

COUNTY OF EL DORADO, CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONTRACT DOCUMENTS

INCLUDING

NOTICE TO BIDDERS, SPECIAL PROVISIONS,
PROPOSAL AND CONTRACT

FOR
CONSTRUCTION OF

**SAWMILL 1B
BIKE PATH PROJECT**

CONTRACT NO. 95148

MAY 2008

FOR USE WITH

STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, CALTRANS

STANDARD SPECIFICATIONS, [MAY 2006](#)

STANDARD PLANS, [MAY 2006](#)

AMENDMENTS TO [MAY 2006](#) STANDARD SPECIFICATIONS

BID OPENING DATE: [JUNE 27, 2008](#)

**DEPARTMENT OF TRANSPORTATION
COUNTY OF EL DORADO, STATE OF CALIFORNIA**

**SAWMILL 1B
BIKE PATH PROJECT**

CONTRACT NO. 95148

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COUNTY OF EL DORADO

DEPARTMENT OF TRANSPORTATION



TAHOE ENGINEERING
924B Emerald Bay Road
South Lake Tahoe, CA 96150
Phone: (530) 573-7900
Fax: (530) 541-7049

RICHARD W. SHEPARD, P.E.
Director of Transportation

Internet Web Site:
<http://co.el-dorado.ca.us/dot>

MAIN OFFICE
2850 Fairlane Court
Placerville CA 95667
Phone: (530) 621-5900
Fax: (530) 626-0387



These Contract Documents provided herein have been prepared by or under the direction of the following registered person:

A handwritten signature in black ink, appearing to read "Steve P. Kooyman", written over a horizontal line.

CIVIL ENGINEER, PCE #55757
Steve P. Kooyman, P.E.
Supervising Civil Engineer

**COUNTY OF EL DORADO, CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

NOTICE TO BIDDERS

NOTICE IS HEREBY GIVEN

By the County of El Dorado, State of California, that sealed bids for work in accordance with the Project Plans (Plans) and Contract Documents designated:

**SAWMILL 1B BIKE PATH PROJECT
CONTRACT NO. 95148**

will be received at the El Dorado County Department of Transportation in South Lake Tahoe, California, at 924B Emerald Bay Road, until **June 27, 2008, at 2:00 p.m.**, at which time bids will be publicly opened and read by the El Dorado County Department of Transportation.

No Bid may be withdrawn after the time established for receiving bids or before the award and execution of the Contract, unless the award is delayed for a period exceeding sixty (60) calendar days. Bids shall be executed in accordance with the instructions given and forms provided in the bound Contract Documents furnished by the El Dorado County Department of Transportation. The Proposal shall not be detached and shall be submitted with the Contract Documents bid package in its entirety. All bids must be clearly marked on the envelope:

**"PROPOSAL FOR THE
SAWMILL 1B BIKE PATH PROJECT
CONTRACT NO. 95148
TO BE OPENED AT 2:00 P.M., June 27, 2008."**

LOCATION/DESCRIPTION OF THE WORK

The Project area is located in eastern El Dorado County, in the Tahoe Basin, near the town of Meyers. With an alignment roughly matching the Highway 50 corridor from the entrance to the Lake Tahoe Golf Course at Meadow Vale Drive to Sawmill Road (approximately 1,820 feet or roughly 0.35 miles), this Project involves the installation of a Class I bicycle path and a pedestrian/bike bridge over the Upper Truckee River that would link the existing Sawmill 1A Bike Path and the future bike path to be constructed along Sawmill Road from Highway 50 to Lake Tahoe Boulevard.

The Work to be done is shown on the Plans, and generally consists of, but is not limited to:

- A. Construction of a Class 1 bike path, and a pedestrian or bike bridge with concrete footing and pile foundations, bike path and bike path excavation and grading, clearing and grubbing, AC/AB paving, tree removal, installing culverts and drainage modifications, landscaping, rock-lined ditches, signing and striping, revegetation, dewatering, concrete retaining walls, traffic control, and temporary erosion control.
- B. Other items or details not mentioned above, that are required by the Plans, Standard Specifications, or the Special Provisions, shall be performed, constructed, or installed.
- C. Bids are required for the entire Work described herein.
- D. The contract time shall be sixty **(60) working days**.
- E. For bonding purposes the anticipated project cost is less than \$2,500,000.
- F. A pre-bid meeting will be held at the El Dorado County Department of Transportation in South Lake Tahoe, California, at 924B Emerald Bay Road at 2:00 P.M. on June 20, 2008.

OBTAINING OR INSPECTING CONTRACT DOCUMENTS

The Contract Documents and Plans may be examined at the El Dorado County Department of Transportation or may be purchased in person or by mail from the Department of Transportation, 924B Emerald Bay Road, South Lake Tahoe, California 96150. The purchase price of each set of Contract Documents and Plans is SEVENTY dollars (\$70.00) for each set and is non-refundable. To receive Contract Documents and Plans by mail, send request and payment prior to shipping and include an additional ELEVEN dollars (\$11.00), for a total of EIGHTY-ONE dollars (\$81.00), to include shipping and handling.

CONTRACTOR'S LICENSE CLASSIFICATION

Bidders shall be properly licensed to perform the Work pursuant to the Contractors' State License Law (Business and Professions Code section 7000 et seq.) and shall possess a **CLASS A** license or equivalent combination of Classes required by the categories and type of Work included in the Contract Documents and Plans at the time the Contract is awarded, and shall maintain a valid license through completion and acceptance of the Work including guarantee and warranty period. If the Contractor possesses a Class A license instead of the equivalent combination of Classes required by the categories and type of work included in the Contract Documents and Plans, then the Contractor or a subcontractor must also possess a **CLASS C27** "Landscaping Contractor" license. Failure of the successful Bidder to obtain proper and adequate licensing for an award of the Contract shall constitute a failure to execute the Contract, and shall result in forfeiture of the Bidder's security.

BUSINESS LICENSE

The County Business License Ordinance provides that it is unlawful for any person to furnish supplies or services, or transact any kind of business in the unincorporated territory of El Dorado County without possessing a County business license unless exempt under County Ordinance Code Section 5.08.070. The Bidder to whom an award is made shall comply with all of the requirements of the County Business License Ordinance, where applicable, prior to beginning work under this Contract and at all times during the term of this Contract.

REQUIRED LISTING OF PROPOSED SUBCONTRACTORS

Each Proposal shall have listed therein the name and address of each subcontractor, including the percentage of each item on which the subcontractor will work, to whom the Bidder proposes to subcontract portions of the Work in an amount in excess of ½ of one percent of his total bid 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 the Act related to the imposition of penalties for a failure to observe its provisions by using unauthorized subcontractors or by making unauthorized substitutions. Forms for listing the subcontractors who will work on this Project as well as subcontractors who have submitted quotes or bids, but were not selected to work on this Project are included in the Proposal section of these Contract Documents.

NONDISCRIMINATION

Attention is directed to the following Notice that is required by Chapter 5 of Division 4 of Title 2, California Code of Regulations.

NOTICE OF REQUIREMENT FOR NONDISCRIMINATION PROGRAM (GOVERNMENT CODE SECTION 12990)

Attention is further directed to the "Nondiscrimination Clause", set forth in Section 7-1.01A (4), "Labor Nondiscrimination," of the Standard Specifications, which is applicable to all nonexempt State contracts and subcontracts, and to the "Standard California Nondiscrimination Construction Contract Specifications" set forth therein. The specifications are applicable to all nonexempt State construction contracts and subcontracts of \$5,000 or more.

During the performance of this Contract, the Contractor and its subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age, or sex. The Contractor and its subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. The Contractor and its subcontractors shall comply with the provisions of the Fair Employment

and Housing Act (Government Code Section 12900 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this Contract by reference and made a part hereof as if set forth in full. The Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. Each subcontract entered into by the Bidder must include this nondiscrimination provision.

PREVAILING WAGE REQUIREMENTS

A. In accordance with the provisions of California Labor Code sections 1770, et seq., including but not limited to sections 1773, 1773.1, 1773.2, 1773.6, and 1773.7, the general prevailing rate of wages in the County in which the Work is to be done has been determined by the Director of the California Department of Industrial Relations. These wage rates appear in the California Department of Transportation publication entitled General Prevailing Wage Rates. Interested parties can obtain the current wage information by submitting their requests to the Department of Industrial Relations, Division of Labor Statistics and Research, PO Box 420603, San Francisco CA 94142-0603, Telephone (415) 703-4708, or by referring to the website at <http://www.dir.ca.gov/DLSR/PWD>. The rates at the time of the bid advertisement date of a project will remain in effect for the life of the project in accordance with the California Code of Regulations, as modified and effective January 27, 1997.

B. Copies of the general prevailing rate of wages in the County in which the Work is to be done are also on file at the Department of Transportation's principal office, and are available upon request

C. In accordance with the provisions of Labor Code 1810, eight (8) hours of labor shall constitute a legal day's work upon all work done hereunder, and Contractor and any subcontractor employed under this Contract shall conform to and be bound by the provisions of Labor Code Sections 1810 through 1815.

BID SECURITY

A bid security shall be provided with each bid. Bid security shall be in an amount of not less than ten percent (10%) of the total amount of the Bid and shall be cash, a certified check or cashier's check drawn to the order of the County of El Dorado or a Bidder's Bond executed by a surety satisfactory to the County of El Dorado and shall be **on the form provided in the Proposal section of these Contract Documents (do not detach the form)**. The Bidder to whom award is made shall provide Certificates of Insurance as required in Section 7 of the Special Provisions, and shall complete and submit the Performance Bond and Payment Bond forms contained in the Contract Documents.

AWARD OF CONTRACT

Bids will be considered for award by the Board of Supervisors. The County of El Dorado reserves the right after opening bids to reject any or all bids, to waive any irregularity in a bid, or to make award to the lowest responsive, responsible Bidder and reject all other bids, as it may best serve the interest of the County.

As a condition of award, the successful Bidder will be required to submit bonds and evidence of insurance prior to execution of the Agreement by the County. Failure to meet this requirement shall constitute abandonment of the Bid by the Bidder and forfeiture of the Bidder's security. Award will then be made to the next lowest responsible Bidder.

RETAINAGE FROM PAYMENTS

The Contractor may elect to receive one hundred percent (100%) of payments due under the Contract from time to time, without retention of any portion of the payment by the County, by depositing securities of equivalent value with the County in accordance with the provisions of Section 22300 of the Public Contract Code. Securities eligible for deposit hereunder shall be limited to those listed in Section 16430 of the Government Code, or bank or savings and loan certificates of deposit.

PROJECT ADMINISTRATION

All communication relative to the Contract Documents and Plans shall be directed to DONALDO PALAROAN, P.E. at the County of El Dorado, **Department of Transportation, 924B Emerald Bay Road, South Lake Tahoe,**

CA 96150, (530) 573-7900. No oral responses to any questions concerning the content of the Plans and Contract Documents will be given. All responses will be in the form of written addenda to the Contract Documents and Plans.

BY ORDER OF the Director of the Department of Transportation, County of El Dorado, State of California.

Executed by the Board of Supervisors on _____, 2008 at Placerville, California.

By _____
Richard W. Shepard, P.E.
Director of Transportation
County of El Dorado

(Because some colored inks will not reproduce in copy machines, please use black ink to complete this Proposal)

(DO NOT DETACH)

PROPOSAL

**TO: THE DEPARTMENT OF TRANSPORTATION,
COUNTY OF EL DORADO,
STATE OF CALIFORNIA**

for the construction of
SAWMILL 1B BIKE PATH PROJECT

CONTRACT NO. 95148

NAME OF BIDDER

BUSINESS P.O. BOX

CITY, STATE, ZIP

BUSINESS STREET ADDRESS

(Please include even if P. O. Box used)

CITY, STATE, ZIP

TELEPHONE NO: AREA CODE () _____

FAX NO: AREA CODE () _____

The work for which this Proposal is submitted is for the construction in accordance with these Contract Documents (including the payment of not less than the State general prevailing wage rates or Federal minimum wage rates set forth herein), the Project Plans described below, including any addenda thereto, the Contract annexed hereto, and also in accordance with the California Department of Transportation Standard Plans, dated **May 2006**, the Standard Specifications, dated **May 2006**, including the Amendments to the May 2006 Standard Specifications, standard drawings from the Design and Improvement Standards Manual of the County of El Dorado, revised March 8, 1994 including Resolutions 199-91 and 54-94 to adopt changes to the Design and Improvement Standards Manual, the Labor Surcharge and Equipment Rental Rates in effect on the date the work is accomplished, and in accordance with the General Prevailing Wage rates. The Project Plans and Contract Documents for the work to be done are entitled:

**SAWMILL 1B BIKE PATH PROJECT
CONTRACT NO. 95148**

Bids are to be submitted for the entire work. The amount of the bid for comparison

purposes will be the total of all items

The Bidder shall 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 this purpose. In the case of unit basis items, the amount set forth under the "Item Total" column shall be the product of the unit price bid and the estimated quantity for the item.

In case of discrepancy between the item price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

(a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount of the entry in the item 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;

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc., from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage wise the unit price or item total in the Department's Final Estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also have no significance in establishing any unit price or item total since all figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the County of El Dorado, and that discretion will be exercised in the manner deemed by the County of El Dorado to best protect the public interest in the prompt and economical completion of the work. The decision of the County of El Dorado respecting the amount of a bid, or the existence or treatment of any irregularity in a bid, shall be final.

If this Proposal is accepted and the undersigned Bidder shall fail to enter into the Contract and furnish the two bonds in the sums required by the State Contract Act, with surety rider(s), if applicable, in accordance with Section 5-1.04, "Contract Bonds" of the Special

Provisions, with surety satisfaction to the County of El Dorado within five (5) days, not including Saturdays, Sundays and legal holidays, after the Bidder has received notice from the County of El Dorado that the Contract has been awarded, the County of El Dorado may, at its option, determine that the Bidder has abandoned the Contract, and thereupon this Proposal and the acceptance thereof shall be null and void and the forfeiture of such security accompanying this Proposal shall operate and the same shall be the property of the County of El Dorado.

Attention! The undersigned Bidder acknowledges that: a bid security must be in an amount of not less than ten percent (10%) of the total amount of the Bid.

The undersigned, as Bidder, declares under penalty of perjury under the laws of the State of California that the only persons 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 it has carefully examined the location of the proposed work, the annexed proposed form of Contract, and the Project Plans therein referred to; and that it proposes, and agrees if this Proposal is accepted, that it will contract with the County of El Dorado, in the form of the copy of the Sample Contract annexed hereto, to provide all necessary machinery, tools, apparatus, and other means of construction, and to do all the work and furnish all the materials specified in the Contract, in the manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that it will take in full payment therefore the following item prices, to wit:

PROPOSAL PAY ITEMS AND BID PRICE SCHEDULE
SAWMILL 1B BIKE PATH PROJECT
CONTRACT NO. 95148

ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT OF MEASURE	UNIT PRICE (in Figures)		ITEM TOTAL (in Figures)	
1	Mobilization	1	LS				
2	Traffic Control	1	LS				
3	Temporary Railing (Type K)	360	LF				
4	Temporary Crash Cushion (Array TS14)	2	EA				
5	Install and Maintain Tree Protection and Construction Limit Fence	1,567	LF				
6	Install and Maintain Type 2 Filter Fence	1,903	LF				
7	Install and Maintain Type 3 Filter Fence	40	LF				
8	Class 1 Asphalt Concrete Bike Path	18,650	SF				
9	Caltrans GCP Inlet	2	EA				
10	18" CMP Culvert	86	LF				
11	18" Flared End Section	3	EA				
12	Rock-Lined Ditch	162	LF				
13	Diversion for STA 169+03 and STA 174+90	2	EA				
14	Rock Bowl	153	SF				
15	Remove Existing Wood Fence	160	LF				
16	Rock Dissipator	36	SF				
17	Dewatering for STA 169+03 and STA 174+90	2	EA				
18	Dewatering for Structures	4	EA				
19	Revegetation – Type SM	13,487	SF				
20	Revegetation – Type MSS	8,266	SF				
21	Coir Logs	3	EA				
22	Striping and Markings	810	SF				
23	Recessed Thermoplastic Markings	200	SF				
24	Peelercore Bollards	4	EA				
25	Removable Bollards	2	EA				
26	Concrete Retaining Wall – Caltrans Type 5	195	SF				

ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT OF MEASURE	UNIT PRICE (in Figures)	ITEM TOTAL (in Figures)
27	Concrete Retaining Wall – Caltrans Type 1	1,808	SF		
28	Tubular Steel Railing	265	LF		
29	Adjust SMH Rim to Grade	3	EA		
30	Sweeping	1	LS		
31	Rock Fracturing and Removal	25	CY		
32	Relocate Existing Roadway Sign	2	EA		
33	Roadway Signs – Type 1	4	EA		
34	Roadway Signs – Type 2	6	EA		
35	Roadway Signs – Type 3	1	EA		
36	Overexcavation and Remove Unsuitable Material	25	CY		
37	Remove and Reconstruct Metal Beam Guardrail	60	LF		
38	Asphalt Concrete Dike, Type F	60	LF		
39	Install and Maintain Tire Wash Area On Pavement	1	EA		
40	Install and Maintain Concrete Wash Out Area	1	EA		
41	Install and Maintain Staging Area	1	EA		
42	Tree Removal	24	EA		
43	Earthwork – Bridge (F)	170	CY		
44	Precast & Prestressed Concrete Piles	725	LF		
45	Structural Concrete - Bridge	48	CY		
46	Pre-Fabricated Steel Truss	1	LS		
47	Miscellaneous Grading	50	CY		
48	Shoring, Bracing or Sloping the Sides of Trenches Greater Than Five Feet Deep	1	LS		
49	Winterization	1	LS		
	TOTAL BID				

(F) Denotes Final Pay Item, (LS) Denotes Lump Sum

(NOTICE: Bidder's failure to execute the questionnaires and statements contained in this Proposal as required by applicable laws and regulations, or the determinations by El Dorado County based upon those questionnaires and statements, may prohibit award of the subject Contract to the Bidder.)

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In accordance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury under the laws of the State of California, the following questionnaire:

Has the Bidder, any officer of the Bidder, or any employee of the Bidder who has a proprietary interest in the Bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes: _____ **No:** _____

If the answer is yes, explain the circumstances in the following space:

PUBLIC CONTRACT CODE SECTION 10232 STATEMENT

In accordance with Public Contract Code Section 10232, the Bidder hereby states under penalty of perjury under the laws of the State of California, that no more than one final unappealable finding of contempt of court by a Federal Court has been issued against the Bidder within the immediate preceding two year period because of the Bidder's failure to comply with an order of a Federal Court which orders the Bidder to comply with an order of the National Labor Relations Board.

NOTE: The above Statement and Questionnaire are part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement and Questionnaire.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

NONCOLLUSION AFFIDAVIT

(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

In accordance with Title 23 United States Code, Section 112, and Public Contract Code Section 7106, the Bidder declares 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 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.

NOTE: The above Noncollusion Affidavit is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Noncollusion Affidavit.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In accordance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the Bidder hereby declares under penalty of perjury under the laws of the State of California that the Bidder has _____, has not _____ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "Bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

NOTE: The Bidder must place a check mark after "has" or "has not" in one of the blank spaces provided.

The above Statement is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Accompanying this Proposal is _____

(NOTICE: INSERT THE WORDS "CASH(\$ ____)," "CASHIER'S CHECK," "CERTIFIED CHECK," OR "BIDDERS BOND," AS THE CASE MAY BE)

in amount equal to at least ten percent of the total of the Bid.

The names of all persons interested in the forgoing Proposal as principals are as follows:

IMPORTANT NOTICE: If the Bidder or other interested person is a corporation, state legal name of corporation and place of incorporation, also names of the president, secretary, treasurer, and executive officer thereof; if a partnership, state name of partnership, also names of all individual partners; if Bidder or other interested person is an individual, state first and last names in full.

Licensed in accordance with an act providing for the registration of Contractors,

License No. _____ Classification(s) _____

(A Copy of the afore-referenced license must be attached hereto)

ADDENDA: This Proposal is submitted with respect to the changes to the Contract included in addenda number(s) _____

(Fill in addenda numbers if addenda have been received and insert, in this Proposal, any Proposal Pay Items and Bid Price Schedules that were received as part of the addenda)

By my signature on this Proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232, and 10285.1 are true and correct and that I have complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, of Division 4 of Title 2 of the California Code of Regulations). By my signature on this Proposal I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106 is true and correct.

The person or persons executing this Proposal on behalf of a corporation or partnership, shall be prepared to demonstrate by resolution, article, or otherwise, that such person is or that such persons are appropriately authorized to act in these regards for such corporation or partnership. Such authority shall be demonstrated to the satisfaction of the County of El Dorado.

If the signature is by an agent other than an officer of a corporation or a member of a partnership, a power of attorney authorizing said act by the agent on behalf of his principal shall be submitted with the bid forms, otherwise the bid may be disregarded as irregular and unauthorized.

The Bidder's execution on the signature portion of this Proposal shall constitute an endorsement and execution of those affidavits, declarations and certifications which are part of this Proposal.

Executed this _____ day of _____, 20
at _____ County, State of _____
Date: _____



SIGN HERE _____

Name and Title of Bidder _____

Name of Firm _____

COUNTY OF EL DORADO

BIDDER'S BOND

this form MUST be used

KNOW ALL PEOPLE BY THESE PRESENTS, THAT WE _____
_____, as **PRINCIPAL**, and

as Surety are held and firmly bound unto the County of El Dorado, a political subdivision of the State of California (hereinafter referred to as "Obligee"), in the penal sum of **TEN PERCENT (10%) OF THE AMOUNT OF THE TOTAL BID PRICE** of the Principal above named, submitted by said Principal to the Obligee for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made to the Obligee, we the Principal and Surety 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

TEN PERCENT (10%) OF THE AMOUNT OF THE TOTAL BID PRICE

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT:

WHEREAS, the Principal has submitted the above-mentioned Bid to the Obligee, as aforesaid, for certain construction specifically described as follows, for which bids are to be opened at 924B Emerald Bay Road, South Lake Tahoe, California 96150, El Dorado County, California, on Friday, June 27, 2008, for the construction of the

SAWMILL 1B BIKE PATH PROJECT
CONTRACT NO. 95148

NOW, THEREFORE, if the aforesaid Principal is awarded the Contract and, within the time and manner required under the Contract Documents, after the prescribed forms are presented to it for signature, enters into a written contract, in the prescribed form, in accordance with the Bid, and files two bonds with the Obligee, 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 virtue.

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

IN WITNESS WHEREOF, we have set our hands and seals on this _____ day of _____ 20__

(seal) _____
Principal

(seal) _____
Surety

Address: _____

(NOTE: Signature of those executing for the Surety shall be properly acknowledged, and accompanied by a Certificate of Acknowledgment.)

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**County of El Dorado, State of California
Department of Transportation,**

CONTRACT NO. 95148
for the construction of
SAWMILL 1B BIKE PATH PROJECT

THIS AGREEMENT ("Agreement") approved by the Board of Supervisors this XXnd day of Month, in the year of 2008, made and concluded, in duplicate, between the COUNTY OF EL DORADO, a political subdivision of the State of California, by the Department of Transportation thereof, the party of the first part hereinafter called "County," and CONTRACTOR, the party of the second part hereinafter called "Contractor."

RECITALS:

WHEREAS, County has caused the above-captioned project to be let to formal bidding process, and

WHEREAS, Contractor has duly submitted a bid response for the captioned project upon which County has awarded this Contract;

NOW, THEREFORE, the parties hereto have mutually covenanted and agreed, and by these presents do covenant and agree, each with the other, as follows:

Article 1. THE WORK

The improvement contemplated in the performance of the Contract is an improvement over which County shall exercise general supervision. County, therefore, shall have the right to assume full and direct control over the Contract whenever County, at its sole discretion, shall determine that its responsibility is so required.

Contractor shall complete, in accordance with the Contract Documents, the Work as specified or indicated under the Bid Schedule(s) of County's Contract Documents entitled:

Sawmill 1B Bike Path Project, dated May 2008

The Project area is located in eastern El Dorado County, in the Tahoe Basin, near the town of Meyers. With an alignment roughly matching the Highway 50 corridor from the entrance to the Lake Tahoe Golf Course at Meadow Vale Drive to Sawmill Road (approximately 1,820 feet or roughly 0.35 miles), this Project involves the installation of a Class I bicycle path and pedestrian/bike bridge over the Upper Truckee River that would link the existing Sawmill 1A Bike Path and the future bike path to be constructed along Sawmill Road from Highway 50 to Lake Tahoe Boulevard.

The Work to be done is shown on the Plans, and generally consists of, but is not limited to:

- A. Construction of a Class 1 bike path, and a pedestrian or bike bridge with concrete footing and pile foundations, bike path and bike path excavation and grading, clearing and grubbing, AC/AB paving, tree removal, installing culverts and drainage modifications, landscaping, rock-lined ditches, signing and striping, revegetation, dewatering, concrete retaining walls, traffic control, and temporary erosion control.
- B. Other items or details not mentioned above, that are required by the Plans, Standard Specifications, or the Special Provisions, shall be performed, constructed, or installed.

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Other items or details not mentioned above, that are required by the Plans, Standard Specifications or the Special Provisions, shall be performed, constructed or installed.

Article 2. CONTRACT DOCUMENTS

The Contract Documents consist of: the Notice to Bidders; the bid forms which include the accepted Proposal, Bid Price Schedule, Subcontractors Listing, Section 10162 Questionnaire, Section 10232 Statement, Noncollusion Affidavit, Section 10285.1 Statement; the Contract which includes this Agreement with all Exhibits thereto, the Payment Bond and Performance Bond and bond riders, if applicable; the drawings listed and identified as the Project Plans; the Special Provisions which incorporate by reference the Caltrans Standard Plans, dated May 2006, and Standard Specifications, dated May 2006, including the Amendments to the May 2006 Standard Specifications; and Standard Drawings from the Design and Improvement Standards Manual of County of El Dorado, revised March 8, 1994 including Resolutions 58-94 and 199-91 to adopt changes to the Design and Improvement Standards Manual; all Addenda incorporated in those documents before their execution; and all Contract Change Orders issued in accordance with the Contract Documents which may be delivered or issued after the Effective Date of this Agreement and are not attached hereto; the prevailing Labor Surcharge And Equipment Rental Rates (when required) as determined by the Department of Industrial Relations to be in effect on the date the Work is accomplished; and all the obligations of County and of Contractor which are fully set forth and described therein; the provisions of all Contract Documents are intended to cooperate so that any work called for in one and not mentioned in the other is to be executed the same as if mentioned in all Contract Documents. Contractor agrees to perform all of its promises, covenants, and conditions set forth in the Contract Documents, and to abide by and perform all terms and conditions set forth therein. In case of conflict between this Agreement and any other contract document, this Agreement shall take precedence.

Article 3. COVENANTS AND CONTRACT PRICE

County hereby promises and agrees with Contractor to employ, and does hereby employ, said Contractor to provide the material and to do the Work according to the terms and conditions of the Contract Documents herein contained and referred to, for the prices hereinafter set forth, and hereby contracts to pay the same at the time, in the manner and upon the conditions herein set forth; and the said parties for themselves, their heirs, executors, administrators, successors and assigns, do hereby agree to the full performance of the covenants herein contained. County shall pay Contractor for the completion of the Work in accordance with the Contract Documents in current funds the Contract Prices named in Contractor's Bid and Bid Schedule, a copy of which is attached hereto as Exhibit A.

Article 4. COMMENCEMENT AND COMPLETION

The Work to be performed under the Contract shall commence on the date specified in the Notice to Proceed issued by County. The Work shall be fully completed within the time specified in the Notices to Proceed pursuant to Section 4 of the Special Provisions.

County and Contractor recognize that time is of the essence of the Agreement and that County will suffer financial loss if the Work is not completed within the time specified in Section 4 of the Special Provisions annexed hereto, plus any extensions thereof allowed in accordance with Section 4 of the Special Provisions. They also recognize the delays, expense, and difficulties involved with proving in a legal proceeding the actual loss suffered by County if the Work is not completed on time. Accordingly, instead of requiring any such proof, County and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay County the sum of two thousand four hundred ten dollars (\$2,410.00) for each and every calendar day's delay in finishing the Work in excess of the number of working days prescribed herein.

Article 5. INDEMNITY

To the fullest extent allowed by law, Contractor shall defend, indemnify, and hold County, the State of California (State), and the California Tahoe Conservancy (CTC), and each of its members, officers, agents, directors, and employees harmless against and from any and all claims, suits, losses, damages, and liability

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for damages, including attorney's fees and other costs of defense brought for or on account of injuries to or death of any person, including but not limited to, workers and the public, or on account of injuries to or death of County, State, or CTC employees, or damage to property, or any economic, consequential or special damages which are claimed or which shall in any way arise out of or be connected with Contractor's services, operations or performance hereunder, regardless of the existence or degree of fault or negligence on the part of the County, State, CTC, Contractor, subcontractors or employees of any of these, except for the active or sole negligence of County, State, CTC, and its members, officers, agents, directors, and employees, or where expressly prescribed by statute.

Contractor further covenants and agrees to keep any and all property subject to County's License Agreement with the CTC free from any mechanic's or materialmen's liens claimed by any person, firm or corporation employed by or on behalf of Contractor for any work or services performed under this Contract. In the event of the filing of any such liens, Contractor shall cause such lien to be released within five (5) days after County's written notice to do so. Contractor shall indemnify and defend County, CTC and State against any and all liability, cost and expense including attorney's fees incurred by County, CTC or State as a result of any such lien.

The duty to indemnify and hold harmless the parties as set forth above, specifically includes the duties to defend set forth in Section 2778 of the Civil Code.

The insurance obligations of Contractor are separate, independent obligations under the Contract Documents, and the provisions of this defense and indemnity are not intended to modify, nor should they be construed as modifying or in any way limiting, the insurance obligations set forth in the Contract Documents.

Article 6. GUARANTEES

Contractor shall repair or replace any or all Work provided hereunder which is defective due to faulty materials, poor workmanship, or defective equipment at no expense to County, ordinary wear or tear and unusual abuse or neglect excepted, during the term of the Contract and for a period of one (1) year from the completion date stated in the Notice of Completion.

Contractor shall be required to repair or replace any and all adjacent facilities or areas which have been damaged or displaced due to Contractor's work performed under this Agreement at no expense to County during the term of this Agreement and for a period of one (1) year from the completion date stated in the Notice of Completion.

If a warranty or guarantee exceeding one (1) year is provided by the supplier or manufacturer of any equipment or materials used in this Project, or if a warranty or guarantee exceeding one (1) year is required elsewhere in these Contract Documents, then the guarantee for such equipment or materials shall be extended for such term. Contractor expressly agrees to act as co-guarantor of such equipment and materials, and Contractor shall supply County with all warranty and guaranty documents relative to equipment and materials incorporated in the job and guaranteed by its suppliers or manufacturers.

The parties agree that this guarantee and the rights and obligations accruing therefrom shall be in addition to, and not by way of limitation in any manner whatsoever to, the rights, obligations, warranties or remedies otherwise provided for by law.

In the event of Contractor's failure to comply with the above mentioned conditions within ten (10) calendar days after being notified in writing by County, Contractor hereby authorizes County to proceed to have said defects repaired and made good at Contractor's expense, and Contractor will honor and pay all costs and charges therefore upon written demand.

Article 7. DISPUTES RESOLUTION

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- a. CONTINUE WORK DURING DISPUTE: In the event of any dispute between County and Contractor, Contractor will not stop Work but will prosecute the Work diligently to completion in the manner directed by County, and the dispute shall be resolved by a court of law after completion of the Work. However, all disputes must be submitted by Contractor in accordance with subsequent provisions of this Article.
- b. COUNTY'S REVIEW OF CLAIM: County shall review the facts pertinent to the claim, secure assistance from legal and other advisors, coordinate with the contract administrators, and within the time stipulated in subsection "c" herein, render a written decision on the claim. A copy of the decision shall be furnished to Contractor by certified mail, return receipt requested, or any other method that provides evidence of receipt. The decision of County shall be made final and conclusive except as is otherwise provided herein.
- c. REQUIREMENTS FOR FILING A CLAIM: For any claim subject to this Article, the following requirements apply: 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.
 1. For claims of less than fifty thousand dollars (\$50,000), County shall respond in writing to any claim within forty-five (45) days of the receipt of the claim or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims County may have against the claimant. If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of County and the claimant. County's written response to the claim, as further documented, shall be submitted to the claimant within fifteen (15) days after the 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.
 2. For claims of fifty thousand dollars (\$50,000) or more, but less than or equal to three hundred seventy-five thousand dollars (\$375,000), County shall respond in writing to all written claims within sixty (60) days of the receipt of the claim or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims County may have against the claimant. If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of County and the claimant. County's written response to the claim, as further documented, shall be submitted to the claimant within thirty (30) days after the 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.
 3. If the claimant disputes County's written response, or County fails to respond within the time prescribed, the claimant may so notify County, in writing, either within fifteen (15) days of County's response or within fifteen (15) days of County's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for the settlement of the issues in dispute. Upon a demand, County shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.
 4. If following the meet and confer conference the claim or any portion remains in dispute, the claimant may file a claim pursuant to 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 the purpose of these provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits a written claim pursuant to subdivision (a) until the time the claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer conference.

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- d. CLAIMS EXEMPT FROM REVIEW: The procedures and remedies provided in this Article 7 do not apply to:
 - 1. Any claims by County.
 - 2. Any claims for or respecting personal injury or death or reimbursement or other compensation arising out of or resulting from liability for personal injury or death.
 - 3. Any claim or dispute relating to stop payment requests or stop notices.
 - 4. Any claim related to the approval, refusal to approve, or substitution of subcontractors, regardless of tier, and suppliers.
- e. PROCEDURE TO RESOLVE CIVIL CLAIMS: County and Contractor shall follow procedures established for all civil actions filed to resolve claims pursuant to Section 20104.4 of the Public Contract Code.
- f. PAYMENT OF UNDISPUTED PORTION OF CLAIM: Payment by County of undisputed portion of claim; interest on arbitration award or judgment.
 - 1. County shall pay such portion of a claim which is undisputed except as otherwise provided in the Contract Documents.
 - 2. In any suit filed under Section 20104.4, of the Public Contract Code, County 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.
- g. SUIT IN EL DORADO COUNTY ONLY: Any litigation arising out of this Contract shall be brought in El Dorado County.

Article 8. ASSIGNMENT OF ANTITRUST ACTIONS

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract Contractor offers and agrees and will require all of its subcontractors and suppliers to agree to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to Contractor, without further acknowledgment by the parties.

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under Government Code Sections 4450-4554, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under Government Code Sections 4450-4554 if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

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Article 9. TERMINATION BY COUNTY FOR CONVENIENCE

County reserves the right to terminate the Contract at any time upon determination by County's Representative that termination of the Contract is in the best interest of County. County shall issue Contractor a written notice specifying that the Contract is to be terminated.

Upon receipt of said written notice, Contractor shall stop all work under the Contract except: (1) work specifically directed to be completed prior to termination, (2) work the Inspector deems necessary to secure the project for termination, (3) removal of equipment and plant from the site of the Work, (4) action that is necessary to protect materials from damage, (5) disposal of materials not yet used in the Work as directed by County, and (6) clean up of the site.

If the Contract is terminated for County's convenience as provided herein, all finished or unfinished work and materials previously paid for shall, at the option of County, become its property. Contractor shall be paid an amount which reflects costs incurred for work provided to the date of notification of termination. In addition, Contractor shall be paid the reasonable cost, as solely judged by County, and without profit, for all work performed to secure the project for termination.

Article 10. TERMINATION BY COUNTY FOR CAUSE

If Contractor is adjudged as bankrupt or insolvent, or makes a general assignment for the benefit of its creditors or if a trustee or receiver is appointed for Contractor or for any of its property, or if Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or on more than one occasion fails to supply sufficient skilled workmen or suitable material or equipment, or on more than one occasion fails to make prompt payments to subcontractors for labor, materials, or equipment, or disregards the authority of County's Representative, or the Engineer, if one is appointed, or otherwise violates any provision of the Contract Documents, then County may, without prejudice to any other right or remedy and after giving Contractor and its Surety a minimum of ten (10) days from delivery of a written termination notice, terminate the services of Contractor and take equipment and machinery thereon owned by Contractor and finish the Work by whatever method County may deem expedient. In such case, Contractor shall not be entitled to receive any further payment until the Work is finished.

