conducted at appropriate nesting times and concentrate on mature trees. If any active nests are observed, these nests and nest trees shall be designated an ESA and construction shall be suspended until the Operator consults with Department for additional protective provisions.

Other Avian Species: Survey for nesting activity within 500 feett of the defined work area 2 to 3 weeks before construction begins. If any nesting activity is found, construction activities shall be suspended and the Operator shall contact the Department and additional protective provisions, specific to each incident, shall be developed.

Vegetation

16. The disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations (with the exception of exotic plant species) and shall only occur within the defined work area. Precautions shall be taken to avoid other damage to vegetation by people or equipment. The disturbed portions of the stream bed, banks or channel shall be restored to as near their original condition as possible (see Restoration below).

17. Native riparian shrubs and trees, and oak trees with trunks greater than or equal to four (4) inches diameter at breast height, if removed during Project activities shall be mitigated for by implementation of a Revegetation Plan described below.

Vehicles

18. Construction vehicle access to the stream banks shall be limited to predetermined ingress and egress corridors on existing roads. All other areas adjacent to the work site shall be considered an ESA and shall remain off-limits to construction equipment. Vehicle corridors and the ESA shall be identified by the Operator and shall be fenced/flagged as described above.

19. Vehicles shall not be operated in areas of surface water or in areas where riparian or aquatic species of plants are present, except as otherwise addressed in this Agreement or without prior approval from the Department.

20. Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life.

21. Fueling and maintenance of vehicles, other equipment, and staging areas shall occur at least 75 feet from any riparian habitat or water body. The Operator shall ensure contamination of habitat does not occur during such operations.

22. Vehicles shall operate on existing roads, in the defined access routes, and the defined work area identified for this Project.

Erosion

23. The Operator shall develop plans to control erosion and stabilize areas subject to ground disturbance during construction. A Construction Period Erosion Prevention and Contingency Plan shall be prepared and implemented prior to commencement of Project activities. The Plan

may include or be comprised of a statement of Best Management Practices (BMPs), winterization plan, etc. used to prevent pollution of surface water.

24. All disturbed soils within the Project site shall be stabilized to reduce erosion potential, both during and following construction. Planting, seeding with native species, and mulching is conditionally acceptable. Where suitable vegetation cannot reasonably be expected to become established, non-erodible material shall be used for such stabilization. Any installation of non-erodible material, not included in the original Project description, shall be coordinated with the Department. Coordination may include the negotiation of additional Agreement provisions for this activity (see Restoration below).

Pollution

25. Raw cement, concrete or washings thereof, asphalt, drilling fluids or lubricants, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish or wildlife resulting from or disturbed by Project-related activities, shall be prevented from contaminating the soil and/or entering "Waters of the State."

26. Prior to the onset of work, the Operator shall prepare and implement a Spill Response Plan to facilitate prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur. The cleanup of all spilled materials shall begin immediately. The Department shall be notified immediately by the Operator of any spills.

27. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located at least 75 feet from the stream channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the stream, shall be positioned over drip-pans.

28. Project generated debris, materials and rubbish shall not be deposited in the stream and shall be removed from areas where such materials could be washed into the stream.

29. The Operator and all contractors shall be subject to the water pollution regulations found in the Department of Fish and Game Code Sections 5650 and 12015.

Diversion and Dewatering

30. Instream work must be performed when the channel is dry. In the event surface water flow is encountered in the stream during Project activities, the Operator shall submit to the Department a Diversion and Dewatering Plan that addresses the provisions below.

31. Any dewatering of excavations shall be done in a manner that prevents pollution and/or siltation of downstream reaches. Infiltrating groundwater removed from excavations shall be

pumped to a temporary sediment basin before discharging back into the stream channel. The temporary sediment basin may be constructed of hay bales bound together by baling wire and an impermeable base, or by other means equally as effective and with prior approval from the Department. Water from the temporary sediment basin shall be discharged in a manner as to not cause erosion of the streambed.

32. Any equipment or structures placed in the active channel for water drafting, pumping or diversion shall be done in a manner that a) prevents pollution and/or siltation, b) provides flows to downstream reaches at all times to support aquatic life; c) provides flows of sufficient quality and quantity, and of appropriate temperature to support aquatic life, both above and below the diversion; and d) restores normal flows to the affected stream immediately upon completion of work at each location.

Structures

33. The Operator confirms that all structures and other constructed features shall be properly aligned and otherwise engineered, installed, and maintained, to assure resistance to washout, and to erosion of the stream bed, stream banks and/or fill and that they will not cause long-term changes in water flows that adversely modify the existing upstream or downstream stream bed/bank contours or increase sediment deposition.

Fish Passage and Adequate Downstream Flow

34. All constructed features shall be properly installed/constructed as to not cause a barrier to the natural movement of fish, pursuant to Fish and Game Code Section 5948.

35. Any artificial obstruction constructed, maintained, or placed in operation, within the active channel, shall allow at all times sufficient water to pass downstream to maintain aquatic life below the obstruction pursuant to Fish and Game Code Section 5937.

Fill/Spoil

36. Spoil storage sites shall not be located within the stream, where spoil will be washed into the stream, or where it will cover aquatic or riparian vegetation.

37. Rock, gravel, and/or other materials shall not be imported into or moved within the stream, except as otherwise addressed in this Agreement. Only on-site materials and clean imported fill shall be used to complete the Project.

38. Fill shall be limited to the minimal amount necessary to accomplish the agreed activities. Excess fill material shall be moved off-site at Project completion.

Restoration

39. Project generated material and debris shall be removed from the Project site following completion of construction. All Project generated debris shall be disposed of in a legal manner.

40. Structures and associated materials, not designed to withstand high seasonal flows, shall be removed to areas above the high-water mark before such flows occur.

41. Site restoration shall include revegetation of all disturbed soils and fill, including recontoured slopes and all other cleared areas, with riparian vegetation or other plants as appropriate. The revegetation requirements identified below shall be incorporated into any existing revegetation plan prepared by the Operator and submitted for Department approval.

- Compensation for removed trees by:
  - Identifying species damaged or removed during Project activities
  - Describing, how, where, and when replacement shrubs and trees will be planted
    - Riparian trees (i.e., willow, cottonwood, poplar, alder, ash, etc.) and shrubs shall be replaced in-kind and on-site, at a ratio of 4:1, and planted in the nearest suitable location to the area where they were removed
  - Proposing measures to be taken (i.e., irrigation methods if necessary, and maintenance) to ensure a performance criteria of 70 percent survival of planted trees for a period of three (3) consecutive years, and an additional two(2) years without assistance

- Seeding and mulching exposed slopes, or stream banks not revegetated with riparian shrubs or trees, with a blend of a minimum of three (3) locally native grass species
  - One or two sterile non-native perennial grass species may be added to the seed mix provided that amount does not exceed 25 percent of the total seed mix by count
  - Locally native wildflower and/or shrub seeds may also be included in the seed mix
  - Seeding shall be completed as soon as possible, but no later than November 15 of the year construction ends

42. A seed mixture shall be submitted to the Department for approval prior to application. At the discretion of the Department, all exposed areas where seeding is considered unsuccessful after 90 days shall receive appropriate soil preparation and a second application of seeding, straw, or mulch as soon as is practical on a date mutually agreed upon.

43. Where suitable vegetation cannot be reasonably expected to become established, non-erodible materials shall be used for such stabilization. Any installation of non-erodible materials not described in the original Project description shall be coordinated with the Department. Coordination may include the negotiation of additional Agreement Provisions for this activity.

44. Operator shall submit annually a Restoration Monitoring Report as described in the MRP below.

MONITORING AND REPORTING PROGRAM (MRP):

PURPOSE OF THE MRP

The purpose of the MRP is to ensure that the protective measures required by the Department are properly implemented, and to monitor the effectiveness of those measures.

OBLIGATIONS OF THE OPERATOR

The Operator shall have primary responsibility for monitoring Project compliance and effectiveness of all protective measures included as "Provisions" in this Agreement. Protective measures must be implemented within the time periods indicated in the Agreement and as described below.

The Operator shall submit the following to the Department:

- Construction/work schedule (Provision 2)
- Diversion and Dewatering Plan (Provision 30)
- Revegetation Plan (Provision 41)
- Seed mixture to be used to control erosion (Provision 42)
- Restoration Monitoring Report (Provision 44) for planted trees and shrubs shall be submitted to the Department in December of each year until the performance criteria described in Provision 41 is met. The report shall assess the revegetation status, effectiveness of maintenance methods, whether or not the revegetation is expected to achieve the performance criteria, and shall propose additional measures that will be taken to achieve the performance criteria during the next year. Photo documentation of monitoring and maintenance for each year shall be part of the annual reports.
- Final Project Report shall be submitted within 30 days after the Project is completed. The final report shall summarize the Project construction, including any problems relating to the protective measures of this Agreement. "Before and after" photo documentation of the Project site shall be required.

In addition to the above monitoring and reporting requirements, the Department requires as part of this MRP that the Operator:

- Immediately notify the Department in writing if monitoring reveals that any of the protective measures were not implemented during the period indicated in this program, or if it anticipates that measures will not be implemented within the time period specified.
- Immediately notify the Department if any of the protective measures are not providing the level of protection that is appropriate for the impact that is occurring, and

recommendations, if any, for alternative protective measures. This includes any erosion detected in the Project area.

VERIFICATION OF COMPLIANCE:

The Department shall verify compliance with management compliance measures to ensure the accuracy of the Operator's monitoring and reporting efforts. The Department may, at its sole discretion, review relevant Project documents maintained by the Operator, interview the Operator's employees and agents, inspect the Project area, and take other actions to assess compliance with or effectiveness of management compliance measures for the Project.

CONCURRENCE:

APPROVED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME

on 5-9, 2008.

for/ W. E. Loudermilk, Regional Manager
Central Region

ACKNOWLEDGMENT

The undersigned acknowledges receipt of this Agreement and, by signing, accepts and agrees to comply with all terms and conditions contained herein. The undersigned also acknowledges that adequate funding shall be made available to implement the measures required by this Agreement.

By: _____ Date: 9/2/08

Mr. Glen Priddy, Deputy Director
Department of Public Works
County of San Luis Obispo

ATTACHMENT D
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

Linda Adams
Secretary for Environmental Protection

California Regional Water Quality Control Board

Central Coast Region

Internet Address: http://www.waterboards.ca.gov/centralcoast/
895 Aerovista Place, Suite 101, San Luis Obispo, California 93401
Phone (805) 549-3147 • FAX (805) 543-0397

Arnold Schwarzenegger
Governor

April 5, 2007

Mark Hutchinson
County of San Luis Obispo
County Government Center Room 207
San Luis Obispo, CA 93408

Dear Mr. Hutchinson:

WATER QUALITY CERTIFICATION NUMBER 35007WQ02 FOR THE SANTA ROSA CREEK ROAD BANK STABILIZATION PROJECT, SAN LUIS OBISPO COUNTY

Thank you for the opportunity to review your February 5, 2007 water quality certification application for the Santa Rosa Creek Road Bank Stabilization Project. The project will discharge to Rocky Creek. We have determined that the project, including proposed mitigation measures, will comply with water quality standards and other appropriate requirements, as defined by Title 23, Section 3831(v) of the California Code of Regulations. Your application demonstrates that: (a) you will take all practicable measures to avoid impacts, (b) where unavoidable temporary impacts take place, you will restore waters and vegetation to pre-project conditions as quickly as practicable, and (c) where unavoidable permanent impacts take place, the project will result in no net loss of wetland, riparian area, or headwater functions, including onsite habitat, habitat connectivity, floodwater retention, and pollutant removal.

The Executive Officer hereby grants water quality certification, subject to the following conditions:

SPECIAL CONDITIONS:

1. The project shall be carried out as described in the application, including all proposed time schedules.

2. The discharge area of the project shall not exceed 0.006 acres.

3. All proposed mitigation, monitoring, and Best Management Practices shall be implemented in the manner and at the time(s) described in the application package.

4. Vegetation used in the restoration of riparian habitat will consist of native riparian vegetation appropriate to the site location.

5. Prior to implementation of any modifications to the project or mitigation measures, the Water Board and other interested agencies shall be notified in writing.

6. The discharge shall not do any of the following: (a) directly or indirectly destabilize a bed of a receiving water, (b) contribute to significant cumulative effects, (c) cause pollution, contamination, or nuisance (as defined by Water Code section 13050), (d) adversely affect candidate, threatened, or endangered species, (e) degrade water quality or beneficial uses, (f) be toxic, (g) include hazardous substances (as defined by Water Code section 13050) or designated waste (as defined by Water Code section 13173).

STANDARD CONDITIONS:

1. 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 and section 3867 of Title 23 of the California Code of Regulations (23 CCR).

2. This certification action is not intended to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed per to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license was being sought.

3. The validity of any non-denial certification action (Actions 1 and 2) shall be conditioned upon total payment of the fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.

4. In the event of a violation or threatened violation of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under state law. For purposes of Section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification.

5. In response to a suspected violation of any condition of this certification, the Water Board may require the holder of any permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the Water Board deems appropriate, provided that the burden, including costs, of the reports shall have a reasonable relationship to the need for the reports and the benefits obtained from the reports.

Per California Code of Regulations Section 3857, we anticipate no further action on your application. Should new information come to our attention that indicates a water quality problem, we may reassess the conditions of this certification or issue Waste Discharge Requirements.

If you have questions please contact **David Haas at (805) 549-3876** or via e-mail at **Dhaas@waterboards.ca.gov**. Please mention the above certification number in all future correspondence pertaining to this project.

Sincerely,

Roger W. Briggs
Executive Officer

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cc:

U.S. Army Corps of Engineers
Ventura Office
Regulatory Section
2151 Allesandro Drive, Suite 110
Ventura, CA 93001

Deborah Hillyard
California Department of Fish and Game
Lake and Streambed Alteration
1234 E. Shaw Avenue
Fresno, CA 93710

401 Program Manager
State Water Resources Control Board
Division of Water Quality
Water Quality Certification Unit
1001 "I" Street
Sacramento, CA 95812-0100

Supervisor
Wetlands Regulatory Office (WTR-8)
U.S. Environmental Protection Agency
75 Hawthorne St.
San Francisco, CA 94105

ATTACHMENT E
U.S. FISH & WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
81440-2009-F-0166

June 9, 2009

Jane M. Hicks, Chief
Regulatory Division, San Francisco District
U.S. Army Corps of Engineers
1455 Market Street
San Francisco, California 94103-1398

Subject: Biological Opinion for Rocky Creek Bank Stabilization along Santa Rosa Creek Road, San Luis Obispo County, California (File Number 2007-400302S) (8-8-09-F-11)

Dear Ms. Hicks:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of your proposed authorization, pursuant to section 404 of the Clean Water Act, of the Rocky Creek Bank Stabilization along Santa Rosa Creek Road, San Luis Obispo County, California, and its effects on the federally threatened California red-legged frog (*Rana aurora draytonii*) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your request for formal consultation was received by our office on September 9, 2008, by electronic mail. However, the request for formal consultation was not complete until we received the biological assessment developed for the project on January 29, 2009 (TRC Essex 2006). In your request for formal consultation, you determined that the proposed action met the suitability criteria contained in the programmatic biological opinion for the California red-legged frog, dated January 26, 1999 (Service 1999). We concur with this determination.

This biological opinion is based on information which accompanied your request for consultation, including the biological assessment, and the San Luis Obispo County, Department of Public Works (County) request for the U.S. Army Corps of Engineers (Corps) permit. A complete administrative record of this consultation is available at the Ventura Fish and Wildlife Office.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed project includes removal of an area of debris in Rocky Creek approximately 20 feet-wide and installation of a layered system to achieve a stabilized slope on the creek bank below Santa Rosa Creek Road. An approximately 60-foot-long segment of the streambank

would be rebuilt and stabilized by placing 540 tons of rock slope protection along the bottom portion of the bank and covering it with receding layers of soil reinforced with geogrid materials and welded wire fabric fencing. The slope reconstruction would require approximately 235 cubic yards of soil excavation and placement of approximately 250 cubic yards of rock slope protection. Following the bank stabilization, Santa Rosa Creek Road would be repaved and the reconstructed slope and road shoulder would be hydroseeded.

The Corps and the County propose to implement the protective measures for the California red-legged frog that are contained in the programmatic biological opinion (Service 1999).

STATUS OF THE SPECIES/CRITICAL HABITAT

The programmatic biological opinion for the California red-legged frog (Service 1999) describes the basic ecology of the subspecies and the reasons for its listing. Since the issuance of the programmatic biological opinion, the Service has issued a recovery plan for the subspecies (Service 2002).

ENVIRONMENTAL BASELINE

Definition of Action Area

The implementing regulations for section 7(a)(2) of the Act define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 Code of Federal Regulations (CFR) 402.02). Based on the information provided to us, we consider the action area to include all areas where people and equipment would be working within the project footprint, approximately 300 square feet (0.007 acre), 315 linear feet of one lane of Santa Rosa Road that would be temporarily closed, and 100 linear feet of Rocky Creek downstream from the project boundary.

The action area is in the Santa Rosa Creek watershed and is within the range of the California red-legged frog (Service 2002). No protocol level surveys have been conducted within the action area; however, based on the California Natural Diversity Database (CNDDB 2009), California red-legged frogs occur approximately 0.10-mile from the action area. The action area provides suitable non-breeding aquatic habitat and potential breeding habitat for California red-legged frogs (TRC Essex 2006).