Without prejudice to other rights or remedies County may have, if Contractor fails to begin delivery of materials and equipment, to commence Work within the time specified, to maintain the rate of delivery of material, to execute the Work in the manner and at such locations as specified, or fails to maintain a work program which will ensure County's interest, or, if Contractor is not carrying out the intent of the Contract, an Inspector's written notice may be served upon Contractor and the Surety on its faithful performance bond demanding satisfactory compliance with the Contract.

If Contractor or its Surety does not comply with such notice within five (5) days after receiving it, or after starting to comply, fails to continue, County may exclude it from the premises and take possession of all material and equipment, and complete the Work by County's own forces, by letting the unfinished Work to another Contractor, or by a combination of such methods.

Where Contractor's services have been so terminated by County, said termination shall not affect any right of County against Contractor then existing or which may thereafter accrue. Any retention or payment of monies by County due Contractor will not release Contractor from compliance with the Contract Documents.

If the unpaid balance of the Contract price exceeds the direct and indirect costs of completing the Work, including compensation for additional professional services, such excess shall be paid to Contractor. If the sums under the Contract are insufficient for completion, Contractor or Surety shall pay to County within five (5) days after the completion, all costs in excess of the Contract price. In any event, the cost of completing the Work shall be charged against Contractor and its Surety and may be deducted from any money due or becoming due from County.

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If the Surety assumes any part of the Work, it shall take Contractor's place in all respect for that part and shall be paid by County for all Work performed by it in accordance with the Contract. If the Surety assumes the entire Contract, all money due Contractor at the time of its default shall be payable to the Surety as the work progresses, subject to the terms of this Contract.

The provisions of this Article shall be in addition to all other rights and remedies available to County under law.

If after notice of termination, it is determined for any reason that Contractor was not in default, the rights and obligations of the parties shall be the same as if the notice of termination had not been issued. The Contract shall be equitably adjusted to compensate for such termination.

Article 11. WORKERS' COMPENSATION CERTIFICATION

Contractor shall comply with Labor Code Sections 3700 et seq., requiring it to obtain Workers' Compensation Insurance, and sign a certificate of knowledge thereof.

CERTIFICATE OF KNOWLEDGE - LABOR CODE SECTION 3700

I am 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 I will comply with such provisions before commencing the performance of work of this Contract.

Signed: _____ Date _____

Article 12. WARRANTY

Contractor warrants to County that materials and equipment furnished for the Work will be good quality and new, unless otherwise required or permitted under the Contract Documents, that the Work will be free from defects or flaws and is of the highest quality of workmanship and that the Work will conform with the requirements therein. Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective.

Article 13. RETAINAGE

The retainage from payments is set forth in the "Payments" section of the Special Provisions. Contractor may elect to receive one hundred percent (100%) of payments due as set forth in the Contract Documents, without retention, by depositing securities of equivalent value with County, in accordance with, and as set forth in Section 22300 of the Public Contract Code. Securities eligible for deposit hereunder shall be limited to those listed in Section 16430 of the Government Code, or bank or saving's and loan Certificates of Deposit.

Article 14. PREVAILING WAGE REQUIREMENTS

In accordance with the provisions of California Labor Code Sections 1770, et seq., including but not limited to Sections 1773, 1773.1, 1773.2, 1773.6 and 1773.7, the general prevailing rate of wages in County in which the Work is to be done has been determined by the Director of the California Department of Industrial Relations. These wage rates appear in the California Department of Transportation publication entitled General Prevailing Wage Rates. Interested parties can obtain the current wage information by submitting their requests to the Department of Industrial Relations, Division of Labor Statistics and Research, PO Box 420603, San Francisco CA 94142-0603, Telephone (415) 703-4708 or by referring to the website at <http://www.dir.ca.gov/dlsr/PWD>. The rates at the time of the bid advertisement date of a project will remain in effect for the life of the project in accordance with the California Code of Regulations, as modified and effective January 27, 1997.

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the Department of Transportation's principal office, and shall be made available upon request.

In accordance with the provisions of Labor Code 1810, eight (8) hours of labor shall constitute a legal day's work upon all work done hereunder, and Contractor and any subcontractor employed under this Contract shall conform to and be bound by the provisions of Labor Code Sections 1810 through 1815.

Article 15. BUSINESS LICENSE

The County Business License Ordinance provides that it is unlawful for any person to furnish supplies or services, or transact any kind of business in the unincorporated territory of El Dorado County without possessing a County business license unless exempt under County Ordinance Code Section 5.08.070. Contractor warrants and represents that it shall comply with all of the requirements of the County Business License Ordinance, where applicable, prior to beginning work under this Contract and at all times during the term of this Contract.

Article 16. CONTRACT ADMINISTRATOR

The County Officer or employee with responsibility for administering this Agreement is Steve P. Kooyman, P.E., Supervising Civil Engineer, Department of Transportation, or successor.

Article 17. PROMPT PAYMENT OF SUBCONTRACTORS

Satisfactory Performance

A prime Contractor or subcontractor shall pay to any subcontractor not later than ten (10) days of receipt of each progress payment, in accordance with the provision in Section 7108.5 of the California Business and Professions Code concerning prompt payment to subcontractors. The ten (10) day period is applicable unless a longer period is agreed to in writing. Any delay or postponement of payment over thirty (30) days may take place only for good cause and with County's prior written approval. Any violation of Section 7108.5 shall subject the violating contractor or subcontractor to the penalties, sanctions and other remedies of that Section. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to Contractor or subcontractor in the event of a dispute involving late payment or nonpayment by Contractor, deficient subcontractor performance, and/or noncompliance by a subcontractor.

Release of Retainage

County shall hold retainage from the prime Contractor and shall make prompt and regular incremental acceptances of portions, as determined by the Department, of the contract work and pay retainage to the prime Contractor based on these acceptances. The prime Contractor or subcontractor shall return all monies withheld in retention from the subcontractor within thirty (30) days after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by County. Any delay or postponement of payment may take place only for good cause and with County's prior written approval. Any violation of these provisions shall subject the violating Contractor or subcontractor to the penalties, sanctions, and remedies specified in Section 7108.5 of the California Business and Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to Contractor or subcontractor in the event of a dispute involving late payment or nonpayment by Contractor, deficient subcontract or performance, and/or noncompliance by a subcontractor.

Article 18. RETENTION AND ACCESS TO RECORDS

All accounting records and other supporting papers of Contractor's connected with performance under this Agreement shall be maintained for a minimum of three (3) years from the date of final payment by County or until all other pending matters are closed and shall be held open to inspection and audit by representatives of County, CTC, and the California State Auditor and copies thereof shall be furnished upon request.

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Contractor and its subcontractors shall maintain all books, documents, papers, accounting records, and other evidence pertaining to the performance of such contracts, including but not limited to, the costs of administering the various contracts. All of the above-referenced parties shall make such materials available at their respective offices at all reasonable times during the contract period and for three (3) years from the date of final payment by County or until all other pending matters are closed. Representatives of County, CTC, and the California State Auditor, shall have access to any books, documents, papers, and records that are pertinent to the contract for audit, examination, excerpts, and transactions and copies thereof shall be furnished upon request.

Article 19. NONDISCRIMINATION

Attention is directed to the following Notice that is required by Chapter 5 of Division 4 of Title 2, California Code of Regulations.

NOTICE OF REQUIREMENT FOR NONDISCRIMINATION PROGRAM (GOVERNMENT CODE SECTION 12990)

Attention is further directed to the "Nondiscrimination Clause", set forth in Section 7-1.01A(4), "Labor Nondiscrimination," of the Standard Specifications, which is applicable to all nonexempt State contracts and subcontracts, and to the "Standard California Nondiscrimination Construction Contract Specifications" set forth therein. The specifications are applicable to all nonexempt State construction contracts and subcontracts of \$5,000 or more.

This Contract is subject to state contract nondiscrimination and compliance requirements including Government Code, Section 12990, and shall be construed and interpreted in compliance with said provisions.

During the performance of this Contract, Contractor and its subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age, or sex. Contractor and its subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. Contractor and its subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12900 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this Contract by reference and made a part hereof as if set forth in full. Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

This nondiscrimination clause shall be included in all contracts entered into by Contractor for the performance of work within the Scope of this Contract.

Article 20. DRUG-FREE WORKPLACE

Contractor agrees to maintain a drug-free workplace in accordance with Government Code Section 8355, et seq. by doing all of the following:

- a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace, and specifying actions that will be taken against employees for violations of this prohibition;
- b. Establishing a drug-free awareness program to inform employees about (1) the dangers of drug

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abuse in the workplace; (2) the person's or organization's policy of maintaining a drug-free workplace; (3) any available drug counseling, rehabilitation, and employee assistance programs; and (4) the penalties that may be imposed upon employees for drug abuse violations;

- c. Submitting a Drug-Free Workplace Certification form (attached hereto as Exhibit B) to County with the submittal of this signed Agreement;
- d. Requiring that each employee engaged in the performance of the contract be given a copy of the certification.

Article 21. AUTHORIZED SIGNATURES

The parties hereto represent that the undersigned individuals executing this Agreement on behalf of their respective parties are fully authorized to do so by law or other appropriate instrument and to bind upon said parties the obligations set forth herein.

S A M P L E

IN WITNESS WHEREOF, the said Department of Transportation of the County of El Dorado, State of California, has caused this Agreement to be executed by the Board of Supervisors of the County, on its behalf, and the said Contractor has signed this Agreement the day and year written below.

COUNTY OF EL DORADO

Dated _____

Chairman, Board of Supervisors

Attest:
Cindy Keck
Clerk of the Board of Supervisors

By: _____
Deputy Clerk

CONTRACTOR

Dated _____

Name of Company

By _____
Authorized Representative License No. Federal Employer Identification #

NOTE: If Contractor 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 contracts on behalf of the corporation; if Contractor is a co-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 co-partnership; and if Contractor is an individual, his/her signature shall be placed above. Contractor executing this document on behalf of a corporation or partnership shall be prepared to demonstrate by resolution, article, or otherwise that it is appropriately authorized to act in these regards. For such corporation or partnership, such authority shall be demonstrated to the satisfaction of County. If signature is by an agent, other than officer of a corporation or a member of a partnership, an appropriate Power of Attorney shall be on file with the Department prior to signing this document.

Mailing Address _____

Business Address _____

City, Zip _____

Phone (____) _____ Fax (____) _____

**EXHIBIT A
CONTRACTOR'S BID AND BID SCHEDULE
SAWMILL 1B BIKE PATH PROJECT
CONTRACT NO. 95148**

ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT OF MEASURE	UNIT PRICE (in Figures)		ITEM TOTAL (in Figures)	
1	Mobilization	1	LS				
2	Traffic Control	1	LS				
3	Temporary Railing (Type K)	360	LF				
4	Temporary Crash Cushion (Array TS14)	2	EA				
5	Install and Maintain Tree Protection and Construction Limit Fence	1,567	LF				
6	Install and Maintain Type 2 Filter Fence	1,903	LF				
7	Install and Maintain Type 3 Filter Fence	40	LF				
8	Class 1 Asphalt Concrete Bike Path	18,650	SF				
9	Caltrans GCP Inlet	2	EA				
10	18" CMP Culvert	86	LF				
11	18" Flared End Section	3	EA				
12	Rock-Lined Ditch	162	LF				
13	Diversion for STA 169+03 and STA 174+90	2	EA				
14	Rock Bowl	153	SF				
15	Remove Existing Wood Fence	160	LF				
16	Rock Dissipator	36	SF				
17	Dewatering for STA 169+03 and STA 174+90	2	EA				
18	Dewatering for Structures	4	EA				
19	Revegetation – Type SM	13,487	SF				
20	Revegetation – Type MSS	8,266	SF				
21	Coir Logs	3	EA				
22	Striping and Markings	810	SF				
23	Recessed Thermoplastic Markings	200	SF				
24	Peelercore Bollards	4	EA				
25	Removable Bollards	2	EA				

ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT OF MEASURE	UNIT PRICE (in Figures)		ITEM TOTAL (in Figures)	
26	Concrete Retaining Wall – Caltrans Type 5	195	SF				
27	Concrete Retaining Wall – Caltrans Type 1	1,808	SF				
28	Tubular Steel Railing	265	LF				
29	Adjust SMH Rim to Grade	3	EA				
30	Sweeping	1	LS				
31	Rock Fracturing and Removal	25	CY				
32	Relocate Existing Roadway Sign	2	EA				
33	Roadway Signs – Type 1	4	EA				
34	Roadway Signs – Type 2	6	EA				
35	Roadway Signs – Type 3	1	EA				
36	Overexcavation and Remove Unsuitable Material	25	CY				
37	Remove and Reconstruct Metal Beam Guardrail	60	LF				
38	Asphalt Concrete Dike, Type F	60	LF				
39	Install and Maintain Tire Wash Area On Pavement	1	EA				
40	Install and Maintain Concrete Wash Out Area	1	EA				
41	Install and Maintain Staging Area	1	EA				
42	Tree Removal	24	EA				
43	Earthwork – Bridge (F)	170	CY				
44	Precast & Prestressed Concrete Piles	725	LF				
45	Structural Concrete - Bridge	48	CY				
46	Pre-Fabricated Steel Truss	1	LS				
47	Miscellaneous Grading	50	CY				
48	Shoring, Bracing or Sloping the Sides of Trenches Greater Than Five Feet Deep	1	LS				
49	Winterization	1	LS				
	TOTAL BID						

(F) Denotes Final Pay Item, (LS) Denotes Lump Sum

**EXHIBIT B
DRUG-FREE WORKPLACE CERTIFICATION**

COMPANY/ORGANIZATION NAME

The Contractor named above hereby certifies compliance with Government Code Section 8355 in matters relating to providing a drug-free workplace. The above named contractor will:

1. Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a).
2. Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b), to inform employees about all of the following:
 - a. The dangers of drug abuse in the workplace,
 - b. The person's or organization's policy of maintaining a drug-free workplace,
 - c. Any available counseling, rehabilitation, and employee assistance programs, and
 - d. Penalties that may be imposed upon employees for drug abuse violations.
3. Provide as required by Government Code Section 8355(c), that every employee who works on the proposed contract:
 - a. Will receive a copy of the company's drug-free policy statement, and
 - b. Will agree to abide by the terms of the company's statement as a condition of employment on the contract.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor to the above-described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME

DATE EXECUTED

EXECUTED IN THE COUNTY OF

CONTRACTOR SIGNATURE

TITLE

FEDERAL I.D. NUMBER

County of El Dorado

PAYMENT BOND

(Section 3247, Civil Code)

Bond No. _____

WHEREAS, the County of El Dorado, a political subdivision of the State of California, hereafter referred to as "Obligee", has awarded to Contractor

_____,
hereafter referred to as "Principal", a contract for the work described as follows:

**SAWMILL 1B BIKE PATH PROJECT
CONTRACT NO. 95148**

AND, WHEREAS, said Principal is required to furnish a bond in connection with said contract, guaranteeing the faithful performance thereof:

NOW, THEREFORE, we the undersigned Principal and Surety are held and firmly bound unto the Obligee, in the sum of

_____ Dollars,

(\$ _____) to be paid to the Obligee, for which payment we bind ourselves, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH,
That if said Principal or its 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 such claimant, or any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board from the wages of employees of the Principal and his subcontractors pursuant to Section 18806 of the Revenue and Taxation 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 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.

Dated: _____, 20_____.

Correspondence or Claims relating to this bond should be sent to the Surety at the following address:

PRINCIPAL

SURETY

ATTORNEY-IN-FACT

NOTE: Signatures of those executing for the Principal and for the Surety must be properly acknowledged, and a Power of Attorney attached for the Surety.

NOTARY ACKNOWLEDGEMENTS ATTACHED

PRINCIPAL

ACKNOWLEDGMENT

State of California

County of _____

On _____ before me, _____,
(here insert name and title of the officer)

personally appeared _____

_____ ,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

(Seal)

SURETY

ACKNOWLEDGMENT

State of California

County of _____

On _____ before me, _____,
(here insert name and title of the officer)

personally appeared _____

_____ ,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

(Seal)

County of El Dorado

PERFORMANCE BOND

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS, that we _____
the Contractor in the Contract hereto annexed, as Principal, and _____
as Surety, are held firmly bound unto the County of El Dorado, a political subdivision of the State of
California, hereinafter called the "Obligee" in the sum of _____ Dollars,
(\$ _____) lawful money of the United States, for which payment, well and truly to be made,
we bind ourselves, jointly and severally, firmly by these presents.

Signed, sealed and dated: _____

The condition of the above obligation is such that if said Principal as Contractor in the Contract hereto annexed shall faithfully perform each and all of the conditions of said Contract to be performed by him, and shall furnish all tools, equipment, apparatus, facilities, transportation, labor and material, other than material, if any, agreed to be furnished by the Obligee, necessary to perform and complete, and to perform and complete in a good and workmanlike manner, the work of **Contract No. 95148 for the Sawmill 1B Bike Path Project** in strict conformity with the terms and conditions set forth in the Contract hereto annexed, then this obligation shall be null and void; otherwise this bond shall remain in full force and effect and the said Surety will complete the Contract work under its own supervision, by Contract or otherwise, and pay all costs thereof for the balance due under terms of the Contract, 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 shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work.

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

This guarantee shall insure the Obligee during the work required by any Contract and for a period of one (1) year from the date of acceptance of the work against faulty or improper materials or workmanship that may be discovered during that time.

No right of action shall accrue under this bond to or for the use of any person other than the Obligee named herein.

Dated: _____, 20_____.

Correspondence or Claims relating to this bond should be sent to the Surety at the following address:

PRINCIPAL

SURETY

ATTORNEY-IN-FACT

NOTE: Signatures of those executing for the Principal and for the Surety must be properly acknowledged, and a Power of Attorney attached for the Surety.

NOTARY ACKNOWLEDGEMENTS ATTACHED

PRINCIPAL

ACKNOWLEDGMENT

State of California

County of _____

On _____ before me, _____,
(here insert name and title of the officer)

personally appeared _____

_____ ,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

(Seal)

SURETY

ACKNOWLEDGMENT

State of California

County of _____

On _____ before me, _____,
(here insert name and title of the officer)

personally appeared _____

_____ ,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

(Seal)

Withholding Exemption Certificate

(This form can only be used to certify exemption from nonresident withholding under California R&TC Section 18662. This form cannot be used for exemption from wage withholding.)

File this form with your withholding agent.
(Please type or print)

Withholding agent's name

Vendor/Payee's name

Vendor/Payee's Social security number
 SOS no. California corp. no. FEIN

Note:
Failure to furnish your identification number will make this certificate void.

Vendor/Payee's address (number and street)

APT no.

Private Mailbox no.

City

State

ZIP Code

I certify that for the reasons checked below, the entity or individual named on this form is exempt from the California income tax withholding requirement on payment(s) made to the entity or individual. Read the following carefully and check the box that applies to the vendor/payee:

Individuals — Certification of Residency:

I am a resident of California and I reside at the address shown above. If I become a nonresident at any time, I will promptly inform the withholding agent. See instructions for Form 590, General Information D, for the definition of a resident.

Corporations:

The above-named corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State to do business in California. The corporation will withhold on payments of California source income to nonresidents when required. If this corporation ceases to have a permanent place of business in California or ceases to be qualified to do business in California, I will promptly inform the withholding agent. See instructions for Form 590, General Information E, for the definition of permanent place of business.

Partnerships:

The above-named partnership has a permanent place of business in California at the address shown above or is registered with the California Secretary of State, and is subject to the laws of California. The partnership will file a California tax return and will withhold on foreign and domestic nonresident partners when required. If the partnership ceases to do any of the above, I will promptly inform the withholding agent. **Note:** For withholding purposes, a Limited Liability Partnership (LLP) is treated like any other partnership.

Limited Liability Companies (LLC):

The above-named LLC has a permanent place of business in California at the address shown above or is registered with the California Secretary of State, and is subject to the laws of California. The LLC will file a California tax return and will withhold on foreign and domestic nonresident members when required. If the LLC ceases to do any of the above, I will promptly inform the withholding agent.

Tax-Exempt Entities:

The above-named entity is exempt from tax under California R&TC Section 23701 _____ (insert letter) or Internal Revenue Code Section 501(c) _____ (insert number). The tax-exempt entity will withhold on payments of California source income to nonresidents when required. If this entity ceases to be exempt from tax, I will promptly inform the withholding agent. **Note:** Individuals cannot be tax-exempt entities.

Insurance Companies, IRAs, or Qualified Pension/Profit Sharing Plans:

The above-named entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.

California Irrevocable Trusts:

At least one trustee of the above-named irrevocable trust is a California resident. The trust will file a California fiduciary tax return and will withhold on foreign and domestic nonresident beneficiaries when required. If the trustee becomes a nonresident at any time, I will promptly inform the withholding agent.

Estates — Certification of Residency of Deceased Person:

I am the executor of the above-named person's estate. The decedent was a California resident at the time of death. The estate will file a California fiduciary tax return and will withhold on foreign and domestic nonresident beneficiaries when required.

CERTIFICATE: Please complete and sign below.

Under penalties of perjury, I hereby certify that the information provided herein is, to the best of my knowledge, true and correct. If conditions change, I will promptly inform the withholding agent.

Vendor/Payee's name and title (type or print) _____ Daytime telephone no. _____

Vendor/Payee's signature ► _____ Date _____

Instructions for Form 590

Withholding Exemption Certificate

References in these instructions are to the California Revenue and Taxation Code (R&TC).

General Information

A Purpose

Use Form 590 to certify an exemption from nonresident withholding. Complete and present Form 590 to the withholding agent. The withholding agent will then be relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless told by the Franchise Tax Board (FTB) that the form should not be relied upon.

Important – This form cannot be used for exemption from wage withholding. Any questions regarding wage withholding should be directed to the California Employment Development Department. For more information contact EDD customer service at (888) 745-3886 or visit their Website: <http://www.edd.ca.gov>.

Do not use Form 590 if you are a seller of California real estate. Sellers of California real estate should use Form 593-C, Real Estate Withholding Certificate.

B Law

R&TC Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on:

- Payments to nonresidents for services rendered in California;
- Distributions of California source income made to domestic nonresident partners and members and allocations of California source income made to foreign partners and members;
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business;
- Payments to nonresidents for royalties for the right to use natural resources located in California;
- Distributions of California source income to nonresident beneficiaries from an estate or trust; and
- Prizes and winnings received by nonresidents for contests in California.

For more information on withholding and waiver requests, get FTB Pub. 1017, Nonresident Withholding Partnership Guidelines, and FTB Pub. 1023, Nonresident Withholding Independent Contractor, Rent and Royalty Guidelines. To get a withholding publication see General Information G.

C Who can Execute this Form

Form 590 can be executed by the entities listed on this form.

Note: In a situation where payment is being made for the services of a performing entity, this form can only be completed by the performing entity or the performing entity's partnership or corporation. It **cannot** be completed by the performing entity's agent or other third party.

Note: The grantor of a revocable/grantor trust shall be treated as the vendor/payee for

withholding purposes. Therefore, if the vendor/payee is a revocable/grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors of a revocable/grantor trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

D Who is a Resident

A California resident is any individual who is in California for other than a temporary or transitory purpose or any individual domiciled in California who is absent for a temporary or transitory purpose.

An individual domiciled in California who is absent from California for an uninterrupted period of at least 546 consecutive days under an employment-related contract is considered outside California for other than a temporary or transitory purpose.

Note: Return visits to California that do not total more than 45 days during any taxable year covered by the employment contract are considered temporary.

This provision does not apply if an individual has income from stocks, bonds, notes, or other intangible personal property in excess of \$200,000 in any taxable year in which the employment-related contract is in effect.

A spouse who is absent from California for an uninterrupted period of at least 546 days to accompany a spouse who is under an employment-related contract is considered outside of California for other than a temporary or transitory purpose.

Generally, an individual who comes to California for a purpose which will extend over a long or indefinite period will be considered a resident. However, an individual who comes to perform a particular contract of short duration will be considered a nonresident. For assistance in determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status, or call the Franchise Tax Board at (800) 852-5711 or (916) 845-6500 (not toll-free).

E What is a Permanent Place of Business

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or if it is a foreign corporation qualified to transact intrastate business by the California Secretary of State. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

F Withholding Agent

Keep Form 590 for your records. DO NOT send this form to the FTB unless it has been specifically requested.

Note: If the withholding agent has received Form 594, Notice to Withhold Tax at Source, only the performing entity can complete and sign Form 590 as the vendor/payee. If the performing entity completes and signs Form 590 indicating no withholding requirement, you must send a copy of Form 590 with Form 594 to FTB.

For more information, contact the Withholding Services and Compliance Section. See General Information G.

The vendor/payee must notify the withholding agent if:

- The individual vendor/payee becomes a nonresident;
- The corporation ceases to have a permanent place of business in California or ceases to be qualified to do business in California;
- The partnership ceases to have a permanent place of business in California;
- The LLC ceases to have a permanent place of business in California; or
- The tax-exempt entity loses its tax-exempt status.

The withholding agent must then withhold. Remit the withholding using Form 592-A, Nonresident Withholding Remittance Statement, and complete Form 592, Nonresident Withholding Annual Return, and Form 592-B, Nonresident Withholding Tax Statement.

G Where to get Publications, Forms, and Additional Information

You can download, view, and print FTB Publications 1017, 1023, 1024, and nonresident withholding forms, as well as other California tax forms and publications not related to nonresident withholding from our Website at:

www.ftb.ca.gov

To have publications or forms mailed to you or to get additional nonresident withholding information, please contact the Withholding Services and Compliance Section.

WITHHOLDING SERVICES AND
COMPLIANCE SECTION
FRANCHISE TAX BOARD
PO BOX 942867
SACRAMENTO CA 94267-0651

Telephone: (888) 792-4900
(916) 845-4900 (not toll-free)
FAX: (916) 845-9512

Assistance for persons with disabilities:
We comply with the Americans with Disabilities Act. Persons with hearing or speech impairments please call TTY/TDD (800) 822-6268.

Asistencia bilingüe en español
Para obtener servicios en español y asistencia para completar su declaración de impuestos/formularios, llame al número de teléfono (anotado arriba) que le corresponde.

Request for Taxpayer Identification Number and Certification

**Give form to the
 requester. Do not
 send to the IRS.**

Print or type See Specific Instructions on page 2	Name (as shown on your income tax return)	
	Business name, if different from above	
	Check appropriate box: <input type="checkbox"/> Individual/ Sole proprietor <input type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Other ▶	
	<input type="checkbox"/> Exempt from backup withholding	
	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	City, state, and ZIP code	
List account number(s) here (optional)		

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Social security number									

OR

Employer identification number									

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. person (including a U.S. resident alien).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. (See the instructions on page 4.)

Sign Here	Signature of U.S. person ▶	Date ▶
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Purpose of Form

A person who is required to file an information return with the IRS, must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

U.S. person. Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee.

In 3 above, if applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

For federal tax purposes, you are considered a person if you are:

- An individual who is a citizen or resident of the United States,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States, or
- Any estate (other than a foreign estate) or trust. See Regulations sections 301.7701-6(a) and 7(a) for additional information.

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

The person who gives Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,

- The U.S. grantor or other owner of a grantor trust and not the trust, and
- The U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person, do not use Form W-9. Instead, use the appropriate Form W-8 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien.

Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the recipient has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity not subject to backup withholding, give the requester the appropriate completed Form W-8.

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments (after December 31, 2002). This is called "backup withholding." Payments that may be subject to backup withholding include interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 4 for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions below and the separate Instructions for the Requester of Form W-9.

Also see *Special rules regarding partnerships* on page 1.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

Sole proprietor. Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name" line.

Limited liability company (LLC). If you are a single-member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Treasury regulations section 301.7701-3, enter the owner's name on the "Name" line. Enter the LLC's name on the "Business name" line. Check the appropriate box for your filing status (sole proprietor, corporation, etc.), then check the box for "Other" and enter "LLC" in the space provided.

Other entities. Enter your business name as shown on required federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name" line.

Note. You are requested to check the appropriate box for your status (individual/sole proprietor, corporation, etc.).

Exempt From Backup Withholding

If you are exempt, enter your name as described above and check the appropriate box for your status, then check the "Exempt from backup withholding" box in the line following the business name, sign and date the form.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

Note. If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

Exempt payees. Backup withholding is not required on any payments made to the following payees:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2),
 2. The United States or any of its agencies or instrumentalities,
 3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities,
 4. A foreign government or any of its political subdivisions, agencies, or instrumentalities, or
 5. An international organization or any of its agencies or instrumentalities.
- Other payees that may be exempt from backup withholding include:
6. A corporation,
 7. A foreign central bank of issue,
 8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States,
 9. A futures commission merchant registered with the Commodity Futures Trading Commission,
 10. A real estate investment trust,
 11. An entity registered at all times during the tax year under the Investment Company Act of 1940,
 12. A common trust fund operated by a bank under section 584(a),
 13. A financial institution,
 14. A middleman known in the investment community as a nominee or custodian, or
 15. A trust exempt from tax under section 664 or described in section 4947.

The chart below shows types of payments that may be exempt from backup withholding. The chart applies to the exempt recipients listed above, 1 through 15.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt recipients except for 9
Broker transactions	Exempt recipients 1 through 13. Also, a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker
Barter exchange transactions and patronage dividends	Exempt recipients 1 through 5
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt recipients 1 through 7 ²

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation (including gross proceeds paid to an attorney under section 6045(f), even if the attorney is a corporation) and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees; and payments for services paid by a federal executive agency.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-owner LLC that is disregarded as an entity separate from its owner (see *Limited liability company (LLC)* on page 2), enter your SSN (or EIN, if you have one). If the LLC is a corporation, partnership, etc., enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at www.socialsecurity.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/businesses and clicking on Employer ID Numbers under Related Topics. You can get Forms W-7 and SS-4 from the IRS by visiting www.irs.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Writing "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, and 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). Exempt recipients, see *Exempt From Backup Withholding* on page 2.

Signature requirements. Complete the certification as indicated in 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor ²
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee ¹
b. So-called trust account that is not a legal or valid trust under state law	The actual owner ¹
5. Sole proprietorship or single-owner LLC	The owner ³
For this type of account:	Give name and EIN of:
6. Sole proprietorship or single-owner LLC	The owner ³
7. A valid trust, estate, or pension trust	Legal entity ⁴
8. Corporate or LLC electing corporate status on Form 8832	The corporation
9. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
10. Partnership or multi-member LLC	The partnership
11. A broker or registered nominee	The broker or nominee
12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or "DBA" name on the second name line. You may use either your SSN or EIN (if you have one). If you are a sole proprietor, IRS encourages you to use your SSN.

⁴ List first and circle the name of the legal trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules regarding partnerships* on page 1.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA, or Archer MSA or HSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, the District of Columbia, and U.S. possessions to carry out their tax laws. We may also disclose this information to other countries under a tax treaty, to federal and state agencies to enforce federal nontax criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.

**DEPARTMENT OF TRANSPORTATION
COUNTY OF EL DORADO, CALIFORNIA**

SPECIAL PROVISIONS

ANNEXED TO CONTRACT NO. 95148

SECTION 1. SPECIFICATIONS AND PLANS

1-1.01 GENERAL

The work embraced herein shall be done in accordance with the Standard Specifications, dated May 2006, including the Amendments to the Standard Specifications, and Standard Plans, dated May 2006, of the California Department of Transportation (Caltrans) insofar as the same may apply, and in accordance with the following Special Provisions.

In case of conflict between the Standard Specifications and these Special Provisions, the Special Provisions shall take precedence over and be used in lieu of such conflicting portions. The Contractor's attention is also directed to Sections 4-1.01, "Intent of Plans and Specifications," and 5-1.04, "Coordination and Interpretation of Plans, Standard Specifications, and Special Provisions," of the Standard Specifications.

1-1.02 DEFINITIONS AND TERMS

As used in the Contract Documents, unless the context requires otherwise, the following terms have the following meanings:

CALTRANS - The State of California Department of Transportation.

CONTRACTOR - Contractor responsible for constructing the **Sawmill 1B Bike Path Project** Improvements.

COUNTY - County of El Dorado, a political subdivision of the State of California.

CTC - California Tahoe Conservancy.

CCC - California Conservation Corps

DOT / DEPARTMENT / DEPARTMENT OF TRANSPORTATION / RECIPIENT - The Department of Transportation as created by the Board of Supervisors for the County of El Dorado.

US DOT - The United States of America Department of Transportation.

COUNTY SURVEYOR - The elected official holding the title of County Surveyor for County of El Dorado, whose office is located in Placerville, California.

DEPUTY DIRECTOR - The Deputy Director of Engineering in the Department of Transportation for the County of El Dorado.

DIRECTOR OF TRANSPORTATION - The Director of Transportation for the County of El Dorado.

ENGINEER / STATE HIGHWAY ENGINEER - The Director of Transportation for the County of El Dorado, or his authorized representative (Resident Engineer).

FHWA - Federal Highway Administration.

LABORATORY - The established laboratory of the El Dorado County Department of Transportation or laboratories authorized by Engineer to test materials and work involved in the contract.

LAHONTAN - The California Regional Water Quality Control Board (CRWQCB) in the Lake Tahoe area known as the Lahontan Region.

MUTCD - California Manual on Uniform Traffic Control Devices (FHWA's MUTCD 2003 Revision 1, as amended for use in California), also called the California MUTCD.

PLANS – The improvement plans titled “**SAWMILL 1B BIKE PATH PROJECT**” approved by the El Dorado County Department of Transportation, and the Standard Plans.

SEZ - Stream Environment Zone - Land Capability Class 1b.

STANDARD PLANS - The May 2006 edition of the Standard Plans of the State of California, Department of Transportation (Caltrans) and Standard Plans Errata.

STANDARD SPECIFICATIONS - The May 2006 edition of the Standard Specifications of the State of California, Department of Transportation (Caltrans) and the Amendments to the May 2006 Standard Specifications.

STPUD - South Tahoe Public Utility District.

SURVEYOR - An employee of the El Dorado County Department of Transportation who is a registered Land Surveyor or who is performing surveying under the license of a registered Land Surveyor who is also employed by the Department of Transportation.

STATE - County of El Dorado.

TRCD - Tahoe Resource Conservation District.

TRPA - Tahoe Regional Planning Agency.

USFS – United States Forest Service; also known as the USDA Forest Service – an agency of the United States Department of Agriculture.

All other Definitions and Terms are in accordance with the Standard Specifications.

1-1.03 AMENDMENTS TO THE STANDARD SPECIFICATIONS

Attention is directed to Appendix A of these Special Provisions, containing Amendments to the Standard Specifications as issued by the State of California Department of Transportation. These Amendments are hereby incorporated into the Contract Documents to replace or supplement those sections of the Standard Specifications where an Amendment exists, and are to be treated the same as the Standard Specifications in relation to other Contract Documents.

SECTION 2. PROPOSAL REQUIREMENTS AND CONDITIONS

2-1.01 GENERAL

The Bidders' attention is directed to the provisions in Section 2, “Proposal Requirements and Conditions”, of the Standard Specifications and these Special Provisions for the requirements and conditions which it must observe in the preparation of the Proposal form and the submission of the bid.

The first sentence of the second paragraph in Section 2-1.05, “Proposal Forms”, of the Standard Specifications is amended to read:

“The Proposal form is bound together with the Notice to Bidders, Special Provisions, Agreement and attendant documents.”

A Proposal shall be deemed “Non-Responsive” if the Proposal is submitted without the entire Contract Document package attached.

In addition to whom the bidder proposes to directly subcontract portions of the Work as required in accordance with Section 2-1.054, "Required Listing of Proposed Subcontractors," of the Standard Specifications, each Proposal shall have listed therein the percentage of work that will be done by each subcontractor listed. A form for listing the subcontractors who will work on this Project is included in the Proposal section of these Contract Documents.

The first sentence of the last paragraph in Section 2-1.07, “Proposal Guaranty,” of the Standard Specifications is amended to read:

The bidder's bond shall conform to the bond form included in the Proposal for the project “SAWMILL 1B BIKE PATH PROJECT” and shall be properly filled out and executed.

(DO NOT DETACH THE FORM).

The Proposal shall not be detached and shall be submitted with the Contract Documents bid package in its entirety.

The form of Bidder's Bond mentioned in the last paragraph in Section 2-1.07, “Proposal Guaranty”, of the Standard Specifications will be found in the Proposal. **The Bidder shall furnish one Bidder's Bond in an amount equal to at least ten percent (10%) of the total amount bid.**

In accordance with Public Contract Code Section 7106, a Noncollusion Affidavit is included in the Proposal. Signing the proposal shall also constitute signature of the Noncollusion Affidavit.

During the performance of this Contract, Contractor and its subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age, or sex. Contractor and its subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. Contractor and its subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12900 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this Contract by reference and made a part hereof as if set forth in full. Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. Each subcontract signed by the Contractor must include this nondiscrimination provision.

2-1.01A NOT USED

2-1.02 REQUIRED LISTING OF PROPOSED SUBCONTRACTORS

Each Proposal shall have listed therein the name and address of each subcontractor including the percentage of each item that the subcontractor will work on to whom the Bidder proposes to subcontract portions of the work in an amount in excess of 0.5% of the total bid 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 directed to other provisions of the Act related to the imposition of penalties for failure to observe its provisions by using unauthorized subcontractors or by making unauthorized substitutions.

A form for listing the subcontractors as required herein, is included in the Proposal section of these Contract Documents.

2-1.03 NOT USED

2-1.04 NOT USED

2-1.05 NOT USED

2-1.06 COMPLIANCE WITH STATE, CTC AND LOCAL AGENCY REQUIREMENTS

County is relying on state, CTC and local agency grants as well as on state or local agency funds for all or a portion of the funding for the Work to be provided under this Contract. As a requirement of County's use of state, CTC and TRPA funds, County is required to comply with certain contracting requirements and to extend those requirements to its third party contracts. Contractor shall comply with all applicable provisions of state, CTC and TRPA regulations and related policies, guidelines, conditions, requirements and the TRPA Code of Ordinances regarding the use, expenditure, control, reporting, allowable costs and management of such funds. Failure of Contractor to comply with any state or CTC provision may be the basis for withholding payments to Contractor and for such other remedies as may be appropriate including termination of this Contract. Contractor shall also comply with any flow-down or third-party contracting provisions which may be required under the state or CTC regulations and which may apply to Contractor's subcontracts, if any, associated with this Contract.

All work undertaken by Contractor or its subcontractors under this Contract shall comply with and conform to all applicable building, fire and sanitary laws, ordinances and regulations of any governmental agency having jurisdiction over any property in the Project area.

SECTION 3. AWARD AND EXECUTION OF CONTRACT

3-1.01 GENERAL

The Bidder's attention is directed to the provisions in Section 3, "Award and Execution of Contract," of the Standard Specifications and these Special Provisions for the requirements and conditions concerning, award and execution of contract.

3-1.01A NOT USED

3-1.02 AWARD OF CONTRACT

Section 3-1.01, "Award of Contract", of the Standard Specifications is amended to read:

3-1.01 Award of Contract; The right is reserved to reject any and all proposals. The award of contract, if it be awarded, will be to the lowest, responsive, responsible Bidder whose Proposal complies with all the requirements prescribed. Such award, if made, will be made within sixty (60) days after the opening of the Proposals. This period will be subject to extension for such further period as may be agreed upon in writing between the Department and the bidder concerned.

All bids will be compared on the basis of the Proposal Pay Items and Bid Price Schedule of the quantities of the work to be done

The lowest responsive responsible Bidder shall be the bidder submitting the lowest additive total of all the bid items. In the event of a discrepancy between the unit price bid and the extended unit total as stated on the Proposal, the amount bid for the unit price shall control and shall be utilized in calculating the additive total of the bid items for purposes of award, including revisions by Addenda, and as specified in the Proposal instructions.

3-1.03 EXECUTION OF CONTRACT

Attention is directed to the "Notice to Bidders" and "Proposal" for this Contract. Barring some unforeseen irregularity, Notice of Award will be sent to the lowest responsive responsible bidder after approval by the El Dorado County Board of Supervisors.

The successful Bidder shall return the signed Contract, the Contract bonds, the Drug-Free Certification form, a California Form 590-Withholding Exemption Certificate, a Federal Form W-9-Request for Taxpayer Identification Number and Certification, and certificates of insurance to the Office of the Department of Transportation **within five (5) days, not including Saturdays, Sundays, and legal holidays, after receiving the Notice of Award of Contract.** Priority delivery or mail of these documents should be to the attention of the Engineer, El Dorado County Department of Transportation at 924B Emerald Bay Road, South Lake Tahoe, California 96150.

The failure of the successful bidder to furnish any bond required of it by law or by these Contract Documents or the failure to execute the Contract, or the failure to provide the required insurance documents within the time fixed for the execution of the Contract and return of the bonds and insurance constitutes a failure to execute and return the Contract as required herein. Upon such failure or refusal to return the executed Agreement, or to provide the bonds or insurance documents required herein, the Bidder's security shall be forfeited to County.

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION, AND LIQUIDATED DAMAGES

4-1.01 GENERAL

Attention is directed to the provisions in Section 8-1.06, "Time of Completion," and in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and these Special Provisions. Section 8-1.03, "Beginning of Work," of the Standard Specifications shall not apply and shall be replaced with the following:

Contractor's work shall begin on the date stated in the Notice to Proceed.

Time is of the essence in this contract.

Should Contractor begin work in advance of receiving the Notice to Proceed, any work performed by Contractor in advance of the date stated in the Notice to Proceed shall be considered as having been done by Contractor at Contractor's own risk and as a volunteer, with the exception of beginning the work related to manufacturing the Pre-Fabricated Steel Truss fifteen (15) working days after receipt of the Notice of Award, as required by Section 4-1.03, "Contractor Submittals," and Section 10-1.29, "Pre-fabricated Steel Truss," of these Special Provisions.

The Contract days shall begin on the date stated in the Notice to Proceed for the Work and shall be diligently prosecuted to completion before the expiration of

SIXTY (60) WORKING DAYS.

Contractor shall pay to the County of El Dorado the sum of two thousand four hundred ten dollars (**\$2,410.00**) for each calendar day, as liquidated damages and not as a penalty, for each and every calendar day's delay in finishing the Work in excess of the contract time prescribed herein. Liquidated damages for all work, will be suspended between, but not including, October 15, 2008 through May 1, 2009, if climatic conditions or local agencies prohibit the Work to continue during this time.

Contractor is advised that most construction operations are prohibited by local agency ordinances during the period between October 15 and May 1. Contractor is responsible for contacting the TRPA and Lahontan to determine the conditions under which this requirement may be modified for specific types of work and for unusual weather conditions.

4-1.02 CONSTRUCTION SCHEDULE AND WORK HOURS

Contractor shall schedule its work day between the hours of 8:00 a.m. to 6:30 p.m. on weekdays. These work hours may be extended only with the written approval of Engineer. A working day shall be defined as Monday through Friday excluding the following County-observed holidays: New Years Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving, Friday after Thanksgiving, Christmas Eve, and Christmas Day. Contractor may work on Saturdays, Sundays, or County-observed holidays, from 8:00 a.m. to 5:00 p.m., only with the written approval of Engineer. If Engineer approves work on such days and Contractor works on the controlling operation or operations for at least 60% of the total daily time, these days will be counted as working days. Controlling operation is defined in Section 8-1.06 "Time of Completion" of the Standard Specifications.

4-1.02A COMMENCEMENT OF WORK REQUIREMENTS

The Contract working days shall begin on the date specified in the Notice to Proceed letter issued to Contractor. Contractor may provide the Submittals required in Section 4-1.03, "Contractor Submittals," to Engineer as early as ten (10) working days after the receipt of Notice of Award, but must comply with these submittal requirements within five (5) working days of the date specified in the Notice to Proceed. Engineer will review and work with Contractor cooperatively to approve Contractor's submittals and schedule the pre-grade inspection by TRPA within ten (10) days of the date specified in the Notice to Proceed. Contractor shall install Temporary Erosion Control measures within ten (10) days of the date specified in the Notice to Proceed.

Contractor shall complete the work within: sixty (60) working days of the date specified in the Notice to Proceed.

The Contract days shall begin on the date specified in the Notice to Proceed, and Contractor may not begin work (other than the temporary erosion control installation and manufacturing the Pre-Fabricated Steel Truss) until all required submittals are approved by Engineer and TRPA completes its required pre-grade inspection.

Contractor's attention is directed to Section 10-1.01, "Order of Work," in these Special Provisions.

4-1.03 CONTRACTOR SUBMITTALS

Contractor may provide the Submittals required in Section 4-1.03, "Contractor Submittals," to Engineer as early as ten (10) working days after the receipt of the Notice of Award, but must comply with these submittal requirements within five (5) working days of receipt of Notice to Proceed.

- Contractor must submit a Construction Schedule for Engineer's review and approval. The first two paragraphs of Section 8-1.04, "Progress Schedule," of the Standard Specifications shall not apply. If Engineer requires changes to the initial Construction Schedule, Contractor shall provide Engineer with a revised schedule within 12 working days of receipt of the Notice to Proceed. Subsequent Schedules shall be updated and submitted to Engineer at the weekly meetings if Contractor falls behind the initially approved schedule by more than three days. Contents of all schedules shall conform to paragraphs three, four and five of Section 8-1.04, "Progress Schedule," of the Standard Specifications.
- Contractor must submit the name and address of its authorized representative who is to receive all written notices under this Contract.
- Contractor must submit a Temporary Erosion Control Plan that shall include the locations and descriptions of erosion control measures and daily clean up measures in accordance with all federal, state, and local agency regulations, the Plans, the Storm Water Pollution Prevention Plan (SWPPP), and these Special Provisions. Contractor may use the temporary erosion control measures and details shown on the Plans in preparing a Temporary Erosion Control Plan. However, Contractor's Temporary Erosion Control Plan shall show specifically where filter fence, rice straw fiber rolls, drain inlet protection, and gravel-filled bags will be applied, where the tire wash and concrete wash areas will be located, and any additional temporary erosion control required due to Contractor's method of operation or required to meet TRPA and Lahontan permit requirements. Contractor's Temporary Erosion Control Plan shall also detail specifically what temporary erosion control measures will be applied and where the temporary

erosion control measures will be placed in any area to be used to store Contractor's materials, equipment, and supplies. All temporary erosion control measures, their implementation, and maintenance shall conform to the Plans and the provisions of the SWPPP outlined in Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)," of these Special Provisions. A complete copy of the SWPPP is available for review at the office of El Dorado County Department of Transportation, 924B Emerald Bay Road, South Lake Tahoe, CA 96150. Contractor shall not propose or use alternative temporary erosion control measures unless the Contract Documents specify where and which alternatives may be used. Contractor's Temporary Erosion Control Plan is subject to TRPA review and approval.

- Contractor must submit a Traffic Control Plan for Engineer's review and approval. Contractor must use the requirements specified in the Traffic Control Plan contained in the Plans in preparing its Traffic Control Plan. Contractor's Plan must also coordinate with the traffic control plan provisions described in Section 10-1.04, "Traffic Control Plan," of these Special Provisions. All Traffic Control shall be in accordance with Section 10-1.03, "Maintaining Traffic," of these Special Provisions.
- Contractor must submit shop drawings for the precast and prestressed concrete piles, bridge foundations, GCP inlet prefabricated elements, and the fabricated elements of the bridge in accordance with the Bid Item descriptions.
- Contractor must submit a Spill Contingency Plan in accordance with Section 5-1.52, "Spill Contingency Plan," of these Special Provisions.
- Contractor shall submit a plan to divert the drainages around the work areas for the following installations in accordance with the respective bid items:
 - 18" CMP, FES, GCP DI, Rock Bowl and Rock-lined ditch at STA 169+03 +/-
 - 18" CMP and GCP DI at STA 174+90+/-
- Contractor shall submit a Dewatering Plan for dewatering associated with the construction of the following;
 - Concrete Retaining Walls
 - Concrete Bridge Abutments
 - 18" Culvert, GCP DI, Rock Bowl and Rock-lined ditch at STA 169+03
 - 18" Culvert and GCP DI at STA 174+90

The Dewatering Plan shall be in accordance with Section 10-1.20 of these Special Provisions and in accordance with the applicable bid items.

- Contractor must submit for County, TRPA, and Lahontan review any proposed revisions to the SWPPP. Upon approval, County will enter the revision into the SWPPP Amendment Log.

No mobilization payments will be made until **all** of the above submittals have been reviewed and approved by Engineer. When weekly schedule update submittals are required, the provisions regarding this submittal and progress payments shall be in accordance with paragraphs three, four, and five of Section 8-1.04, "Progress Schedule", of the Standard Specifications.

Contractor must comply with the time frames listed in the applicable Special Provisions Sections for the following submittals:

- Contractor must submit a Shoring and Excavation Plan in accordance with Section 7-1.01E, "Trench Safety," of the Standard Specifications, as it applies to drainage inlets, culvert installations, and sediment trap installations (See Section 10-1.26, "Shoring and Excavation Plan," of these Special Provisions).
- Contractor must submit AC mix designs and testing in accordance with Section 10-1.15 "Asphalt Concrete," of these Special Provisions.
- Contractor must submit concrete mix designs in accordance with Section 90, "Portland Cement

Concrete,” of the Standard Specifications and Section 10-1.19, “Concrete Structures,” of these Special Provisions.

- Contractor must submit Certificates of Compliance in accordance with Section 5-1.49, “Certificates of Compliance,” of these Special Provisions.
- Contractor must submit information regarding the equipment to be used for the application of humus on the slopes, mulch, and tackifier in accordance with Section 10-1.10D, “Excavating and Grading, Materials,” of these Special Provisions.
- Contractor must submit samples of rock proposed for use in rock bowls, rock-lined ditches, and rock dissipators.
- Contractor must submit information regarding the pile-driving equipment to be used for driving the precast prestressed concrete piles. The information submitted shall include type, make, maximum rated energy, and rated energy per blow of hammer; weight of striking part of hammer; weight of drive cap; details, type, and structural properties of hammer cushion and pile cushion; and details of follower and jetting equipment.
- Contractor must submit a plan that shows how the loads from the equipment specified in Bid Item "Pre-Fabricated Steel Truss" will spread to minimize disturbance in the staging/storage area.

The following Pre-fabricated Steel Truss submittal requirements must be submitted to the Engineer no later than fifteen (15) working days after the receipt of Notice of Award. Upon receipt of the Pre-fabricated Steel Truss submittal requirements, Engineer shall review and approve or request a revised submittal(s) no later than five (5) working days after the initial submittal(s). If corrections are required to the submittal, the Pre-fabricated Steel Truss manufacturer shall remedy all corrections within five (5) working days and resubmit for County approval.

- Contractor must submit shop drawings for the Pre-Fabricated Steel Truss in accordance with Bid Item "Pre-Fabricated Steel Truss" and Section 10-1.29, "Pre-Fabricated Steel Truss" of these Special Provisions.
- Contractor must submit the design calculations for the Pre-Fabricated Steel Truss in accordance with Bid Item "Pre-Fabricated Steel Truss" and Section 10-1.29, "Pre-Fabricated Steel Truss" of these Special Provisions. The calculations must be stamped by a licensed Professional Engineer registered in the State of California.
- Contractor must submit a bridge installation plan that complies with the manufacturer's specifications for review prior to construction. This plan must also include bench mark datum (TBM) set near the bridge to insure precise elevation layout of piers, abutments and bridge seats in accordance with the Plans, Standard Specifications, and these Special Provisions. Contractor shall anticipate a minimum five (5) day review time for all bridge plan submittals.
- Contractor shall be responsible for providing bridge connections submittals and detailed description of means and methods for assembling, field connection and splicing, and erection procedure to Engineer for review and approval at minimum twenty (20) working days prior to fabrication and delivery.
- Contractor shall notify County of the actual means and methods of lifting section, or pre-assembled sections of the bridge, access and verification of support condition, and points of attachment to resist any loads related lifting and erection of the bridge sections and the spans. Contractors' erection submittal shall be submitted to County for review and approval at least twenty (20) working days prior to commencement of any bridge erection.

Approval of all submittals by Engineer does not relieve Contractor of its responsibility to perform the work in an acceptable manner and in accordance with the Plans, the Standard Specifications, and these Special Provisions. Checking is only for general conformance with the design concept of the project and general

compliance with the information given in the Contract Documents. Any action is subject to the requirements of the Plans, Standard Specifications, and these Special Provisions. Contractor is responsible for dimensions which shall be confirmed and correlated at the project site; fabrication processes and techniques of construction; coordination of its work with that of all other trades and the satisfactory performance of its work.

4-1.04 PRE-CONSTRUCTION CONFERENCE AND WEEKLY MEETINGS

Prior to the start of any work, Engineer will hold a pre-construction conference to discuss important aspects of the project. At this conference, Contractor shall submit in writing, signed by the officers of the corporation if applicable, the names of two employees who will be the superintendent on the project. The second name serves as an alternate in the absence of the first designee. The superintendent shall be on the site at all times that work is in progress. Failure to be on site at all times of work constitutes **suspension** of work by Contractor. Weekly meetings will be held to discuss construction issues and scheduling. Contractor's (or designee's) attendance is mandatory.

Full compensation for the required attendance shall be considered as included in the various items of work and no additional compensation will be allowed therefor.

4-1.05 PROSECUTION AND PROGRESS

Attention is directed to the provisions of Section 8, "Prosecution and Progress," of the Standard Specifications.

Contractor shall notify Engineer within five (5) working days of any occurrence which, in Contractor's opinion, entitles it to an extension of time for completion. Such notice shall be in writing. Engineer shall acknowledge, in writing, receipt of any such claim by Contractor within five (5) working days of its receipt.

SECTION 5. GENERAL

5-1.01 EXAMINATION OF PLANS, SPECIFICATIONS, CONTRACT, AND SITE OF WORK

Attention is directed to "Differing Site Conditions" of these Special Provisions regarding physical conditions at the site which may differ from those indicated in the log of test borings.

5-1.02 DIFFERING SITE CONDITIONS

Attention is directed to Section 5-1.116, "Differing Site Conditions," of the Standard Specifications.

During the progress of the work, if subsurface or latent conditions are encountered at the site differing materially from those indicated in the log of test borings, or an examination of the conditions above ground at the site, the party discovering those conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

The Contractor will be allowed fifteen (15) days from the notification of Engineer's determination of whether or not an adjustment of the contract is warranted, in which to file a notice of potential claim in conformance with the provisions of Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications and as specified herein; otherwise the decision of Engineer shall be deemed to have been accepted by the Contractor as correct. The notice of potential claim shall set forth in what respects the Contractor's position differs from Engineer's determination and provide any additional information obtained by the Contractor, including but not limited to additional geotechnical data. The notice of potential claim shall be accompanied by the Contractor's certification that the following were made in preparation of the bid: a review of the contract, a review of the log of test borings and other records of geotechnical data to the extent they were made available to bidders prior to the opening of bids, and an examination of the conditions above ground at the site. Supplementary information, obtained by the Contractor subsequent to the filing of the notice of potential claim, shall be submitted to Engineer in an expeditious manner.

5-1.03 LINES AND GRADES

Attention is directed to Section 5-1.07, "Lines and Grades," of the Standard Specifications. Stakes or marks will be set by Engineer in conformance with Section 5-1.53, "Construction Staking," of these Special Provisions.

5-1.04 CONTRACT BONDS

Attention is directed to Section 3-1.02, "Contract Bonds," of the Standard Specifications and these Special Provisions.

Bonds shall be a Performance Bond equal to one hundred percent (100%) of the amount bid for the work and a Payment Bond equal to one hundred percent (100%) of the amount bid for the work.

5-1.05 COST REDUCTION INCENTIVE

Attention is directed to Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications.

Prior to preparing a written cost reduction proposal, Contractor shall request a meeting with Engineer to discuss the proposal in concept. Items of discussion will also include permit issues, impact on other projects, impact on the project schedule, peer reviews, overall merit of the proposal, and review times required by the Department and other agencies.

If a cost reduction proposal submitted by Contractor, and subsequently approved by Engineer, provides for a reduction in contract time, fifty percent (50%) of that contract time reduction shall be credited to County by reducing the contract working days, not including plant establishment if applicable. Attention is directed to "Beginning of Work, Time of Completion and Liquidated Damages" of these Special Provisions regarding the working days.

5-1.06 LABOR NONDISCRIMINATION

Attention is directed to the following Notice that is required by Chapter 5 of Division 4 of Title 2, California Code of Regulations.

NOTICE OF REQUIREMENT FOR NONDISCRIMINATION PROGRAM (GOV. CODE, SECTION 12990)

Attention is directed to the "Nondiscrimination Clause" set forth in Section 7-1.01A(4), "Labor Nondiscrimination," of the Standard Specifications, which is applicable to all nonexempt State or County contracts and subcontracts, and to the "Standard California Nondiscrimination Construction Contract Specifications" set forth therein. The Specifications are applicable to all nonexempt State or County construction contracts and subcontracts of \$5,000 or more.

This Contract is subject to state contract nondiscrimination and compliance requirements including Government Code, Section 12990, and shall be construed and interpreted in compliance with said provisions.

During the performance of this Contract, the Contractor and its subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, age, or sex. The Contractor and its subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. The Contractor and its subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 12900 et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, and Section 7285.0 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990, set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this Contract by reference and made a part hereof as if set forth in full. The Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. This nondiscrimination

provision shall be included in any subcontract entered into by Contractor for work performed under this Contract.

5-1.07 PREVAILING WAGE

Attention is directed to Section 7-1.01A (2), "Prevailing Wage," of the Standard Specifications.

In accordance with the provisions of California Labor Code sections 1770, et seq., including but not limited to 1773, 1773.1, 1773.2, 1773.6 and 1773.7 the general prevailing rate of wages in the county in which the Work is to be done has been determined by the Director of the California Department of Industrial Relations. These wage rates appear in the California Department of Transportation publication entitled General Prevailing Wage Rates. Interested parties can obtain the current wage information by submitting their requests to the Department of Industrial Relations, Division of Labor Statistics and Research, PO Box 420603, San Francisco CA 94142-0603, Phone (415) 703-4774. This information is also available at the following address on the Internet: <http://www.dir.ca.gov/dlsr/PWD>. The rates at the time of the bid advertisement date of a project will remain in effect for the life of the project in accordance with the California Code of Regulations, as modified and effective January 27, 1997.

Copies of the general prevailing rate of wages in the county in which the Work is to be done are also on file at the Department of Transportation's principal office, and shall be made available upon request.

In accordance with the provisions of Labor Code 1810, eight (8) hours of labor shall constitute a legal day's work upon all work done hereunder, and Contractor and any subcontractor employed under this Contract shall conform to and be bound by the provisions of Labor Code Sections 1810 through 1815.

5-1.08 APPRENTICES

Attention is directed to Sections 1777.5, 1777.6 and 1777.7 of the California Labor Code and Title 8, California Code of Regulations Section 200 et seq. To ensure compliance and complete understanding of the law regarding 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, CA 94102, or one of its branch offices prior to commencement of work on the public works contract. Responsibility for compliance with this section lies with Contractor.

It is County policy to encourage the employment and training of apprentices on public works contracts as may be permitted under local apprenticeship standards.

5-1.09 CERTIFIED PAYROLL

As required under the provisions of Labor Code Section 1776, Contractor and any subcontractors shall keep accurate payroll records as follows:

1. The payroll records shall show the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by Contractor or subcontractors in connection with this project.

2. A certified copy of all payroll records enumerated above shall be available for inspection at all reasonable hours at the principal office of Contractor as follows:

- a. Make available or furnish to the employee or his or her authorized representative on request.
- b. Make available for inspection or furnished upon request to a representative of County, the CTC the State Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the State Department of Industrial Relations.
- c. Make available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through County, the State Division of Labor Standards Enforcement, or the State Division of Apprenticeship Standards. The requesting party shall, prior to being provided the records, reimburse the costs of preparation

by Contractor, subcontractor, and the entity through which the request was made. The public shall not be given access to the records at the principal office of Contractor.

5-1.10 DISPUTES RESOLUTION

Attention is Directed to Section 9, "Measurement and Payment" of the Standard Specifications, and Article 7, "Disputes Resolution" of the Sample Agreement included in this booklet.

5-1.11 RECORDS

Contractor shall maintain cost accounting records for the contract pertaining to, and in such a manner as to provide a clear distinction between the following six categories of costs of work during the life of the contract:

- A. Direct costs of contract item work.
- B. Direct costs of changes in character in conformance with Section 4-1.03C, "Changes in Character of Work," of the Standard Specifications.
- C. Direct costs of extra work in conformance with Section 4-1.03D, "Extra Work," of the Standard Specifications.
- D. Direct costs of work not required by the contract and performed for others.
- E. Direct costs of work performed under a notice of potential claim in conformance with the provisions in Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications.
- F. Indirect costs of overhead.

Cost accounting records shall include the information specified for daily extra work reports in Section 9-1.03C, "Records," of the Standard Specifications. The requirements for furnishing Engineer completed daily extra work reports shall only apply to work paid for on a force account basis.

The cost accounting records for the contract shall be maintained separately from other contracts, during the life of the contract, and for a period of not less than three (3) years after the date of acceptance of the Work. If Contractor intends to file claims against the Department, Contractor shall keep the cost accounting records specified above until complete resolution of all claims has been reached.

5-1.12 RECORDS EXAMINATION AND AUDIT REQUIREMENTS

All accounting records and other supporting papers of Contractor and any subcontractors connected with performance under this Contract shall be maintained for a minimum of three (3) years from the date of final payment by County or until all other pending matters are closed and shall be held open to inspection and audit by representatives of County, CTC, the California State Auditor, or any duly authorized representative of other government agencies and copies thereof shall be furnished upon request.

Contractor and its subcontractors shall maintain all books, documents, papers, accounting records, and other evidence pertaining to the performance of the Contract, including but not limited to, the costs of administering the various aspects of Contract. All of the above-referenced parties shall make such materials available at their respective offices at all reasonable times during the contract period and for three years from the date of final payment by County or until all other pending matters are closed. Representatives of County, CTC, the California State Auditor, or any duly authorized representative of other government agencies shall have access to any books, documents, papers, and records that are pertinent to the Contract for audit, examination, excerpts, and transactions and copies thereof shall be furnished upon request. This right to audit books and records shall also apply to any subcontractors employed under this Contract. Contractor shall incorporate this provision into any subcontract entered into as a result of this Contract and shall require its subcontractors to agree to cooperate with the above-listed agencies by making all appropriate and relevant Project records available to those agencies for audit and copying.

5-1.13 SUBCONTRACTING

Attention is directed to the provisions in Section 8-1.01, "Subcontracting," of the Standard Specifications and Section 2, "Proposal Requirements and Conditions," and Section 3, "Award and Execution of Contract," elsewhere in these Special Provisions.

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. The list of debarred contractors is available from the Department of Industrial Relations web site at <http://www.dir.ca.gov/DLSE/Debar.html>.

5-1.14 PROMPT PROGRESS PAYMENT TO SUBCONTRACTORS

Attention is directed to the provisions in Sections 10262 and 10262.5 of the Public Contract Code. Attention is also directed to Section 7108.5 of the Business and Professions Code, which requires a prime contractor or subcontractor to pay any subcontractor not later than ten (10) days of receipt of each progress payment, unless otherwise agreed to in writing.

5-1.15 PAYMENTS

Attention is directed to Sections 9-1.06, "Partial Payments," and 9-1.07, "Payment after Acceptance," of the Standard Specifications and these Special Provisions.

Partial payments will be made no more than once each month for work completed in place. Work completed in place less than two (2) working days prior to the preparation of the monthly pay estimate shall not be eligible for payment until the following month's estimate. Ten percent (10%) will be retained from each partial payment in accordance with Section 9, "Measurement and Payment," of the Standard Specifications or these Special Provisions, and shall be retained until thirty five (35) days after recordation of the Notice of Completion.

At the discretion of Engineer, partial payment may be made for materials on hand which are furnished but not yet incorporated in the work.

5-1.16 PAYMENT OF WITHHELD FUNDS

Payment of withheld funds shall conform to Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications and these Special Provisions.

The phrase "...with the State Treasurer" is deleted from the first sentence of the second paragraph of Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications.

The Contractor may elect to receive one hundred percent (100%) of payments due under the Contract from time to time, without retention of any portion of the payment by the County, by depositing securities of equivalent value with the County in accordance with the provisions of Section 22300 of the California Public Contract Code. Securities eligible for deposit hereunder shall be limited to those listed in Section 16430 of the Government Code, or bank or savings and loan certificates of deposit.

Funds withheld from progress payments to ensure performance of the Contract that are eligible for payment into escrow or to an escrow agent pursuant to Section 22300 of the Public Contract Code does not include funds withheld or deducted from payment due to a failure of the Contractor to fulfill a Contract requirement.

5-1.17 MEASUREMENT AND PAYMENT

Attention is directed to Section 9, "Measurement and Payment," of the Standard Specifications.

Section 9-1.10, "Arbitration," of the Standard Specifications shall be deleted in its entirety.

In lieu of Section 11-1.02 items A through E of "Mobilization" of the Standard Specifications, the first monthly payment estimate will be prepared when Engineer determines that 5% of the contract amount, not including mobilization, has been completed. Subsequent monthly pay estimates shall be made on the same day of the month as the first monthly pay estimate. Work completed in place less than 2 working days prior to the preparation of the monthly pay estimate shall not be eligible for payment until the following month's estimate. The third to last paragraph of Section 11 "Mobilization" of the Standard Specifications shall be amended to read: "The adjustment provisions in Section 4-1.03 "Changes" shall not apply to the contract lump sum item of mobilization."

Contractor shall submit monthly pay estimates and the proposed final pay estimate to Engineer using the form shown in Appendix C in accordance with the time lines outlined herein. All pay estimate submittals that do not conform to the form in Appendix C will be rejected by Engineer and the time for payment extended in accordance with Section 20140.50 of the Public Contract Code Section.

Measurement shall be in accordance with Section 9 "Measurement and Payment", of the Standard Specifications or these Special Provisions.

5-1.18 INTEREST ON PAYMENTS

Interest shall be payable on progress payments, payments after acceptance, final payments, extra work payments, and claim payments as follows:

- A. Unpaid progress payments, payment after acceptance, and final payments shall begin to accrue interest thirty (30) days after the Contractor submits an undisputed and properly submitted pay estimate to Engineer in the form of that indicated in Appendix C.
- B. Unpaid extra work bills shall begin to accrue interest thirty (30) days after preparation of the first pay estimate following receipt of a properly submitted and undisputed extra work bill. To be properly submitted, the bill must be submitted within seven (7) days of the performance of the extra work and in conformance with the provisions in Section 9-1.03C, "Records," and Section 9-1.06, "Partial Payments," of the Standard Specifications. An undisputed extra work bill not submitted within seven (7) days of performance of the extra work will begin to accrue interest thirty (30) days after the preparation of the second pay estimate following submittal of the bill.
- C. The rate of interest payable for unpaid progress payments, payments after acceptance, final payments, and extra work payments shall be ten percent (10%) per annum.
- D. The rate of interest payable on a claim, protest or dispute ultimately allowed under this contract shall be six percent (6%) per annum. Interest shall begin to accrue sixty-one (61) days after the Contractor submits to Engineer information in sufficient detail to enable Engineer to ascertain the basis and amount of said claim, protest or dispute.

The rate of interest payable on any award in arbitration shall be six percent (6%) per annum in accordance with Section 20104.6 of the Public Contract Code.

5-1.19 PUBLIC SAFETY

Contractor shall provide for the safety of traffic and the public in accordance with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications and these Special Provisions.

Attention is directed to Section 5-1.36, "Storage of Equipment, Materials, Supplies, Etc.," Section 10-1.03, "Maintaining Traffic," and Section 10-1.04, "Traffic Control Plan," of these Special Provisions.

Contractor shall install temporary railing (Type K) between any lanes carrying public traffic and any excavation, obstacle, or storage area when the following conditions exist:

1. Excavations - Whenever the near edge of which is 12 feet or less from the edge of the lane, except for:
 - a. Excavations covered with sheet steel or concrete covers of adequate thickness to prevent accidental entry by traffic or the public.
 - b. Excavations less than one foot deep.
 - c. Trenches less than one foot wide for irrigation pipe or electrical conduit, or excavations less than one foot in diameter.
 - d. Excavations parallel to the lane for the purpose of pavement widening or reconstruction.
 - e. Excavations in side slopes, where the slope is steeper than 4:1.

- f. Excavations protected by existing barrier or railing.

Contractor's attention is directed to Section 10-1.03, "Maintaining Traffic," of these Special Provisions regarding further restrictions on the above types of excavations.

2. Temporarily Unprotected Permanent Obstacles – Whenever the Work includes the installation of a fixed obstacle together with a protective system, such as a sign structure together with protective railing, and Contractor elects to install the obstacle prior to installing the protective system; or whenever Contractor, for its convenience and with permission of Engineer, removes a portion of an existing protective railing at an obstacle and does not replace such railing complete in place during the same day.
3. Storage Areas – Whenever material or equipment is stored within 12 feet of the lane and such storage is not otherwise prohibited by the Standard Specifications or these Special Provisions.

The approach end of temporary railing (Type K) installed in accordance with the provisions in this section "Public Safety" and in Section 7-1.09, "Public Safety," of the Standard Specifications shall be offset a minimum of 15 feet from the edge of the traffic lane open to public traffic. The temporary railing shall be installed on a skew toward the edge of the traffic lane of not more than one foot transversely to 10 feet longitudinally with respect to the edge of the traffic lane. If the 15-foot minimum offset cannot be achieved, the temporary railing shall be installed on the 10 to 1 skew to obtain the maximum available offset between the approach end of the railing and the edge of the traffic lane, and an array of temporary crash cushion modules shall be installed at the approach end of the temporary railing.

Temporary railing (Type K) shall conform to the provisions in Section 12-3.08, "Temporary Railing (Type K)," of the Standard Specifications. Temporary railing (Type K) conforming to the details shown on 2006 Standard Plan T3 may be used. Temporary railing (Type K) fabricated prior to January 1, 1993, with one longitudinal No. 5 reinforcing steel bar near the top in lieu of the 2 longitudinal No. 5 reinforcing steel bars near the top, as shown on the plans, may be used, provided the fabrication date is printed on the required Certificate of Compliance.

Temporary crash cushion modules shall conform to the provisions in "Temporary Crash Cushion Module" elsewhere in these Special Provisions.

Except for installing, maintaining, and removing traffic control devices, whenever work is performed or equipment is operated in the following work areas; Contractor shall close the adjacent traffic lane unless otherwise provided in the Standard Specifications or these Special Provisions:

<u>Approach Speed of Public Traffic (Posted Limit, Miles per Hour)</u>	<u>Work Areas</u>
Over 45	Within 6 feet of a traffic lane but not on a traffic lane.
35 to 45	Within 3 feet of a traffic lane but not on a traffic lane.

The lane closure provisions of this section shall not apply if the work area is protected by permanent or temporary railing or barrier.

When traffic cones or delineators are used to delineate a temporary edge of traffic lane, the line of cones or delineators shall be considered to be the edge of traffic lane, however, Contractor shall not reduce the width of an existing lane to less than 10 feet without written approval from Engineer.

When work is not in progress on a trench or other excavation that requires closure of an adjacent lane, the traffic cones or portable delineators used for the lane closure shall be placed off of and adjacent to the edge

of the traveled way. The spacing of the cones or delineators shall be not more than the spacing used for the lane closure.

Suspended loads or equipment shall not be moved nor positioned over public traffic or pedestrians.

Full compensation for conforming to the provisions including furnishing and installing temporary railing (Type K) and temporary crash cushion modules in this section "Public Safety" shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

5-1.20 TESTING

Testing of materials and work shall conform to the provisions in Section 6-3, "Testing," of the Standard Specifications and these special provisions.