EFFECTS OF THE ACTION

The programmatic biological opinion (Service 1999) generally describes how California red-legged frogs could be affected by actions such as the bank stabilization. For this reason, use of the programmatic biological opinion is appropriate and we will not repeat that analysis herein.

Chytrid fungus is a water-borne fungus that is spread through direct contact between aquatic animals and by spores that are able to move short distances through water. The fungus attacks the thickened parts of a frog's skin that have keratin, such as the mouthparts of tadpoles and the

toes of adults. This fungus can decimate amphibian populations by causing fungal dermatitis. Infection typically results in death within 1 to 2 weeks, but not before infected animals can spread the fungal spores to other aquatic species, ponds, and streams. Once a pond or waterway has become infected with chytrid fungus, it is unknown how long the fungus will persist. Chytrid fungus could be spread if infected California red-legged frogs are relocated and introduced into areas with healthy California red-legged frogs. It is also possible that infected equipment or clothing could introduce chytrid fungus into areas where it did not previously occur.

California red-legged frog non-breeding aquatic habitat and potential breeding habitat would be temporarily lost or degraded by siltation and noise due to project activities. The area to be disturbed constitutes a small portion of the available habitat along Rocky Creek. The bank stabilization would prevent future degradation of the stream bank.

This proposed action would affect a small number of California red-legged frogs, if any occur within the work areas. California red-legged frogs may be captured, injured, or killed during construction or efforts to move them from the work zone. Because of the small size of the work area and the fact that the Corps and the County have proposed to use the protective measures contained in the programmatic biological opinion, we anticipate that few, if any, California red-legged frogs are likely to be killed or injured during this work.

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. We are unaware of any non-Federal actions that are reasonably certain to occur and are likely to adversely affect the California red-legged frog in the action area.

CONCLUSION

After reviewing the current status of the California red-legged frog, the environmental baseline for the action area, the effects of the proposed bank stabilization, and the cumulative effects, it is the Service's biological opinion that the Corps' proposed authorization of this activity is not likely to jeopardize the continued existence of the California red-legged frog.

We have reached these conclusions because:

1. Only 300 square feet (0.007 acre) of habitat within the project footprint, as well as the immediately downstream portion of Rocky Creek would be temporarily affected by the work activities;

2. Few, if any, California red-legged frogs are likely to be killed or injured during project activities; and

3. The Corps and the County have agreed to implement measures to reduce the adverse effects of the proposed activities on the California red-legged frog.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create 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. 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 the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and the Corps must ensure that they become binding conditions of its authorization to the County for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps fails to require the County to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps or the County must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

All California red-legged frogs found within the action area may be subject to take in the form of capture during relocation efforts and some of the captured individuals may be killed or injured as a result of mishandling, predation, exposure, and competition with resident frogs. Any California red-legged frogs that remain in the project area may be subject to increased predation, be crushed by workers conducting project activities, or be otherwise injured or killed.

We cannot determine the precise numbers of California red-legged frogs that may be killed, injured, or harassed as a result of the proposed bank stabilization activities. Numbers and locations of California red-legged frogs within a population vary from year to year. Incidental take of the California red-legged frog will be difficult to detect because of its small body size and finding a dead or injured specimen is unlikely. However, because of the small size of the action area and the fact that the Corps and the County have proposed to use the protective measures described in the programmatic biological opinion for the California red-legged frog (Service 1999), we anticipate that few, if any, California red-legged frogs are likely to be killed or injured during this work.

This incidental take statement does not exempt any activity from the prohibitions against take contained in section 9 of the Act that is not incidental to the action as described in this biological opinion. California red-legged frogs may be taken only within the defined boundaries of the action area as described in the Environmental Baseline section of this biological opinion.

REASONABLE AND PRUDENT MEASURES

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

1. Only qualified biologists, authorized by the Service, may survey for, capture, and move California red-legged frogs from work areas.

2. Well-defined survey and relocation procedures must be implemented by authorized biologists to avoid or minimize the take of California red-legged frogs during project activities.

3. The Corps and the County must ensure that the level of incidental take that occurs during project implementation is commensurate with the analysis contained herein.

The Service's evaluation of the effects of the proposed action includes consideration of the measures to minimize the adverse effects of the proposed action on the California red-legged frog that are contained in the programmatic biological opinion for the California red-legged frog (Service 1999). Any subsequent proposal by the Corps or County to change these measures may constitute a modification of the proposed action and may warrant re-initiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to supplement the protective measures contained in the programmatic biological opinion (Service 1999) that the Corps agrees to incorporate into its authorization of the County's proposed action.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Corps must ensure that the County complies with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. The following term and condition implements reasonable and prudent measure 1:

   The Corps must condition its authorization to require the County to request our approval of any biologist it wishes to employ to survey for, capture, and move California red-legged frogs from work areas. The request must be in writing and be received by the Service at least 15 days prior to any such activities being conducted.

2. The following terms and conditions implement reasonable and prudent measure 2:

   a. The biologist must conduct one daytime survey at the project area prior to the beginning of any work activities and at the beginning of each day that work activities continue. If California red-legged frogs are found, they must be moved to a predetermined, appropriate relocation site. The Service-approved biologist must be allowed sufficient time to move California red-legged frogs from a work area before work activities begin. If California red-legged frogs are found on site during work activities, the Service-approved biologist must have the authority to halt activities until the California red-legged frogs are safely removed from the work area. Only Service-approved biologists may participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. This term and condition supersedes measure 2 in the Minimization of Adverse Effects section of the programmatic biological opinion that requires surveys 2 weeks before the onset of project activities.

   b. Each California red-legged frog to be relocated must be placed in a separate plastic bucket, which must be kept shaded and moist until the individual frog is released at the new site. In the unlikely event that California red-legged frog tadpoles are found at the site, they must be captured in a hand net or a two-pole seine net of ¼-inch mesh and transferred to a bucket containing creek water until they are relocated to a new site. The relocation process must be implemented as quickly as possible.

   c. A Service-approved biologist must relocate California red-legged frogs found in the project area to dense vegetation immediately upstream of the action area.

   d. To ensure that diseases are not conveyed between work sites by Service-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force must be followed at all times. A copy of the code of practice is enclosed. All plastic buckets used either for immediate relocation or for holding California red-legged frogs must be disinfected after each use with a 70 percent ethanol solution, or a bleach solution, and rinsed with sterile water. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

3. The following term and condition implements reasonable and prudent measure 3:

   If more than one California red-legged frog is found dead or injured, the Corps or the County must contact our office immediately so we can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by the Corps and the County and the terms and conditions of this biological opinion have been and continue to be implemented.

REPORTING REQUIREMENTS

The reporting requirements for projects tiered from the programmatic biological opinion are described in the document. The Corps and County should review the programmatic biological opinion regarding the information we require.

DISPOSITION OF DEAD OR INJURED SPECIMENS

Within 3 days of locating any dead or injured California red-legged frogs the Corps or the County must notify the Ventura Fish and Wildlife Office by telephone [(805) 644-1766] and in writing (2493 Portola Road, Suite B, Ventura, California 93003). The report must include the date, time, location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

We recommend that dead California red-legged frogs found in the action area be tested for amphibian disease due to the increased occurrence of amphibian chytridiomycosis in California. However, this recommendation is voluntary and to be determined by you upon contacting our office at the discovery of a dead California red-legged frog. If you choose to submit specimens for testing they can be sent to Southern Illinois University Carbondale for low cost testing. You may contact Gretchen Padgett-Flohr through contact information provided below to determine if dead specimens are candidates for testing. If you determine not to submit dead California red-legged frogs for testing, they must be placed with the California Academy of Sciences Herpetology Department (Contact: Jens Vindum, Department of Herpetology, California Academy of Sciences, 875 Howard Street, San Francisco, California, 94103, (415) 321-8289).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use 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 to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. We recommend the following conservation measure to promote recovery of the California red-legged frog:

> The Corps or the County should submit any dead California red-legged frogs for disease testing by following the protocol described below. Care should be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Specimens collected will be tested for amphibian disease, particularly amphibian chytridiomycosis, by sending them to Gretchen Padgett-Flohr, Department of Zoology, Life Sciences II, Southern Illinois University Carbondale, Carbondale, Illinois 62901. The same methodology is used for all life stages of all caudates and anurans. If the specimen is sloughing skin, care must be taken to include the slough with the animal. Specimens must be placed in a cooler with ice to slow decomposition until proper preservation is possible, but specimens should not be allowed to freeze. Specimens must be preserved in 70 percent ethanol in a leak-proof container (cryogenic vials are not leak-

proof). When depositing adult or large post-metamorphic specimens in the ethanol, ensure that the abdominal cavity is punctured with a small incision to allow the preservative to flow into the body of the animal. The sample must be accompanied by a disease notification form that can be downloaded at http://www.ccadc.us/contact.htm, along with $5.00 per sample which is required for sample analysis and incorporating the data into the California amphibian disease database. The locations of specimens identified as a disease carrier will be georeferenced online at http://www.ccadc.us. Additional information concerning sampling protocols, decontamination procedures, and the mapping project can be found at http://www.ccadc.us (contact: Gretchen Padgett-Flohr, (618-201-5533); gpadgettflohr@aol.com). Arrangements regarding proper disposition of potential specimens should be made with the Southern Illinois University Carbondale, Department of Zoology by the Corps prior to implementation of any actions. If it is determined by Gretchen Padgett-Flohr that the specimen should not be sent to Southern Illinois University Carbondale, the remains of California red-legged frogs must be placed with the institution identified in the Disposition of Dead or Injured Specimens section of this biological opinion.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting California red-legged frogs or their habitat.

REINITIATION NOTICE

This concludes formal consultation on your proposed authorization of the Rocky Creek Bank Stabilization along Santa Rosa Creek Road, San Luis Obispo 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 retained (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 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, please contact Christopher Diel of my staff at (805) 644-1766, extension 305.

Sincerely,

Diane K. Noda
Field Supervisor

LITERATURE CITED

California Department of Fish and Game (CDFG). 2009. California Natural Diversity Database.

TRC Essex. 2006. Biological assessment for the Santa Rosa Creek Road project. Half Moon Bay, California.

U.S. Fish and Wildlife Service. 1999. Programmatic formal Endangered Species Act consultation on issuance of permits under section 404 of the Clean Water Act or authorizations under the Nationwide Permit Program for projects that may affect the California red-legged frog. Dated January 26. Issued to: Art Champ, U. S. Army Corps of Engineers, Sacramento District, Sacramento; Calvin Fong, U. S. Army Corps of Engineers, San Francisco District, San Francisco, California; and Richard Schubel, U. S. Army Corps of Engineers, Los Angeles District, Los Angeles, California. Issued by: Ventura and Sacramento Fish and Wildlife Offices, Ventura and Sacramento, California.

U.S. Fish and Wildlife Service. 2002. Recovery plan for the California red-legged frog (*Rana aurora draytonii*). Portland, Oregon.

The Declining Amphibian Populations Task Force Fieldwork Code of Practice

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each work site.

2. Boots, nets, traps, and other types of equipment used in the aquatic environment should then be scrubbed with 70 percent ethanol solution and rinsed clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond, wetland, or riparian area.

3. In remote locations, clean all equipment with 70 percent ethanol or a bleach solution, and rinse with sterile water upon return to the lab or "base camp." Elsewhere, when washing-machine facilities are available, remove nets from poles and wash in a protective mesh laundry bag with bleach on the "delicates" cycle.

4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable gloves and change them between handling each animal. Dedicate sets of nets, boots, traps, and other equipment to each site being visited. Clean them as directed above and store separately at the end of each field day.

5. When amphibians are collected, ensure that animals from different sites are kept separately and take great care to avoid indirect contact (e.g., via handling, reuse of containers) between them or with other captive animals. Isolation from unsterilized plants or soils which have been taken from other sites is also essential. Always use disinfected and disposable husbandry equipment.

6. Examine collected amphibians for the presence of diseases and parasites soon after capture. Prior to their release or the release of any progeny, amphibians should be quarantined for a period and thoroughly screened for the presence of any potential disease agents. Used cleaning materials and fluids should be disposed of safely and, if necessary, taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

The Fieldwork Code of Practice has been produced by the Declining Amphibian Populations Task Force with valuable assistance from Begona Arano, Andrew Cunningham, Tom Langton, Jamie Reaser, and Stan Sessions.

For further information on this Code, or on the Declining Amphibian Populations Task Force, contact John Wilkinson, Biology Department, The Open University, Walton Hall, Milton Keynes, MK7 6AA, UK. E-mail: DAPTF@open.ac.uk Fax: +44 (0) 1908-654167

ATTACHMENT F
ARMY CORPS OF ENGINEERS

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

COPY

JAN 20 2010

RECEIVED

JAN 22 2010

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS

Regulatory Division

SUBJECT: File Number 2007-400302S

Mr. Glenn Priddy
San Luis Obispo County
Department of Public Works
County Government Center, Room 207
San Luis Obispo, California 93408

Dear Mr. Priddy:

This letter is written in response to your submittal of January 12, 2007, requesting Department of the Army authorization to conduct a bank stabilization project in Rocky Creek, which runs alongside Santa Rosa Creek Road, approximately 8 miles southwest of the City of Paso Robles (Latitude: 35.5438°, Longitude: -120.8658°), San Luis Obispo County, California.

This project involves removal of an approximately 20 foot wide area of debris in the creek and installation of a layered system of strata to achieve a 0.5:1 stabilized slope on the creek bank below Santa Rosa Creek Road. The rebuilding and stabilization of an approximately 60 foot long segment of bank will be accomplished by placing 540 tons of rock slope protection (RSP) along the bottom portion of the bank and covering it with receding layers of soil, reinforced with geogrid materials and welded wire fabric facing. The slope reconstruction will require soil excavation and placement of RSP approximately five feet below and ten feet above the creek bed; approximately 235 cubic yards of soil will be excavated below the ordinary high water mark and filled with 250 cubic yards of RSP. Soil will be placed within the layered geogrid system above the RSP. The road shoulder width, which is currently two feet wide, will be rebuilt so that the top of the slope will be approximately 10 feet from the edge of the roadway. After building the slope, the roadway will be repaved and the reconstructed slope and road shoulder will be hydro seeded with an erosion control mix consisting of stabilizing emulsion, fiber, seed and water. Approximately 180 square feet (0.004 acre) of unvegetated stream bed will be impacted by this project. Project construction will take place during the dry months when water flow at the project site is minimal.

Based on a review of the information you submitted, your project qualifies for authorization under Department of the Army Nationwide Permit 13 - *Bank Stabilization* (72 Fed. Reg. 11092, March 12, 2007), pursuant to Section 404 of the Clean Water Act (33 U.S.C. Section 1344). See Enclosure 1. All work shall be completed in accordance with the plans and drawings titled "USACE File #2007-400302S, Rocky Creek Bank Stabilization" and dated January 11, 2010.

The project must be in compliance with the General Conditions cited in Enclosure 2 for this Nationwide Permit authorization to remain valid. Non-compliance with any condition could result in the suspension, modification or revocation of the authorization for your project, thereby requiring you to obtain an Individual Permit from the Corps. This Nationwide Permit authorization does not obviate the need to obtain other State or local approvals required by law.

This authorization will remain valid for two years from the date of this letter unless the Nationwide Permit is modified, suspended or revoked. If you have commenced work or are under contract to commence work prior to the suspension, or revocation of the Nationwide Permit and the project would not comply with the resulting Nationwide Permit authorization, you have 12 months from that date to complete the project under the present terms and conditions of the Nationwide Permit. Upon completion of the project and all associated mitigation requirements, you shall sign and return the Certification of Compliance, Enclosure 3, verifying that you have complied with the terms and conditions of the permit.

To ensure compliance with this Nationwide Permit authorization, the following special conditions shall be implemented:

1. This Corps permit does not authorize you to take an endangered species. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit or a Biological Opinion (BO) under ESA Section 7 with "incidental take" provisions with which you must comply). The enclosed U.S. Fish and Wildlife Service (FWS) BO dated June 9, 2009, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take authorized by the attached BO, whose terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take and it would also constitute non-compliance with this Corps permit. The FWS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.

2. All standard Best Management Practices shall be implemented to prevent the movement of sediment downstream. No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products, or other organic or earthen material shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into the waterways.

3. A post construction report shall be submitted 45 days after the conclusion of construction activities. The report shall document construction activities and contain as-built drawings (if different from drawings submitted with application) and include before and after photos.