Whenever the provisions of Section 6-3.01, "General," of the Standard Specifications refer to tests or testing, it shall mean tests to assure the quality and to determine the acceptability of the materials and work.

Engineer will deduct the costs for testing of materials and work found to be unacceptable, as determined by the tests performed by the Department, and the costs for testing of material sources identified by the Contractor which are not used for the work, from moneys due or to become due to the Contractor. The amount deducted will be determined by Engineer.

5-1.21 REMOVAL OF ASBESTOS AND HAZARDOUS SUBSTANCES

When the presence of asbestos or hazardous substances is not shown on the plans or indicated in the Contract Documents and Contractor encounters materials which Contractor reasonably believes to be asbestos as defined in Section 25914.1 of the Health and Safety Code or a hazardous substance as defined in Section 25117 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, Contractor may continue work in unaffected areas reasonably believed to be safe. Contractor shall immediately cease work in the affected area and report the condition to Engineer in writing.

In accordance with Section 25914.1 of the Health and Safety Code, removal of asbestos or hazardous substances including any exploratory work to identify and determine the extent of such 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 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.

5-1.22 SOUND CONTROL REQUIREMENTS

Sound control shall conform to the provisions in Section 7-1.01I, "Sound Control Requirements," of the Standard Specifications and these Special Provisions.

The noise level requirement shall apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers, or transient equipment that may or may not be owned by Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel. Contractor is required to provide and maintain proper muffler devices for all equipment, machinery and tools used for construction of the Project.

Full compensation for conforming to the requirements in this section shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

5-1.23 NOT USED

5-1.24 NOT USED

5-1.25 PROJECT APPEARANCE

Contractor shall maintain a neat appearance to the Work. In any area visible to the public, the following shall apply:

When practicable, broken concrete, asphalt concrete, and debris developed during clearing and grubbing shall be disposed of concurrently with its removal. If stockpiling is necessary, the material shall be removed or disposed of weekly. Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

5-1.26 CONTRACTOR'S RESPONSIBILITY FOR MATERIALS

Contractor shall be responsible for the condition of all materials which it has furnished, and shall replace at its own expense all such material found to be defective or which has been damaged after delivery. This includes the replacement of material which is found to be defective at any time prior to expiration of the guarantee period.

5-1.27 LAKE, STREAM, AND AIR POLLUTION

Contractor's attention is directed to the Fish and Game Code, El Dorado County Air Quality Management District Ordinances and Regulations, Section 7-1.01G "Water Pollution," of the Standard Specifications, Section 10-1.20, "Dewatering," and Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)," of these Special Provisions, and other applicable statutes relating to pollution prevention or abatement. Contractor shall exercise every reasonable precaution to prevent silt, sand or other detritus from entering Lake Tahoe and live streams.

Attention is directed to Rule 300 "Open Burning", Rule 223 "Fugitive Dust – General Requirements", and Rule 223.1 "Fugitive Dust - Construction, Bulk Material Handling, Blasting, and Other Earthmoving Activities and Carryout and Trackout Prevention," of the County Air Quality Management District Rules and Regulations. A valid permit from an El Dorado County Air Pollution Control Officer is required when open burning of wood waste is proposed. A copy of the permit shall be filed with Engineer prior to any burning.

The Contractor shall comply with applicable State, TRPA, and County Air Quality Management District rules and regulations regarding reduction of construction related impacts on air quality, including the implementation of the following measures:

1. Maintain equipment in tune per manufacturer's specifications.
2. Retard diesel engine injection timing by two or four degrees unless not recommended by manufacturer (due to lower emission output in place).
3. Use reformulated, low-emission diesel fuel, when feasible.
4. Substitute electric and gasoline-powered equipment for diesel where feasible
5. Use catalytic converters on gasoline-powered equipment.
6. Do not leave inactive equipment idling for prolonged periods (i.e. more than 2 minutes.)

Oil, chemical, or greasy substances, cement or cement products originating from Contractor's operations shall not be allowed to enter or be placed where they will later enter streams. Washing of vehicles or construction equipment within the project area shall be in accordance with Sections 5-1.50, "Local, State, and Federal Agencies' Conditions of approval and Permits," and 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan," of these Special Provisions.

Full compensation for conforming to the requirements in this Section shall be considered as included in the prices for the various contract items of work and no additional compensation will be allowed therefor.

5-1.28 UTILITIES

Contractor's attention is directed to Section 8-1.10 "Utility and Non-Highway Facilities," of the Standard Specifications and items 3 and 10 of the General Notes shown on Sheet ii of the Plans.

Contractor shall notify the following listed utility companies forty-eight (48) hours in advance of doing any work at the site of the project:

Underground Service Alert

Phone: 1-800-642-2444

Sierra Pacific Power Company

Attn: Jeff Matthews
933 Eloise Avenue
So. Lake Tahoe, CA 96150
(530) 542-6400
FAX (530) 544-4811

South Tahoe Public Utility District (water & sewer)

Attn: Mike Adams
1275 Meadow Crest Drive
So. Lake Tahoe, CA 96150
(530) 544-6474
FAX (530) 544-6359

AT&T (telephone)

Attn: Carol Prince, PW Mgr.
12824 Earhart Avenue
Auburn, CA 95602
(530) 888-2031
FAX (530) 823-6041

Charter Communications

Attn: Shawn Miller
P.O. Box 11019
Zephyr Cove, NV 89448
(866) 731-5420
FAX (360) 828-6790

Southwest Gas Corporation

Attn: Chris Peters
1740 D Street, Unit No. 4
South Lake Tahoe, CA 96150
(530) 543-3225

Contractor shall determine by potholing or other means the exact utility locations in advance of performing the Contract items of work, especially placement of the drainpipe work.

Contractor shall determine the exact location of existing underground utilities in conflict with the excavation by excavating with hand tools within the area of the approximate location of the underground utility as determined by the field marking provided in accordance with Section 4216.3 of the Government Code before using any power-operated or power-driven excavating or boring equipment within the approximate location of the underground utilities. Power-operated or power-driven excavating or boring equipment may be used for the removal of any existing pavement if there are no existing underground utilities contained in the pavement. If mutually agreeable with the utility company and Contractor, Contractor may utilize power-operated or power-driven excavating or boring equipment within the approximate location of the underground utilities and to any depth.

If the Contractor while performing the Contract discovers utility facilities not identified by Engineer in the Contract Plans or Specifications or if the utility located in the field by Contractor is different than that shown on the Contract Plans, Contractor shall immediately notify Engineer in writing. Contractor shall schedule the project so as to allow Engineer forty-eight (48) hours, excluding Saturdays, Sundays, and holidays, to determine the work to be done when a conflict exists. County will not compensate Contractor for idle equipment during potholing, nor will County compensate Contractor for right-of-way delays during the forty-eight (48) hours allotted for a decision to be reached. The owner of the utility facility shall have the sole discretion to perform the repairs or relocation work itself, or to permit Contractor to do such repairs or relocation work at a reasonable price. In the event that the owner authorizes Contractor to perform the work, the parties shall proceed with a written Change Order. Compensation to Contractor for said cost shall be in accordance with Section 4215 of the Government Code and with Section 9-1.03, "Force Account Payment," of the Standard Specifications.

Nothing herein shall be construed to require County to locate the presence of any existing services not expressly included in Government Code Section 4215, nor limit the County's rights or remedies set forth therein.

Contractor shall protect from damage existing utility and other non-highway facilities that are to remain in place. This protection may consist of shoring an existing utility. Damage due to Contractor's failure to exercise reasonable care shall be repaired at its cost and expense.

Any damage to the facilities or damage cause by the failure of a facility due to Contractor's operations shall be the responsibility of Contractor. Contractor shall contact the appropriate utility company listed above should any problems, concerns, or questions arise during the construction.

Full compensation for working around said facilities, which are to remain whether shown on the Plans or not, and for potholing, shall be considered as included in the prices paid for the various contract items and no additional compensation will be allowed therefor.

5-1.29 NOT USED

5-1.30 NOT USED

5-1.31 NOT USED

5-1.32 FINAL INSPECTION

Contractor shall notify Engineer, in writing, of the completion of the work and Engineer shall promptly inspect the work. Contractor will be notified, in writing, of any defects or deficiencies to be remedied. Within five (5) working days of such notification, Contractor shall proceed to correct such defects or deficiencies. The provisions of Section 4-1.01, "General" of the Special Provisions regarding time of completion and liquidated damages shall apply. When notified that the work has been completed, Engineer will again inspect the work to ensure that the work has been done in accordance with the Contract Documents and recommend to the Board of Supervisors that the Project be formally accepted and the Notice of Completion be recorded.

5-1.33 ACCEPTANCE OF CONTRACT

Section 7-1.17, "Acceptance of Contract," of the Standard Specifications is modified as follows:

When Engineer has made the final inspection as provided in Section 5-1.32, "Final Inspection," of these Special Provisions and the Board of Supervisors has recorded the Notice of Completion, and immediately upon and after such recordation, Contractor will be relieved of the duty of maintaining and protecting from damage the Work as a whole, and it will not be required to perform any further work thereon except work required under Section 5-1.34 "Repair and Correction," of these Special Provisions; and Contractor will be relieved of its responsibility for injury to persons or property or damage to the work which occurs after the recordation of the Notice of Completion.

5-1.34 REPAIR AND CORRECTION

For a period of three hundred sixty-five (365) calendar days, commencing on the date of recordation of the Notice of Completion, Contractor shall, upon receipt of notice in writing from County, promptly make all repairs arising out of defective materials, workmanship, or equipment. County is hereby authorized to make such repairs, at Contractor's expense, if ten (10) days after giving of such notice to Contractor, Contractor has failed to make or undertake the repairs with due diligence. In case of an emergency, where, in the opinion of County, delay could cause serious loss or damage, repairs may be made without notice being sent to Contractor and the expenses in connection therewith shall be charged to Contractor.

5-1.35 ACCESS FOR INSPECTION OF WORK

Representatives of County, Engineer, Caltrans, USFS, Lahontan, CTC, TRPA, Southwest Gas, STPUD, AT&T, Sierra Pacific Power Company, and Charter Communications shall, at all times, have full access for inspection and testing of the work accomplished under this contract and Contractor shall provide proper and safe facilities for such access.

5-1.36 STORAGE OF EQUIPMENT, MATERIALS, SUPPLIES, ETC.

Attention is directed to the provisions of Section 6-1.03, "Storage of Materials," of the Standard Specifications, and Sections 5-1.19 "Public Safety," 10-1.01, "Order of Work", 10-1.03, "Maintaining Traffic," and 10-1.04, "Traffic Control Plan," of these Special Provisions.

The following staging areas that Contractor may use for storage of materials and equipment:

- 1) Approximately 3,500 SF at the northerly paved end of Arapahoe Street.

Contractor's attention is directed to Section 4-1.02, "Construction Schedule and Work Hours," of these Special Provisions regarding work hours. These hours apply to working on or starting up equipment in these storage areas.

Attention is directed to Sections 10-1.01 "Order of Work", 10-1.10 "Excavation and Grading," 10-1.24 "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)," and Bid Items "Install and Maintain Type 2 Filter Fence" and "Install and Maintain Staging Area," of these Special Provisions.

5-1.37 COORDINATION WITH PROPERTY OWNERS

County has entered into a license agreement for one public parcel owned by the CTC for access and construction shown on the Plans and indicated in these Special Provisions.

The County has obtained an easement from California State Parks for the construction of the bike path on public parcel APN 033-180-15 shown on the Plans and indicated in these Special Provisions.

Contractor shall communicate with adjacent property owners to all extent possible to inform them of access construction operations, and shall give twenty-four (24) hours notice to the property owners when work is to be performed on their property.

Access to adjacent businesses shall be maintained so that the businesses shall remain open during all normal business hours.

The conditions of the agreements with adjacent property owners, permits and any temporary construction easements are made a part of these Special Provisions, and no additional compensation will be due to Contractor for complying with those conditions or in obtaining any required permits.

5-1.38 SAFETY AND HEALTH PROVISIONS

Attention is directed to the Standard Specifications Section 7-1.06, "Material Breach," and these Special Provisions.

In addition to other specifications, definitions and provisions, Contractor is also hereby categorized and designated as the following types of employer for this project:

- **Exposing Employer** – the employer whose employees are exposed to a hazard
- **Creating Employer** – the employer who actually is creating a hazard
- **Controlling Employer** – the employer who is responsible and who has the authority for ensuring that a hazardous condition is corrected
- **Correcting Employer** - the employer who has the responsibility for actually correcting a hazard

Contractor's Safety Officer shall be certified as a competent person for controlling this project's workplace safety. A Contractor's Safety Officer shall be on the site, at a minimum, each and every day that work is in progress or periodically when work is not active and shall have the authority to correct any safety violation. In addition, Contractor is required to develop a Safety Program specifically for this project, which will be available on site, at all times, and updated periodically during the project.

5-1.39 ARCHAEOLOGICAL DISCOVERIES

All articles of archaeological interest that may be uncovered by the Contractor during the progress of the work shall be reported immediately to Engineer. The further operations of the Contractor with respect to the discovery shall be decided under the direction of Engineer.

If archaeological materials, including but not limited to human skeletal material and disarticulated human bone, are discovered at the job site, protect and leave undisturbed and in place archaeological materials in accordance with the following codes and these special provisions:

1. California Public Resources Code, Division 5, Chapter 1.7 § 5097.5
2. California Public Resources Code, Division 5, Chapter 1.75 § 5097.98 and § 5097.99
3. California Administrative Code, Title 14 § 4308
4. California Penal Code, Part 1, Title 14 § 622-1/2
5. California Health and Safety Code, Division 7, Part 1, Chapter 2, § 7050.52

Archaeological materials are the physical remains of past human activity and include historic-period archaeological materials and prehistoric Native American archaeological materials. Nonhuman fossils are not considered to be archaeological except when showing direct evidence of human use or alteration or when found in direct physical association with archaeological materials as described in these special provisions.

Historic-period archaeological materials include cultural remains beginning with initial European contact in California, but at least 50 years old. Historical archaeological materials include:

1. Trash deposits or clearly defined disposal pits containing tin cans, bottles, ceramic dishes, or other refuse indicating previous occupation or use of the site
2. Structural remains of stone, brick, concrete, wood, or other building material found above or below ground or
3. Human skeletal remains from the historic period, with or without coffins or caskets, including any associated grave goods

Prehistoric Native American archaeological materials include:

1. Human skeletal remains or associated burial goods such as beads or ornaments
2. Evidence of tool making or hunting such as arrowheads and associated chipping debris of fine-grained materials such as obsidian, chert, or basalt
3. Evidence of plant processing such as pestles, grinding slabs, or stone bowls
4. Evidence of habitation such as cooking pits, stone hearths, packed or burnt earth floors or
5. Remains from food processing such as concentrations of discarded or burnt animal bone, shellfish remains, or burnt rocks used in cooking

Immediately upon discovery of archaeological materials, stop all work within a 60-foot radius of the archaeological materials and immediately notify Engineer. Archaeological materials found during construction are the property of the County. Do not resume work within the 60-foot radius of the find until Engineer gives you written approval. If, in the opinion of Engineer, completion of the work is delayed or interfered with by reason of an archaeological find or investigation or recovery of archaeological 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," of the Standard Specifications.

The Department may use other forces to investigate and recover archaeological materials from the location of the find. When ordered by Engineer furnish labor, material, tools and equipment, to secure the location of the find, and assist in the investigation or recovery of archaeological materials and the cost will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications.

Full compensation for immediately notifying Engineer upon discovery of archaeological materials and leaving undisturbed and in place archaeological materials discovered on the job site shall be considered as included in the contract price paid for various items of work involved and no additional compensation will be allowed therefor.

5-1.40 EMPLOYEE CHEMICAL EXPOSURES

Contractor shall provide, directly to Engineer, Material Safety Data Sheets conforming to all requirements of Title 8, California Code of Regulations, Section 5194. If applicable, Contractor may instead provide a

statement to the effect that any given substance is exempt from these regulations. This requirement shall be met a minimum of five (5) working days before any chemical substance is brought onto the premises where County Employees are present. Contractor shall cooperate with County's effort to communicate substance hazards to its employees and to provide them with a safe and healthy workplace. As appropriate, Contractor may be required to acknowledge in writing that it has received Material Safety Data Sheets and County's departmental rules and procedures for safety around chemical substances which may be present on County premises.

5-1.41 DISPOSAL OF WATER

It shall be the responsibility of Contractor to dispose of all water resulting from this work, according to all local, state, and federal agencies' standards and requirements.

5-1.42 UTILITIES REQUIRED BY CONTRACTOR

Except as set forth otherwise herein, all water, electric current, telephone, and/or any utility service, including portable sanitary facilities, required by Contractor during construction shall be furnished at its own expense.

5-1.43 CONSTRUCTION INSPECTION AND CONTRACT ADMINISTRATION

Resident construction inspection and contract administration will be performed by the County of El Dorado, Department of Transportation, under the supervision of Donaldo Palaroan, P.E. (Resident Engineer) or successor.

5-1.44 HIGHWAY CONSTRUCTION EQUIPMENT

Attention is directed to Section 7-1.01D, "Vehicle Code," and 7-1.02, "Load Limitations," of the Standard Specifications and these Special Provisions.

Pursuant to the authority contained in Section 591 of the Vehicle Code, the Department has determined that, within such areas as are within the limits of the Project and are open to public traffic, Contractor shall comply with all the requirements set forth in Divisions 11, 12, 13, 14, and 15 of the Vehicle Code. Attention is directed to the statement in Section 591 that this section shall not relieve Contractor or any person from the duty of exercising due care. Contractor shall take all necessary precautions for safe operation of Contractor's equipment and the protection of the public from injury and damage from Contractor's equipment.

5-1.45 SITE INVESTIGATION AND REPRESENTATION

Contractor and its Subcontractor(s) acknowledge that they have satisfied themselves as to the nature and location of the Work, the general and local conditions, particularly those bearing upon availability of transportation; disposal of materials, handling, and storage of materials; availability of labor, water, electric power, and roads; uncertainties of weather, or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during the prosecution of the Work; and all other matters which can in any way affect the Work or the cost thereof under this Contract.

Contractor further acknowledges that it has satisfied itself as to the character, quality, and quantity of the surface and subsurface materials to be encountered from inspecting the site, as well as from information presented by the plans and specifications made a part of the Contract. Any failure by Contractor to acquaint itself with all the available information or obtaining any additional information deemed necessary, will not relieve it from responsibility for properly estimating the difficulty or cost of successfully performing the work.

Contractor warrants that as a result of its examination and investigation of all the aforesaid data that it can perform the work in a good and workmanlike manner and to the satisfaction of County. County assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this Contract, unless: (1) such representations are expressly stated in the Contract, and (2) the Contract expressly provides that the responsibility therefore is assumed by County.

The submission of a Proposal shall be conclusive evidence that Contractor and its Subcontractor(s) have investigated and are satisfied as to the conditions to be encountered, as to the character, quality, and

quantities of work to be performed and materials to be furnished, and as to the requirements of the contract documents.

5-1.46 ASSIGNMENT OF ANTITRUST ACTIONS

Contractor's attention is directed to the following provisions of Public Contract Code 7103.5 and Government Code Sections 4553 and 4554, which shall be applicable to Contractor and its subcontractors:

"In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract the contractor or subcontractor offers and agrees to assign the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties."

"If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery."

"Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action."

5-1.47 PERSONAL LIABILITY

Neither the Director, Engineer nor any other officer or authorized employee of the CTC, TRPA, USFS, State of California nor any officer or employee of any county, city or district shall be personally responsible for any liability arising under or by virtue of the contract.

5-1.48 SAFETY PROVISIONS

Reference is hereby made to Section 7-1.06, "Safety and Health Provisions," of the Standard Specifications concerning safety provisions by Contractor.

Contractor shall note the following directive from the Division of Occupational Safety & Health (DOSH):

"Construction Safety Order Section 1592 and General Industry Safety Order Section 3706 require an acceptable automatic backup alarm to sound immediately upon backing. Warning devices such as wheel-mounted bell types (ding-dongs) normally sound on a quarter revolution of the wheel. These units do not meet the immediate sounding requirements of these orders and are not acceptable in California. Electronic warning devices which begin to sound as soon as the machine is put into reverse not only will meet this requirement, but have the added advantage of sounding even before actually backing."

In addition, Contractor should take particular note of Section 1592, "Warning Methods," of the Construction Safety Orders, Cal-OSHA.

5-1.49 CERTIFICATES OF COMPLIANCE

Attention is directed to Section 6-1.07, "Certificates of Compliance," of the Standard Specifications and these Special Provisions.

Certificates of Compliance are required for the following materials:

- Precast Prestressed Concrete Piles
- Bridge Structural Steel
- Bridge Welds
- Liquid Asphalt & Emulsions
- Asphalt Binder
- Asphalt Concrete
- Joint Sealant
- Class 1 Types A and B Permeable Material
- Portland Cement
- Portland Cement Concrete
- Concrete Curing Compound
- 3 sack slurry cement
- Reinforcing Steel
- Galvanizing Repair Material
- Grout
- Corrugated Steel Pipe
- Class 2 Aggregate Base (3/4" max.)
- Humus
- Mulch
- Tackifier
- All Signing and Delineation Products Used in the Work
- Slurry Cement Backfill
- Woven Filter Fabric for Tire Wash Area
- Filter Fabric for Filter Fence
- Rice Straw Fiber Rolls
- Turf Reinforcement Mat

Contractor shall submit all Certificates of Compliance within twenty (20) working days of the contract start date noted in the Notice to Proceed, or within three (3) working days before the materials are to be used, whichever is sooner. The provisions of Sections 4-1.03, "Contractor Submittals," and 4-1.04, "Pre-Construction Conference and Weekly Meetings," of these Special Provisions regarding submittals shall apply.

5-1.50 LOCAL, STATE, AND FEDERAL AGENCIES' CONDITIONS OF APPROVAL AND PERMITS

Attention is directed to the following items:

1. California Regional Water Quality Control Board, Lahontan Region, Board Order No. _____, dated _____ (not available by print date)
2. Tahoe Regional Planning Agency Permit, No. _____ (not available by print date)
3. Caltrans Encroachment Permit, No. 0307-NMC0472 (This is a double permit, therefore the Contractor shall comply with all requirements of said permit, submit a signed copy of the SWPPP, and pay Caltrans directly in the amount of \$656.00 for the second fee installment of the double Permit, payment of which shall be included within the "Mobilization" bid item.)

County will obtain all permits above prior to the Notice to Proceed and will provide copies to Contractor.

Contractor shall comply with the conditions of the permits where applicable and shall comply with the regulations and conditions of the TRPA and Lahontan. All fines levied against County due to Contractor's negligence shall be paid by Contractor.

Contractor shall procure at its own expense all permits, licenses, and insurance policies not already obtained by County as may be necessary to comply with Federal and State laws associated with the performance of the Work. Any permits obtained that are associated with the parcels identified in County's License Agreement with the CTC shall list the CTC as a co-permittee.

These shall include but are not limited to the following:

- El Dorado County Encroachment Permit (no charge).
- Caltrans Encroachment Permit.
- Timber Operator's license as specified in Section 10-1.27, "Timber Removal Practices," of these Special Provisions.
- Water Truck Permit from STPUD.
- Trench Permit.

5-1.51 DUST AND TRACKING CONTROL

The following requirements shall be applicable to this Contract in addition to the requirements of Section 10, "Dust Control," of the Standard Specifications.

Dust Control

Contractor shall provide an acceptable plan for preventing the generation of dust due to its operations in the construction zones, along the haul or traveled routes, or in equipment parking zones. Contractor's Dust Control Plan and daily dust control operations shall not conflict with requirements of any agency having jurisdiction in the project area. Contractor is required to have a water truck on site at all times during construction.

At the end of each day's work and as necessary during the work day, Contractor shall wet down the construction area to control dust. On days that Contractor is not working, it shall take such action as may be required to prevent the generation of dust within the project area if it is deemed necessary by Engineer.

In the event the control of dust is not satisfactory to Engineer, Engineer shall take such measures as may be necessary to insure satisfactory dust control and shall deduct the cost of those measures from any payments due Contractor.

Dust shall be controlled through a combination of sweeping and use of the water truck. **Dust control is a temporary erosion control measure or Best Management Practice (BMP). A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to implement this temporary erosion control measure.**

Tracking Control

Tracking of sediment onto public streets shall be minimized by a combination of road sweeping and use of tire wash areas designated on the Plans during soil hauling operations, during equipment transporting from one work area to another, and as necessary to keep the streets clear of soil and debris. Tracking control applies to streets within the project area as well as to streets adjacent to the project area that have the potential to be impacted by tracking from the project construction.

Affected streets shall be swept a **minimum of three (3)** times daily (e.g. mid-morning, mid-afternoon, and at the end of the day) during soil hauling operations, during equipment transporting from one work area to another, and as necessary to keep the streets clear of soil and debris.

Tracking control is a temporary erosion control measure or BMP. A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to implement this temporary erosion control measure.

The costs associated with installing, maintaining, and removing the Tire Wash Area on Pavement shall be included in the Bid Item "Tire Wash Area on Pavement." The costs associated with sweeping and disposing of the swept material shall be included in the Bid Item "Sweeping."

Full compensation for conforming to the requirements in this section pertaining to using the water truck for dust control, using the tire wash area, and cleaning equipment/vehicles shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

5-1.52 SPILL CONTINGENCY PLAN

Contractor shall provide the information requested in Appendix B, Spill Contingency Plan, of the Storm Water Pollution Prevention Plan within five (5) working days of receipt of Notice to Proceed. This Spill Contingency Plan is included in Appendix B of these Special Provisions.

Full compensation for conforming to the requirements in this section shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

5-1.53 CONSTRUCTION STAKING

The Surveyor will furnish one (1) set of construction stakes as set forth below and Contractor shall be solely responsible for the maintenance and protection of the survey stakes or marks, once set, in accordance with the following provisions. Any additional stakes or marks requested and any replacement of stakes or marks shall be set by the Surveyor at Contractor's expense. The Surveyor will provide Contractor with copies of the staking cut sheets, when applicable. The construction staking furnished by the Surveyor will be as outlined below, unless otherwise agreed to by the Surveyor and Contractor at the pre-construction meeting. Where site constraints do not allow for staking to be placed as specified herein, other staking configurations will be agreed upon by the Surveyor and Contractor at the pre-construction meeting or when the staking request is submitted. Attention is directed to the Contractor's TBM datum to be set near the bridge location to insure precise elevation layout of piers, abutments and bridge seats according to the plan.

1. Tree Removal – All trees to be removed will be conspicuously marked by Engineer or the Surveyor for removal with an X, flagging, or other agreed upon marking.
2. Rock-Lined Ditch – One set of offset stakes will be set at 10' from centerline of channel at 50' intervals and at angle points. The stakes will be graded to the finished rock surface at the flowline of the channel for rock-lined channel and to the flowline before sod placement for vegetated swales.
3. Concrete Retaining Walls – One set of offset stakes will be set at 10' from the front face of retaining wall at 50' intervals and at angle points. The stakes will be graded to the top of footing and top of wall elevations.
4. Culverts – All grade breaks will be staked with one offset (at a distance to be agreed to by the Surveyor and the Contractor) perpendicular from the line at the grade break and graded to flowline of the pipe. Except for runs containing grade breaks, storm drain pipe will not be staked on runs shorter than 50'. On short runs, the pipe is to be placed based upon the staking of the drainage structures. Except for runs containing grade breaks, for run greater than 50', one offset (at a distance to be agreed to by the Surveyor and the Contractor) perpendicular from the line at the midpoint will be set and graded to flowline of the pipe. Curved pipe will be staked at 50' intervals for curves with radius greater than or equal to 500', and at 25' intervals for curves with radius less than 500'. Culverts will be staked with two offsets at each end. The closer offset will be marked with grade to flowline of pipe. The farther offset will be marked with elevation only.
5. Type 2, and Type 3 Filter Fence, Tree Protection and Construction Limit Fence – Stakes for these items will be provided only when these items are shown on the Plans. One set of stakes for horizontal location will be provided at 50' intervals and at angle points.

6. Benchmark – Elevations of the Surveyor's control points will be provided to the Contractor. In the event that the control points are not in usable positions for the Contractor, the Surveyor will set up to four (4) temporary benchmarks throughout the project, at locations to be agreed upon by the Surveyor and the Contractor. Attention is directed to the Contractor's TBM datum to be set near the bridge location to insure precise elevation layout of piers, abutments and bridge seats according to the plan.
7. Rock Bowl and Rock Dissipator – One set of offset stakes (two (2) stakes total) will be set for horizontal control only. At locations where the rock bowl is controlled by the location of a staked or existing pipe outlet, separate stakes will not be set for the rock bowl.
8. GCP Drainage Inlets – Two (2) offset stakes will be set for each structure. Due to the nature of the design and to site conditions, the offset locations will be agreed upon by the Surveyor and the Contractor at the pre-construction meeting. The closer of the offset stakes to the inlet will be marked with grades to all Invert Elevations (IEs), Window Invert Elevations (WIs), and to Rim or Top of Structure (TOS), as applicable. The farther offset will be marked with an elevation only.
9. Tire Wash Areas – Will be delineated by Engineer or the Surveyor.
10. Bike Path – One set of offset stakes for vertical and horizontal control at 50' intervals, at grade breaks, EVCs, BVCs, and at E.C.s, B.C.s. Offset stakes are to the centerline of bike path.
11. Bridge Bents and Abutments – One (1) set of double offset stakes will be provided for vertical and horizontal control. Vertical control for the bridge bents will reference both the elevation of the top of the stem of the bent at the center of the bent, and top of pile cutoff. The vertical control for the bike path bridge abutments will reference both the elevation of the top of the abutment at the centerline of the abutment and at the top of pile cutoff. Line stakes will be provided for horizontal control for the bents and the abutments. The bike path bridge pier horizontal control will refer to the center of the stem of the bent. The horizontal control for the abutments will refer to centerline of the abutments.
12. Revegetation Limits – Paint or flagging for horizontal control. Areas will be marked in the field by Engineer or Surveyor.
13. Location of Bike Path Signs – Two (2) offset stakes will be set for each sign for horizontal control. Due to the nature of the design and to site conditions, the offset locations will be agreed upon by the Surveyor and the Contractor at the pre-construction meeting.
14. Peeler Core Fence – One set of offset stakes will be set at the beginning end and angle points.
15. Bollards – Will be delineated in the field by Engineer or Surveyor.
16. Bollard Removal – Will be delineated in the field by Engineer or Surveyor.
17. AC Dike – Will be delineated in the field by Engineer or Surveyor

In order to match existing conditions, dimensions and elevations in the field may vary from those shown on the Plans. Any such field changes will be with the approval of Engineer or Surveyor, and Contractor will be notified of such changes.

Surveying provided will not, nor is intended to, supplant or supplement any layout work normally provided by Contractor. Contractor is advised that it shall furnish personnel and equipment necessary to perform any additional layout for construction purposes that it may require.

All stakes and survey markers will be conspicuously marked with flagging and/or paint. It will be the obligation of Contractor to inform its employees and subcontractors of the importance of their preservation. The Surveyor has placed control monuments necessary for the work. Contractor is specifically advised that it shall be its sole responsibility to protect and maintain all stakes and monuments from destruction by any source. In the event that one or more of the stakes are damaged or destroyed, the Surveyor will replace the stakes at Contractor's expense. If a control point cannot be preserved, Contractor shall give the Surveyor sufficient notice (i.e., 48 hours excluding Saturdays, Sundays, and Holidays) to place alternate control points in the immediate vicinity before the original point(s) is (are) destroyed.

Contractor shall give the Surveyor not less than two (2) full working days' (i.e. 48 hours excluding Saturdays, Sundays, and Holidays) notice for each staking order, and a minimum staking order shall be not less than a full day's work as determined by the Surveyor. Timeliness of surveying services will not be guaranteed without written notice submitted to the Surveyor not less than two (2) working days prior to the day staking is needed. County will supply Contractor with staking request forms.

Contractor and its subcontractor shall insure that existing property survey monuments and markers that are not designated to be removed are not impacted by construction activities. Any right-of-way or property corner monuments, not designated to be removed per the Plans or as directed by Engineer, disturbed or destroyed by Contractor shall be replaced, at Contractor's expense, by a Professional Land Surveyor registered in the State of California in accordance with Business and Professions Code Sections 8700 et seq. Contractor shall also ensure that a Corner Record or Record of Survey is prepared and submitted as required by the Professional Land Surveyors Act, at Contractor's expense, to County Surveyor's office to document this replacement. A copy of the approved Corner Record or Record Survey shall be submitted to Engineer or Surveyor. County may retain \$2,000.00 of the 10% retention money withheld for each Corner Record and/or Record of Survey, until the documentation specified above is provided. Since the project is funded by grants with a finite term, should the grants expire before Contractor provides proof of the submittal, Contractor shall forfeit the amount retained.

5-1.54 NOT USED

5-1.55 NOT USED

SECTION 6. (NOT USED)

SECTION 7. CONTRACTOR'S INSURANCE

7-1.01 GENERAL INSURANCE REQUIREMENTS

Contractor shall provide proof of a policy of insurance satisfactory to the El Dorado County Risk Management Division and documentation evidencing that Contractor maintains insurance that meets the following requirements:

1. Full Workers' Compensation and Employers' Liability Insurance covering all employees of Contractor as required by law in the State of California.
2. Commercial General Liability (CGL) Insurance of not less than Two Million Dollars (\$2,000,000.00) combined single limit per occurrence for bodily injury and property damage, including but not limited to endorsements for the following coverage: personal injury, premises, operations, products and completed operations, blanket contractual, independent contractors liability. This insurance can consist of a minimum One Million Dollars (\$1,000,000.00) primary layer of CGL and the balance as an excess/umbrella layer, but only if the County is provided with written confirmation that the excess/umbrella layer "follows the form" of the CGL policy.

3. Automobile Liability Insurance of not less than One Million Dollars (\$1,000,000.00) is required in the event motor vehicles are used by Contractor in performance of the Contract.
4. In the event Contractor is a licensed professional and is performing professional services under this Contract, Professional Liability Insurance is required with a limit of liability of not less than One Million Dollars (\$1,000,000.00).
5. Explosion, Collapse and Underground (XCU) coverage is required when the scope of work includes XCU exposures. For the purpose of this Contract, XCU coverage is required.

7-1.02 PROOF OF INSURANCE REQUIREMENTS

1. Contractor shall furnish proof of coverage satisfactory to the El Dorado County Risk Management Division as evidence that the insurance required herein is being maintained. The insurance will be issued by an insurance company acceptable to Risk Management Division, or be provided through partial or total self-insurance likewise acceptable to Risk Management Division.
2. The County of El Dorado, its officers, officials, employees, and volunteers, and the State of California, the California Tahoe Conservancy (CTC) and CTC's officers, officials, employees, and volunteers, are included as additional insured, but only insofar as the operations under this Contract are concerned. This provision shall apply to all liability policies except Automobile Liability, Workers' Compensation, and Professional Liability insurance policies. Proof that County, State, and CTC are named additional insureds shall be made by providing the Risk Management Division with a certified copy, or other acceptable evidence, of an endorsement to Contractor's insurance policy naming County, State and CTC additional insureds.
3. In the event Contractor cannot provide an occurrence policy, Contractor shall provide insurance covering claims made as a result of performance of this Contract for not less than three (3) years following completion of performance of this Contract.
4. Any deductibles or self-insured retentions must be declared to and approved by County. At the option of County, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the County, its officers, officials, employees and volunteers; or Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.
5. Contractor shall require each of its subcontractors to procure and maintain commercial general liability insurance and automobile liability insurance of the types and in the amounts specified above, or shall insure the activities of its subcontractors in its own policy in like amounts. Contractor shall also require each of its subcontractors to name Contractor and the County of El Dorado and any other additional insured listed above as additional insureds.

7-1.03 INSURANCE NOTIFICATION REQUIREMENTS

1. Contractor agrees that no cancellation or material change in any policy shall become effective except upon thirty (30) days prior written notice to the County of El Dorado at the office of the Department of Transportation, 2850 Fairlane Ct., Placerville, CA 95667.
2. Contractor agrees that the insurance required herein shall be in effect at all times during the term of this Contract. In the event said insurance coverage expires at any time or times during the term of this Contract, Contractor shall immediately provide a new certificate of insurance as evidence of the required insurance coverage. In the event Contractor fails to keep in effect at all times insurance coverage as herein provided, County may, in addition to any other remedies it may have, terminate this Contract upon the occurrence of such event. New certificates of insurance are subject to the approval of the El Dorado County's Risk Management Division.

7-1.04 ADDITIONAL STANDARDS

Certificates shall meet such additional standards as may be determined by the Department either independently or in consultation with Risk Management Division, as essential for protection of County.

7-1.05 COMMENCEMENT OF PERFORMANCE

Contractor shall not commence performance of this Contract unless and until compliance with each and every requirement of the insurance provisions is achieved.

7-1.06 MATERIAL BREACH

Failure of Contractor to maintain the insurance required herein, or to comply with any of the requirements of the insurance provisions, shall constitute a material breach of the entire Contract.

7-1.07 REPORTING PROVISIONS

Any failure to comply with the reporting provisions of the policies shall not affect coverage provided to County, its officers, officials, employees or volunteers, the State or the CTC, its officers, officials, employees or volunteers.

7-1.08 PRIMARY COVERAGE

Contractor's insurance coverage shall be primary insurance as respects County, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by County, its officers, officials, employees or volunteers shall be excess of Contractor's insurance and shall not contribute with it.

7-1.09 PREMIUM PAYMENTS

The insurance companies shall have no recourse against the County of El Dorado, CTC, the State of California, and their members, officers, agents, employees, or any of them for payment of any premiums or assessments under any policy issued by any insurance company.

7-1.10 CONTRACTOR'S OBLIGATIONS

Contractor's indemnity and other obligations shall not be limited by the insurance required herein and shall survive the expiration of this Contract.

7-1.11 GOVERNING PRECEDENCE

To the extent that this Section 7, "Contractor's Insurance," is inconsistent with Section 7-1.12, "Indemnification and Insurance," of the Standard Specifications, this Section shall govern; otherwise each and every provision of such Section 7-1.12 shall be applicable to this Contract.

SECTION 8. MATERIALS

8-1.01 NOT USED

8-1.02 PREQUALIFIED AND TESTED SIGNING AND DELINEATION MATERIALS

Caltrans maintains the following list of Prequalified and Tested Signing and Delineation Materials. Engineer shall not be precluded from sampling and testing products on the list of Prequalified and Tested Signing and Delineation Materials.

The manufacturer of products on the list of Prequalified and Tested Signing and Delineation Materials shall furnish the Engineer a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each type of traffic product supplied.

For those categories of materials included on the list of Prequalified and Tested Signing and Delineation Materials, only those products shown within the listing may be used in the work. Other categories of products, not included on the list of Prequalified and Tested Signing and Delineation Materials, may be used in the work provided they conform to the requirements of the Standard Specifications.

Materials and products may be added to the list of Prequalified and Tested Signing and Delineation Materials if the manufacturer submits a New Product Information Form to the New Product Coordinator at the Caltrans Transportation Laboratory. Upon a Caltrans departmental request for samples, sufficient samples shall be submitted to permit performance of required tests. Approval of materials or products will depend upon compliance with the specifications and tests Caltrans may elect to perform.

PAVEMENT MARKERS, PERMANENT TYPE

Retroflective With Abarasion Resistant Surface (ARS)

1. Apex, Model 921AR (4" x 4")
2. Ennis Paint, Models C88 (4" x 4"), 911 (4" x 4") and C80FH
3. Ray-O-Lite, Model "AA" ARS (4" x 4") and ARC Round Shoulder (4" x 4")
4. 3M Series 290 (3.5" x 4")
5. 3M Series 290 PSA
6. Glowlite, Inc Model 988AR (4" x 4")

Retroflective With Abarasion Resistant Surface (ARS)

(For recessed application only)

1. Ennis Paint, Model 948 (2.3" x 4.7")
2. Ennis Paint, Model 944SB (2" x 4")*
3. Ray-O-Lite, Model 2002 (2" x 4.6")
4. Ray-O-Lite, Model 2004 ARS (2" x 4")*

*For use only in 4.5 inch wide (older) recessed slots

Non-Retroflective, 4-inch round

1. Apex Universal (Ceramic)
2. Apex Universal, Models 929 (ABS) and 929PP (Polypropylene)
3. Glowlite, Inc. (Ceramic)
4. Hi-Way Safety, Inc., Models P20-2000W and 2001Y (ABS)
5. Interstate Sales, "Diamond Back" (Polypropylene)
6. Novabrite Models Cdot (White) Cdot-y (Yellow), Ceramic
7. Novabrite Models Pdot-w (White) Pdot-y (Yellow), Polypropylene
8. Three D Traffic Works TD10000 (ABS), TD10500 (Polypropylene)

PAVEMENT MARKERS, TEMPORARY TYPE

Temporary Markers For Long Term Day/Night Use (180 days or less)

1. Vega Molded Products "Temporary Road Marker" (3" x 4")

Temporary Markers For Short Term Day/Night Use (14 days or less)

(For seal coat or chip seal applications, clear protective covers are required)

1. Apex Universal, Model 932
2. Filtrona Extrusion, Models T.O.M., T.R.P.M., and "HH" (High Heat)
3. Hi-Way Safety, Inc., Model 1280/1281
4. Glowlite, Inc., Model 932

STRIPING AND PAVEMENT MARKING MATERIAL

Permanent Traffic Striping and Pavement Marking Tape

1. Advanced Traffic Marking, Series 300 and 400
2. Brite-Line, Series 1000
3. Brite-Line, "DeltaLine XRP"
4. Swarco Industries, "Director 35" (For transverse application only)
5. Swarco Industries, "Director 60"
6. 3M, "Stamark" Series 380 and 5730
7. 3M, "Stamark" Series 420 (For transverse application only)

Temporary (Removable) Striping and Pavement Marking Tape (180 days or less)

1. Advanced Traffic Marking, Series 200
2. Brite-Line, Series 100
3. Garlock Rubber Technologies, Series 2000

4. P.B. Laminations, Aztec, Grade 102
5. Swarco Industries, "Director-2"
6. Trelleborg Industries, R140 Series
7. 3M Series 620 "CR", and Series A750
8. 3M Series A145, Removable Black Line Mask
(Black Tape: for use only on Hot mix asphalt surfaces)
9. Advanced Traffic Marking Black "Hide-A-Line"
(Black Tape: for use only on Hot mix asphalt surfaces)
10. Brite-Line "BTR" Black Removable Tape
(Black Tape: for use only on Hot mix asphalt surfaces)
11. Trelleborg Industries, RB-140
(Black Tape: for use only on Hot mix asphalt surfaces)

Preformed Thermoplastic (Heated in place)

1. Flint Trading Inc., "Hot Tape"
2. Flint Trading Inc., "Premark Plus"
3. Ennis Paint Inc., "Flametape"

Ceramic Surfacing Laminate, 6" x 6"

1. Highway Ceramics, Inc.

CLASS 1 DELINEATORS

One Piece Driveable Flexible Type, 66-inch

1. Filtrona Extrusion, "Flexi-Guide Models 400 and 566"
2. Carsonite, Curve-Flex CFRM-400
3. Carsonite, Roadmarker CRM-375
4. FlexStake, Model 654 TM
5. GreenLine Model CGD1-66

Special Use Type, 66-inch

1. Filtrona Extrusion, Model FG 560 (with 18-inch U-Channel base)
2. Carsonite, "Survivor" (with 18-inch U-Channel base)
3. Carsonite, Roadmarker CRM-375 (with 18-inch U-Channel base)
4. FlexStake, Model 604
5. GreenLine Model CGD (with 18-inch U-Channel base)
6. Impact Recovery Model D36, with #105 Driveable Base
7. Safe-Hit with 8-inch pavement anchor (SH248-GP1)
8. Safe-Hit with 15-inch soil anchor (SH248-GP2) and with 18-inch soil anchor (SH248-GP3)

Surface Mount Type, 48-inch

1. Bent Manufacturing Company, Masterflex Model MF-180EX-48
2. Carsonite, "Channelizer"
3. FlexStake, Surface Mount, Models 704, 754 TM, and EB4
4. Impact Recovery Model D48, with #101 Fixed (Surface-Mount) Base
5. Three D Traffic Works "Channelflex" ID No. 522248W

CHANNELIZERS

Surface Mount Type, 36-inch

1. Bent Manufacturing Company, Masterflex Models MF-360-36 (Round) and MF-180-36 (Flat)
2. Filtrona Extrusion, Flexi-Guide Models FG300PE, FG300UR, and FG300EFX
3. Carsonite, "Super Duck" (Round SDR-336)
4. Carsonite, Model SDCF03601MB "Channelizer"
5. FlexStake, Models 703, 753 TM, and EB3
6. GreenLine, Model SMD-36
7. Hi-way Safety, Inc. "Channel Guide Channelizer" Model CGC36
8. Impact Recovery Model D36, with #101 Fixed (Surface-Mount) Base
9. Safe-Hit, Guide Post, Model SH236SMA and Dura-Post, Model SHL36SMA
10. Three D Traffic Works "Boomerang" 5200 Series

Lane Separation System

1. Filtrona Extrusion, "Flexi-Guide (FG) 300 Curb System"
2. Qwick Kurb, "Klemmfix Guide System"
3. Dura-Curb System
4. Tuff Curb

CONICAL DELINEATORS, 42-inch

(For 28-inch Traffic Cones, see Standard Specifications)

1. Bent Manufacturing Company "T-Top"
2. Plastic Safety Systems "Navigator-42"
3. Traffix Devices "Grabber"
4. Three D Traffic Works "Ringtop" TD7000, ID No. 742143
5. Three D Traffic Works, TD7500
6. Work Area Protection Corp. C-42

OBJECT MARKERS

Type "K", 18-inch

1. Filtrona Extrusion, Model FG318PE
2. Carsonite, Model SMD 615
3. FlexStake, Model 701 KM
4. Safe-Hit, Model SH718SMA

Type "K-4" / "Q" Object Markers, 24-inch

1. Bent Manufacturing "Masterflex" Model MF-360-24
2. Filtrona Extrusion, Model FG324PE
3. Carsonite, "Channelizer"
4. FlexStake, Model 701KM
5. Safe-Hit, Models SH824SMA_WA and SH824GP3_WA
6. Three D Traffic Works ID No. 531702W and TD 5200
7. Three D Traffic Works ID No. 520896W

CONCRETE BARRIER MARKERS AND TEMPORARY RAILING (TYPE K) REFLECTORS

Impactable Type

1. ARTUK, "FB"
2. Filtrona Extrusion, Models PCBM-12 and PCBM-T12
3. Duraflex Corp., "Flexx 2020" and "Electriflexx"
4. Hi-Way Safety, Inc., Model GMKRM100
5. Plastic Safety Systems "BAM" Models OM-BARR and OM-BWAR
6. Three D Traffic Works "Roadguide" Model TD 9304

Non-Impactable Type

1. ARTUK, JD Series
2. Plastic Safety Systems "BAM" Models OM-BITARW and OM-BITARA
3. Vega Molded Products, Models GBM and JD
4. Plastic Vacuum Forming, "Cap-It C400"

METAL BEAM GUARD RAIL POST MARKERS

(For use to the left of traffic)

1. Filtrona Extrusion, "Mini" (3" x 10")
2. Creative Building Products, "Dura-Bull, Model 11201"
3. Duraflex Corp., "Railrider"
4. Plastic Vacuum Forming, "Cap-It C300"

CONCRETE BARRIER DELINEATORS, 16-inch

(For use to the right of traffic)

1. Filtrona Extrusion, Model PCBM T-16
2. Safe-Hit, Model SH216RBM

CONCRETE BARRIER-MOUNTED MINI-DRUM (10" x 14" x 22")

1. Stinson Equipment Company "SaddleMarker"

GUARD RAILING DELINEATOR

(Place top of reflective element at 48 inches above plane of roadway)

Wood Post Type, 27-inch

1. Filtrona Extrusion, FG 427 and FG 527
2. Carsonite, Model 427
3. FlexStake, Model 102 GR
4. GreenLine GRD 27
5. Safe-Hit, Model SH227GRD
6. Three D Traffic Works "Guardflex" TD9100
7. New Directions Mfg, NDM27

Steel Post Type

1. Carsonite, Model CFGR-327

RETROREFLECTIVE SHEETING

Channelizers, Barrier Markers, and Delineators

1. Avery Dennison T-6500 Series (For rigid substrate devices only)
2. Avery Dennison WR-7100 Series
3. Nippon Carbide Industries, Flexible Ultralite Grade (ULG) II
4. Reflexite, PC-1000 Metalized Polycarbonate
5. Reflexite, AC-1000 Acrylic
6. Reflexite, AP-1000 Metalized Polyester
7. Reflexite, Conformalight, AR-1000 Abrasion Resistant Coating
8. 3M, High Intensity

Traffic Cones, 4-inch and 6-inch Sleeves

1. Nippon Carbide Industries, Flexible Ultralite Grade (ULG) II
2. Reflexite, Vinyl, "TR" (Semi-transparent) or "Conformalight"
3. 3M Series 3840
4. Avery Dennison S-9000C

Drums

1. Avery Dennison WR-6100
2. Nippon Carbide, Flexible Ultralite Grade (ULG) II
3. Reflexite, "Conformalight", "Super High Intensity" or "High Impact Drum Sheeting"
4. 3M Series 3810

Barricades: Type I, Medium-Intensity (Typically Enclosed Lens, Glass-Bead Element)

1. Nippon Carbide Industries, CN8117
2. Avery Dennison, W 1100 series
3. 3M Series CW 44

Barricades: Type II, Medium-High-Intensity (Typically Enclosed Lens, Glass-Bead Element)

1. Avery Dennison, W-2100 Series

Signs: Type II, Medium-High-Intensity (Typically Enclosed Lens, Glass-Bead Element)

1. Avery Dennison, T-2500 Series
2. Nippon Carbide Industries, Nikkalite 18000

Signs: Type III, High-Intensity (Typically Encapsulated Glass-Bead Element)

1. Avery Dennison, T-5500A and T-6500 Series
2. Nippon Carbide, Nikkalite Brand Ultralite Grade II
3. 3M Series 3870 and 3930 Series

Signs: Type IV, High-Intensity (Typically Unmetallized Microprismatic Element)

1. Avery Dennison, T-6500 Series
2. Nippon Carbide Industries, Crystal Grade, 94000 Series
3. Nippon Carbide Industries, Model No. 94847 Fluorescent Orange
4. 3M Series 3930 and Series 3924S

Signs: Type VI, Elastomeric (Roll-Up) High-Intensity, without Adhesive

1. Avery Dennison, WU-6014
2. Novabrite LLC, "Econobrite"
3. Reflexite "Vinyl"
4. Reflexite "SuperBright"
5. Reflexite "Marathon"
6. 3M Series RS20

Signs: Type VII, Super-High-Intensity (Typically Unmetallized Microprismatic Element)

1. 3M Series 3924S Fluorescent Orange
2. 3M LDP Series 3970

Signs: Type VIII, Super-High-Intensity (Typically Unmetallized Microprismatic Element)

1. Avery Dennison, T-7500 Series
2. Avery Dennison, T-7511 Fluorescent Yellow
3. Avery Dennison, T-7513 Fluorescent Yellow Green
4. Avery Dennison, W-7514 Fluorescent Orange
5. Nippon Carbide Industries, Nikkalite Crystal Grade Series 92800
6. Nippon Carbide Industries, Nikkalite Crystal Grade Model 92847 Fluorescent Orange

Signs: Type IX, Very-High-Intensity (Typically Unmetallized Microprismatic Element)

1. 3M VIP Series 3981 Diamond Grade Fluorescent Yellow
2. 3M VIP Series 3983 Diamond Grade Fluorescent Yellow/Green
3. 3M VIP Series 3990 Diamond Grade
4. Avery Dennison T-9500 Series
5. Avery Dennison, T9513, Fluorescent Yellow Green
6. Avery Dennison, W9514, Fluorescent Orange
7. Avery Dennison, T-9511, Fluorescent Yellow

SPECIALTY SIGNS

1. Relexite "Endurance" Work Zone Sign (with Semi-Rigid Plastic Substrate)

ALTERNATIVE SIGN SUBSTRATES

Fiberglass Reinforced Plastic (FRP) and Expanded Foam PVC

1. Fiber-Brite (FRP)
2. Sequentia, "Polyplate" (FRP)
3. Inteplast Group "InteCel" (0.5-inch for Post-Mounted CZ Signs, 48-inch or less)(PVC)

Aluminum Composite, Temporary Construction Signs and Permanent Signs up to 4 foot, 7 inches

1. Alcan Composites "Dibond Material, 80 mils
2. Mitsubishi Chemical America, Alpolic 350

8-1.03 TEST METHODS

Whenever a reference is made in the specifications to any of the California Test numbers specified below, the corresponding ASTM Designation or AASHTO Designation test may be used to determine the quality of the work or materials. The latest edition of each standard test method shall be used.

<u>California</u> <u>Test</u>	<u>ASTM</u> <u>Designation</u>	<u>AASHTO</u> <u>Designation</u>
231	D 2922	T 238(a)
203	D 422	T 88

204	D 4318	T 89 and T 90
504	C 231	T 152
518	C 138	T 121
521	C 39	T 22
523	C 293 and C 78	T 177 and T 97
533	C 360	-----
211	C131 and C 535	T 96

Note: When ASTM Designation: D 2922 or AASHTO Designation: T 238 is used, the frequency and real distribution of such tests shall comply with the requirements specified in California Test 231. For each determination of relative compaction by ASTM test methods, laboratory compaction tests per ASTM Designation: D 1557 shall be performed, except when the use of previous laboratory maximum dry unit weights are allowed. Previous laboratory maximum dry unit weights may be used to determine relative compaction if the material, as determined by Engineer, is from the same general excavation or plant source and has the same visual characteristics of color, gradation, and soil classification as the previous laboratory maximum dry unit weights.

8-1.04 NOT USED

8-1.05 NOT USED

8-1.06 NOT USED

8-2.00 FREEZE-THAW REQUIREMENTS

Aggregates proposed for use in Portland Cement Concrete and precast Portland Cement Concrete products shall pass the freezing and thawing test, as specified in Section 90-2.02, "Aggregates," of the Standard Specifications and these Special Provisions.

A list of sources of aggregates which have previously passed the freeze-thaw test is available in the Caltrans District Office at 703 "B" Street, Marysville, California 95901.

Contractor's attention is directed to the fact that California Test 528, "Test for Freeze-Thaw Resistance of Aggregates in Air-Entrained Concrete," does not include procedures that determine compliance of the aggregates with the other requirements of the Plans and Specifications.

The mortar strength of fine aggregate relative to the mortar strength of Ottawa sand shall be one hundred percent (100%), minimum, as determined by California Test 515.

Unless a higher cement content is otherwise required, the minimum cement content for all Portland Cement Concrete and for all precast Portland Cement Concrete products shall be 590 pounds per cubic yard.

An air-entraining admixture conforming to the requirements in Section 90-4, "Admixture," of the Standard Specifications shall be added to the concrete at the rate required to result in an air content of $5 \frac{1}{2}\% \pm 1 \frac{1}{2}\%$ in the freshly mixed concrete, unless a different air content is specified elsewhere in these Special Provisions.

SECTION 9. DESCRIPTION OF WORK

The Project area is located in eastern El Dorado County, in the Tahoe Basin, near the town of Meyers. With an alignment roughly matching the Highway 50 corridor from the entrance to the Lake Tahoe Golf Course at Meadow Vale Drive to Sawmill Road (approximately 1,820 feet or roughly 0.35 miles), this Project involves the installation of a Class I bicycle path and pedestrian/bike bridge over the Upper Truckee River that would link the existing Sawmill 1A Bike Path and the future bike path to be constructed along Sawmill Road from Highway 50 to Lake Tahoe Boulevard.

The Work to be done is shown on the Plans, and generally consists of, but is not limited to:

- A. Construction of a Class 1 bike path, and a pedestrian or bike bridge with concrete footing and pile foundations, bike path and bike path excavation and grading, clearing and grubbing, AC/AB paving, tree removal, installing culverts and drainage modifications, landscaping, rock-lined ditches, signing and striping, revegetation, dewatering, concrete retaining walls, traffic control, and temporary erosion control.
- B. Other items or details not mentioned above, that are required by the Plans, Standard Specifications, or the Special Provisions, shall be performed, constructed, or installed.

Other items or details not mentioned above, that are required by the Plans, Standard Specifications or the Special Provisions, shall be performed, constructed or installed.

SECTION 10. CONSTRUCTION DETAILS

10-1.00 DESCRIPTION OF BID ITEMS

BID ITEM 1 – MOBILIZATION

Mobilization shall conform to the provisions of Sections 4-1.03, "Contractor Submittals," and 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan," of these Special Provisions.

Mobilization shall include the obtaining of all bonds, insurance, and permits; moving onto the site of all equipment; and the furnishing and erecting of temporary buildings and other facilities required for the performance and completion of the Work. Mobilization shall also include the following items:

- 1) Providing on-site sanitary facilities
- 2) Arranging for and setting up Contractor's storage area(s) in accordance with Section 5-1.36, "Storage of Equipment, Materials, Supplies, Etc."
- 3) Posting all OSHA required notices and establishment of safety programs.
- 4) Posting of all Prevailing Wage Requirements.
- 5) Preparing and transmitting the Submittals outlined in Section 4-1.03, "Contractor Submittals."
- 6) Obtaining and Submitting Certificates of Compliance.
- 7) Cleaning excavating and loading equipment prior to mobilization on site and presenting receipts to Engineer.

Contractor shall be entitled to progress payments in accordance with Public Contract Code Section 20104.50. In lieu of Section 11-1.02 items A through E of "Mobilization" of the Standard Specifications, the first monthly payment estimate will be prepared when Engineer determines that 5% of the contract amount, not including mobilization, has been completed. Subsequent monthly pay estimates shall be made on the same day of the month as the first monthly pay estimate. Work completed in place less than 2 working days prior to the preparation of the monthly pay estimate shall not be eligible for payment until the following month's estimate. The third to last paragraph of Section 11, "Mobilization," of the Standard Specifications shall be amended to read: "The adjustment provisions in Section 4-1.02A "Changes" shall not apply to the contract lump sum item of mobilization."

Payment for Mobilization Bid Item as specified above will be made at the lump sum price bid, with no additional compensation therefor. In lieu of Section 11-1.02, "Payment," of the Standard Specifications, one partial payment of 50% of the bid price will be made upon completion of 50% of the mobilization of equipment on site and completion of items 1-6 above. The final payment of the remainder of the mobilization bid will be after satisfactory completion of the final project punch list. Satisfactory work completion for the partial or final payment will be determined by Engineer.

BID ITEM 2 – TRAFFIC CONTROL

Work under this item shall include all flaggers, temporary signs, lights, barricades, communication devices, and other devices required for the direction of local traffic through or around the work during construction. Contractor shall furnish all sign panels, posts, hardware, and all barricades and shall erect, maintain and remove all construction area signs, necessary for construction of project improvements, as specified in the Plans and these Special Provisions.

Traffic Control Requirements will be strictly enforced. Violation of these requirements is justification for Engineer to stop work until these requirements are met.

Attention is directed to Section 10-1.03, "Maintaining Traffic," and Section 10-1.04, "Traffic Control Plan," of these Special Provisions.

In lieu of Section 12-2.02, "Flagging Costs," of the Standard Specifications, the full cost of any flagging necessary shall be borne by Contractor.

Payment for Traffic Control Bid Item as specified above shall be made at the lump sum price bid, with no additional compensation therefor. Partial payments for traffic control will be made based on the percentage of work completed as determined by Engineer.

BID ITEM 3 – TEMPORARY RAILING (TYPE K)

Work under this item shall consist of furnishing all labor, materials (including reinforcement, Type P marker panels and reflectors), tools, and equipment necessary with furnishing, placing, maintaining, repairing, replacing, and removing the temporary railing (Type K), including excavation and backfill, drilling holes and bonding threaded rods or dowels when required, removing threaded rods or dowels and filling the drilled holes with mortar and moving and replacing removable panels as required, complete in place, in accordance with the Plans, the Standard Specifications, and these Special Provisions, and as directed by Engineer.

Attention is direction to Section 10-1.01, "Order of Work" of these Special Provisions and Section 12-3.08 "Temporary Railing (Type K)" of the Standard Specifications.

Payment for the Temporary Railing (Type K) Bid Item shall be based on the unit price bid and on the linear feet of Temporary Railing (Type K) installed as specified above.

BID ITEM 4 – TEMPORARY CRASH CUSHION (ARRAY TS14)

Work under this item shall consist of furnishing all labor, materials (including sand, pallets or frames and marker panels), tools, and equipment necessary with furnishing, installing, maintaining, moving, and resetting during a work period for access to the work, and removing from the site of the work when no longer required (including those damaged by public traffic) sand filled temporary crash cushion array, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Attention is direction to Section 10-1.01, "Order of Work" and Section 10-1.05, "Temporary Crash Cushion Module," of these Special Provisions.

Payment for the Temporary Crash Cushion (Array TS14) Bid Item shall be based on the unit price bid and on the number of Arrays installed as specified above.

BID ITEM 5 – INSTALL AND MAINTAIN TREE PROTECTION AND CONSTRUCTION LIMIT FENCE

Work under this item shall consist of furnishing all labor, tools, equipment, and materials necessary to install, maintain, remove, and dispose of this temporary erosion control measure as required by the Plans, the Standard Specifications, these Special Provisions, and the TRPA Best Management Practices.

Attention is direction to Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)," of these Special Provisions.

A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to install new temporary erosion control devices and/or maintain existing temporary erosion control devices.

Contractor shall perform all construction activities that are outside the road right-of-way within the construction limits staked by Engineer and delineated with construction limit fence installed by Contractor. Where directed by Engineer and/or shown on the Plans, construction limit fence shall be placed around individual trees that are to remain, in accordance with the Tree Protection and Construction Limit Fence Detail shown on the Plans. Attention is directed to Section 10-1.22, "Disturbance and Revegetation," of these Special Provisions.

The area within which Contractor will be allowed to work will be the area within the limits of the construction limit fence. At trees near the work area, the width of the work area will be reduced in order to protect the

trees. Contractor shall review each such location to determine what equipment can be used to install the improvements at these locations or if hand work will be necessary. The costs associated with working within these reduced widths shall be included in the unit price bid for the applicable item of work with no additional compensation therefore.

All Construction Limit Fence shall remain in place until equipment access is no longer necessary in the area and TRPA approval is obtained or until the Contractor provides alternative measures to control public access to the site prior to County's acceptance of the project. The costs associated with leaving the Construction Limit Fence in place until the project is accepted or providing alternative access restriction shall be included in this bid item with no additional compensation therefore.

Where tree protection fencing cannot be placed at the dripline of the tree, the detail showing construction limit fencing wrapped around tree trunk and covered with lath fence shall apply. The unit price bid for Tree Protection and Construction Limit Fence shall also apply to this condition.

Payment for the Install and Maintain Tree Protection and Construction Limit Fence Bid Item shall be based on the unit cost bid and on the number of linear feet of Construction Limit Fence and/or Tree Protection fencing installed and maintained with no additional compensation therefore. Progress payments for this Bid Item will be a maximum of 50% of the unit cost bid multiplied by the number of linear feet of Construction Limit Fence and/or Tree Protection fencing installed during the pay period as determined by Engineer and/or required by TRPA's Compliance Division. Payment for the maintenance, removal, and disposal of all construction limit fence and/or tree protection fence will be made in the Final Pay Estimate providing that satisfactory maintenance was performed throughout the duration of the project and removal was completed as specified.

BID ITEMS 6 AND 7 – INSTALL AND MAINTAIN TYPE 2 FILTER FENCE AND INSTALL AND MAINTAIN TYPE 3 FILTER FENCE

Work under these items shall consist of furnishing all labor, tools, equipment, and materials necessary to install, maintain, remove, and dispose of these temporary erosion control measures as required by the Plans, the Standard Specifications, these Special Provisions, and the TRPA Best Management Practices.

Attention is direction to Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan" of these Special Provisions.

A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to install new temporary erosion control devices and/or maintain existing temporary erosion control devices.

INSTALL AND MAINTAIN TYPES 2 and 3 FILTER FENCE (FF): Type 2 FF shall be placed at the downstream edge of fill, or elsewhere noted on the Plans. Type 3 Filter Fence (includes woven and non-woven Filter Fence) shall be placed in rock-lined ditches after grading is completed, when the turf reinforcement mat cannot be placed in the ditch immediately after that section of ditch is graded, unless from weather reports, Engineer determines that the interim use of Type 3 FF is unnecessary.

Spacing intervals for Type 3 FF sections at rock-lined ditches shall be maintained with new sections of Type 3 FF (whichever is applicable) added as the installation of these improvements progress. In addition to the placement of Type 3 FF sections (whichever is applicable) at the specified spacing intervals, Contractor shall place Type 3 FF (whichever is applicable) at the location where each installation is temporarily discontinued. This section of Type 3 FF (whichever is applicable) shall be reused to satisfy the specified spacing intervals once the installation that had been temporarily discontinued is completed. However, payment for the installation and maintenance of this section of Type 3 FF (whichever is applicable) will be made only once. TRPA, Lahontan, County, or engineer may require that Types 2 and/or 3 FF be used at additional locations.

Areas where Contractor temporarily stockpiles excavated materials may require the use of Type 2 FF for temporary erosion control. Attention is directed to Section 5-1.36 of these Special Provisions and Sheet EC-01, EC-02, and TC-01 of the Plans for the designated temporary staging/storage areas.

Type 2 FF shall be removed and disposed of by Contractor after construction is completed except for the Type 2 FF placed at the downstream edge of fill, **which shall remain in place and become the property of County.** Type 3 FF at rock-lined ditches shall be removed just prior to the installation on turf reinforcement mat.

Contractor **shall not use straw bales** for any temporary erosion control use or measures.

Payment for the Install and Maintain Types 2 and 3 Filter Fence Bid items shall be based on the unit prices bid and on the number of linear feet of Type 2 FF and Type 3 FF installed and maintained as described above with no additional compensation therefor. Progress payments for these Bid Items will be a maximum of 50% of the applicable unit cost bid multiplied by the number of linear feet of Type 2 FF, and/or Type 3 FF installed during the pay period as determined by the Engineer and/or required by TRPA's Compliance Division, Lahontan, County or the Engineer. Payments for maintenance, removal, and disposal, as applicable, of Type 2 FF and Type 3 FF will be made in the Final Pay Estimate providing that satisfactory maintenance was performed through the duration of the project and removal was completed as specified.

BID ITEM 8 – CLASS 1 ASPHALT CONCRETE BIKE PATH

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to construct the asphalt concrete Class 1 bike path from STA 156+73.48 to STA 171+90.50 and from STA 174+43.00 to STA 174+90.77 in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item includes clearing and grubbing, bike path excavation and disposal of excess material, salvaging and stockpiling topsoil, placing topsoil mix, scarifying and compacting subgrade, backfill and compaction, furnishing, placing, and compacting bike path aggregate base, and furnishing, placing, and compacting asphalt concrete, including sawcut and remove and dispose of existing ac to tie-into and conform the new paving into the existing.

Attention is directed to Section 10-1.10, "Excavation and Grading", Section 10-1.12, "Aggregate Base, Class 2," Section 10-1.15, "Asphalt Concrete," Bid Item "Revegetation Type SM," and Section 10-1.22, "Disturbance and Revegetation," of these Special Provisions.

Payment for the Class 1 Asphalt Concrete Bike Path Bid Item shall be based on the unit price bid and on the number of square feet of asphalt bike path installed as specified above. In measuring the square footage of bike path installed, the width of the asphalt concrete bike path shall include the two two-foot shoulders.

BID ITEM 9 – CALTRANS TYPE GCP INLET

Work under this item shall consist of furnishing all labor, tools, equipment and materials necessary to construct the Caltrans GCP Inlet in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item shall include clearing and grubbing, excavation, disposal of excess material, Class 1 Type B permeable material base, backfill, compaction, regrading, furnishing and installing concrete pipe inlet (including fabrication and installation of grates, as applicable), one-foot long CMP culvert stub(s) and attachment of stub(s) to the concrete pipe inlet and to culvert, No. 1 rock backing with precast concrete base, grouting of precast base to concrete pipe inlet, painting exposed surfaces of the inlet and grate, and placing and compacting topsoil mix around outside of concrete pipe inlet, as applicable. The inlet including the grate shall be in accordance with Standard Plan D75B Type GCP. The costs associated with the removal and disposal of sediment and storm water accumulated in the concrete pipe inlet during construction shall also be included in the unit prices bid for this bid item. Disposal of sediment shall be in accordance with Section 10-1.10 of these Special Provisions. Sediment shall be removed just prior to demobilization.

Contractor is responsible for the protection of the existing utilities in the performance of work described herein. The costs associated with providing such protection shall be included in the cost of each Inlet installed.

Contractor shall submit shop drawings for all prefabricated elements of the inlet to Engineer within five (5) working days of the Notice to Proceed for Engineer's approval.

Attention is directed to Section 10-1.19, "Concrete Structures," for concrete base and collar requirements, Section 10-1.21, "Rock Specifications," for No. 1 rock backing requirements, and Section 10-1.17 "Culvert and CMP Structures," of these Special Provisions.

Attention is directed to Section 10-1.26, "Shoring and Excavation Plan," and Bid Item "Shoring, Bracing, or Sloping the Sides of Trenches Greater than Five Feet Deep" for submittal requirements for safety and a description of the conditions under which sloping the sides of the excavation will be allowed in lieu of shoring and/or bracing, and Section 10-1.10, "Excavation and Grading," regarding compaction specifications.

Payment for Caltrans Type GCP Inlet Bid Item shall be based on the unit price bid and on the number of inlets installed as specified above.

BID ITEM 10 – 18" CMP CULVERT

Work under this item shall consist of furnishing all labor, tools, equipment, and materials necessary to construct CMP pipes in accordance with the Plans, Standard Specifications, and these Special Provisions. Work under these items includes excavation, disposal of excess material, scarifying and compacting subgrade, shoring, bracing, or sloping of the sides of the excavation for excavations five feet or less, furnishing and laying pipe, couplings, backfilling and compaction, salvaging topsoil, mixing topsoil with humus, and placing and compacting topsoil mix where applicable. The costs associated with the removal and disposal of sediment accumulated in the culverts during and at the end of construction shall also be included in the unit prices bid for this bid item. Disposal of sediment shall be in accordance with Section 10-1.10, "Excavation and Grading," of these Special Provisions. Sediment shall be removed just prior to demobilization.

Attention is directed to Section 10-1.17 "Culvert and CMP Structures," of these Special Provisions.

Contractor is responsible for the protection of the existing utilities in the performance of the work described herein. The costs associated with providing such protection shall be included in the linear foot cost of CMP culvert installed.

The costs associated with furnishing, placing, and compacting AB and AC are included in the Bid item "Class 1 Asphalt Concrete Bike Path."

Payment for 18" CMP Culvert Bid Item shall be based on the unit price bid and on the number of linear feet of 18" CMP culvert constructed as specified above.

BID ITEM 11 – 18" FLARED END SECTION

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install galvanized metal flared end sections in accordance with the Plans, Standard Specifications, and these Special Provisions. Work under this item includes excavation, disposal of excess material, backfill, compaction, installation, attachment to culvert, furnishing and installing No. 1 rock backing around the flared end section.

Attention is directed to Section 10-1.10, "Excavation and Grading," regarding compaction specifications, Section 10-1.17, "Culvert and CMP Structures," and Section 10-1.18, "Flared End Sections," of these Special Provisions.

Payment for 18" Flared End Section Bid Item shall be based on the unit price bid and on the number of flared end sections installed as specified above.

BID ITEM 12 – ROCK-LINED DITCH

Work under this item consists of furnishing all labor, tools, materials, and equipment necessary to construct the rock-lined ditch in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item includes clearing and grubbing, excavation, disposal of excess material, scarifying and compaction of subgrade, furnishing and placing turf reinforcement mat and No. 1 backing, salvaging topsoil, mixing topsoil with humus, and placing and compacting topsoil mix in the area disturbed beyond the rock-lined ditch, but within the construction limit fencing. The costs associated with salvaging the top 1" of topsoil shall also be included in the unit price bid for "Rock-lined Ditch."