Should you have any questions regarding this matter, please call Holly Costa of our Regulatory Division at (415) 503-6780. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copy furnished (w/o enclosures):

CA DFG, Monterey, CA
CA RWQCB, San Luis Obispo, CA

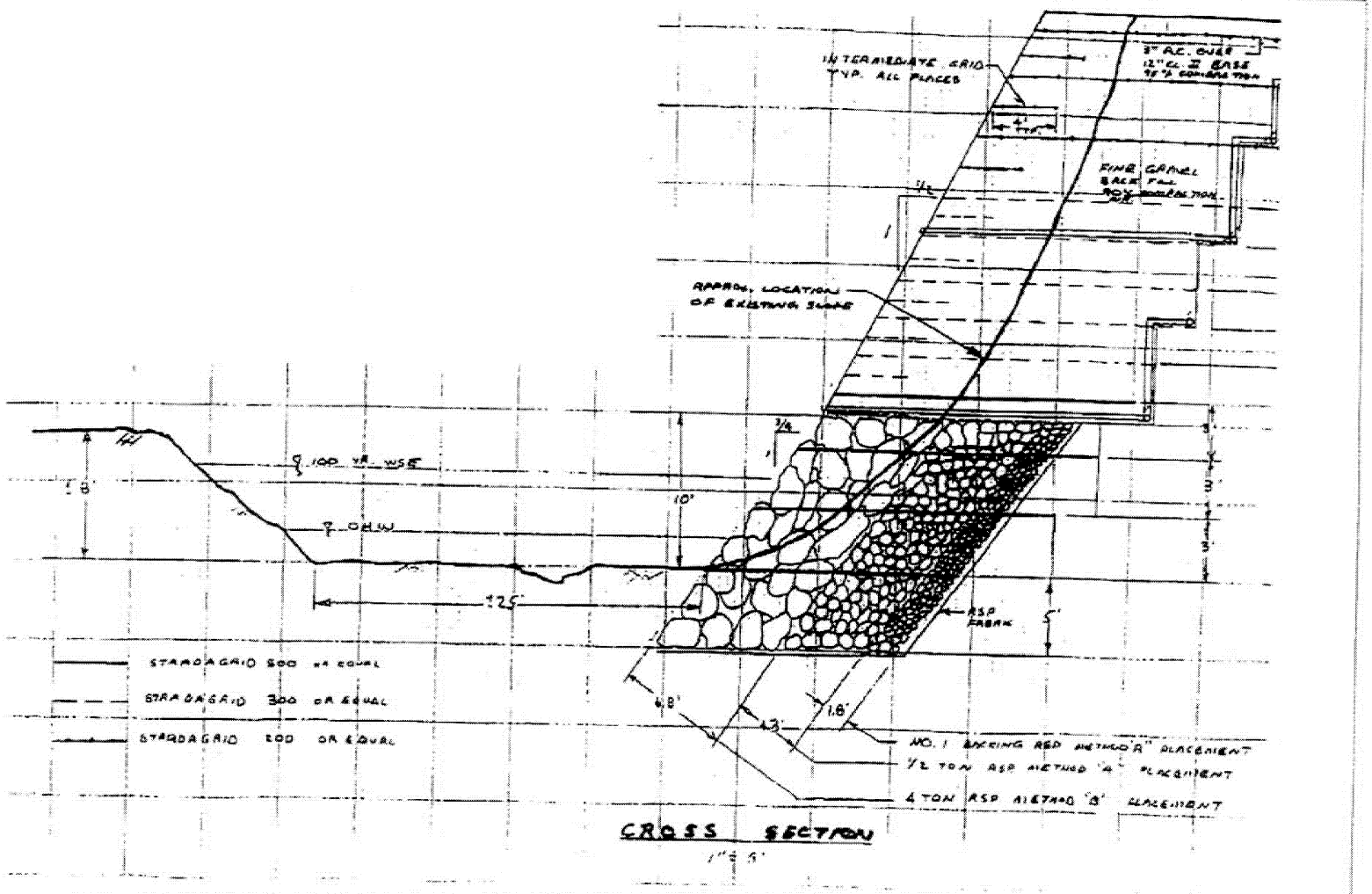
Santa Rosa Creek Road Project
Vicinity Map

TRC Essex

7/19/2005 X:\SLO\Santa Rosa Creek\mxd\Santa Rosa Creek Road Vicinity Map.mxd

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

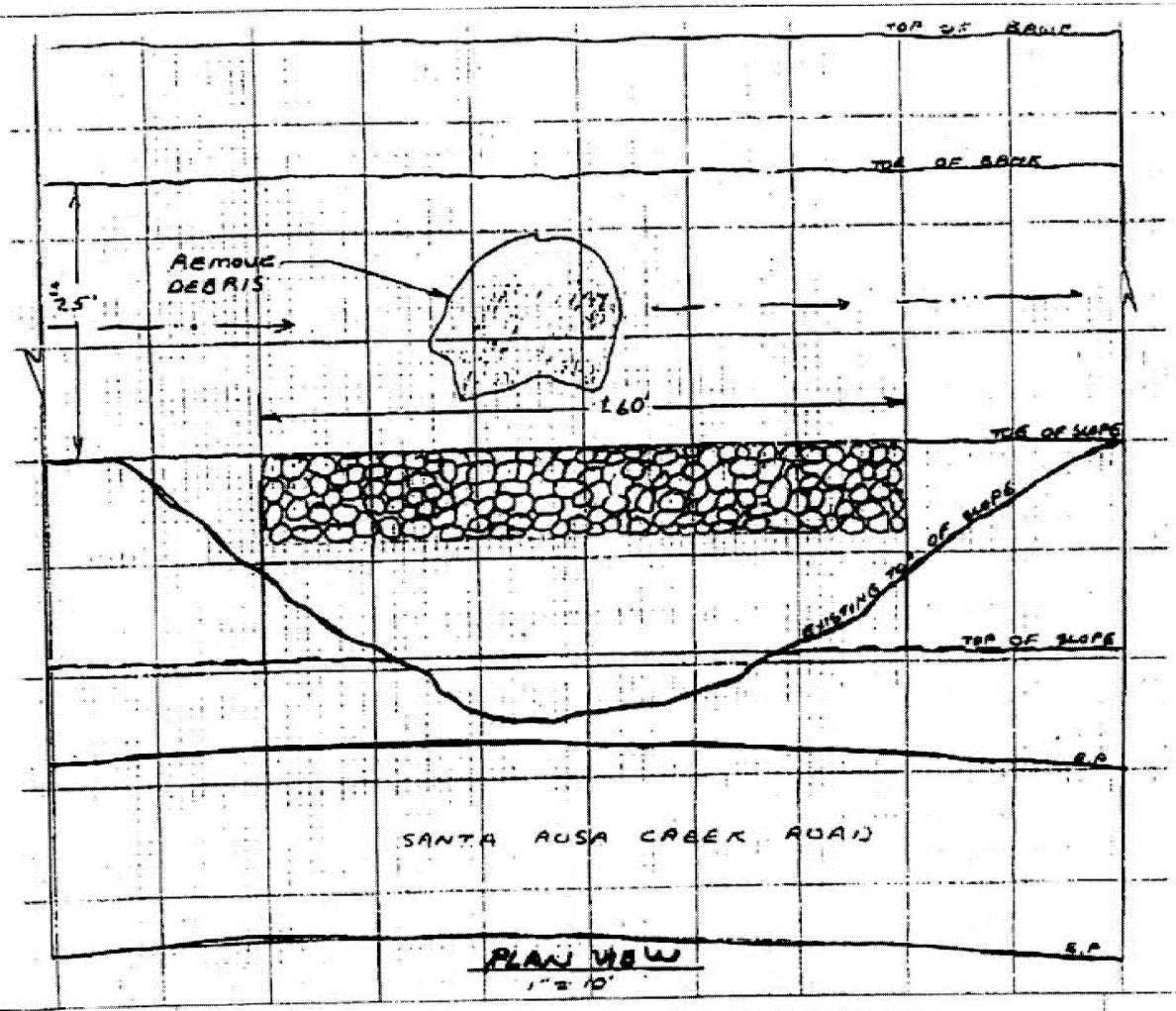
USACE File #2007-400302S
Rocky Creek Bank Stabilization
January 11, 2010



COUNTY OF SAN LUIS OBISPO DEPARTMENT OF PUBLIC WORKS	Santa Rosa Creek Road Bank Stabilization On Rocky Creek	Sheet 2 of 2 January 12, 2006

U.S. Army Corps of Engineers
San Francisco District

USACE File #2007-400302S
Rocky Creek Bank Stabilization
January 11, 2010
Page 2 of 2



COUNTY OF SAN LUIS OBISPO DEPARTMENT OF PUBLIC WORKS	**Santa Rosa Creek Road Bank Stabilization On Rocky Creek**	Sheet 1 of 2 January 12, 2006

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)

Enclosure 2

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/ or Coastal Zone Management Act consistency for an NWP.

1. *Navigation.* (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. *Aquatic Life Movements.* No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. *Spawning Areas.* Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. *Migratory Bird Breeding Areas.* Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. *Shellfish Beds.* No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. *Suitable Material.* No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. *Water Supply Intakes.* No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. *Adverse Effects From Impoundments.* If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. *Management of Water Flows.* To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. *Fills Within 100-Year Floodplains.* The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. *Equipment.* Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. *Soil Erosion and Sediment Controls.* Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. *Removal of Temporary Fills.* Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. *Proper Maintenance.* Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. *Wild and Scenic Rivers.* No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and
Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. *Tribal Rights.* No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. *Endangered Species.* (a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. (c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species specific regional endangered species conditions to the NWPs. (e) Authorization of an activity by a
NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at *http://www.fws.gov/* and *http://www.noaa.gov/fisheries.html* respectively.

18. *Historic Properties.* (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. (b) Federal permittees should follow

their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the preconstruction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed. (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete preconstruction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h–2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. *Designated Critical Resource Waters.* Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment. (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. *Mitigation.* The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal: (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site). (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal. (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require preconstruction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood

of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment. (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs. (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses. (g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan. (h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. *Water Quality.* Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

22. *Coastal Zone Management.* In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

23. *Regional and Case-By-Case Conditions.* The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. *Use of Multiple Nationwide Permits.* The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. *Transfer of Nationwide Permit Verifications.* If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)_____
(Date) _____

26. *Compliance Certification.* Each permittee who received a NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include: (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions; (b) A statement that any required mitigation was completed in accordance with the permit conditions; and (c) The signature of the permittee certifying the completion of the work and mitigation.

27. *Pre-Construction Notification.* (a) *Timing.* Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity: (1) Until notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or (2) If 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2). (b) *Contents of Pre-Construction Notification:* The PCN must be in writing and include the following information: (1) Name, address and telephone numbers of the prospective permittee; (2) Location of the proposed project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.); (4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate; (5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property.

Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act. (c) *Form of Pre-Construction Notification:* The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used. (d) *Agency Coordination:* (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. (2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring preconstruction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the preconstruction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each preconstruction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination. (5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS. (e) *District Engineer's Decision:* In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. *Single and Complete Project.* The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

Enclosure 3

Permittee: Mr. Glenn Priddy, San Luis Obispo County Department of Public Works

File Number: 2007-400302S

Certification of Compliance
for
Nationwide Permit

"I hereby certify that the work authorized by the above referenced File Number and all required mitigation have been completed in accordance with the terms and conditions of this Nationwide Permit authorization."

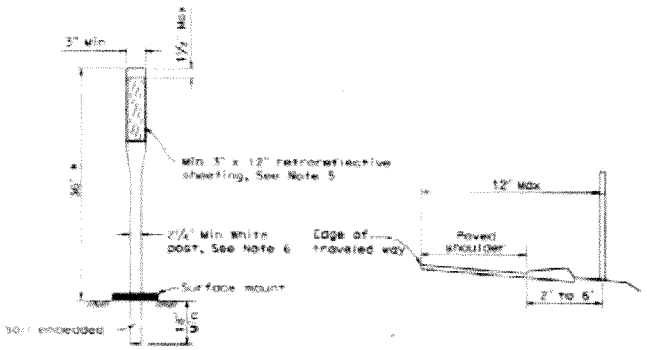
_____ _____

(Permittee) (Date)

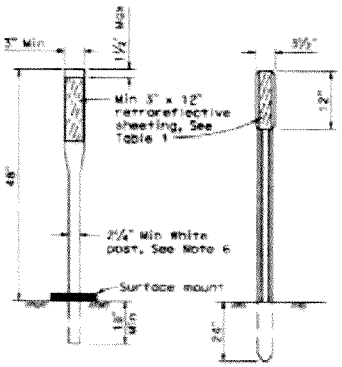
Return to:

Holly Costa
U.S. Army, Corps of Engineers
San Francisco District
Regulatory Division, CESPN-R
1455 Market Street
San Francisco, CA 94103-1398

ATTACHMENT G
APPLICABLE STANDARD DRAWINGS AND PLANS
(Not limited those included herein)



DELINEATOR POSITIONING



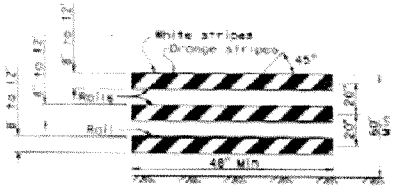
CLASS 1 FLEXIBLE POST

CLASS 2 METAL POST
See Note 4

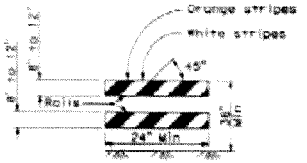
DELINEATORS

* 36" Min where speeds are 40 miles/h or less.

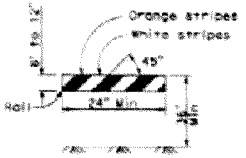
CHANNELIZERS



TYPE III BARRICADE



TYPE II BARRICADE



TYPE I BARRICADE
See Note A

BARRICADES (See Note 3)

Only face of rails shown. Barricade construction materials and supports as specified in the specifications.

TABLE 2 - BARRICADES

BARRICADE	TYPE I	TYPE II	TYPE III
Width of Rail	8" Min - 12" Max *	8" Min - 12" Max *	8" Min - 12" Max *
Length of Rail	24" Min	24" Min	48" Min
Width of Stripes * *	6"	6"	6"
Height	36" Min	36" Min	60" Min
Number of Retroreflective Rail Faces	2 (one each direction)	4 (two each direction)	3 if facing traffic in one direction 6 if facing traffic in two direction

* For the wooden option dimensions are nominal lumber dimensions.

* * For rails less than 38" long, 4" wide stripes shall be used.

NOTE A:

Barricades to have a minimum of 270 square inches of retroreflective area facing traffic when used on freeways, expressways, and other high speed highways.

TABLE 1 - DELINEATORS

TYPE	RETROREFLECTIVE SHEETING	
	FRONT	BACK
E	White	White (See Note 1)
F	White	None
G	Yellow	None
I	Yellow	Yellow (See Note 1)
J	Red	None

NOTES:

1. The retroreflective sheeting used on the back of delineator shall be a minimum size of 3" x 3".
2. The type of delineator to be installed will be designated on the plans.
3. All barricade stripes shall be retroreflective.
4. See Standard Plan A73B for Metal Post Details.
5. Unless shown otherwise on the plans, or as directed by the Engineer, the color of the retroreflective sheeting for permanent channelizers shall conform to the color of the pavement markings it supplements.
6. Except, Class 1 (Flexible Post) temporary delineators and temporary channelizers in work zones shall be orange post with white retroreflective sheeting.

REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

The State of California or the officers or agents shall be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To get to the Caltrans web site, go to: http://www.dot.ca.gov

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DELINEATORS, CHANNELIZERS AND BARRICADES

NO SCALE

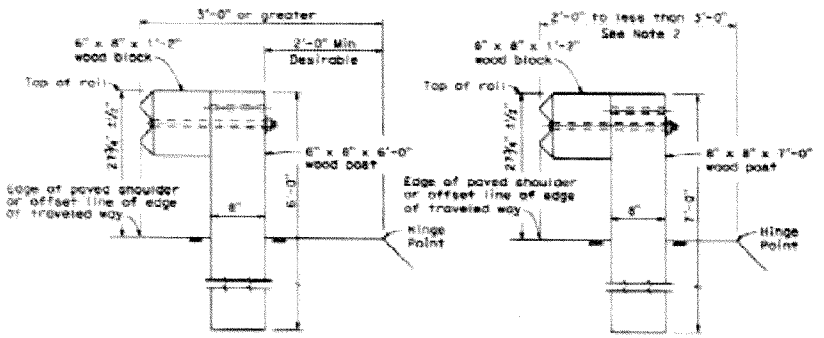
A73C

2006 STANDARD PLAN A73C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Randell D. Hiatt
REGISTERED CIVIL ENGINEER
May 1, 2006
PLANS APPROVAL DATE
Renewal 6-30-07

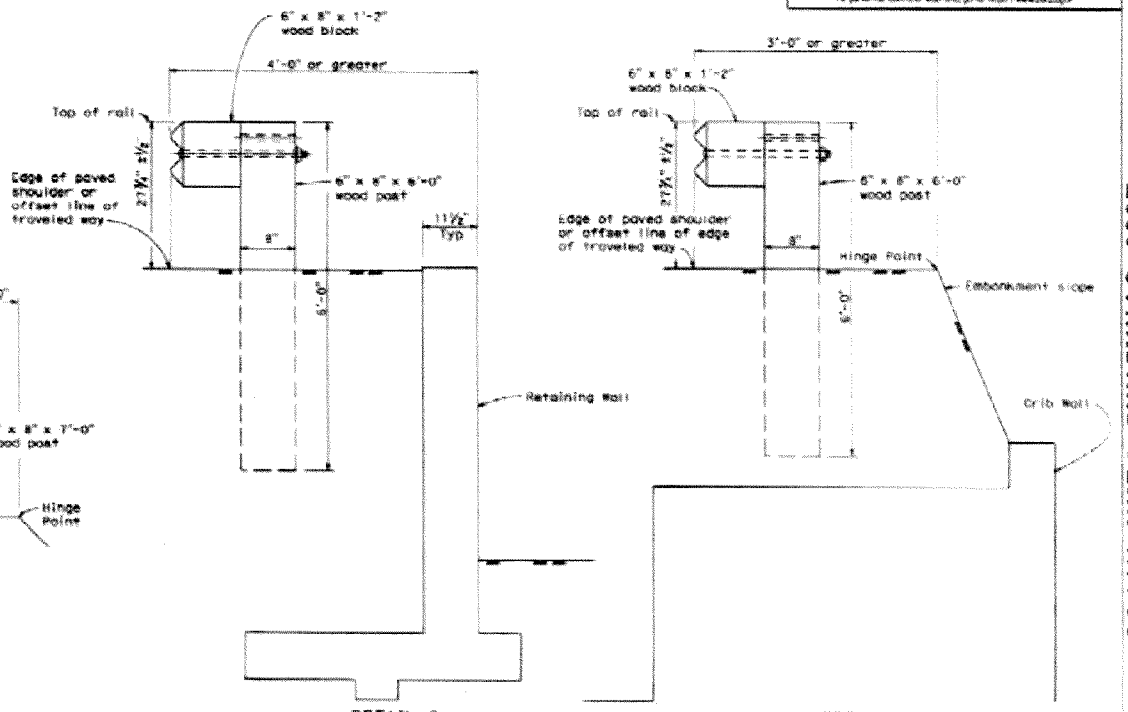
To get to the California web site, go to http://www.dot.ca.gov