Attention is directed to Bid Items "Install and Maintain Filter Fence Type 2 and Install and Maintain Type 3 Filter Fence." Attention is also directed to Section 10-1.07, "Clearing and Grubbing," Section 10-1.10, "Excavation and Grading," Section 10-1.21, "Rock Specifications," and Section 10-1.23, "Turf Reinforcement Mat," of these Special Provisions.

Payment for Rock-lined Ditch Bid Item shall be based on the unit price bid and on the number of linear feet of rock-lined ditch installed as specified above.

BID ITEM 13 – DIVERSION FOR STATION 169+03 AND 174+90

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to divert flows around the work areas at the following locations in accordance with the Plans, the Standard Specifications, and these Special Provisions:

- 18" CMP , FES, GCP DI, Rock Bowl, and Rock-Lined Ditch at STA 169+03 (Sheet P-03 of the Plans); and
- 18" CMP and GCP DI at STA 174+90(Sheet P-04 of the Plans).

When the drainage in the work area is flowing (flowing means that surface flow within the work area is visible), Contractor shall divert the entire flow around the work area(s) via a temporary culvert with sand bag/filter fabric dam, or water pump and hose system, or similar system.

Contractor's attention is directed to Section 4-1.03, "Contractor Submittals," Section 5-1.27, "Lake, Stream, and Air Pollution," Section 10-1.01, "Order of Work," and Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)" of these Special Provisions.

Engineer will monitor the turbidity upstream and downstream of the work area before the work is performed and while the work is being performed. In no case shall Contractor's operations cause an increase in turbidity that exceeds the permit conditions. Contractor shall take these requirements into consideration in the design and operation of the diversion system and the performance of the work.

Discussions between Contractor and Engineer will determine if diversions are necessary at each location. If it is decided that a diversion at a particular location is unnecessary, no payment for this location will be made. The elimination or reduction of this item shall not constitute the basis for a claim of extra payment or damage by Contractor and Section 4-1.03B of the Standard Specifications shall not apply.

Payment for Diversion for Station 169+03 and 174+90 Bid Item shall be on the bid price for each location, with no additional compensation therefor. Alternatively no payments shall also be as specified above.

BID ITEM 14 – ROCK BOWL

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to construct the rock bowl in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item consists of clearing and grubbing, excavation, disposal of excess material, scarifying and compaction of subgrade, furnishing and placing of turf reinforcement mat, furnishing and placing topsoil mix in disturbed area around rock bowl within construction limit fence and/or filter fence, and furnishing and placing No. 1 rock backing.

Attention is directed to Section 10-1.10 "Excavation and Grading," Section 10-1.21 "Rock Specifications," and Section 10-1.23 "Turf Reinforcement Mat" of these Special Provisions.

Payment for Rock Bowl Bid Item shall be based on the unit price bid and on the number of square feet of rock bowl installed as specified above. The start of the rock bowl payment limit shall be from the end of the FES.

BID ITEM 15 – REMOVE EXISTING WOOD FENCE

Work under this item consists of furnishing all labor, tools, materials, and equipment necessary to remove and dispose of Existing Wood Fence in accordance with the Plans, the Standard Specifications, and these Special Provisions.

Removed wood fence materials shall become the property of Contractor and shall be disposed of in accordance with Section 10-1.10 "Excavating and Grading" of these Special Provisions.

Payment for Remove Existing Wood Fence Bid Item shall be based on the unit price bid and on the linear feet of wood fence removed as specified above.

BID ITEM 16 – ROCK DISSIPATOR

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to construct the rock dissipator in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item consists of clearing and grubbing, excavation, disposal of excess material, scarifying and compaction of subgrade, furnishing and placing of turf reinforcement mat, placing and compacting topsoil mix in the disturbed area around the perimeter of the rock dissipator but within the construction limit fence and filter fence, and No. 1 rock backing, including the 18" x 24" rock key.

Attention is directed to Section 10-1.10, "Excavation and Grading," Section 10-1.21, "Rock Specifications," and Section 10-1.23, "Turf Reinforcement Mat," of these Special Provisions.

Payment for Rock Dissipator Bid Item shall be based on the unit price bid and on the number of square feet of rock dissipator installed as specified above. The start of the rock dissipator payment limit shall be from the end of the FES.

BID ITEM 17 – DEWATERING FOR STATION 169+03 AND 174+90

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to dewater the excavations for the pipes in order to achieve the required compaction in the trenches for the following pipe system locations:

- 18" CMP, GCP DI, Rock Bowl, and Rock-Lined Ditch at STA 169+03 (Sheet P-03 of the Plans); and
- 18" CMP and GCP DI at STA 174+90 (Sheet P-04 of the Plans).

It is anticipated that these areas may exhibit wet conditions. Discussions between Contractor and Engineer will determine if dewatering is necessary. If it is decided that dewatering at a particular location is unnecessary, no payment for this location will be made. If it is decided that dewatering is unnecessary at each of these locations, no payment for this item will be made. The elimination or reduction of this item shall not constitute the basis for a claim of extra payment or damage by Contractor and Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications shall not apply.

Contractor's attention is directed to Section 4-1.03, "Contractor Submittals," Section 10-1.01, "Order of Work," Section 10-1.20, "Dewatering," Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)."

Payment for Dewatering for Culverts Bid Item shall be based on the unit price bid for dewatering and on the number of pipe locations dewatered as specified above. Alternatively no payments shall also be as specified above.

BID ITEM 18 – DEWATERING FOR STRUCTURES

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to dewater the excavations for the structures listed below in order to achieve the required compaction in the excavations and to pour and cure concrete under dry conditions for the following locations:

- Retaining Wall No. 1;
- Retaining Wall No. 2;
- Bridge Abutment No. 1;

- Bridge Abutment No. 4.

It is anticipated that these areas may exhibit wet conditions. Discussions between Contractor and Engineer will determine if dewatering is necessary. If it is decided that dewatering at a particular location is unnecessary, no payment for this location will be made. If it is decided that dewatering is unnecessary at each of these locations, no payment for this item will be made. The elimination or reduction of this item shall not constitute the basis for a claim of extra payment or damage by Contractor and Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications shall not apply.

Contractor's attention is directed to Section 4-1.03, "Contractor Submittals," Section 10-1.01, "Order of Work," Section 10-1.20, "Dewatering," Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)."

Payment for Dewatering for Structures Bid Item shall be based on the unit price bid for dewatering and on the number of structure locations dewatered as specified above. Alternatively no payments shall also be as specified above.

BID ITEMS 19 AND 20 – REVEGETATION – TYPE SM AND TYPE MSS

Work under these items shall consist of furnishing all labor, tools, material, and equipment necessary to revegetate disturbed areas in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under these items shall conform to the notes as indicated on Sheet R-01 of the Plans.

Attention is directed to Section 10-1.22, "Disturbance and Revegetation," for specifications regarding seed mix, humus, and compost mulch and their application. Attention is directed to Section 10-1.10, "Excavation and Grading," for topsoil mix requirements.

Payment for Revegetation - Type SM and Type MSS Bid Items shall be based on the unit price bid and on the number of square feet of revegetation installed as specified above.

BID ITEM 21 – COIR LOGS

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to install the coir logs in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item shall consist of excavating, disposal of excess material, furnishing and installing coir logs, stakes, and twine.

Coir logs shall be coconut fiber wrapped in bio-degradable netting. Twine shall be sisal and stakes shall be made of hardwood.

One ten-foot long section of coir log will be considered one coir log.

Payment for Coir Logs Bid Item shall be based on the unit price bid and on the number of coir logs installed as specified above.

BID ITEM 22 – STRIPING AND MARKINGS

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install bike path striping and markings in accordance with the Plans, the Standard Specifications, and these Special Provisions.

Striping and Markings shall conform to the provisions of Section 84-3 "Painted Traffic Strips and Pavement Markings" of the Standard Specifications.

Payment for Striping and Markings Bid Item shall be based on the unit price bid and on the number of square of striping and markings installed as specified above.

BID ITEM 23 – RECESSED THERMOPLASTIC MARKINGS

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install recessed thermoplastic striped crossings as shown on the plans and specified in the Standard Specifications

and these Special Provisions. Work under this item includes grinding of asphalt pavement, disposal of grindings, and placement of thermoplastic striping.

Attention is directed to Section 10-1.28 "Thermoplastic Traffic Markings (Recessed)" of the Special Provisions.

Payment for Recessed Thermoplastic Markings Bid Item shall be based on the unit bid price and the actual square foot area of recessed thermoplastic marking placed in the field, with no additional compensation therefor.

BID ITEM 24 – PEELERCORE BOLLARDS

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install peelercore bollards in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item includes excavation, disposal of excess material, compaction, furnishing and placing concrete footing, furnishing and placing peeler core bollards, rails and hardware, and beveling tops of posts.

Peelercore bollards shall be treated Hem-fir. Contractor's attention is directed to Section 10-1.19, "Concrete Structures," of these Special Provisions.

Payment for Peelercore Bollards Bid Item shall be based on the unit price bid and on the number of peelercore bollards installed as specified above.

BID ITEM 25 – REMOVABLE BOLLARDS

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install removable bollards in accordance with the plans, the Standard Specifications, and these Special Provisions. Work under this item includes excavation, disposal of excess material, compaction, furnishing and placing concrete footing, furnishing and placing removable bollards with reflective tape.

Payment for Removable Bollards Bid Item shall be based on the unit price bid and on the number of removable bollards installed as specified above.

BID ITEM 26 – CONCRETE RETAINING WALL – CALTRANS TYPE 5

Work under this item consists of furnishing all labor, tools, materials, and equipment necessary to construct the Caltrans Type 5 concrete retaining wall (including the piles) in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item consists of excavation, disposal of excess material, salvaging topsoil, scarifying and compaction of subgrade, furnishing and driving of piles, concrete – including footings and key, its forming, placing, furnishing and placing reinforcing steel, backfill and compaction, expansion joints, weakened plane joints, and weep holes. The Caltrans Type 5 concrete retaining wall shall be in accordance with Standard Plan B3-7.

Concrete, reinforcing steel, and piles shall be in accordance with Section 10-1.19, "Concrete Structures," of these Special Provisions. Attention is directed to Section 10-1.26, "Shoring and Excavation Plan," and Section 10-1.20, "Dewatering," of these Special Provisions.

Work under this item also includes the overexcavation and placement of 12" Class 2 aggregate base compacted to 95% relative compaction over 18" of 2"-minus Class 1 Type B backfill material consisting of crushed gravel wrapped in a non-woven geotextile fabric from STA 171+68.25 to STA 171+88.25 as shown on the Foundation Grade Soils Detail on Sheet RW-01 of the Plans.

The costs associated with the installation of additional filter fence and/or coir logs shall be included in the unit price bid for the respective bid items.

Work under this item also includes painting of all exposed concrete surfaces. Attention is directed to Section 10-1.19, "Prepare and Paint Concrete Surfaces."

Payment for Concrete Retaining Wall – Caltrans Type 5 Bid Item shall be based on the unit price bid and on the number of square feet, as measured from top of footing of the retaining wall installed as specified above.

BID ITEM 27 – CONCRETE RETAINING WALL – CALTRANS TYPE 1

Work under this item consists of furnishing all labor, tools, materials, and equipment necessary to construct the Caltrans Type 1 concrete retaining wall in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item consists of excavation, disposal of excess material, scarifying and compaction of subgrade, salvaging topsoil, concrete – including footings and key, its forming, placing, furnishing and placing reinforcing steel, backfill and compaction, expansion joints, weakened plane joints, and weep holes. The Caltrans Type 1 concrete retaining wall shall be in accordance with Standard Plan B3-1.

Concrete and reinforcing steel shall be in accordance with Section 10-1.19, "Concrete Structures," of these Special Provisions. Attention is directed to Section 10-1.26, "Shoring and Excavation Plan," and Section 10-1.20, "Dewatering," of these Special Provisions.

Work under this item also includes the overexcavation and placement of 12" Class 2 aggregate base compacted to 95% relative compaction over 18" of granular soils compacted to 90% relative compaction from STA 169+60 to STA 171+40 as shown on the Foundation Grade Soils Detail on Sheet RW-01 of the Plans. Granular soils shall conform to the provisions of Section 10-1.10 "Excavating and Grading" D2 of the Special Provisions for imported fill or backfill and may be material excavated on-site providing the soil meets the provisions of Section 10-1.10 D2

Work under this item also includes the overexcavation and placement of 12" Class 2 aggregate base compacted to 95% relative compaction over 18" of 2"-minus Class 1 Type B backfill material consisting of crushed gravel wrapped in a non-woven geotextile fabric from STA 171+40 to STA 171+68.25 and from STA 174+45.25 to STA 174+82.00 as shown on the Foundation Grade Soils Detail on Sheet RW-01 of the Plans.

Work under this item also includes painting of all exposed concrete surfaces. Attention is directed to Section 10-1.19 "Prepare and Paint Concrete Surfaces".

The costs associated with the installation of additional filter fence and/or coir logs shall be included in the unit price bid for the respective bid items.

Payment for Concrete Retaining Wall – Caltrans Type 1 Bid Item shall be based on the unit price bid and on the number of square feet, as measured from top of footing of the retaining wall installed as specified above.

BID ITEM 28 – TUBULAR STEEL RAILING

Work under this item consists of furnishing all labor, tools, materials, and equipment necessary to construct the Tubular Steel Railing in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item consists of furnishing all materials and labor necessary to install the tubular steel railing on the retaining walls and bridge abutment No.4.

Tubular Steel Railing shall be in accordance with the details shown on Sheet D-03 of the Plans.

Attention is directed to Section 10-1.19, "Concrete Structures," of these Special Provisions.

Payment for Tubular Steel Railing Bid Item shall be based on the unit price bid and on the linear feet of tubular steel railing installed as specified above.

BID ITEM 29 – ADJUST SMH RIM TO GRADE

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to adjust Sewer Manhole (SMH) rims to grade in accordance with the Plans, Standard Specifications, and these Special Provisions. All manhole rims shall be adjusted in accordance with Section 15-2.05, "Reconstruction," of the Standard Specifications. Rims to be adjusted to grade may be located either in or out of the AC paving.

Contractor shall be responsible for providing a record (e.g. stake) in the field of the locations of the existing manholes that are in areas to receive AC paving or to be backfilled above existing rim. During the AC paving operation, Contractor shall use this record to locate the buried facilities and adjust them to grade. Contractor's method of paving over these facilities, removing and disposing of the paving to expose and to

adjust the facilities to grade, and repaving around the facilities shall minimize the size of the pavement patches repaved around the facilities.

All adjustments shall provide a watertight seal in the raised portion and in the connecting existing portions of the facility.

Work shall include excavation, removal of cover and frame, adding and removing grade rings as required, and resetting the cover and frame 1/4" below the finish surface of the AC paving, where applicable. The South Tahoe Public Utility District (STPUD) will provide the rings for the SMHs.

Payment for Adjust SMH Rim to Grade Bid Item shall be based on the unit price bid and on the number of SMH rims adjusted as specified above.

BID ITEM 30 – SWEEPING

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to sweep the project site and dispose of the swept materials. Tracking of sediment onto public streets shall be minimized by a combination of road sweeping and use of tire wash areas designated on the Plans during soil hauling operations, during equipment transporting from one work area to another, and as necessary to keep the streets clear of soil and debris. Tracking control applies to streets within the project area as well streets adjacent to the project area that have the potential to be impacted by tracking from the project construction.

Contractor shall provide sweeping equipment that conforms to the following minimum requirements:

- The sweeper shall be a chassis-mounted vehicle capable of vacuuming the roadways such that the swept material is placed into a hopper, from which the swept material can be removed and disposed of. **Broom sweepers that are attachments to other equipment are not acceptable sweepers.**

Affected streets shall be swept a minimum of three times daily (e.g. mid-morning, mid-afternoon, and at the end of the day) during soil hauling operations, during equipment transporting from one work area to another, and as necessary to keep the streets clear of soil and debris. The swept material shall be disposed of in accordance with Section 10-1.10C.6. of these Special Provisions.

Attention is directed to Section 5-1.51 "Dust and Tracking Control."

Sweeping is a temporary erosion control measure or BMP. A fine of \$100/ day will be levied against the Contractor for each day Contractor delays in responding to Engineer's request to implement this temporary erosion control measure.

Payment for Sweeping Bid Item shall be based on the lump sum price bid and on performing the sweeping operations as specified above. Partial payments for sweeping will be made based on the percentage of work completed as determined by Engineer.

BID ITEM 31 – ROCK FRACTURING AND REMOVAL

Work under this item shall consist of furnishing all labor, tools, equipment, and material necessary to fracture and remove any existing rock that prohibits installation of the proposed improvements to the grades shown on the Plans and that can't be removed after a reasonable effort with the equipment being used on the site has been made. Work under this item shall consist of the use of a cracking agent, or non-detonating rock breaking equipment, rather than blasting; blasting will not be allowed. The work includes fracturing the rock in accordance with the manufacturer's recommendations and removing the rock. If the rock can not be used in the construction of other improvements, Contractor shall dispose of the rock in accordance with Section 10-1.10 "Excavation and Grading" of these Special Provisions. Contractor shall be responsible for any damage to persons, private property, the work, or existing structures or utilities associated with this bid item.

This specification is intended to illustrate the minimum effort that can reasonably be expected from Contractor if rock is encountered and must be removed. Should Contractor have larger equipment on site for use on the project, Contractor shall make a reasonable effort with the larger equipment to remove the rock

and compensation shall not be made under this bid item, but shall be included in the unit price bid for the item of work for which the rock was encountered.

The quantity of this item listed in the Bid Schedule represents no actual estimate, is nominal only, and may be increased, decreased, or reduced to zero. The increase or reduction of this quantity as compared with that set forth in the bid schedule shall not constitute a basis for a claim by Contractor for extra payment or damages and Section 4-1.03B of the Standard Specifications does not apply.

Contractor shall notify Engineer immediately when rock is encountered that meets the definition described in the first paragraph of this bid item. Engineer will consider whether the lines and grades can be adjusted to avoid fracturing and removing the rock. If Engineer determines adjustments in the lines and grades are not feasible, that the rock meets the definition described herein, and that Contractor has made a reasonable effort to remove, fracture and remove, or scrape and remove the rock with the minimum equipment specified above or the equipment on site, whichever is applicable, then the removal and disposal of the obstructing rock shall be accomplished and paid for in accordance with the alternate methods described in this bid item. Contractor and Engineer will agree to the number of cubic yards of rock fractured and removed immediately after the removal of the rock from the excavation.

The void created by the rock removal shall be backfilled with native material or whichever is applicable per the Plans and details. The backfill shall conform to and shall be compacted in accordance with Section 10-1.10, "Excavation and Grading," of these Special Provisions.

The cracking agent shall be soundless chemical demolition agent such as Bentonamit, Fract.Ag, or approved equal. The non-detonating rock breaking equipment shall be Boulder Buster, NoneX, or approved equal.

Payment for Rock Fracturing and Removal Bid Item shall be based on the unit price bid and on the number of cubic yards of rock fractured and removed as specified above and mutually agreed upon by Contractor and Engineer.

BID ITEM 32 – RELOCATE EXISTING ROADWAY SIGN

Work under this item consists of the removal and salvaging of existing road signs, removal and disposal of concrete encasement if present, and resetting signs in new concrete as per Caltrans Standards and/or in kind. Signs to be removed and relocated will be marked by the Engineer.

Unless temporary signing acceptable to the Engineer is installed, each roadside sign shall be installed at the new or original location, as applicable, on the same day said sign is removed from its original location. If the Engineer determines that a sign post is damaged, the Contractor shall repair or replace the post. Such costs shall be included in this bid item.

Payment for Relocate Existing Roadway Sign Bid Item shall be based on the unit price bid and on the number of roadside signs removed and relocated, as specified above.

BID ITEMS 33, 34, AND 35 – ROADWAY SIGN (TYPE 1), ROADWAY SIGN (TYPE 2), ROADWAY SIGN (TYPE 3)

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install Type 1, Type 2, and Type 3 Signs in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item shall include furnishing, painting, and installing the bike path signs, posts, and concrete post foundation.

Type 1 Roadway Signs shall consist of one sign mounted on a post.

Type 2 Roadway Signs shall consist of two signs mounted on a post.

Type 3 Roadway Signs shall consist of three signs mounted on a post.

Payment for Roadway Signs (Type 1), Signs (Type 2), and Signs (Type 3) Bid Items shall be based on the unit price bid for each type of sign and on the number of each type of sign installed as specified above.

BID ITEM 36 – OVEREXCAVATION AND REMOVAL OF UNSUITABLE MATERIAL

Work done under this item shall be directed by Engineer. When directed by Engineer, Contractor shall excavate below the lower limit of the excavation line as shown on the Plans.

All work done under this item shall conform to the requirements of applicable portions of the Standard Specifications except as modified herein.

The quantity of this item listed in the Bid Schedule represents no actual estimate, is nominal only, and may be greatly increased, decreased, or reduced to zero. The increase or reduction of this quantity as compared with that set forth in the bid schedule shall not constitute a basis for claim by Contractor for extra payment or damages, and Section 4-1.03B of the Standard Specifications shall not apply.

Payment under this item will be limited to the volume of material removed, as directed by Engineer, below the lower limit of the excavation line and outside the dimensional limits designated on the Plans.

If excavation below the lower limit of excavation as shown on the Plans is required, the ensuing void shall be backfilled with Class 1 Type B permeable material compacted in accordance with Section 10-1.10, "Excavation and Grading," of these Special Provisions.

Payment for permeable backfill and compaction shall be included in the unit price bid for this bid item and no additional compensation shall be made therefor.

All unsuitable material removed under this bid item shall be removed from the Tahoe Basin in accordance with Section 10-1.10, "Excavation and Grading," of these Special Provisions.

Payment for Overexcavation and Removal of Unsuitable Material Bid Item shall be based on the unit price bid and on the number of cubic yards of unsuitable material excavated as specified above. Measurement of the number of cubic yards shall be based on the dimensions of the void resulting from the excavation as measured by the Engineer.

BID ITEM 37 – REMOVE AND RECONSTRUCT METAL BEAM GUARDRAIL

Work under this item shall include removing the existing metal beam guardrail, posts, blocks and hardware, and furnishing and installing new posts, blocks, and hardware; connecting reconstructed metal beam guard railing to existing structures, other flat concrete surfaces or terminal systems; removing, disposing, and replacing terminal systems.

Attention is directed to Section 10-1.13, "Existing Highway Facilities," of these Special Provisions.

Payment for Remove and Reconstruct Metal Beam Guardrail shall be based on the unit bid price and on the linear feet of metal beam guardrail removed and reconstructed.

BID ITEM 38 – ASPHALT CONCRETE DIKE, TYPE F

Work under this item shall include furnishing all labor, tools, materials (including AC), and equipment necessary to remove and dispose of the existing AC dike and to construct standard Type F asphalt concrete dike to tie-into and conform to the existing AC as shown on the Plans and specified in the Standard Specifications and these Special Provisions. Section 39-8, "Measurement and Payment" of Amendments to the Standard Specifications shall not apply.

Payment for Asphalt Concrete Dike, Type F shall be based on the unit bid price and on the linear feet of Asphalt Concrete Dike, Type F constructed as specified above.

BID ITEM 39 – INSTALL AND MAINTAIN TIRE WASH AREA ON PAVEMENT

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install, maintain, remove, and dispose of the tire wash area on pavement in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item includes furnishing, installing, maintaining, removing and disposing of gravel bags wrapped in woven filter fabric and the Class 1 Type A permeable rock filter.

Attention is directed to Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)." Attention is directed to Section 5-1.51, "Dust and Tracking Control," of these Special Provisions regarding payment for the actual washing of tires.

A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to install new temporary erosion control devices and/or maintain existing temporary erosion control devices.

Payment for Install and Maintain Tire Wash Area On Pavement Bid Item shall be based on the unit price bid and on the number of tire wash areas installed and maintained as specified above. Progress payments for this Bid Item will be a maximum of 50% of the unit cost bid multiplied by the number of tire wash areas installed on pavement during the pay period as determined by Engineer and/or required by TRPA's Compliance Division. Payment for the maintenance, removal, and disposal of all tire wash areas on pavement will be made in the Final Pay Estimate providing that satisfactory maintenance was performed throughout the duration of the project and removal was completed as specified.

BID ITEM 40 – INSTALL AND MAINTAIN CONCRETE WASH AREA

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install, maintain, remove, and dispose of the concrete wash area in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item includes clearing and grubbing, excavation and disposal of excess material, grading, furnishing, installing, maintaining, removing and disposing of the rice straw fiber roll, woven filter fabric, and Class 1 Type A Permeable rock filter.

Attention is directed to Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)," and Section 10-1.10, "Excavation and Grading," of these Special Provisions.

The Concrete Wash Area is a temporary erosion control device or BMP. A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to maintain this temporary erosion control device. A separate \$100 fine will be levied for each time that Contractor, subcontractor, or suppliers do not use the concrete wash out and wash out in a location that has not been approved.

Payment for Install and Maintain Concrete Wash Area Bid Item shall be based on the unit price bid and on the number of concrete wash areas installed and maintained as specified above. Progress payments for this Bid Item will be a maximum of 50% of the unit cost bid multiplied by the number of concrete wash areas installed during the pay period as determined by Engineer and/or required by TRPA's Compliance Division. Payment for the maintenance, removal, and disposal of all concrete wash areas will be made in the Final Pay Estimate providing that satisfactory maintenance was performed throughout the duration of the project and removal was completed as specified.

BID ITEM 41 – INSTALL AND MAINTAIN STAGING AREA

Work under this item shall consist of furnishing all labor, tools, equipment and material necessary to install, maintain, remove, and dispose of the staging area in accordance with the Plans, the Standard Specifications, and these Special Provisions.

Attention is directed to Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)," and Section 10-1.10, "Excavation and Grading," of these Special Provisions.

The Staging Area is a temporary erosion control device or BMP. A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to maintain this temporary erosion control device.

Payment for Install and Maintain Staging Area Bid Item shall be based on the unit price bid and on the number of staging areas installed and maintained as specified above. Progress payments for this Bid Item will be a maximum of 50% of the unit cost bid multiplied by the number of staging areas installed during the pay period as determined by the Engineer and/or required by TRPA's Compliance Division. Payment for the maintenance, of all staging areas will be made in the Final Pay Estimate providing that satisfactory

maintenance was performed throughout the duration of the project and removal was completed as specified above.

BID ITEM 42 – TREE REMOVAL

Work under this item shall consist of furnishing all labor, tools, equipment and materials necessary for the removal and disposal of trees equal to or greater than 6" and less than 30" in diameter, measured at an elevation of five feet above the existing ground surface adjacent to the tree. Trees equal to or greater than 6" and less than 30" in diameter to be removed are shown on the Plans and will be marked in the field by the Engineer.

Compensation for the removal of trees less than 6" in diameter, as necessary for construction of the various items of work as staked by the Engineer, shall be included in the unit prices paid for the various items of work as part of clearing and grubbing and no additional compensation shall be made therefor.

Attention is directed to Section 10-1.07, "Clearing and Grubbing," and Section 10-1.27, "Timber Removal Practices," of these Special Provisions.

Payment for Tree Removal Bid Item shall be based on the unit price bid and the number of trees equal to or larger than 6" in diameter and less than 30" in diameter removed as specified.

BID ITEM 43 – EARTHWORK – BRIDGE (F)

Work under this item shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in the excavation and backfill for the construction of the Bike Path Bridge including bridge abutments in accordance with the Plans, Standard Specifications, and these Special Provisions.

As noted by (F) in the bid schedule, the quantity shown in the bid schedule shall be the final pay quantity.

Contractor's attention is directed to Section 10-1.10, "Excavation and Grading," of these Special Provisions.

Payment for Earthwork – Bridge Bid Item (F) shall be based on the unit price bid and on the number of cubic yards of excavation shown in the bid schedule as specified above.

BID ITEM 44 – PRECAST & PRESTRESSED CONCRETE PILES

Work under this item shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in the furnishing and driving of Precast & Prestressed Concrete Piles in accordance with the Plans, Standard Specifications, and these Special Provisions.

Contractor's attention is directed to Section 4-1.03, "Contractor Submittals," and Section 10-1.19, "Concrete Structures," of these Special Provisions.

Payment for Precast & Prestressed Concrete Piles Bid Item shall be based on the unit price bid and on the number of linear feet of piles installed as specified above.

BID ITEM 45 – STRUCTURAL CONCRETE - BRIDGE

Work under this item consists of furnishing all labor, tools, materials, and equipment necessary to place concrete for the bike path bridge including bents and abutments in accordance with the Plans, the Standard Specifications, and these Special Provisions. Work under this item consists of excavation, disposal of excess material, scarifying and compaction of subgrade, concrete, its forming, placing, furnishing and placing reinforcing steel, backfill and compaction, removal and placement of existing rock slope protection and the installation of expansion joints.

Concrete, reinforcing steel and expansion joint material shall be in accordance with Section 10-1.19, "Concrete Structures," of these Special Provisions. Attention is directed to Section 10-1.26, "Shoring and Excavation Plan," and Section 10-1.20, "Dewatering," of these Special Provisions.

Work under this item also includes painting of all exposed concrete surfaces. Attention is directed to Section 10-1.19, "Prepare and Paint Concrete Surfaces."

Payment for Structural Concrete - Bridge Bid Item shall be based on the unit price bid number and on the cubic yards of concrete installed as specified above.

BID ITEM 46 – PRE-FABRICATED STEEL TRUSS

Work under this item shall include full compensation for furnishing all labor, materials, tools, and equipment, necessary to install the Prefabricated Steel Truss in accordance with the Plans, the Standard Specifications, and these Special Provisions. The work includes furnishing the bridge design calculations, shop drawings and certifications, installation plan, prefabricating, transporting, delivery, unloading, staging/storing, and installing the bridge. The work under this item also includes furnishing all labor, tools, material, and equipment necessary to access the site such that the minimum disturbance is created in installing the items associated with this Bid Item. The crane used for the installation of the bike path bridge shall be truck-mounted. Equipment used for unloading and placing the bridge in the staging area shall be low ground pressure equipment or, as an alternative, Contractor shall use landing mats to minimize over-compaction. Contractor shall place landing mats with cribbing under each outrigger or other suitable means that maintains the allowable outrigger load. Contractor shall submit a plan for load spreading for the crane in accordance with Section 4-1.03, "Contractor Submittals," of these Special Provisions within ten (10) working days of the use of the crane.

Contractor's attention is directed to Section 4-1.03, "Contractor Submittals," and Section 10-1.29, "Pre-Fabricated Steel Truss," of these Special Provisions.

Payment for Pre-Fabricated Steel Truss Bid Item shall be made at the lump sum price bid, with no additional compensation therefor.

BID ITEM 47 – MISCELLANEOUS GRADING

Work under this item shall consist of providing all labor, tools, materials, and equipment necessary to perform grading as directed by Engineer. Grading includes excavation, fill, compaction, disposal of excess material in accordance with Section 10-1.10, "Excavation and Grading," of these Special Provisions, and scarifying and compaction of subgrade.

Work under this item is separate from excavation, fill, compaction, disposal of excess material, and scarifying and compacting of subgrade required within other items of work in these Special Provisions.

Measurement for payment under this item shall be based on the number of cubic yards of soil excavated or the number of cubic yards of soil placed and compacted as shown on the Plans. If miscellaneous grading is required but not shown and quantified on the Plans, the payment quantity shall be mutually agreed upon by Engineer and Contractor. The quantity shown on the bid item is approximate and may be reduced to the total of the amounts noted above or may be increased. The increase or reduction of this quantity compared with that set forth in the bid schedule shall not constitute a basis for a claim by Contractor for extra payment or damages and Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications shall not apply.

Attention is directed to Section 10-1.10, "Excavation and Grading," regarding compaction requirements.

Payment for Miscellaneous Grading Bid Item shall be based on the unit price bid and on the number of cubic yards of soil excavated or placed and compacted as quantified on the Plans and/or as determined by mutual agreement between Engineer and Contractor.

BID ITEM 48 – SHORING, BRACING OR SLOPING THE SIDES OF TRENCHES GREATER THAN FIVE FEET DEEP

Work under this item shall consist of furnishing all labor, tools, equipment, and materials necessary for shoring and installing bracing or sloping the sides of trenches greater than five feet deep in accordance with the Plans, the Standard Specifications, and these Special Provisions. All trenches greater than five feet deep shall be shored/braced in lieu of laying back the slopes of the excavation.

Attention is directed to Section 10-1.10, "Excavation and Grading," Section 10-1.20, "Dewatering," and Section 10-1.26, "Shoring and Excavation Plan," of these Special Provisions. If Section 10-1.26, "Shoring and Excavation Plan," requires shoring and Contractor doesn't do it, no payment will be made under this item.

Payment for Shoring, Bracing or Sloping the Sides of Trenches Greater than Five Feet Deep Bid Item shall be based on the lump sum price bid as specified above. Partial payments for shoring, bracing or sloping the sides of trenches greater than five feet deep will be made based on the percentage of work completed as determined by Engineer and based on locations where shoring is actually used compared to where required to be used.

BID ITEM 49 – WINTERIZATION

Work under this item shall consist of developing a winterization plan for the Engineer's review and approval; and furnishing all labor, tools, equipment, and materials necessary to maintain the winterization measures within the approved plan as required by the Plans (Sheets EC-01 and EC-02), these Special Provisions (Section 10-1.24, "Temporary Erosion Control And Storm Water Pollution Prevention Plan (SWPPP)"), and the approved SWPPP during the winterization timeframe from October 15, 2008 to May 1, 2009. Maintenance shall be in accordance with Section 10-1.24 "Temporary Erosion Control and Storm Water Pollution Prevention Plan (SWPPP)" of these Special Provisions. Work under this item also includes demobilization of the equipment needed to complete the remaining work in the 2009 construction season and remobilization of the equipment and materials necessary to complete the remaining work in the 2009 construction season. Payment for this item of work constitutes full and final compensation for all direct and indirect costs of performing the work required herein, inclusive of all profit, extended or unabsorbed home or field office overhead, bond and insurance premiums, escalation costs, and any other costs associated with carrying the project through the winter for completion during the 2009 construction season.

Any grading work started (i.e., soil disturbance) must be winterized by October 15 unless County is able to obtain an extension to the grading deadline from both TRPA and Lahontan. If grading extensions are not granted, County will notify the Contractor five (5) working days prior to October 15, 2008 with a written suspension of work notice related to the grading activities only and a request to develop the winterization plan for submittal to the Engineer within two (2) days of receipt of the written suspension of work notice for review and approval. The Engineer shall review the Contractor's winterization plan and respond to the Contractor with any revisions to the plan within two (2) working days. Upon receipt of the required revisions, the Contractor shall have two (2) working days to re-submit for final Engineer's approval and written notice to proceed with the work described within the approved plan.

Attention is direction to Section 4, "Beginning of Work and Time of Completion," Section 10-1.01, "Order of Work," and Bid Items 6 "**Install and Maintain Type 2 Filter Fence**" and 7 "**Install and Maintain Type 3 Filter Fence**" of these Special Provisions.

Attention is also directed to Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications with respect to temporary suspension of work.

A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to maintain the temporary erosion control devices within the approved winterization plan.

If the Engineer requires work beyond that described herein, the Engineer will negotiate a Contract Change order with the Contractor for this extra work.

The lump sum amount bid shall include maintaining the following temporary BMPs which are within the approved SWPPP and which shall be the minimum required BMPs within the Contractor's winterization plan:

- 1903 Linear Feet of Type 2 Filter Fence
- 40 Linear Feet of Type 3 Filter Fence

Payment for Winterization Bid Item shall be based on the lump sum price bid for the work as specified above. Should Contractor complete the Project in accordance with Section 5-1.32 "Final Inspection" of these Special

Provisions prior to October 15, 2008, or such other extended deadline as may be allowed by TRPA and Lahontan, this item of work shall not be required and no compensation will be provided therefor.

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.

Contractor shall schedule work to reduce the need for dewatering by working on the drier areas of the project first.