DETAIL A
TYPICAL ROADWAY INSTALLATION
See Note 1

DETAIL B
NARROW ROADWAY INSTALLATION
See Note 1

POST EMBEDMENT



DETAIL C

DETAIL D

INSTALLATION AT EARTH RETAINING WALLS

NOTES:

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 9 steel post, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 9 steel post, 7'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Standard Plans A77A1 and A77A2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-0", see the Project Plans for special details.
3. For dike positioning with guard railing installations, see Standard Plan A77C4.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LINE POST EMBEDMENT AND HINGE POINT OFFSET DETAILS

NO SCALE

A77C3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Randall D. Hiatt
REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

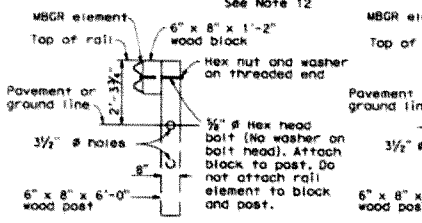
Randall D. Hiatt
No. C50200
Exp. 6-30-07
CIVIL
STATE OF CALIFORNIA

TABLE A

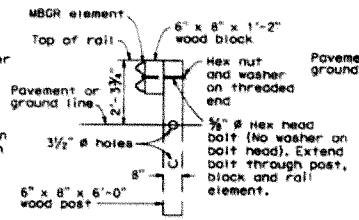
POST OFFSET DIMENSIONS

Post No.	3'-0" System End Offset	3'-6" System End Offset
1	36"	42"
2	22¼"	27¾"
3	11¾"	16¼"
4	6¾"	10⅜"
5	3"	6"
6	¾"	2¾"
7	0"	¾"
8	0"	0"

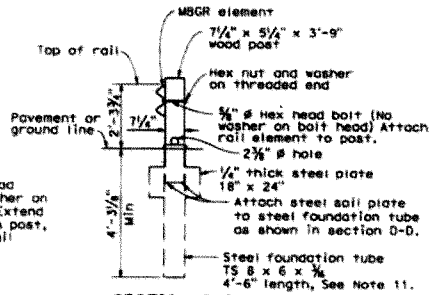
See Note 12



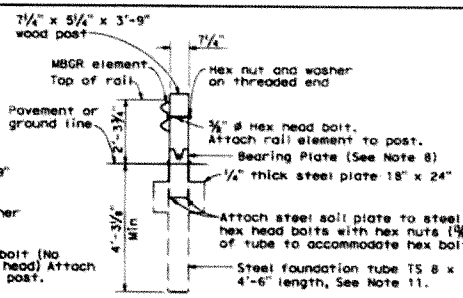
SECTION A-A



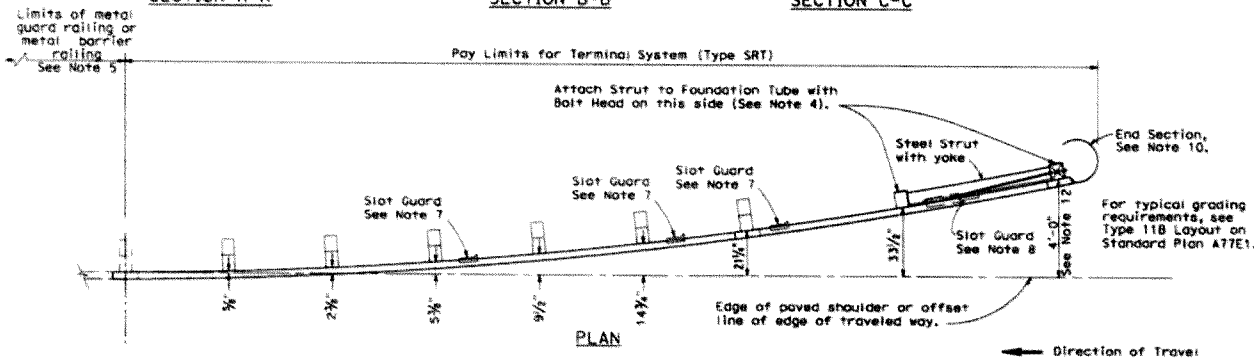
SECTION B-B



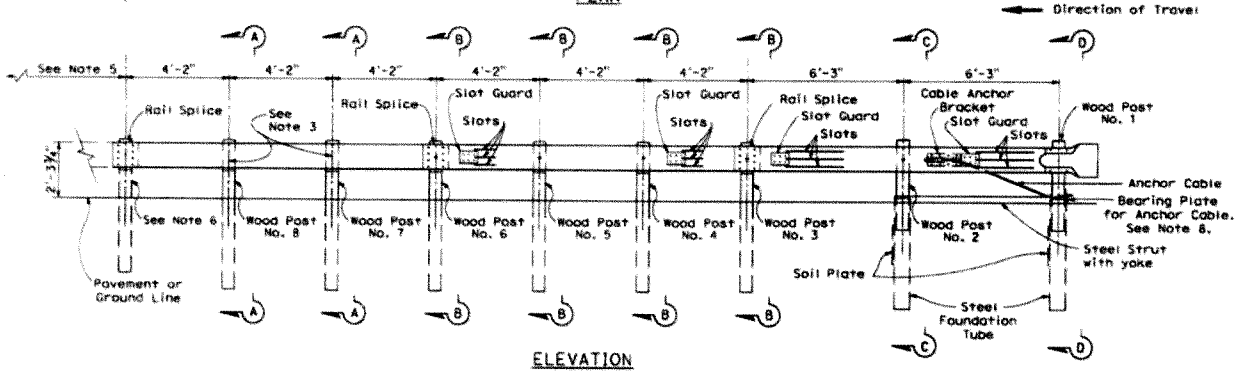
SECTION C-C



SECTION D-D
(Terminal Section not shown)



PLAN



ELEVATION

TERMINAL SYSTEM (TYPE SRT)
(8 Post System)
See Note 9

NOTES:

1. For additional details of Terminal System (Type SRT), refer to the manufacturer's installation instructions.
2. The post offset dimensions are given to the center of the traffic face of the block, except at the first two posts, where the dimension is to the center of the traffic face of the post. Offset points are to be located by chord measurements at the back of the rail equal to the nominal post spacings shown. Posts are to be set approximately radial to the railing at each post locations.
3. Do not attach rail elements to posts 7 and 8.
4. Attach strut to Post Nos. 1 and 2 foundation tubes with ⅝" ø hex head bolts, washers and hex nuts. Bolts extend through the strut, steel foundation tube, and wood posts.
5. For the length and type of metal beam guard railing or metal barrier railing the terminal system is attached to, see the Project Plans.
6. Attach rail element to this post and block. Payment for this post, block and hardware is included in payment for the type of railing or barrier the terminal system is attached to, not part of payment for Terminal System (Type SRT).
7. The deflector angle of the slot guard is to be positioned immediatley downstream of the slots.
8. For bearing plate orientation, refer to the manufacturer's installation instructions.
9. For typical use of this terminal system with guard railing, see the A77E, A77F and A77G Series of Standard Plans. See Standard Plan A78E for typical use of this terminal system with single thrie beam barrier.
10. A complete wrap around end section may continued to be used in existing installations. New installations shall be constructed with the ¾ wrap end section shown.
11. A 6'-0" length steel foundation tube, TS 8 x 6 x ⅜ without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A ⅝" ø hex head bolt and nut shall be installed in the hole in 6'-0" length tube to keep the wood post from dropping into the tube.
12. Where site conditions will not accommodate use of the standard 4'-0" system end offset, 3'-6" or 3'-0" system end offsets, as applicable, may be used. See Table A for post offset dimensions for 3'-6" and 3'-0" system end offsets.

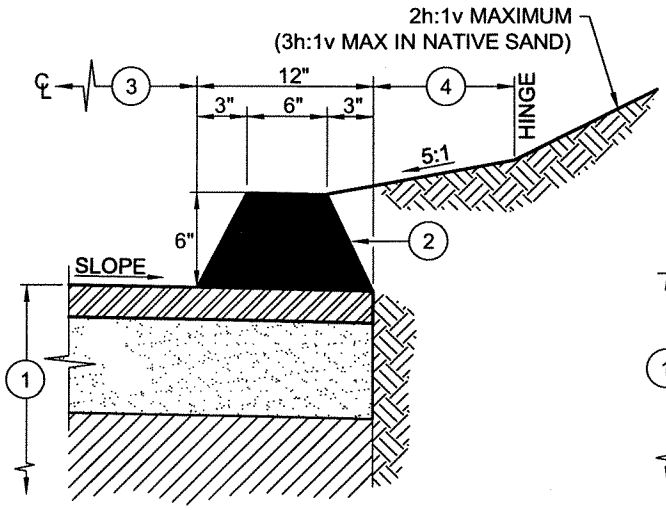
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM RAILING TERMINAL SYSTEM (TYPE SRT)

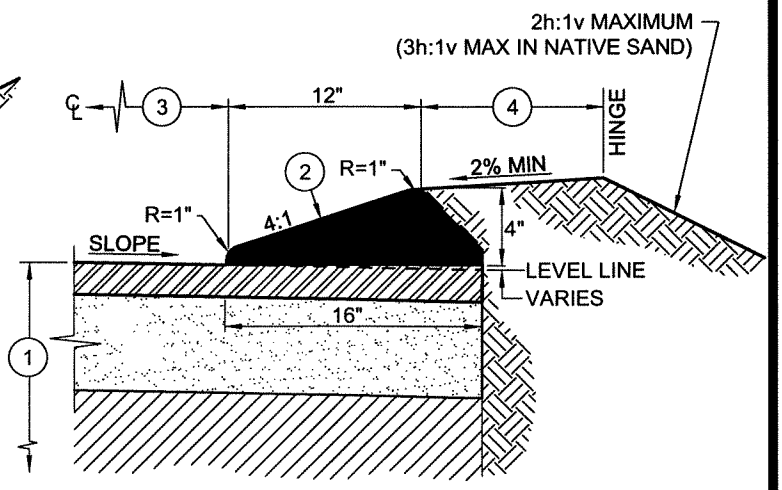
NO SCALE

A77L1

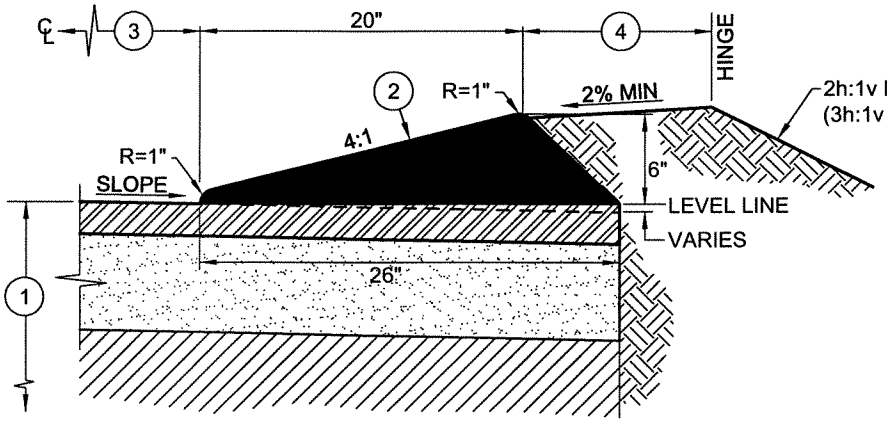
Revisions					
Description	Approved	Date	Description	Approved	Date



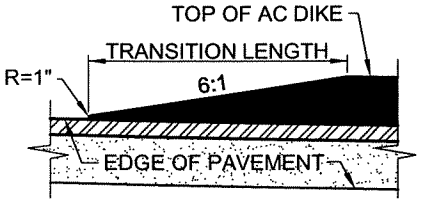
TYPE "A" ASPHALT DIKE
FOR USE IN CUT CONDITIONS



TYPE "E" MOUNTABLE ASPHALT DIKE
FOR USE IN FLAT & FILL CONDITIONS



TYPE "D" MOUNTABLE ASPHALT DIKE
FOR USE IN FLAT & FILL CONDITIONS (OPTIONAL)



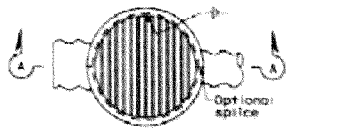
DIKE END TRANSITION (5)

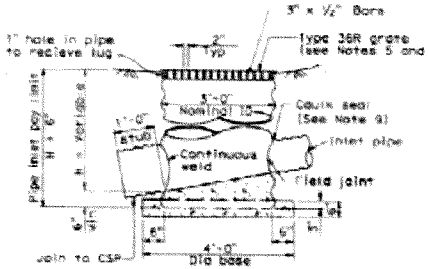
NOTES:
1. ROADWAY STRUCTURAL SECTION THICKNESS PER PLAN.
2. ASPHALT CONCRETE DIKE SHALL BE REQUIRED PER THE DESIGN STANDARDS (REFER TO A-1 SERIES STANDARD DRAWINGS). USE PG 70-10 ASPHALT BINDER FOR ALL ASPHALT CONCRETE DIKE.
3. ROADWAY TRAVEL PLUS SHOULDER WIDTH MEASURED FROM ROAD CENTERLINE TO THIS POINT.
4. REFER TO A-1 SERIES STANDARD DRAWINGS FOR MINIMUM DISTANCES TO HINGE POINT.
5. A 6h:1v DIKE HEIGHT TAPER SHALL BE PROVIDED AT EACH END OF AN AC DIKE.
6. ASPHALT DIKE SHALL BE REQUIRED BY THE DEPARTMENT WHERE NEEDED TO CONTROL DRAINAGE OR EROSION AND ON LONGITUDINAL GRADES OF 3% OR GREATER. TYPE "A" DIKE SHALL BE USED WHEN THE ROADWAY IS BELOW EXISTING OR FINISHED SURFACE. TYPE "D" OR "E" DIKE SHALL BE REQUIRED IN CONDITIONS WHERE THE ROADWAY IS ABOVE OR LEVEL WITH EXISTING OR FINISHED SURFACE.
7. PRIOR TO PROJECT ACCEPTANCE, ALL DAMAGED ASPHALT DIKE SHALL BE REMOVED AND REPLACED AND A FOG SEAL SHALL BE APPLIED TO BOTH THE REPLACED ASPHALT DIKE AND TO THE REMAINING UNDAMAGED ASPHALT DIKE TO THE LIMITS DETERMINED BY THE DEPARTMENT.

SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

ASPHALT DIKES

Scale:	Issued:
1"=1'	Aug. 2006
Drawing No:	C-3
Sheet No:	1 OF 1

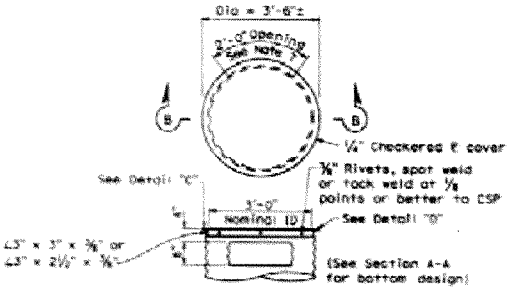




SECTION A-A

TYPE GMP

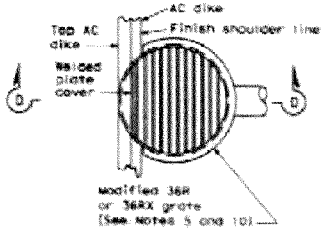
STEEL PIPE INLET WITH GRATE

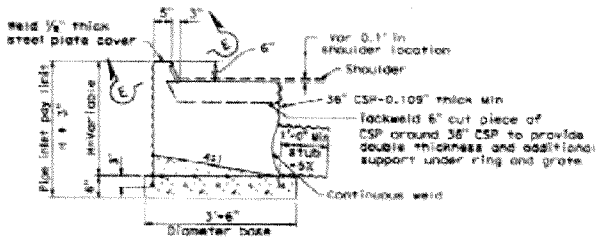


SECTION B-B

TYPE OMP or OMPI

STEEL PIPE INLET WITH SIDE OPENING AND STEEL COVER (See Note 6)

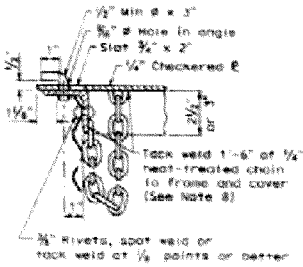




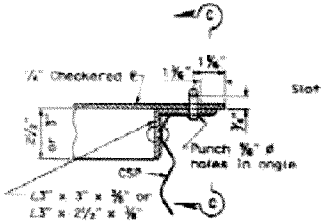
SECTION D-D

TYPE ODI

STEEL PIPE INLET WITH GRATE AND RAISED OPENING AT AC DIKE FLOWLINE



DETAIL "C"



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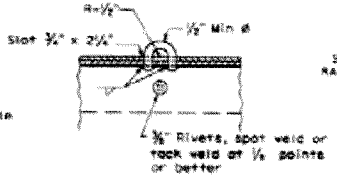
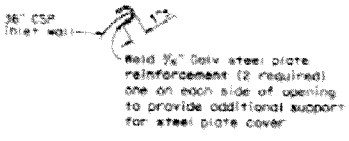
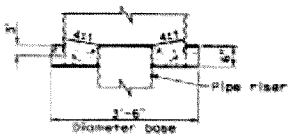


SECTION C-C



SECTION E-E



TYPE ODI BASE DETAIL FOR PIPE RISER CONNECTION

NOTES:

1. For Details of concrete pipe inlets, see Standard Plan D75B.
2. For details of ladder and steps and when ladder or steps are required, see Standard Plan D75C.
3. Inlet pipes shall not protrude into basin.
4. Except for inlets used for junction boxes, basin floors shall have minimum slope of 4% from all directions toward outlet pipe, and a wood trowel finish.
5. See Standard Plans D77A and D77B for Grate and Frame Details and weights of Miscellaneous Iron and Steel.
6. Designation of Type OMP1 pipe inlets on plans indicates trash racks are to be furnished and installed on all side openings. See Standard Plan D75C for trash rack details.
7. More than one side opening may be required. Location and number as ordered by the Engineer.
8. Chain to be provided when specified.
9. Caulk seal with pliable mixture of sand, portland cement, and emulsified asphalt (Mixture of 1 part portland cement, 3-5 parts sand, and 1½ parts SS1 emulsified asphalt).
10. Place pipe so bars of grate will be parallel with main surface flow.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

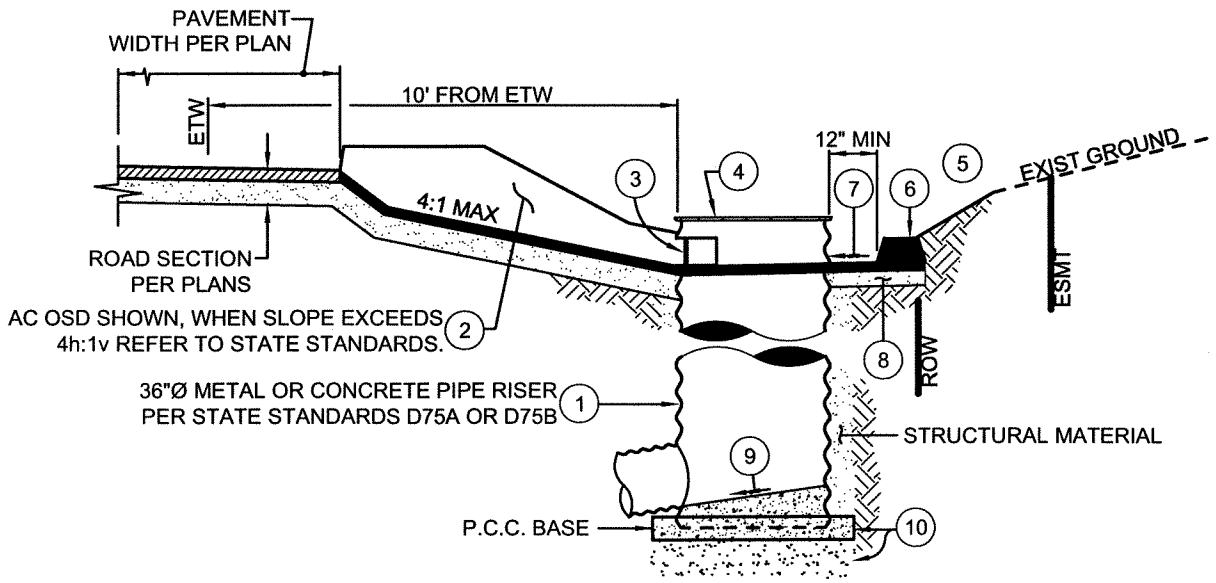
STEEL PIPE INLETS

NO SCALE

D75A

2006 STANDARD PLAN D75A

Revisions					
Description	Approved	Date	Description	Approved	Date
NOTE 10	REM	NOV 07			
NOTE 14	GDM	NOV 08			

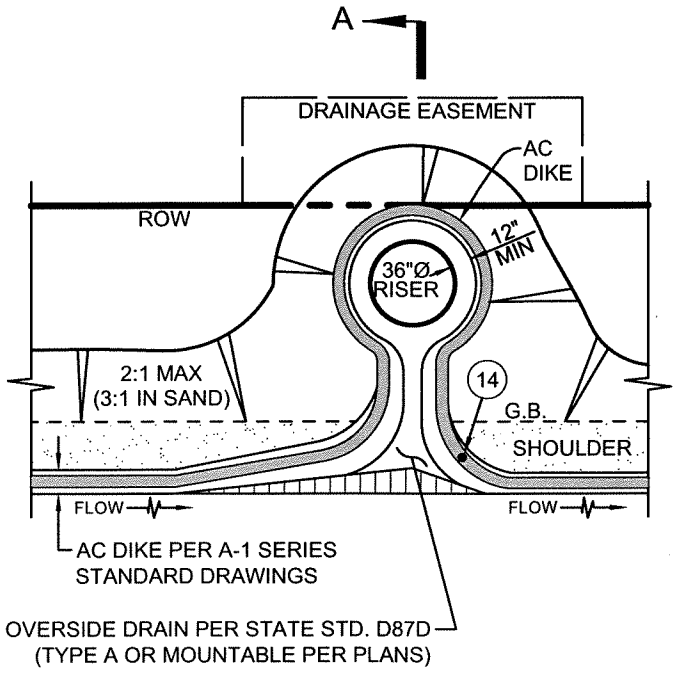


SECTION A-A

ALL CATCH BASINS SHALL BE EQUIP WITH A STAINLESS STEEL FRAME DESIGNED TO ACCEPT A "DrainPac™" STORM DRAIN FILTER INSERT, OR EQUAL.

NOTES:

1. REFER TO THE 2006 STATE STANDARD PLANS D75A OR D75B FOR PIPE RISER DETAILS. THE PROJECT ENGINEER SHALL PROVIDE ALL DESIGN SPECIFICATIONS ON THE PLANS (RISER TYPE, LID, GRATE, PIPE SIZE, ETC).
2. REFER TO THE 2006 STATE STANDARD D78D FOR AC OVERSIDE DRAIN DETAILS AND SPECIFICATIONS. THE PROJECT ENGINEER SHALL PROVIDE ALL DESIGN SPECIFICATIONS ON THE PLANS.
3. CONSTRUCT TRASH RACK PER THE 2006 STATE STANDARD PLAN D75C.
4. A LID MAY BE USED WHEN THE RISER NOT LOCATED IN SUMP CONDITIONS, OTHERWISE USE TYPE "GMP" OR "GCP" GRATE. PROJECT ENGINEER SHALL PROVIDE HYDRAULIC CALCULATIONS.
5. MINIMUM CUT SLOPE SHALL BE 2 HORIZONTAL:1 VERTICAL (3h:1v IN NATIVE SAND).
6. TYPE "A" AC DIKE PER DRAWING C-3..
7. SLOPE TO DRAIN TOWARDS RISER OPENING.
8. 2-INCH MINIMUM ASPHALT CONCRETE OVER 6-INCH MINIMUM COMPACTED AGGREGATE BASE.
9. RISER FLOOR SLOPED TO DRAIN AT 4h:1v TOWARDS OUTLET, PROVIDE WOOD FLOAT FINISH.
10. CONCRETE SHALL BE 565 LBS/CY CEMENTITIOUS MATERIAL [6 SACK]., OVER 6-INCH MINIMUM CLASS II AGGREGATE BASED TO 95% RELATIVE COMPACTION.
11. ALL EXPOSED STEEL SHALL BE COLD GALVANIZED.
12. A DRAINAGE EASEMENT SHALL BE OFFERED TO THE PUBLIC WHENEVER THE IMPROVEMENTS EXTEND BEYOND THE RIGHT-OF-WAY.
13. MODIFY AS REQUIRED FOR SUMP CONDITIONS.
14. INSTALL STORM DRAIN MARKER PER M-6.



PLAN

REDUCED SCALE

SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

RURAL CATCH BASIN

ASPHALT DIKE CONDITION

Scale:	Issued:
1"=4'	Aug. 2006

Drawing No: D-2b

Sheet No: 1 OF 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

LICENSED LANDSCAPE ARCHITECT

June 5, 2009
PLANS APPROVAL DATE

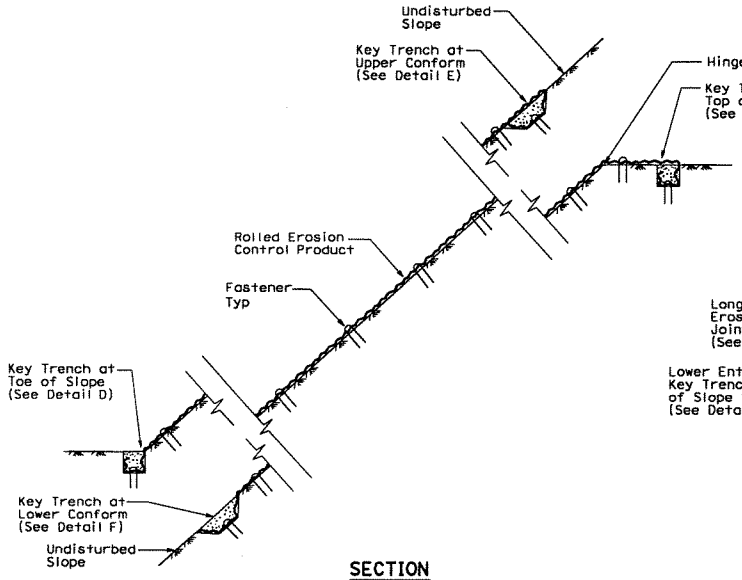
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

LICENSED LANDSCAPE ARCHITECT — STATE OF CALIFORNIA — 2-28-11 — 5-14-09

To accompany plans dated _____

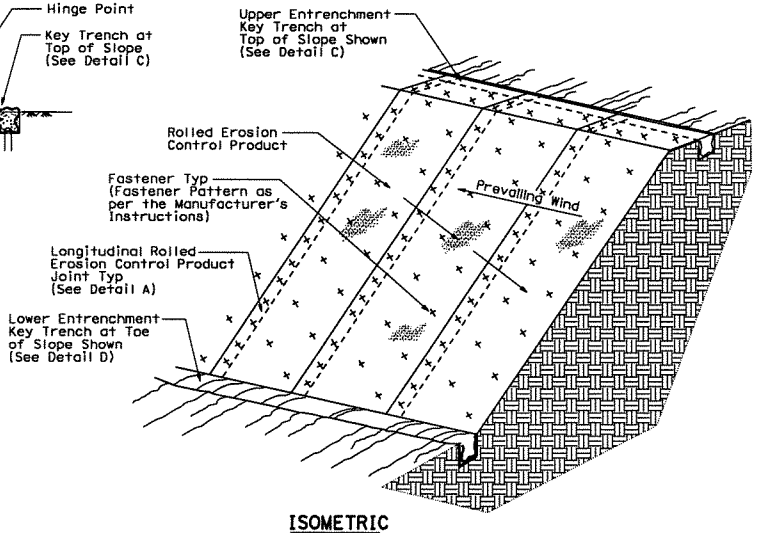
NOTE:

1. Fiber Roll/Compost Sock shown for reference purposes only.
2. If transverse rolled erosion control product joints are required on slopes, see Detail B.



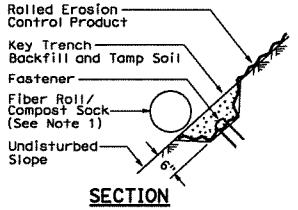
SECTION

ROLLED EROSION CONTROL PRODUCT ON SLOPE WITH VARIOUS KEY ENTRENCHMENTS



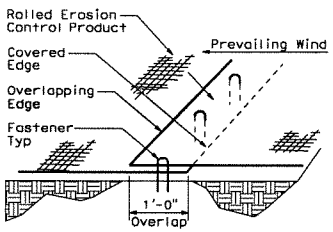
ISOMETRIC

ROLLED EROSION CONTROL PRODUCT ON SLOPE



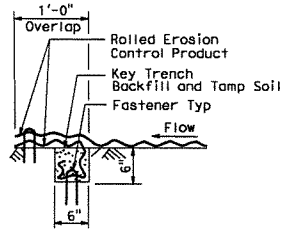
SECTION

DETAIL F KEY TRENCH AT LOWER CONFORM



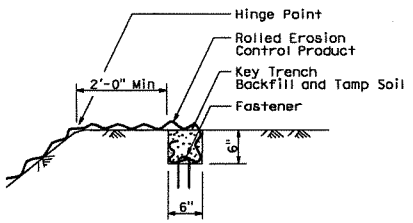
PERSPECTIVE

DETAIL A LONGITUDINAL ROLLED EROSION CONTROL PRODUCT JOINT



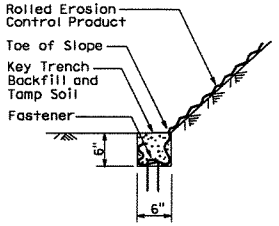
SECTION

DETAIL B TRANSVERSE ROLLED EROSION CONTROL PRODUCT JOINT



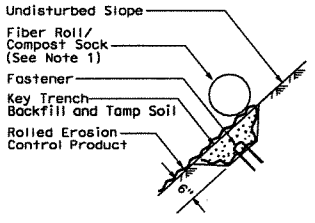
SECTION

DETAIL C KEY TRENCH AT TOP OF SLOPE



SECTION

DETAIL D KEY TRENCH AT TOE OF SLOPE



SECTION

DETAIL E KEY TRENCH AT UPPER CONFORM

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ROLLED EROSION CONTROL PRODUCT

NO SCALE

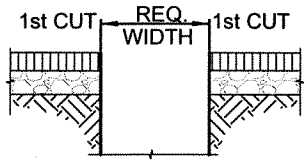
NSP H53 DATED JUNE 5, 2009 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP H53

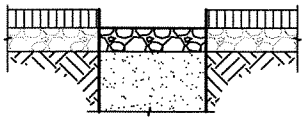
3-4-09

2006 NEW STANDARD PLAN NSP H53

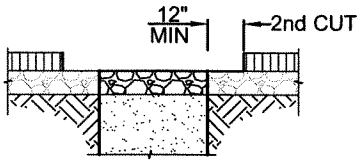
Revisions					
Description	Approved	Date	Description	Approved	Date



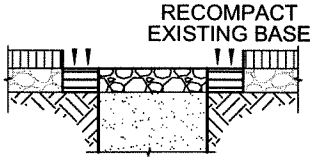
STEP 1: SAWCUT PER TO CONSTRUCT TRENCH PER U-4. SAWCUT SHALL FOLLOW ALIGNMENT OF STRUCTURE.



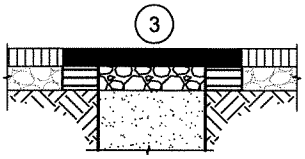
STEP 2: BACKFILL & COMPACT NEW TRENCH TO TOP OF EXIST BASE SECTION PER U-4.



STEP 3: SAWCUT PER NOTE 1 TO REMOVE AN ADDITIONAL 12" MIN OF ASPHALT SURFACE.

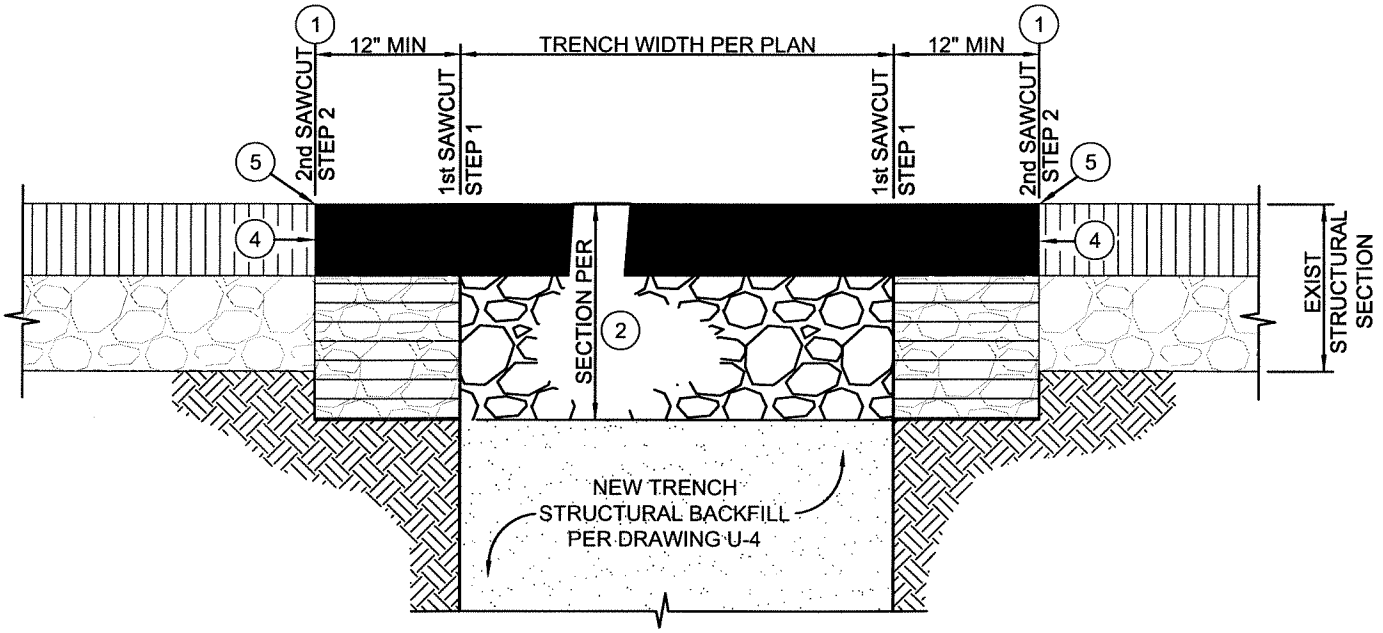


STEP 4: RECOMPACT EXISTING BASE SECTION TO 95% RELATIVE COMPACTION.