As described in Section 4-1.02A, "Commencement of Work Requirements," Contractor shall install temporary erosion control.

Temporary Railing (Type K) and temporary crash cushions shall be secured in place prior to commencing work for which the temporary railing and crash cushions are required.

Contractor's attention is directed to Section 10-1.04, "Traffic Control Plan," of these Special Provisions for the traffic control requirements in the Caltrans' right-of-way that may affect the order in which the work is performed.

Any work started (i.e., soil disturbance) must be winterized by October 15 unless County is able to obtain an extension to the grading deadline from both TRPA and Lahontan.

Contractor shall implement the following sequence of work for the project:

- Place the order for the pre-fabricated steel truss. Contractor shall furnish the Engineer with a statement from the vendor that the order for the pre-fabricated steel truss has been received and accepted by the vendor;
- All AC paving must be complete by October 31, 2008.

Attention is directed to Section 5-1.19, "Public Safety," of these Special Provisions.

10-1.02 NOT USED

10-1.03 MAINTAINING TRAFFIC

Attention is directed to Section 7, "Legal Relations and Responsibility," and Section 12, "Construction Area traffic Control Devices," of the Standard Specifications, Section 5-1.19, "Public Safety," and Section 10-1.01, "Order of Work," and these Special Provisions.

Traffic Control Requirements will be strictly enforced. Any violation of such requirements is justification for Engineer to stop work until requirements are met.

When entering or leaving roadways carrying public traffic, Contractor's equipment, whether empty or loaded shall in all cases yield to public traffic.

When work is in progress on Sawmill Road a minimum of one 10-foot lane shall be opened to public traffic at all times. Access by Contractor to Project via the Golf Course including the Golf Course Driveway will not be allowed.

Equipment actively engaged in construction shall be confined to the work corridor marked by delineators spaced at 30-foot intervals, and will not be allowed to travel or encroach upon the travel lane(s) used to convey local traffic through the project, unless traffic is controlled by an adequate number of flaggers.

When traffic cones or delineators are used to delineate a temporary edge of travel lane, the line of cones or delineators shall be considered to be the edge of travel lane, however, Contractor shall not reduce the width of the travel lane to less than 10 feet within County right-of-way without written approval from Engineer.

When work is not in progress on a trench or other excavation that requires reduction or closure of the travel lane, the traffic cones or portable delineators used for the travel lane reduction or closure shall be placed off of and adjacent to the edge of the traveled way. The spacing of the cones or delineators shall be not more than the spacing used for the lane closure.

Personal vehicles of Contractor's employees shall not be parked within the construction limits at any time. Contractor shall make its own arrangements relative to keeping the work area clear of parked vehicles, whether belonging to its employees or to private individuals.

Construction area signs shall not be used until they are needed and when no longer needed they shall become the property of Contractor and shall be removed from the site of the work.

The seventh paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications shall be amended to read as follows:

Contractor shall clean all construction area sign panels at the time of installation and as often thereafter as Engineer determines to be necessary, but at least once every month.

Signs damaged by any cause shall be repaired or, if determined by Engineer to be irreparable, replaced by Contractor at its expense.

All construction area signs shall conform to the dimensions, color, legends, and reflectorization or lighting requirements of the Plans, the California Manual on Uniform Traffic Control Devices (FHWA's MUTCD 2003 Revision 1, as amended for use in California), also called the California MUTCD, and these Special Provisions. All sign panels shall be the product of a commercial sign manufacturer, but need not be new. Used sign panels, in good repair may be furnished with Engineer's approval.

Except as otherwise shown on the Plans, construction area signs shall be stationary signs or portable signs. Construction area signs shall be erected at the locations shown on the Plans or in Contractor's Traffic/Detour Plan approved by Engineer.

Stationary signs shall conform to Section 12-3.06A, "Stationary Mounted Signs," of the Standard Specifications with the following additions:

Stationary signs that are shown on the Plans or described in these Special Provisions, or as directed for placement by Engineer, shall be attached to 4" x 4" wood posts with 5/16" galvanized carriage bolts and washers. The posts shall be securely set a minimum of 30" in the ground and such that the bottom of the signs will be five (5) feet above the pavement.

Sign panels for stationary mounted signs shall consist of high quality reflective sheeting applied to a base of aluminum or plywood in conformance with the following:

Base material shall be exterior grade plywood not less than 3/8" thick, or sheet aluminum not less than 0.063" thick for widths up to 42" and not less than 0.080" thick for widths of 48" or greater.

Portable signs shall conform to the provisions of Section 12-3.06B, "Portable Signs," of the Standard Specifications except the third paragraph shall be amended to read: "The sign standard or framework shall be capable of supporting the size of the sign specified."

The fact that rain or other causes, either within or beyond the control of Contractor, forces delay of the work, shall in no way relieve Contractor of its responsibility for maintaining traffic through the project as specified herein. Contractor shall at all times keep on the job such material, force, equipment as may be necessary to keep the road within the project open to traffic and in good repair, and shall expedite the passage of traffic using such labor and equipment as may be necessary.

The term "Construction Area Signs" shall include all temporary signs required for the direction of local traffic through or around the work during construction. Such signs are shown in or referred to in the California Manual on Uniform Traffic Control Devices (FHWA's MUTCD 2003 Revision 1, as amended for use in California), also called the California MUTCD - Warning Signs, Lights, and Devices for use in Performance of Work Upon Highways, hereinafter referred to as California MUTCD.

Construction Area Signs shall conform to Section 12-3.06, "Construction Area Signs," of the Standard Specifications with the following additions and amendments:

Contractor shall furnish all sign panels, posts and hardware, and shall erect, maintain, and remove all construction area signs shown on the Plans as provided in these Special Provisions.

Traffic cones shall conform to the provisions of Section 12-3.10, "Traffic Cones," of the Standard Specifications.

In lieu of the provisions in Section 7-1.08, "Public Convenience," Section 7-1.09, "Public Safety," and Section 12-2.02, "Flagging Costs," of the Standard Specifications, Contractor shall bear the entire cost of furnishing flaggers and furnishing, installing, maintaining, and removing signs, lights, flares, barricades, delineators, and other warning and safety devices.

Full compensation for providing signs, covering and uncovering signs, lights, flares, traffic cones, flaggers, delineators, barricades, warning and safety devices shall be made under the lump sum bid item "Traffic Control."

10-1.04 TRAFFIC CONTROL PLAN

Traffic Control Procedures on County roads shall conform generally to Caltrans Standard Plans, the California MUTCD, and these Special Provisions.

Contractor's Traffic Control Plan shall include detailed controls, including flaggers, lane closures and signs, detours and signs, as applicable, road closures and signs, as applicable, for all items of road work which will require alteration of existing traffic patterns. Contractor's Traffic Control Plan shall include all signing required on intersecting streets within the area that will require traffic control, including signage on Highway 50 or Sawmill Road for traffic control related to trucks entering Highway 50 or Sawmill Road from the Project.

The Caltrans Encroachment Permit specifies that a pre-job meeting is required to discuss the work and traffic control. Daytime lane closures are not authorized from July 1 through the Tuesday after Labor Day. There shall be no work after 12:00 Noon on Friday or the day proceeding a holiday. Weekend and holiday work is not authorized. A minimum of seven (7) working days notice is required for any work involving lane closures. Work shall not be performed in fog or inclement weather.

Contractor's Traffic Control Plan shall include details for signing and controls during pile driving operations, retaining wall construction, bent and abutment construction, and bridge staging and placement.

Contractor's Traffic Control Plan shall conform to the provisions of Section 5-1.19, "Public Safety," Section 10-1.01, "Order of Work," and Section 10-1.03, "Maintaining Traffic," of these Special Provisions and the California MUTCD as well as applicable requirements in the Caltrans Encroachment Permit.

Submittal of Contractor's Traffic Control Plan shall conform to Section 4-1.03, "Contractor Submittals," of these Special Provisions. No work that requires traffic control shall be commenced until the Traffic Control Plan is approved by Engineer. Any violation of the Traffic Control requirements is justification for Engineer to stop work until the requirements are met.

The costs associated with the requirements outlined in this section shall be included in the Bid Item "Traffic Control" and no additional compensation will be made therefor.

10-1.05 TEMPORARY CRASH CUSHION MODULE

This work shall consist of furnishing, installing, and maintaining sand filled temporary crash cushion modules in groupings or arrays at each location shown on the plans, as specified in these Special Provisions or where designated by the Engineer. The grouping or array of sand filled modules shall form a complete sand filled temporary crash cushion in conformance with the details shown on the plans and these Special Provisions.

Attention is directed to Section 5-1.19, "Public Safety," Section 10-1.01, "Order of Work," Bid Items "Temporary Railing (Type K)" and "Temporary Crash Cushion (Array TS14)" of these Special Provisions.

Whenever the work or Contractor's operations establishes a fixed obstacle, the exposed fixed obstacle shall be protected with a sand filled temporary crash cushion. The sand filled temporary crash cushion shall be in place prior to opening the lanes adjacent to the fixed obstacle to public traffic.

Sand filled temporary crash cushions shall be maintained in place at each location, including times when work is not actively in progress. Sand filled temporary crash cushions may be removed during a work period for access to the work provided that the exposed fixed obstacle is 15 feet or more from a lane carrying public traffic and the temporary crash cushion is reset to protect the obstacle prior to the end of the work period in which the fixed obstacle was exposed. When no longer required, as determined by the Engineer, sand filled temporary crash cushions shall be removed from the site of the work.

At Contractor's option, the modules for use in sand filled temporary crash cushions shall be either Energite III Inertial Modules, Fitch Inertial Modules or Traffix Sand Barrels manufactured after March 31, 1997, or equal:

1. Energite III and Fitch Inertial Modules, manufactured by Energy Absorption Systems, Inc., 35 East Wacker Drive, Suite 1100, Chicago, IL 60601:
 - 1.1. Northern California: Traffic Control Service, Inc., 8585 Thys Court, Sacramento, CA 95828, telephone (800) 884-8274, FAX (916) 387-9734
 - 1.2. Southern California: Traffic Control Service, Inc., 1818 E. Orangethorpe, Fullerton, CA 92831-5324, telephone (800) 222-8274, FAX (714) 526-9501
2. Traffix Sand Barrels, manufactured by Traffix Devices, Inc., 220 Calle Pintoresco, San Clemente, CA 92672, telephone (949) 361-5663, FAX (949) 361-9205
 - 2.1. Northern California: United Rentals, Inc., 1533 Berger Drive, San Jose, CA 95112, telephone (408) 287-4303, FAX (408) 287-1929
 - 2.2. Southern California: Statewide Safety & Sign, Inc., P.O. Box 1440, Pismo Beach, CA 93448, telephone (800) 559-7080, FAX (805) 929-5786

Modules contained in each temporary crash cushion shall be of the same type at each location. The color of the modules shall be the standard yellow color, as furnished by the vendor, with black lids. The modules shall exhibit good workmanship free from structural flaws and objectionable surface defects. The modules need not be new. Good used undamaged modules conforming to color and quality of the types specified herein may be utilized. If used Fitch modules requiring a seal are furnished, the top edge of the seal shall be securely fastened to the wall of the module by a continuous strip of heavy duty tape.

Modules shall be filled with sand in conformance with the manufacturer's directions, and to the sand capacity in pounds for each module shown on the plans. Sand for filling the modules shall be clean washed concrete sand of commercial quality. At the time of placing in the modules, the sand shall contain not more than 7 percent water as determined by California Test 226.

Modules damaged due to Contractor's operations shall be repaired immediately by Contractor at Contractor's expense. Modules damaged beyond repair, as determined by the Engineer, due to Contractor's operations shall be removed and replaced by Contractor at Contractor's expense.

Temporary crash cushion modules shall be placed on movable pallets or frames conforming to the dimensions shown on the plans. The pallets or frames shall provide a full bearing base beneath the modules. The modules and supporting pallets or frames shall not be moved by sliding or skidding along the pavement or bridge deck.

A Type R or P marker panel shall be attached to the front of the crash cushion as shown on the plans, when the closest point of the crash cushion array is within 12 feet of the traveled way. The marker panel, when required, shall be firmly fastened to the crash cushion with commercial quality hardware or by other methods determined by the Engineer.

At the completion of the project, temporary crash cushion modules, sand filling, pallets or frames, and marker panels shall become the property of Contractor and shall be removed from the site of the work. Temporary crash cushion modules shall not be installed in the permanent work.

Temporary crash cushion modules placed in conformance with the provisions in Section 5-1.19, "Public Safety," of these Special Provisions will not be measured nor paid for.

Temporary crash cushion modules will be measured by the unit as determined from the actual count of modules used in the work or ordered by Engineer at each location. Temporary crash cushion modules placed in conformance with the provisions in Section 5-1.19, "Public Safety" of these Special Provisions and modules placed in excess of the number specified or shown will not be measured nor paid for.

Repairing modules damaged by public traffic will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications. Modules damaged beyond repair by public traffic, when ordered by the Engineer, shall be removed and replaced immediately by Contractor. Modules replaced due to damage by public traffic will be measured and paid for as temporary crash cushion module.

If Engineer orders a lateral move of the sand filled temporary crash cushions and the repositioning is not shown on the plans, moving the sand filled temporary crash cushion will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications and these temporary crash cushion modules will not be counted for payment in the new position.

The contract unit price paid for temporary crash cushion module shall include full compensation for furnishing all labor, materials (including sand, pallets or frames and marker panels), tools, equipment, and incidentals, and for doing all the work involved in furnishing, installing, maintaining, moving, and resetting during a work period for access to the work, and removing from the site of the work when no longer required (including those damaged by public traffic) sand filled temporary crash cushion modules, complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by Engineer.

10-1.06 NOT USED

10-1.07 CLEARING AND GRUBBING

Construction areas to receive improvements shall be cleared of all logs, upturned stumps, roots of felled trees, brush, grass, weeds, debris, and all other deleterious material. Grubbing in these areas shall consist of removal of all buried roots, stumps, logs, and any foreign objects encountered within a radius of one foot beyond the proposed structure. Areas shall only be cleared and grubbed to the minimum required for installation of improvements as specified.

Contractor's attention is directed to Section 10-1.10, "Excavation and Grading," of these Special Provisions regarding salvaging of topsoil from excavated areas. Removal and disposal of trash, branches, shrubs, and pine cones from the excavated material to be salvaged is included in the clearing and grubbing within the specific improvement bid item.

Combustible material may be chipped on site. The chips will not be needed for use on this project and shall be removed from the site.

Trees shall be removed in such a manner as to cause no damage to the road, existing drainage facilities, adjacent property or utilities, or the public. Contractor shall remove felled logs from site within two weeks of felling. Logs infested with insects shall be covered with clear plastic sheeting and sealed at the ground until the wood is disposed of.

All areas where tree stumps are removed shall be backfilled with native material or other material as applicable to the location of the void relative to the improvements compacted in accordance with Section 10-1.10, "Excavation and Grading," of these Special Provisions, and regraded to match adjacent existing ground elevations. Stumps that interfere with the installation of improvements shall be removed to a depth of 2' below the bottom of the improvement. Stumps shall not be removed in areas that will be graded (e.g. rock-lined channels) until just prior to the beginning of grading to minimize the areas of exposed bare soil.

All activities controlled by Contractor, except cleanup or other required work, shall be confined within County road rights-of-way, the permanent and temporary easements, and construction limits.

Nothing herein shall be construed as relieving Contractor of its responsibility for final cleanup of the construction areas provided in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

All cleared and grubbed, chipped, and waste material shall become the property of Contractor and shall be disposed of outside the Tahoe Basin or at a site approved by all local, state, and federal agencies.

Contractor shall take all necessary precautions to preserve all on-site trees and vegetation not designated for removal. Such precautions shall include placing construction limit fence along the length of the construction limits noted on the Plans. If ordered by Engineer and where noted on the Plans, Contractor shall provide and install suitable safeguards, approved by Engineer, to protect trees and/or vegetation from injury or damage. If trees and/or vegetation are injured or damaged by reason of Contractor's operations, they shall be replaced in kind by Contractor to a condition acceptable to Engineer and at Contractor's expense.

Where roots of live trees are encountered and can't be protected as described in Section 10-1.24, "Temporary Erosion Control and Storm Water Pollution prevention Plan (SWPPP)" of these Special Provisions, and must be removed, all roots larger than 1½" in diameter shall be saw cut, leaving a clean cut. The ends of the remaining root shall be treated with tree seal.

Contractor's attention is directed to Section 10-1.27, "Timber Removal Practices," of these Special Provisions.

Full compensation for all work involved in clearing and grubbing, which includes trees and stumps with a diameter less than 8," shall be considered as included in the compensation for the various contract items of work and no additional compensation will be allowed therefor. Tree removal for trees equal to or greater than 8" diameter measured at a height five above the adjacent ground shall be paid for in accordance with the unit price bid for Bid Item "Tree Removal."

10-1.08 NOT USED

10-1.09 WATERING

Watering shall conform to the provisions in Section 17, "Watering," of the Standard Specifications, except that full compensation for developing a water supply shall be considered as included in the prices paid for the various contract items of work involving the use of water and no separate payment will be made therefor.

No guarantees of an available source of water supply, implied or otherwise, are made by County. It shall be the sole responsibility of Contractor to make all necessary arrangements in order to develop a source of water supply.

10-1.10 EXCAVATING AND GRADING

A. GENERAL

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these Special Provisions. In lieu of the applicable provisions in Section 19-3.08, "Payment," full compensation for excavation, backfill, and pervious material shall be considered included in the contract item prices paid for the applicable items of work. Excavation and grading for erosion control improvements as shown on the Plans shall be considered as a part of the respective erosion control bid item and no additional compensation will be allowed therefor.

If rock is encountered in the bottom of the trenches where culvert, drainage inlets, concrete retaining walls, or bridge abutments are to be placed, Contractor shall immediately notify Engineer so that an assessment of the impact on the design can be made

Where a portion of the existing surfacing is to be removed, the outline of the area to be removed shall be cut on a neat line with a power-driven saw to a minimum depth of 0.17 feet (two inches) before removing the surfacing. Full compensation for cutting the existing surfacing shall be considered as included in the contract price for roadway excavation and no additional compensation will be allowed therefor.

B. COMPACTION

County will, at their expense, provide compaction testing of subgrade to verify that Contractor has achieved the required compaction. Relative compaction will be based on the maximum dry unit weight as determined by ASTM D-1557. Corrections to the Unit Weight for Soil Containing Oversize Particles will be made in accordance with ASTM 4718.

Compaction testing will be performed on subgrade (where applicable), aggregate base, fill, backfill, topsoil, and where applicable, permeable material. Contractor shall provide a 24-hour notice to Engineer stating when Contractor will be completed with an operation that requires compaction testing to allow Engineer time to schedule testing before Contractor begins with the next operation. County will make every effort to collect native samples and to provide moisture-density curves in a timely manner. However, should Contractor choose to proceed with the work before compaction criteria for native soil or fill material can be verified, he assumes the risk of having to remove this work at its expense if subgrade compaction is later found to be inadequate. Subgrade that exhibits pumping will not be accepted.

All compaction shall be accomplished with mechanical compaction. Fill or backfill that exhibits pumping will not be accepted.

All areas where asphalt concrete, Portland Cement Concrete, aggregate base, Class 1 Types A and B permeable material, fill, backfill, or No. 1 rock backing is to be placed over native material, the native material shall be scarified a minimum of 6 inches, thoroughly mixed with water to the optimum moisture for compaction, and compacted to a minimum of 90% relative compaction prior to placement of fill or other material unless noted otherwise on the Plans.

All fill and backfill using native material or excess excavated material shall be thoroughly mixed with water to the optimum moisture for compaction. Lift thickness shall be a maximum of 8" thick, loose, prior to compaction. Unless otherwise specified, all fill and backfill placed shall be compacted to a minimum relative compaction of 90%. These provisions also apply to imported fill or backfill if it is necessary.

Native backfill at drainage inlets and culverts shall be compacted to a minimum of 90% relative compaction.

All Class 2 aggregate base to be placed over native material or for pipe backfill as applicable, culvert removal backfill, rock removal backfill, and stump removal backfill shall be compacted to a minimum of 95% relative compaction.

Class 1 Types A and B permeable material to be placed over native material shall be compacted to a minimum of 90% relative compaction. Compaction of permeable material shall be verified by an established method agreed upon by Engineer and Contractor.

The void created by stump removal, DI removal, culvert removal, overslope drain removal, or rock removal shall be filled with native material and compacted to a minimum of 90% relative compaction if such backfill

material is consistent with the required backfill for the location of the void. The void resulting from the removal of unsuitable material shall be backfilled with Class 1 Type A permeable material and compacted to a minimum relative compaction of 95%, except if unsuitable material is overexcavated. In this case 85% minimum and 90% maximum relative compaction will be required.

The mixture of salvaged topsoil and humus (i.e. topsoil mix) shall be compacted to a minimum of 85% relative compaction and a maximum of 90% relative compaction. Compaction of topsoil mix shall be verified by an established method agreed upon by Engineer and Contractor.

All costs associated with compaction shall be included in the various items of work and no additional compensation will be made therefor.

All structure excavation and backfill for the bridge foundations and retaining walls shall conform to Section 19, "Earthwork," of the Standard Specifications.

Compaction Requirements at Storm Drain Pipe

General

Where rock is encountered at the bottom of the trench where the solid wall pipe is to be laid such that a point load is created by the rock, the rock shall be removed to a depth of 6" below the trench bottom. The 6" shall be backfilled with native material that meets the specifications defined in the Excess Material section below and compacted to 90% relative compaction. The costs associated with the rock removal and disposal shall be included in the applicable in the unit price bid item for the respective bid items with no additional compensation therefor.

Pipe bedding for solid wall pipe shall be defined as the area of backfill from the bottom of the pipe to a depth of 12" above the top of the pipe. The material between the top of the bedding and the finished surface shall be defined as backfill. For pipe under pavement, cover is defined as the distance between the top of the pipe and the finished surface of the proposed AC paving. For pipe out of pavement, cover is defined as the distance between the top of the pipe and the top of the pipe trench.

Solid wall pipe bedding and solid wall backfill (other than cement slurry) shall be native material, as described in Excess Materials below, from the area excavated within the pipe trench. Perforated pipe backfill shall be as specified in the applicable bid items.

Where native backfill is specified for pipes:

For areas where pipe is under AC or Portland Cement Concrete:

The pipe bedding for solid wall pipe shall be compacted to a minimum of 85% relative compaction. The area above the bedding but below the aggregate base shall be compacted to 90% relative compaction. Class 2 aggregate base shall be compacted to 95% relative compaction.

For pipe not under AC or Portland cement concrete

The pipe bedding for solid wall pipe shall be compacted to 85% relative compaction with the area between the bedding and topsoil layer compacted to 90%. The topsoil layer shall be mounded over the top of the pipe as shown on the Plans and compacted to 85% minimum and 90% maximum relative compaction.

The minimum cover for pipe not under AC or Portland cement concrete shall be 12". Bedding and backfill for solid wall pipe shall be native material from the area excavated within the pipe trench and shall conform to the Excess Material section of these Special Provisions.

All costs associated with compaction shall be included in the various items of work and no additional compensations shall be made.

C. EXCESS MATERIAL, TOPSOIL, MULCH, HUMUS, AND TACKIFIER

1. CUT, FILL, TOPSOIL, TOPSOIL MIX, MULCH, & HUMUS VOLUMES

The following quantities have been calculated from the cross sections attached to the Plans and from the topographic information shown on the Plans. The volumes shown are "raw" meaning that neither shrinkage, subsidence, nor bulking have been taken into account. It is assumed for the quantities shown that no rock was encountered. It is Contractor's responsibility to review these quantities and apply the necessary factors to determine the volume of import material necessary (or if it is necessary).

EARTHWORK SUMMARY BY IMPROVEMENT

ALL VOLUMES ARE IN CY	CUT	FILL	STRUCTURE EXCAVATION	STRUCTURE BACKFILL	TOPSOIL SALVAGED	HUMUS FOR MIXTURE W/ TOPSOIL	TOPSOIL MIX PLACEMENT	MULCH
Bike Path	230	625			85.5	31	125	43
Rock Bowls/ Rock Dissipator, Rock Lined Ditch	44				3	1		
Culverts	13				2			
Retaining Walls			240	260	3	1		
Bridge Abutments			170	100	1			
Misc. fence foundation or bollard footings					0.5			
Existing Dirt Path					0	51	87	26
TOTAL	287	625	410	360	95	84	125	69

Importing of material (other than humus, mulch, and tackifier) or disposal of excess material shall be included in Contractor's bid for the various items of work and no additional compensation will be made therefor.

Any material excavated on site **shall** be used for fill, backfill, or topsoil mix (where necessary and as specified herein) and shall contain be less than 2% by volume non-decomposed organic material and material no larger than 1½" in the largest dimension and shall contain no asphalt concrete.

2. TOPSOIL

Salvage

After removal and disposal of pine cones, branches, trash, and other large debris (i.e. clearing and grubbing), Contractor shall excavate and stockpile an average of the top 1.5" of native soil and undecomposed plant material from the following areas:

- Bike Path;
- Culverts;
- Rock-lined ditches; and
- Retaining Walls.

The stockpiled, excavated material will be mixed in a ratio of 3:1 (salvaged material to humus) with humus at the project site to create the topsoil mix. The humus shall conform to the provisions of 10-1.10D of this section. Compaction of the topsoil mix shall be in accordance with 10-1.10B of this section.

Mixture, Placement, and Compaction

Contractor shall place and compact the topsoil mix (3" compacted thickness) as described in Section 10-1.22, "Disturbance and Revegetation," of these Special Provisions and on Plan Sheets T-03 and R-02 of the Plans for Revegetation Type SM.

Humus shall be mixed with salvaged topsoil in a ratio of 3:1 (salvaged topsoil to humus) to create topsoil mix. Humus and salvaged soil must be mixed together in a separate stockpile. Mixing of these materials in place at the locations the top soil mix will be placed will not be acceptable. The costs associated with salvaging and stockpiling topsoil, mixing the topsoil with humus, and placing and compacting the topsoil mix shall be included in the various items of work requiring topsoil and no additional compensation will be made therefor.

3. MULCH

Contractor shall apply 1" mulch as described in Section 10-1.22, "Disturbance and Revegetation," of these Special Provisions and Sheet R-02 of the Plans. Mulch and its application shall conform to 10-1.10D of this section.

The cost associated with furnishing and applying mulch shall be included in the unit price bid for the applicable Revegetation bid items.

4. HUMUS

Contractor shall apply 1" humus as described in Section 10-1.22, "Disturbance and Revegetation," of these Special Provisions and Sheet R-02 of the Plans. Humus and its application shall conform to 10-1.10D of this section.

The cost associated with furnishing and applying mulch shall be included in the unit price bid for the Bid Item "Revegetation – Type SM."

5. TACKIFIER

Contractor shall apply tackifier to all areas that have been mulched. Tackifier and its application shall conform to 10-1.10D of this section.

The cost associated with furnishing and applying tackifier shall be included in the unit price bid for the applicable Revegetation bid items.

6. DISPOSAL OF EXCESS MATERIAL

Asphalt, Concrete, and Wood Fence

Asphalt concrete (e.g. pavement and dike), Portland cement concrete and wood fence removed from any portion of the project shall be disposed of by Contractor at its expense and shall be disposed of outside of the Lake Tahoe Basin. AC, concrete, and wood may be disposed of in the Lake Tahoe Basin provided Contractor obtains and submits written approval from all applicable state, local, and federal agencies.

Soil & Rock

Section 19-2.06, "Surplus Material," of the Standard Specifications is amended to read as follows:

Surplus excavated materials from any portion of the project, if suitable according to the provisions of these Specifications and the Plans, shall be used to balance material deficiencies in any other portion of the work. **As the excavation for an item of work progresses, the excess excavated material shall not be stockpiled adjacent to where it was excavated unless the area is an approved storage area.** The excess excavated material shall be removed as it is excavated from the site of the excavation for stockpiling in an approved staging area or for use as fill or backfill in an applicable item of work.

Excess material that can not be reused on site shall be defined as unsuitable material; or material that is removed from temporary erosion control devices and the sweeper in satisfying the maintenance of these devices; or material that is larger than 1½" in the largest dimension, but doesn't meet the rock specifications outlined in these Special Provisions; or material that has less than 2% by volume non-decomposed organic matter and contains material no larger than 1½" in the largest dimension, but is in excess of what is needed for fill or backfill for the proposed improvements. Any excess or unsuitable material shall be disposed of by Contractor at its own expense and shall be disposed **outside of the Lake Tahoe Basin**. Materials may be disposed of in the Lake Tahoe Basin providing Contractor obtains and submits to County written approval from all applicable state, local, and federal agencies. At no time shall excess material be disposed of or stockpiled in such a way as to allow erosion of the material or to pose a threat of adverse water quality impact. The costs associated with stockpiling, disposing of, or reusing excess material are included in the applicable bid items with no additional compensation therefor.

D. MATERIALS

1. Permeable Material

Class 1 Type A ¾" and Class 1 Type B 1-1/2" permeable material shall conform to the following requirements:

Class 1 Type A ¾"	
Sieve Sizes	Percent Passing
1"	100
¾"	90
½"	59
⅜"	39
No. 4	2
No. 10	2

Class 1 Type B 1-1/2"	
Sieve Sizes	Percent Passing
1-1/2"	100
1-1/4"	88
1"	24
¾"	9
½"	7
⅜"	4

2. Imported Fill or Backfill

If required, imported fill or backfill shall be a silty sand material designated by SM in the Unified Soil Classification System (USCS).

Should such imported material be required, Contractor shall notify Engineer of the borrow site location 72 hours before Contractor plans to pick-up the material so Engineer can verify the suitability of the material.

3. Humus

Humus shall consist of an amendment that shall be the result of an aerobic composting process maintaining temperatures greater than 135°F and less than 165°F, for a minimum of 10 days. Nitrogen introduction shall be derived from dairy manure. The compost feedstock must consist of a minimum of 50% by volume indigenous forest vegetation from the Lake Tahoe Basin. The humus shall be 50% Humus Fines (⅜" minus) and 50% wood over (⅜" to 3"). Full Circle Compost (Humus is called "Integrated 50%") and Bently Agridynamics, both in Minden, Nevada, produce a humus that satisfies these requirements.

Contractor shall notify Engineer of the proposed location of the source of imported humus 72 hours before Contractor plans to pick-up the material so Engineer can verify the suitability of the material. Contractor shall submit written certification that the humus is weed free.

Humus shall be mixed with salvaged topsoil in a ratio of 3:1 (salvaged topsoil to humus) to create topsoil mix.

Humus on slopes to be revegetated shall be applied by means of a pneumatic conveying system capable of blowing the humus at rates between 10 and 15 cubic yards per hour and shall be capable of

blowing the humus a distance of 300 feet as necessary to access slopes. The conveying equipment shall have a self- contained dust suppression system.

4. Mulch

Material shall be the result of an aerobic composting process maintaining temperatures greater than 135 degrees Fahrenheit and less than 165 degrees Fahrenheit for a minimum of 10 days. Nitrogen introduction shall be derived from dairy manure. The compost feedstock must consist of a minimum of 50% by volume indigenous forest vegetation from the Lake Tahoe Basin. The resulting finished compost shall consist of 75% wood "overs" (from 3/8" to 3" in size) and 25% humus (fines) (3/8" minus). Full Circle Compost (Mulch is called "Integrated 25%") and Bently Agridynamics, both in Minden, Nevada, produce a mulch that satisfies these requirements.

Mulch shall be applied by means of a pneumatic conveying system capable of blowing the mulch at rates between 10 and 15 cubic yards per hour and shall be capable of blowing the mulch a distance of 300 feet as necessary to access slopes. The conveying equipment shall have a self- contained dust suppression system.

Contractor shall submit written certification that the mulch is weed free.

5. Tackifier

Tackifier shall include wood-cellulose fiber mulch. The term "tackifier" used in these Special Provisions shall mean tackifier with wood-cellulose fiber mulch. The Tackifier material shall be of an organic, plant-derived substance containing psyllium, guar gum, cornstarch such as PT-TAC, Reclamare 2400, M-Binder, Eco-tak, Fisch-Stick, or approved equal. Material shall form a transparent 3-dimensional film-like crust permeable to water and air and containing no agents toxic to seed germination. Mulch shall consist of degradable green-dyed wood-cellulose fiber or 100%-recycled long-fiber pulp (recycled newspaper), free from weeds or other foreign matter toxic to seed germination.

Mulch shall be anchored with tackifier within 48 hrs. of application. A hydroseeder with a paddle wheel agitator shall be used to evenly apply the tackifier mixture at the following rates under suspension unless otherwise approved. Contractor shall apply tackifier to all areas where mulch has been applied. The Tackifier shall be mixed and applied in accordance with the following:

Wood-cellulose fiber mulch:	500 lbs/acre
Tackifier:	130 lbs/acre
Water:	As needed

Tackifiers shall be applied using a commercial hydraulic mulcher with a built-in agitation system that has sufficient capacity to agitate, suspend, homogenize, and apply materials (at indicated rates) specified for hydraulic application in this section of the Special Provisions.

Information regarding mulching and humus blowing and tackifier application equipment that Contractor proposes to use for this project shall be presented for review and approval by Engineer no later than 10 days prior to the proposed use. Hydraulic/Pneumatic applications of humus, mulch, and tackifier shall not be conducted during windy conditions (greater than 8mph) to insure uniform application and proper placement of these materials at specified rates. To facilitate proper placement of these materials, applications shall consist of a continuous operation where each treatment follows the preceding as specified above. Specified materials shall be applied to individual identified areas within a single seeding work shift. Under no circumstances shall any one application be completed independent of completion of the others.

10-1.11 NOT USED

10-1.12 AGGREGATE BASE, CLASS 2

Aggregate base shall be Class 2 in conformance with the provisions in Section 26, "Aggregate Base," of the Standard Specifications and the amendments thereto.

In lieu of the second sentence in the second paragraph in Section 26-1.02A, "Class 2 Aggregate Base," of the Standard Specifications, the grading shall be for 3/4" maximum.

County will, at their expense, provide compaction testing of Class 2 Aggregate Base to verify that Contractor has achieved the specified compaction. Relative compaction will be based on the maximum dry unit weight as determined by ASTM D-1557. Corrections to the Unit Weight for containing oversize particles will be made in accordance with ASTM 4718. Any areas of Class 2 Aggregate Base that are pumping will not be acceptable.

10-1.13 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.

1. RECONSTRUCT METAL BEAM GUARD RAILING

Existing metal beam guard railing, where shown on the plans to be reconstructed, shall be reconstructed.

Attention is directed to Section 10-1.01, "Order of Work," of these Special Provisions regarding the reconstruction of metal beam guard railing at those locations exposed to public traffic.

Cable anchor assemblies or terminal anchor assemblies, including concrete anchors and steel foundation tubes, shall be completely removed and disposed of.

New posts, blocks, and hardware shall be added as necessary to conform to the post spacing shown on the plans for new metal beam guard railing. New posts and blocks shall be alternated with existing posts and blocks in the new location. New posts, blocks, and hardware shall conform to the provisions in Section 83-1.02B, "Metal Beam Guard Railing," of the Standard Specifications.

Posts, blocks, and other components of the removed metal beam guard railing, including terminal sections, that are not used in the reconstruction work shall become the property of Contractor and disposed of outside of the right-of-way.

10-1.14 ASPHALTIC EMULSION (PAINT BINDER)

Asphaltic emulsion (paint binder) shall conform to the provisions of Section 94, "Asphaltic Emulsions," and Section 39-4.02, "Prime Coat and Paint Binder," of the Standard Specifications and these Special Provisions.

Paint binder shall be asphaltic emulsion SS-1, applied in one application at the approximate rate of 0.05 gallons per square yard of surface covered. The exact rate of application will be determined by Engineer.

Full compensation for furnishing all labor, equipment, and materials involved in applying asphaltic emulsion as a paint binder shall be considered as included in the various contract items of work and no additional compensation will be allowed therefor.

Asphaltic emulsion shall be SS-1. Full compensation for furnishing all labor, equipment, and materials involved in applying fog seal coat shall be included in the various associated contract items of work, and no additional compensation will be allowed therefor.