STEP 5: PAVE ROADWAY PER DEPARTMENT APPROVED SECTION.

PAVEMENT REPAIR PROCEDURE



SECTION VIEW

NOTES:

1. SAWCUT TO REMOVE DAMAGED OR FAILED PAVEMENT SECTION ADJACENT TO THE EDGE OF TRENCH AS NECESSARY TO PROVIDE A CLEAN JOIN LINE. ALL SAWCUTS SHALL BE PERPENDICULAR OR PARALLEL TO CENTERLINE, OUTSIDE THE NORMAL VEHICLE TIRE PATH WITHIN A TRAVEL LANE, AND SHALL NOT BE ALLOWED WITHIN DESIGNATED BICYCLE LANES. CUT EDGES SHALL BE VERTICAL WITH SQUARE CORNERS AND SHALL BE STRAIGHT AND NEAT IN APPEARANCE. ALL SAWCUTS SHALL BE TO MINIMUM SHOWN OR TO COMPETENT PAVEMENT SECTION.
2. THE STRUCTURAL ROAD REPAIR SECTION SHALL MATCH THE EXISTING STRUCTURAL SECTION THICKNESS OR AS REQUIRED BY THE DEPARTMENT. TYPICAL ROAD WIDENING SECTION SHALL BE:
   - ASPHALT CONCRETE PER THE DESIGN STANDARDS TO 95% RELATIVE COMPACTION, OVER
   - CLASS II AGGREGATE BASE TO 95% RELATIVE COMPACTION, OVER
   - TRENCH SECTION PER DRAWING U-4 (STRUCTURAL BACKFILL TO 95% MIN RELATIVE COMPACTION)
3. NEW PAVEMENT SHALL BE PLACED IN LIFTS NOT EXCEEDING 3-INCHES (COMPACTED). WHERE EXISTING PAVEMENT IS 3.5-INCHES THICK OR GREATER SEE STANDARD DRAWING R-4a FOR TRENCH REPAIR REQUIREMENTS.
4. A TACK COAT SHALL BE APPLIED TO ALL HORIZONTAL AND VERTICAL CONFORM SURFACES PRIOR TO PAVING.
5. AFTER PAVING, APPLY "CRAFCO SUPERFLEX" TO ALL SURFACE SEAMS PER MANUFACTURER'S RECOMMENDATIONS.
6. THE DEPARTMENT SHALL PROVIDE ADDITIONAL REQUIREMENTS WHEN TRENCHING IN EXISTING ROADS HAVING CONCRETE STRUCTURAL SECTIONS.

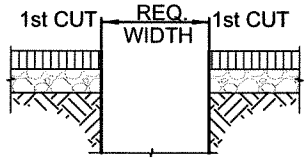
SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

TRENCH REPAIR

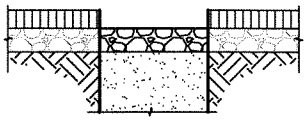
EXISTING AC PAVEMENT LESS THAN 3.5" THICK

Scale:	Issued:
NTS	Aug. 2006
Drawing No:	R-4
Sheet No:	1 OF 1

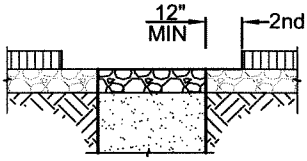
Revisions					
Description	Approved	Date	Description	Approved	Date



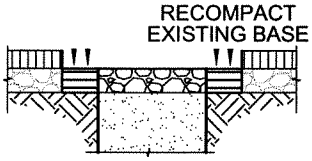
STEP 1: SAWCUT PER TO CONSTRUCT TRENCH PER U-4. SAWCUT SHALL FOLLOW ALIGNMENT OF STRUCTURE



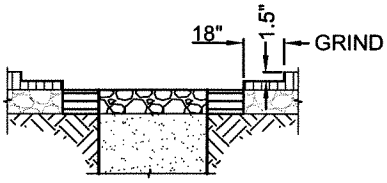
STEP 2: BACKFILL & COMPACT NEW TRENCH TO TOP OF EXIST BASE SECTION PER U-4



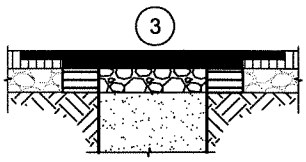
STEP 3: SAWCUT PER NOTE 1 TO REMOVE AN ADDITIONAL 12" MIN OF ASPHALT SURFACE



STEP 4: RECOMPACT EXISTING BASE SECTION TO 95% RELATIVE COMPACTION.

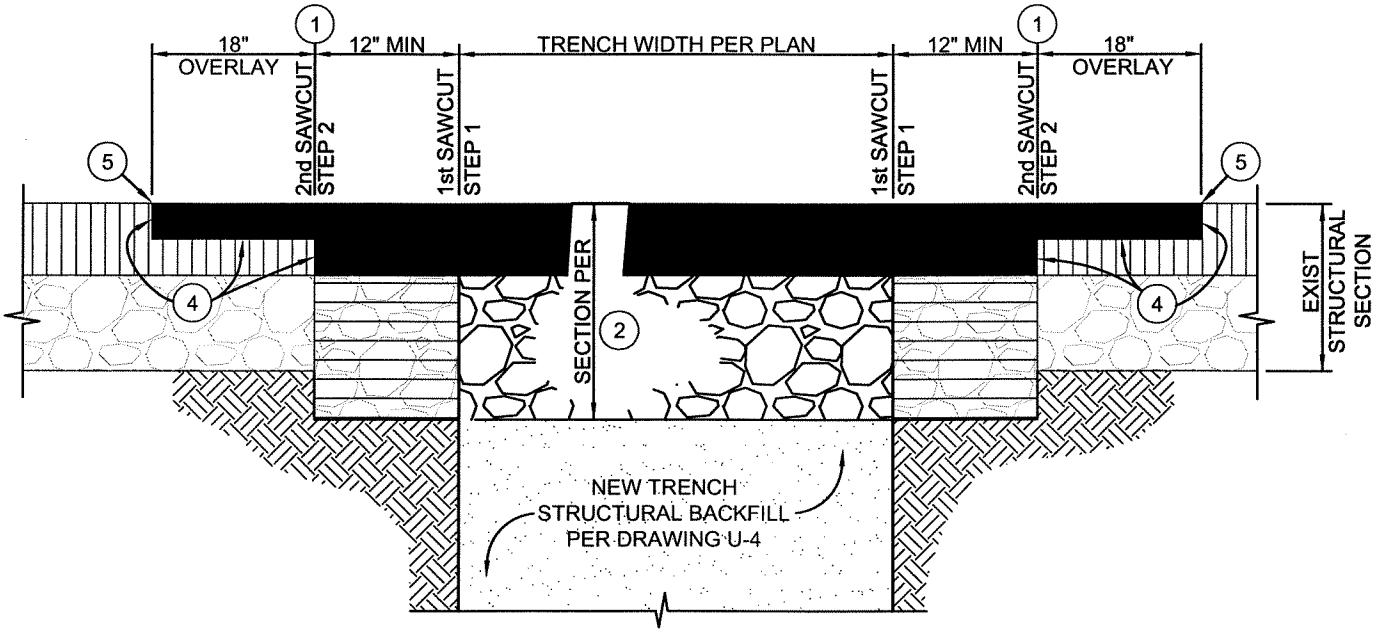


STEP 5: WHEN EXISTING AC IS ≧3.5" THICK, GRIND 18" WIDE x 1.5" DEEP OF OFF EXISTING ASPHALT SURFACE.



STEP 6: PAVE ROADWAY TO MATCH EXISTING SECTION OR AS REQUIRED BY THE DEPARTMENT.

PAVEMENT REPAIR PROCEDURE



SECTION VIEW

NOTES:

1. SAWCUT TO REMOVE DAMAGED OR FAILED PAVEMENT SECTION ADJACENT TO THE EDGE OF TRENCH AS NECESSARY TO PROVIDE A CLEAN JOIN LINE. ALL SAWCUTS SHALL BE PERPENDICULAR OR PARALLEL TO CENTERLINE, OUTSIDE THE NORMAL VEHICLE TIRE PATH WITHIN A TRAVEL LANE, AND SHALL NOT BE ALLOWED WITHIN DESIGNATED BICYCLE LANES. CUT EDGES SHALL BE VERTICAL WITH SQUARE CORNERS AND SHALL BE STRAIGHT AND NEAT IN APPEARANCE. ALL SAWCUTS SHALL BE TO MINIMUM SHOWN OR TO COMPETENT PAVEMENT SECTION.
2. THE STRUCTURAL ROAD REPAIR SECTION SHALL MATCH THE EXISTING STRUCTURAL SECTION THICKNESS OR AS REQUIRED BY THE DEPARTMENT. TYPICAL ROAD WIDENING SECTION SHALL BE:
   - ASPHALT CONCRETE PER THE DESIGN STANDARDS TO 95% RELATIVE COMPACTION, OVER
   - CLASS II AGGREGATE BASE TO 95% RELATIVE COMPACTION, OVER
   - TRENCH SECTION PER DRAWING U-4 (STRUCTURAL BACKFILL TO 95% MIN RELATIVE COMPACTION)
3. NEW PAVEMENT SHALL BE PLACED IN LIFTS NOT EXCEEDING 3-INCHES (COMPACTED), WITH A MINIMUM LIFT NOT LESS THAN 1.5-INCHES.
4. A TACK COAT SHALL BE APPLIED TO ALL HORIZONTAL AND VERTICAL CONFORM SURFACES PRIOR TO PAVING.
5. AFTER PAVING, APPLY "CRAFCO SUPERFLEX" TO ALL SURFACE SEAMS PER MANUFACTURER'S RECOMMENDATIONS.
6. THE DEPARTMENT SHALL PROVIDE ADDITIONAL REQUIREMENTS WHEN TRENCHING IN EXISTING ROADS HAVING CONCRETE STRUCTURAL SECTIONS.

SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

TRENCH REPAIR

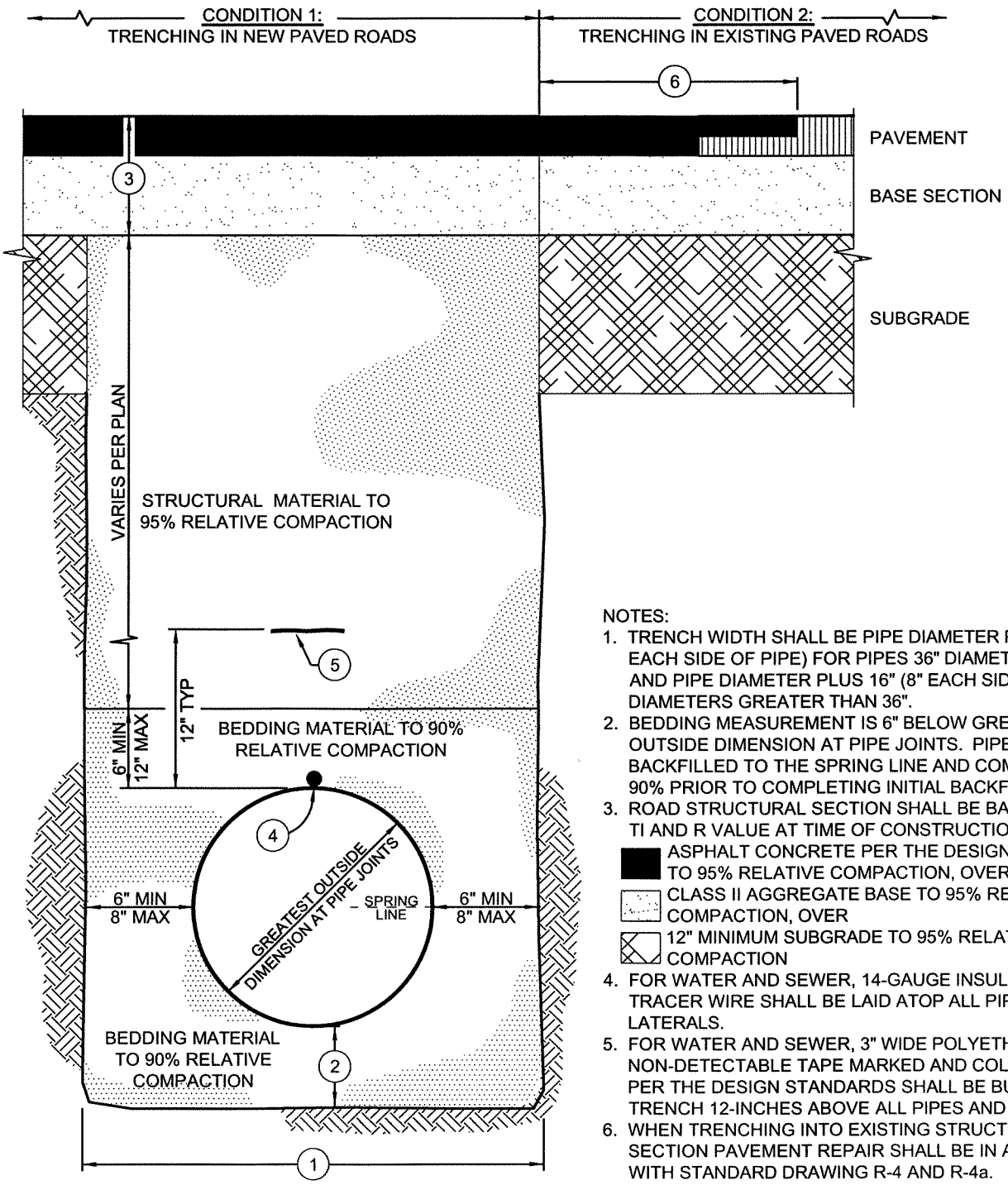
EXISTING AC PAVEMENT 3.5" THICK OR GREATER

Scale:	Issued:
NTS	Aug. 2006

Drawing No: R-4a

Sheet No: 1 OF 1

Revisions					
Description	Approved	Date	Description	Approved	Date
LOCATION OF DETECTOR WIRE & TAPE, NOTES 4 & 5	REM	NOV 07			



NOTES:

1. TRENCH WIDTH SHALL BE PIPE DIAMETER PLUS 12" (6" EACH SIDE OF PIPE) FOR PIPES 36" DIAMETER OR LESS, AND PIPE DIAMETER PLUS 16" (8" EACH SIDE) FOR PIPE DIAMETERS GREATER THAN 36".
2. BEDDING MEASUREMENT IS 6" BELOW GREATEST OUTSIDE DIMENSION AT PIPE JOINTS. PIPE SHALL BE BACKFILLED TO THE SPRING LINE AND COMPACTED TO 90% PRIOR TO COMPLETING INITIAL BACKFILL.
3. ROAD STRUCTURAL SECTION SHALL BE BASED ON THE TI AND R VALUE AT TIME OF CONSTRUCTION:
   - ASPHALT CONCRETE PER THE DESIGN STANDARDS TO 95% RELATIVE COMPACTION, OVER
   - CLASS II AGGREGATE BASE TO 95% RELATIVE COMPACTION, OVER
   - 12" MINIMUM SUBGRADE TO 95% RELATIVE COMPACTION
4. FOR WATER AND SEWER, 14-GAUGE INSULATED COPPER TRACER WIRE SHALL BE LAID ATOP ALL PIPES AND LATERALS.
5. FOR WATER AND SEWER, 3" WIDE POLYETHYLENE NON-DETECTABLE TAPE MARKED AND COLOR CODED PER THE DESIGN STANDARDS SHALL BE BURIED IN THE TRENCH 12-INCHES ABOVE ALL PIPES AND LATERALS.
6. WHEN TRENCHING INTO EXISTING STRUCTURAL SECTION PAVEMENT REPAIR SHALL BE IN ACCORDANCE WITH STANDARD DRAWING R-4 AND R-4a.
7. REFER TO STANDARD DRAWINGS U-3 TO U-3b FOR ADDITIONAL REQUIREMENTS FOR WATER AND SEWER TRENCHES.
8. THE DEPARTMENT SHALL REQUIRE ADDITIONAL WORK WHEN TRENCHING INTO EXISTING ROADS HAVING CONCRETE STRUCTURAL SECTIONS.

BEDDING MATERIAL

SIEVE SIZES	PERCENT PASSING
1"	100%
No. 4	80% - 100%
No. 200	0% - 15%

STRUCTURAL MATERIAL

SIEVE SIZES	PERCENT PASSING
3"	100%
No. 4	35% - 100%
No. 30	20% - 100%

SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

TRENCH DETAIL

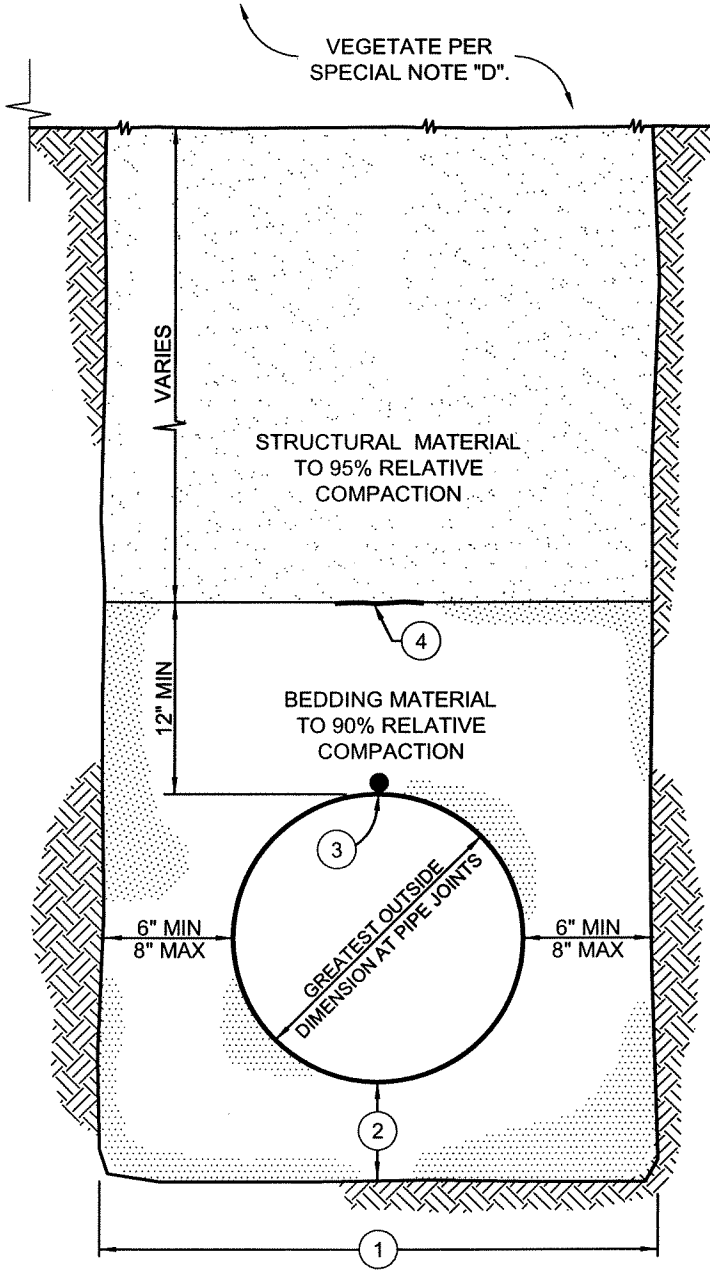
EXISTING AND NEW PAVED ROADS

Scale:	Issued:
NTS	Aug. 2006

Drawing No: U-4

Sheet No: 1 OF 1

Revisions					
Description	Approved	Date	Description	Approved	Date
LOCATION OF DETECTOR WIRE & TAPE, NOTES 3 & 4	REM	NOV 07			



NOTES:

1. TRENCH WIDTH SHALL BE PIPE DIAMETER PLUS 12" (6" EACH SIDE OF PIPE) FOR PIPES 36" DIAMETER OR LESS, AND PIPE DIAMETER PLUS 16" (8" EACH SIDE) FOR PIPE DIAMETERS GREATER THAN 36".
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3. FOR WATER AND SEWER, 14-GAUGE INSULATED COPPER TRACER WIRE SHALL BE LAID ATOP ALL PIPES AND LATERALS.
4. FOR WATER AND SEWER, 3" WIDE POLYETHYLENE NON-DETECTABLE TAPE MARKED AND COLOR CODED PER THE DESIGN STANDARDS SHALL BE BURIED IN THE TRENCH 12-INCHES ABOVE ALL PIPES AND LATERALS.
5. REFER TO STANDARD DRAWINGS U-3 TO U-3b FOR ADDITIONAL REQUIREMENTS FOR WATER AND SEWER TRENCHES.

SPECIAL NOTES:

A. SPECIAL CONSIDERATION SHALL BE TAKEN BY THE DESIGNER TO ENSURE SURFACE DRAINAGE WILL NOT ENTER THE TRENCH.
B. WHEN TRENCHING ON STEEP SLOPES, CUT-OFF WALLS AND/OR PIPE ANCHORS MAY BE REQUIRED BY THE DEPARTMENT AND SHALL BE DETAILED ON THE PLANS.
C. TRENCHING ALIGNMENT SHALL BE DESIGNED TO AVOID DAMAGE TO EXISTING TREES AND THEIR ROOT SYSTEMS. WHEN ADJACENT TO TREES THEN THE TRENCHING RECOMMENDATIONS OF THE PROJECT BOTANIST SHALL BE FOLLOWED.
D. THE UPPER SURFACE SHALL BE SCARIFIED AND REVEGETATED. VEGETATIVE COVER SHALL BE ESTABLISHED PRIOR TO ACCEPTANCE OF WORK.

BEDDING MATERIAL	
SIEVE SIZES	PERCENT PASSING
1"	100%
No. 4	80% - 100%
No. 200	0% - 15%

STRUCTURAL MATERIAL	
SIEVE SIZES	PERCENT PASSING
3"	100%
No. 4	35% - 100%
No. 30	20% - 100%

SAN LUIS OBISPO COUNTY DEPARTMENT OF PUBLIC WORKS

TRENCH DETAIL

NON-PAVED AREAS

Scale:	Issued:
NTS	Aug. 2006

Drawing No: U-4a

Sheet No: 1 OF 1

ATTACHMENT H
PROJECT PLANS

ROAD NO.	JOB NO.	SHEET NO.	TOTAL SHEETS
5086	245R12B595	1	4

COUNTY OF SAN LUIS OBISPO, CALIFORNIA
PUBLIC WORKS DEPARTMENT
DESIGN DIVISION

APPROVED: March 31 ,20 11

Dave Flynn

DEPUTY DIRECTOR OF PUBLIC WORKS – ENGINEERING SERVICES
R.C.E. 43933 (Exp. 6-31-2011)

REGISTERED PROFESSIONAL ENGINEER No. C43933 Exp 6/30/11 CIVIL STATE OF CALIFORNIA

INDEX OF SHEETS

SLIP-OUT REPAIR
SANTA ROSA CREEK ROAD,
0.9 MILES NORTH OF STATE HIGHWAY 46
NEAR BRIDGE No. 49C-345
EAST OF CAMBRIA, CA
COUNTY CONTRACT No. 245R12B595

To Be Supplemented By State Standard Plans Dated May, 2006

LICENSE REQUIREMENTS

The successful bidder shall possess a Class A general engineering contractor's license at the time this contract is awarded. In the alternative, the successful bidder shall possess a specialty contractor's license at the time this contract is awarded that permits the successful bidder to perform with his or her own organization contract work amounting to not less than 30% of the original total contract price and to subcontract the remaining work in accordance with Section 8-1.01, "Subcontracting," of the Standard Specifications.

LEGEND

No.	Type	Size	Message	Quantity
1	W20-3	48"X48"	"ROAD CLOSED AHEAD"	4
2	W12-2a	–	"500 FT"	2
3	W12-2a	–	"1000 FT"	2
4	W7-3a	–	9.8 MILES	1 (NIC)
5	W7-3a	–	15.1 MILES	1 (NIC)
6	W7-3a	–	0.9' MILES	1 (NIC)
7	W7-3a	–	3.4 MILES	1 (NIC)
8	SC6-4	60"x48"	"ROAD CLOSED"____THRU____	4 (NIC)

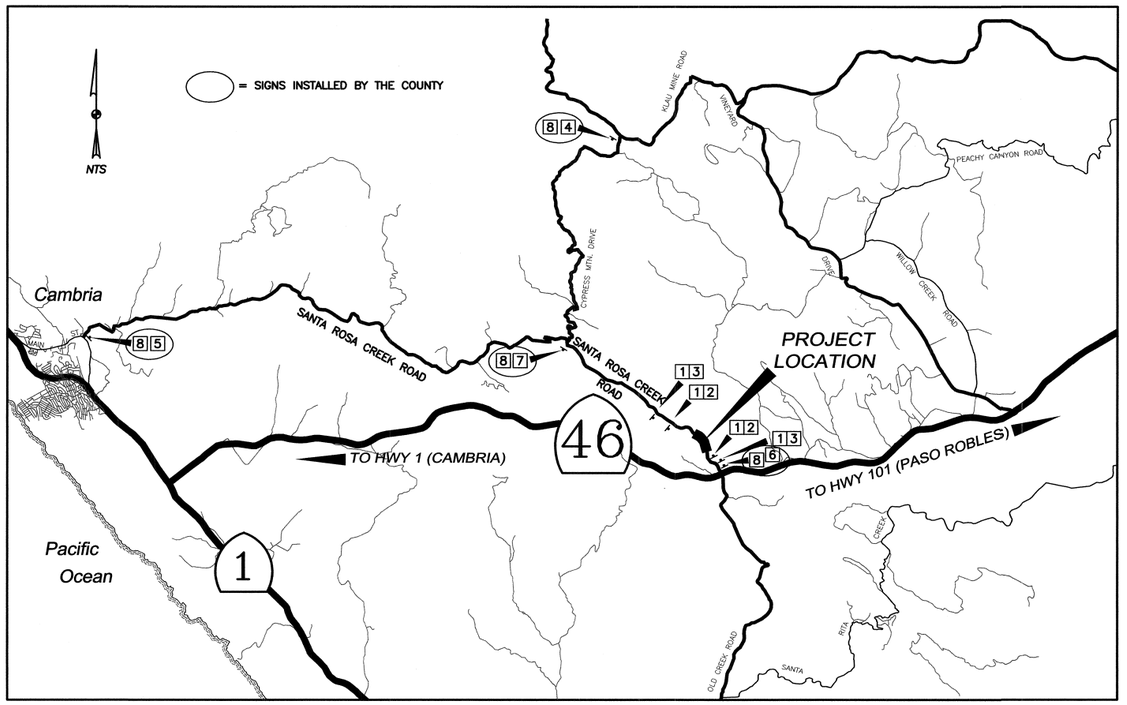
NOTES:

All Signs Shall Be Stationary Mounted on 4x4 Wood Posts, Unless Noted Otherwise or as directed by the Engineer.

All Construction Signs Shall be Placed Approximately 4' off the Edge of Roadway, the Exact Location and Position of Signs Shall be Determined by the Engineer.

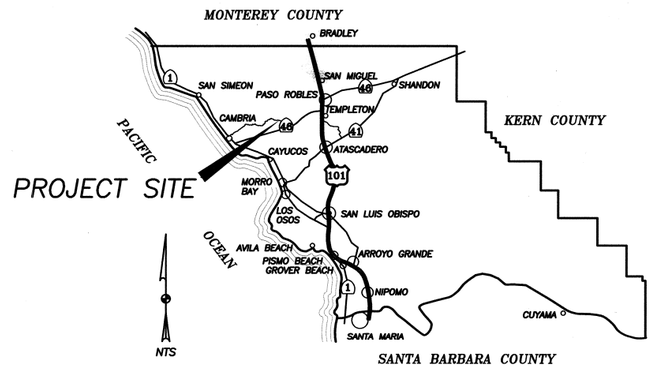
(NIC) = Not in Contract
These Signs will be Installed by the County in Advance of Construction. The Contractor shall be Responsible to Update the Posting of the Closure Dates as Directed by the Engineer.

Utility Contacts		
Company Name	Contact Person	Phone Number
AT&T	Diane Vickers	(805)-546-7463



LOCATION MAP and CONSTRUCTION AREA SIGN PLAN

NO SCALE



VICINITY MAP

NO SCALE

REGISTERED PROFESSIONAL ENGINEER ANTHONY MATTHEW REINHART Lic. No. 42831 Expires 3/31/12 CIVIL STATE OF CALIFORNIA 3/29/11

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD					
TITLE SHEET					
SANTA ROSA CREEK ROAD, CA.					
Designer	Date	Drawn By	Date	Design Engineer	Date
M REINHART	5/10	C COX	5/10	J WERST	5/10

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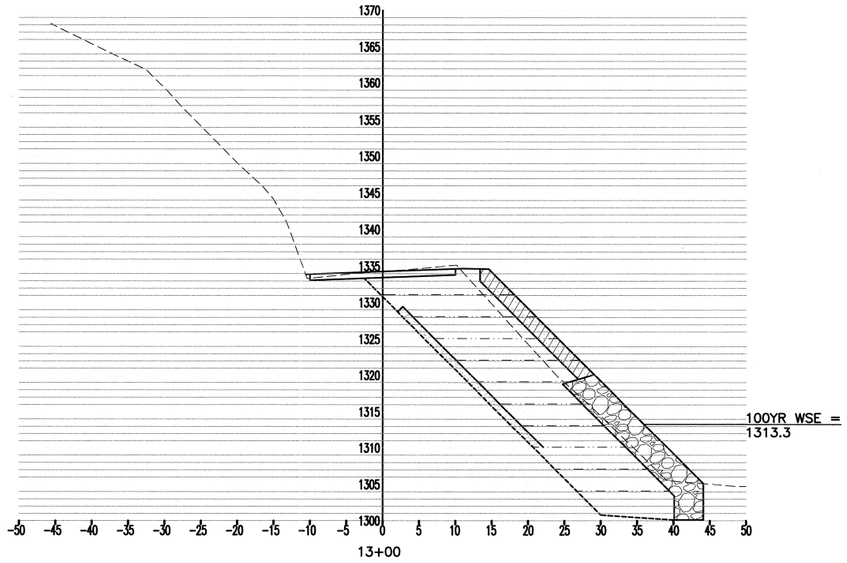
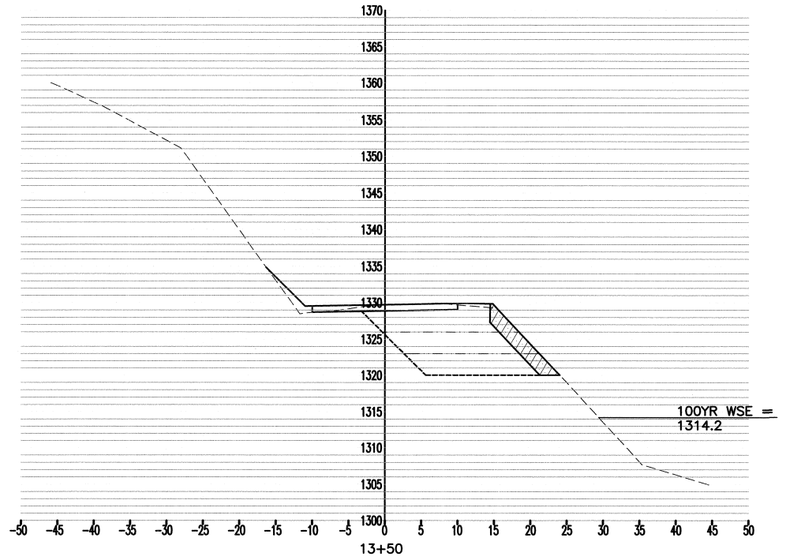
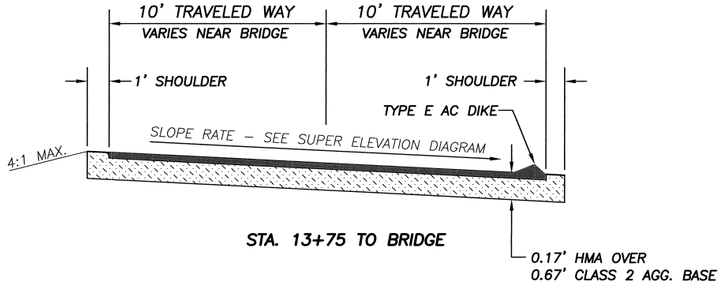
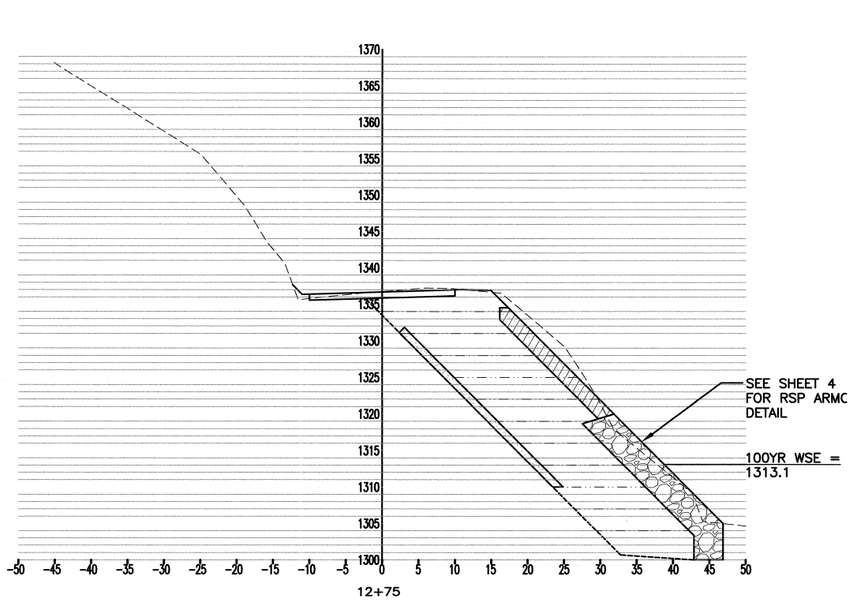
ROAD NO.	JOB NO.	SHEET NO.	TOTAL SHEETS
5086	245R12B595	2	4

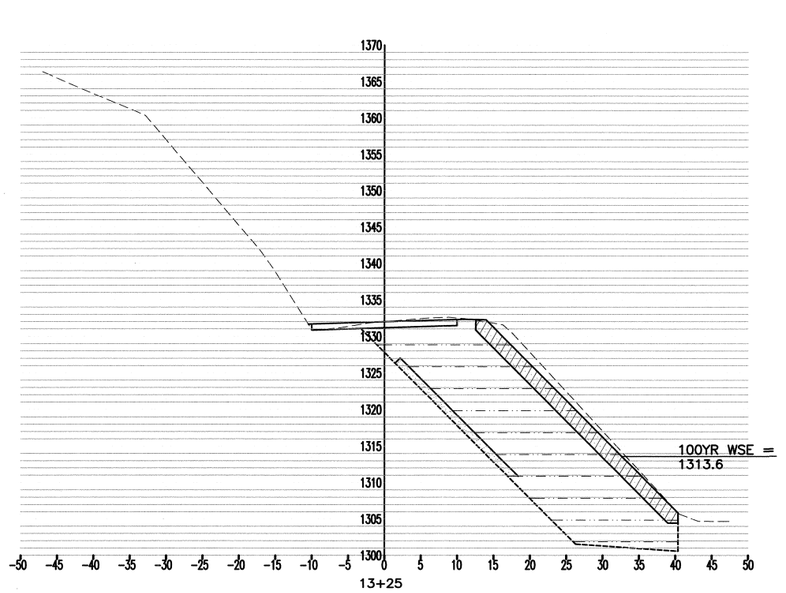


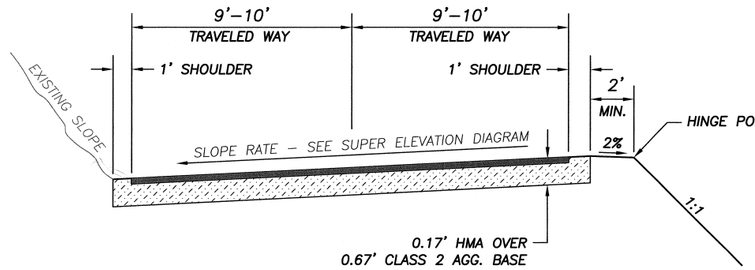




STA. 13+75 TO BRIDGE







STA. 12+00 TO 13+50

ADT(2010) = 150
ADT(B0) = 223
TRUCKS = 2%
DIRECT = 55%
DHV = 25
TI = 5.0

TYPICAL SECTION

NOT TO SCALE

SECTIONS

HORIZ. – 1" = 10'
VERT. – 1" = 10'

REGISTERED PROFESSIONAL ENGINEER
ANTHONY MATTHEW REINHART
Lic. No. 42831
Expires 3/31/12
CIVIL
STATE OF CALIFORNIA
3/29/11

SLIP–OUT REPAIR SANTA ROSA CREEK ROAD					
CROSS SECTIONS					
SANTA ROSA CREEK ROAD, CA.					
Designer	Date	Drawn By	Date	Design Engineer	Date
M REINHART	5/10	C COX	5/10	J WERST	5/10

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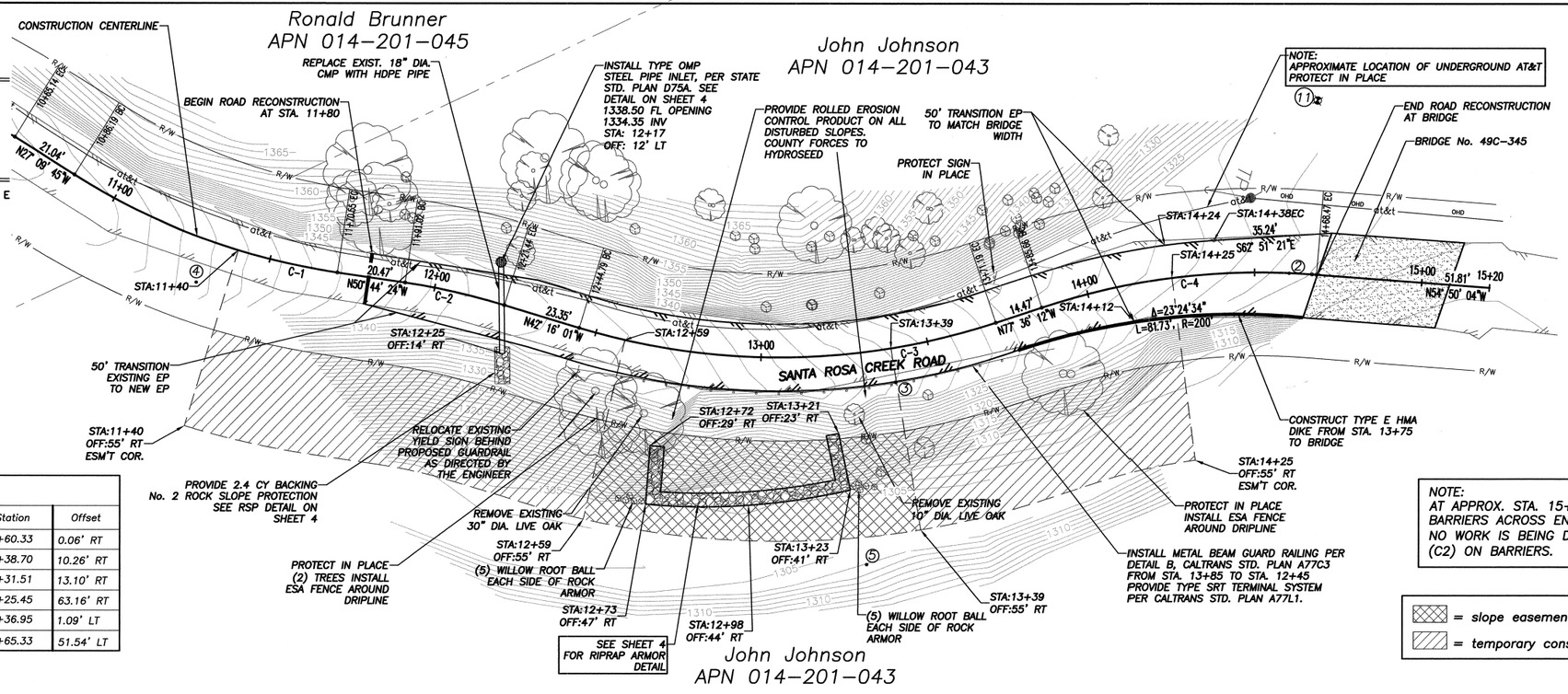
ROAD NO.	JOB NO.	SHEET NO.	TOTAL SHEETS
5265	245R12B595	3	4

BENCHMARK

BM# N 707 ELEV 1323.3'
BRASS DISK DATED 1943
DATUM NAVD 88

BASIS OF BEARINGS

CENTERLINE OF BRIDGE ASSUMED BASIS OF BEARING OF S 55° E



CURVE TABLE

CURVE	LENGTH	RADIUS	TANGENT	DELTA
C-1	84.36'	205.00'	42.78'	23°34'38"
C-2	30.43'	205.39'	15.24'	8°29'19"
C-3	126.40'	204.88'	65.28'	35°20'48"
C-4	82.81'	205.05'	41.98'	23°08'20"

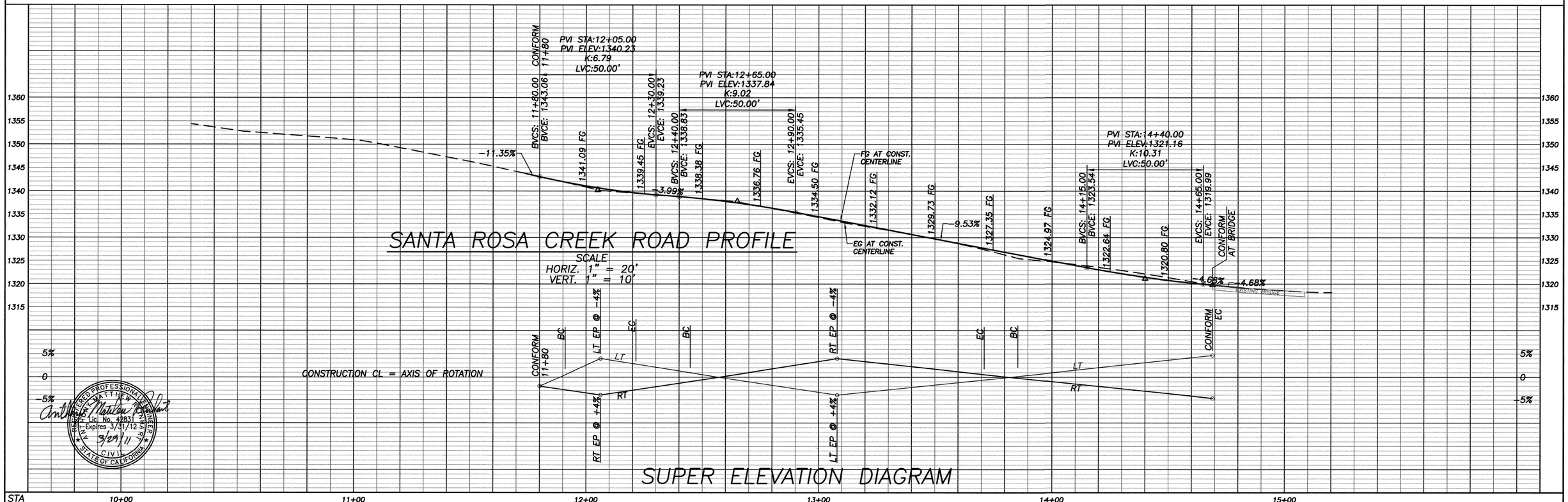
Point Table

Point #	Elevation	Northing	Easting	Description	Station	Offset
(2)	1320.16	4965.61	5049.11	SETMAG+TIN4CP2	14+60.33	0.06' RT
(3)	1330.97	4933.74	5166.45	SETSPK+TIN4CP3	13+38.70	10.26' RT
(4)	1348.67	4801.13	5330.68	SETSPK+TIN4CP4	11+31.51	13.10' RT
(5)	1306.54	4976.11	5201.73	SET2X2TAC4CP5	13+25.45	63.16' RT
(10)	1353.50	4711.56	5368.82	FDNAIL+TAGLS4562	10+36.95	1.09' LT
(11)	1320.25	4925.96	5015.61	FDBMN707	14+65.33	51.54' LT

STATION AND OFFSETS BASED ON CONSTRUCTION CENTERLINE

NOTE:
AT APPROX. STA. 15+80, & 7+90 PROVIDE CONCRETE BARRIERS ACROSS ENTIRE ROADWAY WIDTH DURING HOURS WHEN NO WORK IS BEING DONE ONSITE. DISPLAY "ROAD CLOSED" SIGN (C2) ON BARRIERS.

= slope easement, net area, 2868 sq ft
= temporary construction easement, total area, 6224 sq ft



Designer	Date	Drawn By	Date	Design Engineer	Date
M REINHART	5/10	C COX	5/10	J WERST	5/10

0 1 2 3
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

SLIP-OUT REPAIR SANTA ROSA CREEK ROAD
PLAN AND PROFILE

REGISTERED PROFESSIONAL ENGINEER MATTHEW A. MARTIN REINHART
RCE Lic. No. 42831
Expires 3/31/12
3/29/11
CIVIL
STATE OF CALIFORNIA

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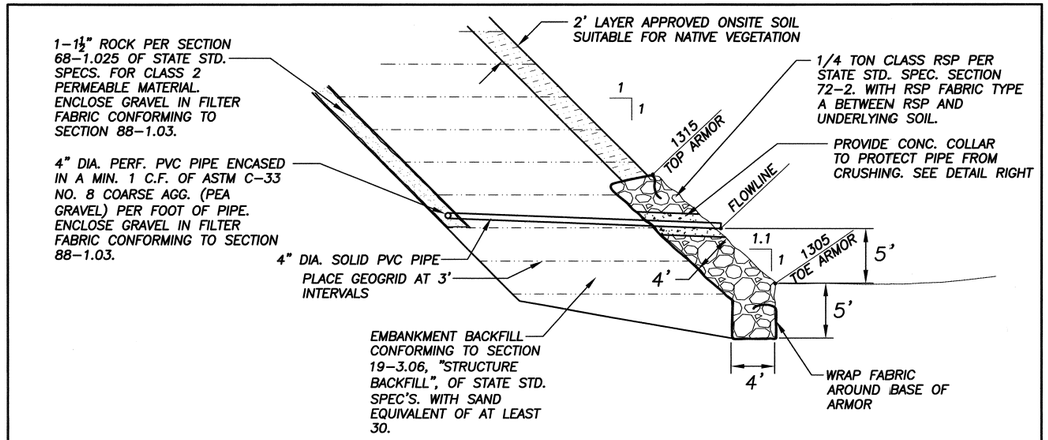
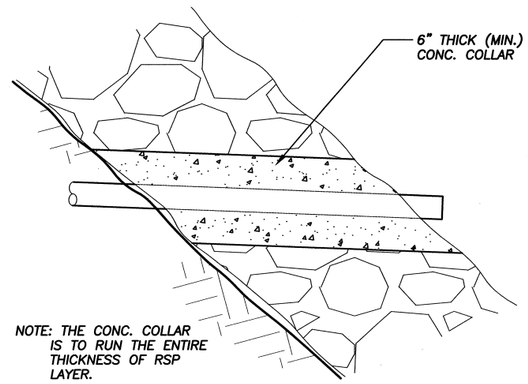
ROAD NO.	JOB NO.	SHEET NO.	TOTAL SHEETS
5086	245R12B595	4	4



RSP ARMOR DETAIL

NOT TO SCALE



CONCRETE COLLAR DETAIL

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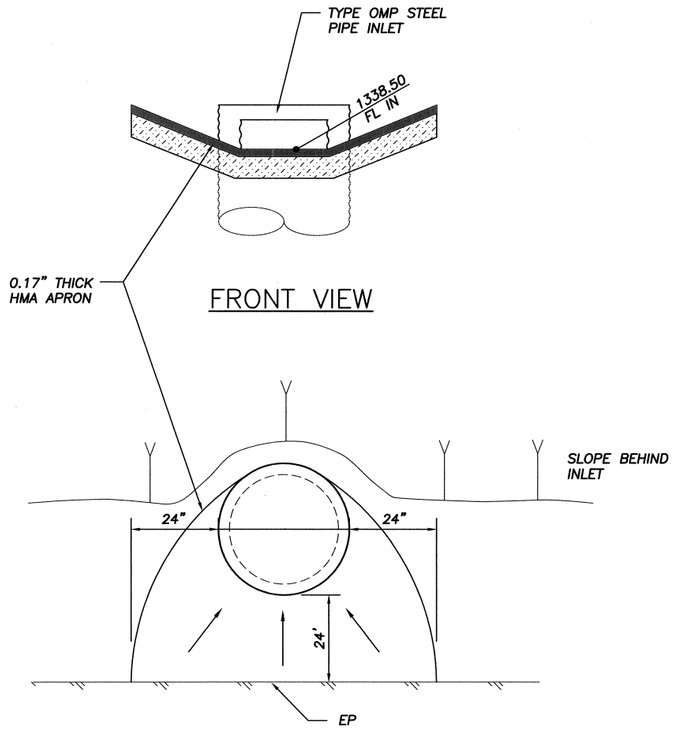
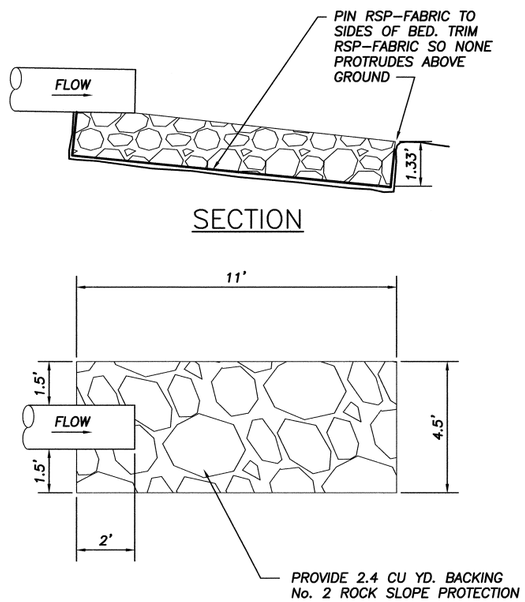


FRONT VIEW

PLAN VIEW

TYPE OMP STEEL PIPE INLET DETAIL

NOT TO SCALE



SECTION

PLAN

RSP DETAIL

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
ANTHONY MATTHEW REINHART
Lic. No. 42831
Expires 3/31/12
CIVIL
STATE OF CALIFORNIA

SLIP–OUT REPAIR SANTA ROSA CREEK ROAD					
TYPICAL SECTIONS AND DETAILS					
SANTA ROSA CREEK ROAD, CA.					
Designer	Date	Drawn By	Date	Design Engineer	Date
M REINHART	5/10	C COX	5/10	J WERST	5/10

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