10-1.15 ASPHALT CONCRETE

All Asphalt Concrete shown on the Plans shall conform to these Special Provisions except that the material shall be as specified herein.

Alternative 1 – Asphalt Concrete

Unless otherwise directed by Engineer, asphalt binder to be mixed with the mineral aggregate shall be steam-refined paving asphalt, performance grade, PG 64-28.

Aggregate grading shall conform to the following gradation requirements:

Sieve Sizes	Percentage Passing
2"	95-100
3/8"	90-100
No. 4	60-77
No. 8	42-60
No. 30	25-38
No. 200	5-10

S.E. = 32 minimum for all material passing No. 4 sieve. The gradation above shall be considered the "contract compliance range" as described in the Standard Specifications.

Alternative 2 – Asphalt Concrete

Asphalt concrete shall conform to Type A 1/2" maximum medium of the Standard Specifications. Asphalt binder to be mixed with the mineral aggregate shall be steam-refined paving asphalt conforming to the provisions in Section 92 "Asphalts," of the Standard Specifications and shall be PG 64-28PM.

General

Contractor shall submit an asphalt concrete mix design for each type of asphalt proposed for use on the project including sand equivalent test results, optimum bitumen content, unit weight, source of aggregate, gradation tests of aggregate, % air voids and stabilometer values for the proposed design mix to be used. The mix design shall be no older than six months, to insure that the mix supplied is consistent with the mix design. The design and test results shall be submitted to Engineer within 20 working days of the receipt of the Notice to Proceed and at least 10 working days prior to the start of paving operations. No work shall be done until the design is approved by Engineer. The mix design shall be in effect until modified by Engineer. Should a change in sources of material be made, a new mix design, and Sand Equivalent test must be established before the new material is used.

Unless otherwise directed in writing by Engineer, Contractor shall furnish and use canvas tarpaulins to cover all loads of asphalt concrete from the time that the mixture is loaded until it is discharged from the delivery vehicle.

Acceptance Sampling and Testing of Bituminous Mixture

County's testing laboratory shall obtain samples of the loose mixture from the asphalt plant and one sample for each day of paving from the uncompacted mix directly behind the paver to determine the percent bitumen, sieve analysis, material finer than No. 200 sieve, and density of the bituminous paving mixture. It is anticipated that the test results on a sample will be available at the start of work of the day following the day the sample was taken. If the test results indicate that the gradations and/or bitumen content do not fall within the limits as shown on the job mix formula from the approved mix design, placement of bituminous pavement shall not be started until Contractor, at its expense, provides test results or other information, that indicates to the satisfaction of Engineer that the material to be placed will comply with the requirements of the job mix formula.

County will use a thin-lift asphalt gage in quality assurance testing of the asphalt concrete for relative compaction requirements. Compaction will be tested with the thin-life gage at approximately 100-foot intervals and where the hot mix was sampled if different than the 100-foot intervals. Asphalt concrete shall be compacted to 95% of the maximum density determined from the asphalt plant sample, from the samples taken behind the paver, and from the lab test results. Engineer will drill three 4" diameter cores where the hot mix was sampled and the thin-lift gage was used. All core samples will be tested for the determination of the compacted density at no cost to Contractor. The target percent compaction of each core sample location shall be 95% of the average density determined. Contractor shall furnish all labor, tools, equipment, and material necessary to replace the pavement that was cored and shall include the costs associated with replacing this pavement in the various bid items with no additional compensation therefor. Acceptance of the

asphalt concrete density shall be based on the thin-lift gage readings. No cores will be taken on the open-graded asphalt.

Except as noted above, all tests necessary to determine conformance with the requirements specified in this section will be performed by Engineer without cost to Contractor.

Measurement and Payment

Measurement of asphalt concrete quantities shall be in accordance with the bid item descriptions containing asphalt concrete work.

Full compensation for the asphalt concrete, including supply, spreading, and compaction shall be included in the various contract bid items.

10-1.16 NOT USED

10-1.17 CULVERT AND CMP STRUCTURES

Culvert pipe shall be high-density polyethylene pipe (HDPE) or corrugated metal pipe (CMP) as specified on the Plans. All culverts shall have soil tight gasketed joints.

All exposed surfaces of the CMP structures (including covers, grates, and atrium trash racks) shall be painted with an exterior non-gloss paint of an earth-tone color (e.g. brown) that blends in with the surrounding predominant colors. Paint selection shall be submitted to Engineer for approval. Painting and its preparation shall conform to Section 59-3, "Painting Galvanized Surfaces," of the Standard Specifications. The CMP structures shall be painted in the field, however the covers and grates may be painted during the prefabrication process.

CMP

Corrugated metal pipe shall be steel and conform to the requirements of Section 66, "Corrugated Metal Pipe," of the Standard Specifications, and these Special Provisions. CMP structures shall be corrugated galvanized steel pipe. Galvanizing shall conform to Section 75-1.05, "Galvanizing," of the Standard Specifications. For CMP culvert the maximum allowable horizontal deflection shall be 5 degrees.

Corrugated Metal Pipe (CMP) shall have the following minimum thickness:

STEEL THICKNESS FOR CORRUGATED METAL PIPE	
Diameter of pipe, inches	Steel Gauge thickness, minimum
12	14 gauge (0.079")
18	14 gauge (0.079")
24	14 gauge (0.079")
30	14 gauge (0.079")
36	12 gauge (0.108")
48	12 gauge (0.108")

General

Pipes shall be laid to the lines and grades shown on the Plans and established by Engineer. The subgrade on which the culverts will be placed shall be finish graded with the use of a string line or other similar method to assure the culverts are set on smooth, straight grades consistent with the slopes and elevations shown on the Plans with no deviations along the length of pipe. Compaction of bedding and backfill shall conform to Section 10-1.10, "Excavation and Grading," of these Special Provisions.

Attachment of culverts to sediment traps, to drainage inlets, to drain basins, and to precast SDMHs shall conform to the concrete collar detail shown on the Plans and as specified in Section 10-1.19, "Concrete

Structures," of these Special Provisions. Field fabrication and prefabrication requirements for sediment traps and their attachments shall be as specified in the respective bid items. Welded joints that damage galvanizing shall be repaired with a corrosion resistant coating.

Contractor's method of operation for culvert installation shall conform to the requirements of the Traffic Control Plan and as outlined in Section 10-1.03, "Maintaining Traffic," and Section 10-1.04, "Traffic Control Plan," of these Special Provisions.

The interior of the pipeline shall be cleaned as the work progresses.

10-1.18 FLARED END SECTIONS

Flared end sections shall be galvanized prefabricated steel flared end sections and shall conform to the requirements in AASHTO M36 and M218. The flared end sections shall be equipped with galvanized toe plates.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in installing flared end sections, including excavation and backfill, complete and in place shall be considered as included in the contract unit price for flared end sections, and no additional compensation will be allowed therefor.

10-1.19 CONCRETE STRUCTURES

Portland Cement Concrete structures shall conform to the provisions in Section 51, "Concrete Structures" of the Standard Specifications and these Special Provisions. Portland Cement Concrete shall conform to Section 90, "Portland Cement Concrete," of the Standard Specifications, except as noted herein.

Reinforcement shall conform to the details shown on the Plans, these Special Provisions, and Section 52, "Reinforcement," of the Standard Specifications and shall conform to the requirements of ASTM Designation A615 Grade 60.

Tubular Steel Railing shall conform to the provisions in Section 83 "Railings and Barriers" of the Standard Specifications.

Precast and Prestressed Piles shall conform to the provisions of Section 49-3 of the Standard Specifications.

Expansion joints, joint seal, and weep holes shall conform to the provisions in Section 51 "Concrete Structures" of the Standard Specifications.

Portland Cement shall be Type II with no mineral admixtures.

Contractor shall supply concrete mix designs for all items of work requiring concrete within 15 working days of the receipt of the Notice to Proceed and at least five (5) working days prior to the start of the concrete work associated with these items.

Portland Cement Concrete for retaining walls, bridge foundations, and drainage inlets shall have a compressive strength of a minimum of 3,600 psi at 28 days. The tenth bulleted item of Section 90-1.01, "Description," of the Standard Specifications shall not apply. Engineer will take a set of cylinders five (5) for each 100 cubic yards of concrete or for a day's pour whichever comes first. Compressive strength tests at 7 days and at 28 days shall be performed on the cylinders at County's expense. If the 28-day compressive strength of any cylinder tests below 3,600 psi, Contractor shall replace the concrete (100 cubic yards or the quantity of one day's pour) at its expense. Alternatively, also at Contractor's expense, Contractor shall core the areas that tested below 3,600 psi, patch the holes, test the corings, and replace if the coring tests still show strengths below 3,600 psi and retest the replacement section.

An air-entraining agent conforming to the requirements in Section 90-4, "Admixtures," of the Standard Specifications shall be added to the concrete at the rate required to result in an air content of 4-7% in the freshly mixed concrete. Air Content will be tested by and at the discretion of Engineer at County's expense. For concrete bridge decking, see Section of 10-.29 of these Special Provisions.

Slump tests shall be performed by Engineer at Engineer's discretion and at County's expense. Slump for Portland cement concrete shall be no more than 2 inches nor less than 1 inch. Slump for grout shall be 3".

A mechanical power driven internal vibrator shall be used for concrete consolidation.

Concrete for precast bases, peelercore bollards, removable bollards, roadway signs, and concrete collars shall be minor concrete as defined in Section 51, "Concrete Structures," of the Standard Specifications and shall have not less than 548 pounds of cement per cubic yard.

Slurry cement backfill shall conform to the provisions of Section 19-3.062, "Slurry Cement Backfill," of the Standard Specifications, except that the mix shall contain 282 pounds of cement (i.e. 3 sack mix).

PREPARE AND PAINT CONCRETE SURFACES

This work shall consist of preparing and painting all exposed concrete surfaces of the retaining walls, bridge abutments and bridge bents in conformance with these Special Provisions.

MATERIALS

The paint shall be a light-stable, alkali-resistant, acrylic latex or acrylic latex copolymer emulsion, commercially manufactured for use as an exterior concrete coating. The paint shall conform to the provisions in Section 91-4.05, "Paint: Acrylic Emulsion, Exterior White and Light and Medium Tints," of the Standard Specifications. The paint color shall be Pantone PMS 5787 or PMS 5797. Contractor shall submit to the Engineer, not less than one week prior to application of the concrete coating, a copy of the manufacturer's recommendations, written application instructions, and a sample of the paint color.

SURFACE PREPARATION

New concrete surfaces to be painted shall be cured in conformance with the provisions in Section 90-7.03, "Curing Structures," of the Standard Specifications. Concrete surfaces to be painted shall be prepared in conformance with the requirements of SSPC-SP 13, "Surface Preparation of Concrete," of the Structural Steel Painting Council. After concrete surface preparation is complete, Contractor shall clean all concrete surfaces to be painted by water rinsing as defined in Section 59-1.03, "Application," of the Standard Specifications.

PAINTING CONCRETE

The coating shall be applied per the manufacturer's recommendations and in conformance with the requirements of SSPC-SP 11, "Guide for Coating Concrete," of the Structural Steel Painting Council. Any damaged areas shall be repaired in the same manner as the original surface preparation and paint application.

10-1.20 DEWATERING

This section outlines acceptable dewatering methods and locations for the disposal of dewatering effluent for the installation of the concrete retaining walls, concrete bridge abutments, 18" CMP, Type GCP inlet, rock bowl, and rock lined ditch at STA 169+03 (Sheet P-03 of the Plans), and 18" CMP and Type GCP inlet at STA 174+90 (Sheet P-04 of the Plans), **if in accordance with the respective bid items, it is determined that dewatering is necessary.**

Contractor shall furnish, install, and operate pumps, pipe, appliances, and equipment of sufficient capacity to keep all excavations that require casting concrete in place or all construction that requires compaction under optimum moisture conditions free from water until the areas are backfilled and compacted in accordance with these Special Provisions. All water removed from such excavations shall be placed in a water truck(s). Contractor shall provide water truck(s) of sufficient capacity so as not to delay the dewatering operations by frequent emptying of the water truck(s). Contractor shall provide all means or facilities to conduct water to the pumps and to the water truck(s) for disposal as specified herein.

The dewatering effluent shall be discharged from the water truck(s) and applied to high land capability areas (Class 3, 4, 5, 6, 7 not SEZ = Class 1b- See Sheets L-01 of the Plans) for dust control, irrigation, or for use in the tire wash areas.

Alternatively, Contractor may discharge the dewatering effluent onto non-sensitive lands by pumping the effluent through a piping system.

The dewatering effluent shall be discharged in such a manner as to prevent erosion. Contractor shall install temporary erosion control measures where dewatering effluent is discharged as necessary to control sediment transport.

Full compensation for furnishing all labor, tools, material, and equipment necessary to dewater the above referenced excavations and areas to be compacted shall be included in the price bid for each dewatering bid item and no additional compensation will be made therefor.

10-1.21 ROCK SPECIFICATIONS

This section applies to all rock-lined channels, rock dissipators, rock in bottom of sediment traps, rock breast wall, rock slope protection, and grouted rock bowl included in the Contract work. Attention is directed to Section 10-1.10, "Excavation and Grading," of these Special Provisions for the specifications for permeable material.

This Section 10-1.21, "Rock Specifications," shall **replace** Section 72, "Slope Protection," of the Standard Specifications.

All rock shall conform to the following quality requirements:

<i>Test</i>	<i>California Test</i>	<i>Requirement</i>
Apparent Specific Gravity	206	2.5 min.
Absorption	206	4.2% max*
Durability Index	229	52 min.*

Coarse Durability Index

$$\% \text{ Absorption} + 1 = \text{Durability Absorption Ratio (DAR)}$$

* Based on the formula contained herein, absorption may exceed 4.2% if DAR is greater than 10. Durability Index may be less than 52 if DAR is greater than 24.

Rock Materials. The following grading restrictions shall apply to each type of rock specified:

No. 1 Rock Backing

<u>Rock Size</u>	<u>Percent Smaller Than</u>
16"	100
12"	75-100
8"	0-20
6"	0

Percentage is based on the number of rocks per size range versus the total number of rocks in any 100 SF area. Rock size shall be measured along the smallest dimension of each rock.

Where 18" thickness of rock layering is designated on the Plans, it shall be interpreted as a nominal thickness. This means that some areas may be 16" thick, some may be 18," and some may be greater than 18" thick. In any case, in any 100 SF area of rock, the average thickness of the rock layering shall not be less than 18".

Rock shall be angular with not fewer than three fractured surfaces and of such shape as to form a stable protective structure after placement. The use of rounded cobbles will not be permitted.

Attention is directed to the color of rock that is required for the Tahoe Basin. All rock color shall blend with the surroundings and shall not consist of bright, light colors such as light gray, white, or off-white. At least 50% of the rock shall have at least one surface that is weathered (i.e. exhibiting signs of oxidation).

Samples of acceptable rock coloring are available for viewing at El Dorado County Department of Transportation, 924B Emerald Bay Road, in South Lake Tahoe, CA.

Application of erosion control blanket, turf reinforcement mat, or filter fabric or prior to rock placement shall be performed in accordance with other portions of these Special Provisions and in accordance with applicable Plan details.

Rock Placement for Rock-lined Ditches, Rock Dissipators, and Rock Bowls. On each rock, three perpendicular axes can be identified in three dimensions: a short axis, an intermediate axis, and a long axis. In order to produce the most stable and aesthetic appearing revetment, with a relatively uniform rock surface, rock shall be placed with the short axis in a vertical plane parallel to the face of the slope, the intermediate axis perpendicular to the face of the slope, and the long axis horizontal and parallel to the face of the slope. Each rock shall have a minimum of three points bearing on the rocks below and adjacent. Every effort shall be made to place the rock with the weathered surface exposed.

Rocks shall be placed so as to provide a minimum of voids. The larger rocks shall be placed in the toe course. The rock shall be placed in accordance with the lines and grades as shown on the Plans to form the specified cross section in a roughly regular surface without large cavities or excess projections above the general lines of the rock layer.

For rock-lined ditches, dissipators, and rock bowls, Contractor shall key in the full diameter of the rocks such that the top of all rock is at the same elevation at the edge of the rock structure (e.g. top of bank for rock-lined ditch) as the adjacent finished grade. Rock placement for channels shall proceed both from the lowest end towards the upper end and from the center of the channel towards the sides.

Compensation for furnishing and installing all rock, including all necessary excavation and embankment of rock-lined channels, or disposal of excavated material, will be at the contract price per various associated items of work and no additional compensation will be allowed therefor.

10-1.22 DISTURBANCE AND REVEGETATION

Contractor shall not disturb any area beyond the construction area limits shown on the Plans, and staked and fenced in the field, or disturb any areas outside of the areas to be disturbed by construction of the improvements as indicated on the Plans. Should such disturbance occur, Contractor will be liable for the following costs:

1. Revegetation and assuring plant establishment at Contractor's expense.
2. Provide mitigation of disturbance as required by TRPA.

Scarify Existing Compacted Surfaces

The work shall consist of spreading approved composted mulch in an even layer 2" deep on the existing compacted earth surfaces and scarifying the area in preparation for revegetation. After placement of the 2" of composted mulch, the entire area shall be thoroughly scarified to a depth of not less than 6" below the original ground surface. The means of scarifying shall be subject to approval by the Engineer and shall be capable of mixing the compost mulch with the underlying earth material. When scarifying takes place over root zones, Contractor shall hand dig to determine where the roots are located and scarify only above the root zones. Roots of trees over 4" in diameter shall not be severed, if avoidable, pursuant to Subsection 65.2.F of the TRPA Code of Ordinances. The finished surface shall be uneven and natural in appearance.

Soil Amendment

Soil amendment shall conform to all rules and regulations governing the registration, licensing, and collection of license fees for commercial amendments in the State of California in accordance with the California Food and Agricultural Code. The soil amendment shall be a slow release, non-burning with a formulation of 6-3-3 such as 'Biosol Plus' applied at 1,200 lbs. per acre or an equivalent product such as 'Ringer'. Amendment shall be applied at the specified rate to all areas identified for amendment application. Nutrients shall be derived from fungal mycelium, microbial biomass, bentonite and potassium-magnesia. Amendment shall be

labeled f; in accordance with applicable State regulations, and bear the warranty of the producer for the type furnished. Amendment shall be uniform in composition, dry and free flowing, granular or pelleted and shall be applied only with a mechanical spreader.

Seed

Seed shall be Seed Mix #1 as described on the Plans and shall be applied at a rate of 20/lbs./acre by rotary or drop spreader.

Incorporate Seed and Amendment

Seed and amendment shall be incorporated into the soil to a depth of approximately 1/4". Incorporation on slopes shall be raked from the bottom to the top.

Revegetation Types MSS and SM

REVEGETATION TYPE MSS shall apply to dirt trails and disturbed areas including areas in constructing rock-lined ditches and rock bowls. The work shall consist of the following performed in the order stated: Scarify to depth of 6", incorporate 2" of humus, apply Seed Mix #1, and apply mulch and tackifier.

REVEGETATION TYPE SM shall apply to areas of cut and fill of bike path and for culvert backfill that extends beyond bike path slopes. The work shall consist of the following performed in order stated: Apply 3" (lightly compacted) of topsoil mix, apply Seed Mix #1, and apply mulch and tackifier.

Contractor's attention is directed to Section 10-1.10, "Excavation and Grading," of these Special Provisions.

10-1.23 TURF REINFORCEMENT MAT

This section applies to the erosion control blanket, turf reinforcement mat, filter fabric, and impermeable barrier specified to be placed underneath the various rock-lined structures and grass-lined swales shown on the Plans. The Table below outlines the acceptable products for each of the aforementioned applications.

	APPLICATION	PRODUCT
TURF REINFORCEMENT MAT	Under rock-lined ditch, rock bowl, and rock dissipators.	Landlok TRM 450 as manufactured by SI Geosolutions or P300 as manufactured by North American Green, or approved equal

Full compensation for furnishing and installing turf reinforcement mat as shown on the Plans and as specified in these Special Provisions or as directed by Engineer shall be considered as included in the various items of work, and no additional compensation shall be made therefor.

10-1.24 TEMPORARY EROSION CONTROL AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Contractor is advised that, due to the steepness and erodability of the work area, temporary erosion control provisions of these Specifications will be strictly enforced. It is Contractor's responsibility to determine the effect that temporary erosion control measures will have on construction operations, and to fully account for this effect in the bid price for the work.

Contractor shall attend a pre-grade inspection meeting with TRPA prior to the start of any work, other than temporary erosion control installation. All temporary erosion control facilities shown on the Plans shall be in place prior to any soil disturbance or excavation.

In addition to temporary erosion control facilities shown on the Plans, Contractor shall provide additional temporary erosion control facilities as necessary to prevent adverse water quality impacts.

A fine of \$100/ day will be levied against Contractor for each day Contractor delays in responding to Engineer's request to install new temporary erosion control devices and/or maintain existing temporary erosion control devices.

Requirements: Temporary erosion control requirements shall be in accordance with Tahoe Regional Planning Agency's "Best Management Practices and Ordinances" and permits for this project, the Lahontan Regional Board Order pertaining to the project, and the California Tahoe Conservancy requirements. Water quality effluent limits must be in accordance with the following values:

TRPA and Lahontan Water Quality Limits

Constituent	Surface Waters		Infiltration Systems	
	Lahontan	TRPA	Lahontan	TRPA
Total Nitrogen as N	0.5 mg/l		5 mg/l	
Dissolved Nitrogen as N		0.5 mg/l		5 mg/l
Total Phosphate as P	0.1 mg/l		1 mg/l	
Dissolved Phosphate as P		0.1 mg/l		1 mg/l
Total Iron	0.5 mg/l		4 mg/l	
Dissolved Iron		0.5 mg/l		4 mg/l
Turbidity	20 NTU		200 NTU	
Suspended Sediment		250 mg/l		
Grease & Oil	2 mg/l	2 mg/l	40 mg/l	40 mg/l

Source: Storm Water Quality Improvement Committee document

Note: Surface Water values also apply to discharges to SEZs,

Temporary erosion control shall consist of taking necessary measures to minimize erosion and resulting transport of sediment from graded or disturbed areas into natural or man-made facilities within and outside the project limits. Temporary erosion control shall continue to be effective through the completion of Work and shall be maintained as required during the course of Work.

Contractor shall install and maintain all erosion control measures shown on the plans as well as all measures required by TRPA's permit conditions, including but not limited to Best Management Practices and the following construction/grading conditions:

Construction/Grading Conditions:

The following conditions shall be complied with during the grading and construction phase of the project.

1. All construction shall be accomplished in strict compliance with the Plans approved by TRPA.
2. The TRPA permit and final construction drawings bearing the TRPA stamp of approval shall be present on the construction site from the time construction commences to final TRPA site inspection. The permit and Plans shall be available for inspection upon request by any TRPA employee. Failure to present the TRPA permit and approved Plans may result in the issuance of a Cease and Desist Order by TRPA.
3. There shall be no grading or land disturbance performed with respect to the project between October 15 and May 1, unless proper approvals are obtained from TRPA, as provided in the limited exemption described in Subsection 4.2.A of the TRPA Code of Ordinances. Approvals from Lahontan are also required.
4. Except as provided in Subsection 64.2.B of the Code of Ordinances, there shall be no grading at any time of the year during periods of precipitation and for the resulting period of time when the site is covered with snow or is in a saturated, muddy, or unstable condition.
5. Replanting of all exposed surfaces by others, in accordance with the Plans, shall be accomplished within the first growing season following disturbance, unless an approved construction/inspection schedule establishes otherwise.

6. All trees and natural vegetation to remain on the site shall be fenced for protection. Scarring of trees shall be avoided and, if scarred, damaged areas shall be repaired with tree seal.
7. Soil and construction material shall not be tracked off the construction site. Grading operations shall cease in the event that a danger of violating this condition exists. The site shall be cleaned up and road right-of-way swept clean when necessary.
8. During grading and construction, environmental protection devices such as erosion control devices, dust control, and vegetation protection barriers shall be maintained.
9. Loose soil mounds or surfaces shall be protected from wind or water erosion by being appropriately covered when construction is not in active progress or when required by TRPA.
10. Excavated material shall be stored up grade from the excavated areas to the extent possible. No material shall be stored in any stream environment zone (SEZ land capability 1b) or wet areas as shown on Sheet L-1 of the Plans.
11. Only equipment of a size and type that, under prevailing site conditions, and considering the nature of the work to be performed, will do the least amount of damage to the environment shall be used. Construction equipment and vehicles shall be stored on pavement in the area designated on the Plans and in Section 5-1.36, "Access for Inspection of Work," of these Special Provisions when not in use.
12. Washing of tires of earth moving equipment/vehicles and washing of concrete equipment shall be allowed only in the areas designated on the Plans for these specific purposes. Cleaning of vehicles or construction equipment for other purposes shall not be permitted within the project area.
13. No vehicles or heavy equipment shall be allowed in any stream environment zone, or wet area, except as authorized by TRPA. All construction equipment authorized by TRPA to work in or near SEZ areas must be steam cleaned prior to mobilization to the SEZ area and maintained in clean and good working order with maintenance logs made available to TRPA at their request.
14. All construction sites shall be winterized by October 15 to reduce water quality impacts associated with winter weather as follows:
 - A. For sites that will be inactive between October 15 and May 1:
 - (1) Temporary erosion controls shall be installed;
 - (2) Temporary vegetation protection fencing shall be installed;
 - (3) Disturbed areas shall be stabilized;
 - (4) Onsite construction slash and debris shall be cleaned up and removed;
 - (5) Where feasible, mechanical stabilization and drainage improvements shall be installed; and
 - (6) Spoil piles shall be removed from the site.
 - B. For sites that will be active between October 15 and May 1, in addition to the above requirements;
 - (1) Permanent mechanical erosion control devices shall be installed, including paving of driveway and parking areas; and
 - (2) Parking of vehicles and storage of building materials shall be restricted to paved areas.
15. No Toxic materials shall be treated, stored, disposed of, spilled, or leaked in significant quantities within the project area. Contractor shall submit a Spill Contingency Plan in accordance with Section 5-1.36, "Storage of Equipment, Materials, Supplies, Etc.," of these Special Provisions.

The following are requirements for Best Management Practices that are to be installed and maintained to provide temporary erosion control prior to and throughout construction:

Sediment Barriers: Throughout the entire construction period Contractor shall be responsible for insuring that no material eroded from the site leaves the construction area via the conveyance system. Contractor shall provide adequate sediment barriers at all storm drain pipe outlets and other collection points. Sediment barriers shall be constructed in accordance with the details shown on the Plans and include filter fence and rice straw fiber rolls.

Contractor shall install and maintain filter fences to intercept and filter sediment-laden runoff water leaving the construction site via overland flow. Care must be taken to insure that all runoff water must pass through, not over, under or around, the filter fence. The filter fence shall be constructed from material specified in this section and in a manner to filter the runoff water without overtopping, collapsing, becoming overfilled with sediment, or having runoff flows skirt around the filter fence. Type 3 Filter Fence shall consist of the components of the Type 1 Filter Fence, except fabric-wrapped rice bales or gravel-filled bags shall be used in lieu of embedding the filter fabric in the ground. In addition to filter fence, Type 3 Filter Fence includes continuously lining the graded channel or swale with filter fabric, overlapping this filter fabric with the filter fabric of the filter fence on the upslope side of the fence.

Protection of Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place, against the following: Unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line.

Areas inside the drip line of existing tree branches within the construction area shall be fenced in accordance with the "Tree Protection and Construction Limit Fence" detail shown on the Plans. Lath shall not be nailed to trees and Construction Limit Fence shall be wrapped around tree prior to wrapping lath. Construction Limit Fence shall be placed along the work area limits and around tree drip line perimeters as shown on the Plans and staked by the Engineer.

Contractor shall water trees and other vegetation to remain within limits of contract work, as required, to maintain their health during course of construction operations.

Contractor shall provide protection for roots over 1½" diameter cut during construction operations. Contractor shall coat cut faces with emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Contractor shall temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible. Contractor shall repair or replace, except where noted otherwise in these Special Provisions, trees and vegetation indicated to remain, which are damaged by construction operations, in a manner acceptable to Engineer at Contractor's expense.

Tire Wash Areas: Tracking of sediment onto public streets shall be minimized by a combination of road sweeping and use of tire wash areas designated on the Plans during soil hauling operations, during equipment transporting from one work area to another, and as necessary to keep the streets clear of soil and debris. Tracking control applies to streets within the project area as well streets adjacent to the project area that have the potential to be impacted by tracking from the project construction.

Concrete Wash Areas: Contractor shall ensure that concrete equipment is washed out only at the designated concrete wash areas. The concrete wash area shall be sized for washing all concrete equipment without overtopping the wash area.

Materials:

Type 2 Filter fence shall be constructed with metal fence posts, #14 gauge chicken wire, and covered with filter fence material, Propex 2130 as manufactured by AMOCO, or 100X as manufactured by Mirafi, or approved equal. Type 3 Filter Fence shall be constructed with metal fence posts and filter fence material Propex 4545 as manufactured by AMOCO, or 135N as manufactured by Mirafi, or approved equal wrapped around posts and tied to the posts at 2 foot center to center spacing. Filter fabric to be placed in the swale or

channel with Type 3 Filter fence shall be Propex 2130 as manufactured by AMOCO or 100 X as manufactured by Mirafi, or approved equal.

Woven filter fabric for concrete wash shall be Propex 2130 as manufactured by AMOCO or 100 X as manufactured by Mirafi, or approved equal.

Class 1 Types A and B permeable rock filter shall conform to Section 10-1.10, "Excavation and Grading," of these Special Provisions.

Tree Protection and Construction limit fence shall be constructed with high-density polyethylene open pattern safety barrier fence or metal mesh fence and shall be at least 48 inches high. Additional tree protection where fence cannot be placed at tree dripline shall be 1" x 2" x 4' wooden lath tied together by 1/4" steel cable laced through staples attached to lath. Wooden lath fence shall be bound to tree with steel cable.

Polyethylene Film: To contain sediment and control erosion in an emergency (such as a heavy rainstorm), keep 6 mil polyethylene film in a sufficient amount to cover all spoils. Contractor shall maintain the polyethylene film cover over the stockpile of materials in the staging/storage areas when not accessing the stockpile. The film shall be secured to remain in place during storm events.

Maintenance of Sediment Barriers:

General

Engineer will take periodic turbidity readings of the effluent discharging from all filtering devices. If the effluent levels fall below the allowable limits listed above, Contractor shall take appropriate measures to bring the effluent levels within the allowable limits. These measures include removing deposited sediment from filter fencing, and other filter materials (e.g. fabric-wrapped rice bale sediment barrier or gravel-filled bags, fiber rolls, fiber rolls with geotextile blanket) after each storm and cleaning or replacing filter materials. The sediment removed shall be disposed of in accordance with Section 10-1.10, "Excavation and Grading," of these Special Provisions.

Specific

Temporary gravel-filled bags shall be repaired or replaced on the same day when the damage occurs. Damage to the temporary gravel bag resulting from Contractor's vehicles, equipment, or operations shall be repaired at Contractor's expense. Gravel-filled bags shall be replaced when the bag material or roll material is ruptured or when the yarn has failed, allowing the bag contents to spill out.

Filter fence shall be repaired or replaced on the same day when the damage occurs. Damage to the filter fence resulting from Contractor's vehicles, equipment, or operations shall be repaired at Contractor's expense.

Rice straw fiber roll shall be maintained to disperse concentrated water runoff and to reduce runoff velocities. Split, torn, or unraveling rolls shall be repaired or replaced. Where applicable, broken or split stakes shall be replaced. Sagging or slumping fiber rolls shall be repaired with additional stakes or replaced. Locations where rills and other evidence of concentrated runoff have occurred beneath the rolls shall be corrected. Rice straw fiber roll and weighted fiber rolls shall be repaired or replaced on the same day when the damage occurs. Damage to the temporary fiber rolls resulting from Contractor's vehicles, equipment, or operations shall be repaired at Contractor's expense.

Filter Fabric shall be repaired or replaced the same day damage occurs. Damage to the filter fabric resulting from Contractor's vehicles, equipment, or operations shall be repaired at Contractor's expense.

Maintenance of Tire Wash Areas: Engineer will take periodic turbidity readings of the effluent discharging from the tire wash areas. If effluent limits for turbidity are exceeded, Contractor shall take the appropriate measures to bring the effluent limits into compliance. These measures include flushing the area to remove clogging of geotextile fabric and replacing Class 1 Type A Permeable Material filter medium, and/or gravel-filled bags.

Maintenance and replacement of gravel-filled bags and woven filter fabric used in Tire Wash Areas shall conform to the requirements outlined above under Maintenance of Sediment Barriers.

Maintenance of Concrete Wash Areas: Contractor shall vector or otherwise clean the concrete wash areas as necessary to prevent overtopping of these facilities and before removing the non-woven filter fabric when the concrete wash area is no longer needed. Contractor shall remove hardened concrete and dispose of it in accordance with Section 10-1.10, "Excavation and Grading," of these Special Provisions and replace Class 1 Type A Permeable rock filter as necessary to keep the facility functional. After the facility is vectored and hardened concrete is removed, Contractor shall return the facility to a functional condition.

Maintenance and replacement of rice fiber rolls and woven filter fabric used in Concrete Wash Areas shall conform to the requirements outlined above under Maintenance of Sediment Barriers.

Removal: Except where noted otherwise in the Bid Item descriptions, remove temporary erosion control measures only when all permanent structural and permanent erosion control measures have been implemented, and where designated elsewhere in these Special Provisions, upon approval by TRPA. Ground disturbance, including holes and depressions, caused by the installation and removal of the temporary erosion control measures shall be backfilled and compacted.

Payment for compliance with this section shall be considered as included in the applicable Bid Items and no additional compensation will be made therefor.

10-1.25 CLEANUP

This section describes the cleanup of construction areas associated with the erosion control construction:

Cleanup and Dressing: After all of the work indicated on the Plans and Specifications is complete and before final acceptance of the project, the entire construction site including areas used for storage of supplies and equipment shall be neatly finished to the lines and grades shown on the Plans. Slopes shall be graded so as to produce a slightly roughened (natural) appearance without damaging the existing or new improvements, trees, and shrubs.

Machine dressing shall be supplemented by hand work as necessary. At the completion of dressing, the project shall appear uniform in all respects. Trash of any kind shall be removed from the construction site and disposed of at Contractor's expense and all culverts shall be cleaned, unless otherwise directed by Engineer. All temporary erosion control devices shall be cleaned first and then removed unless noted otherwise. All pavement surfaces whether new or old shall be thoroughly cleaned by watering and sweeping.

No direct compensation shall be paid for cleanup work and Contractor shall include cleanup work as a part of the bid items of work.

10-1.26 SHORING AND EXCAVATION PLAN

Contractor shall provide for its employee's protection in any trench or excavation as required by 29 CFR Part 1926 and Section 7-1.01E, "Trench Safety," of the Standard Specifications. This includes, but is not limited to, safe means of egress in trenches and excavations over 3.5 feet in depth, and shoring, bracing, or sloping of the sides of the trench or excavation, in trenches and excavations over five feet in depth.

Contractor shall submit a detailed plan showing the design of the shoring, bracing, sloping or other provisions which Contractor proposes to use during construction to Engineer in accordance with Section 5-1.02A, "Excavation Safety Plans," of the Standard Specifications, except that this plan shall be submitted to Engineer within five (5) working days prior to any proposed work requiring protection. No excavation or trenching requiring protection shall be commenced until the receipt of the "Shoring and Excavation Plan" is acknowledged by Engineer.

Nothing in this provision shall be construed to impose tort liability on County or any of its employees.

The following excavations shall be shored rather than sloping the sides of the excavation:

SHEET	STRUCTURE DESCRIPTION	APPROX. STATION
RW-01	Retaining Wall No. 1	STA 171+50 LT
RW-02	Retaining Wall No. 2	STA 174+70 LT
B-03	Bridge Abutment No. 1	STA 171+90
B-03	Bridge Abutment No. 4	STA 174+43

The costs associated with shoring, bracing or sloping the sides of the excavations shall be paid for in accordance with the unit price bid for Bid Item "Shoring, Bracing or Sloping the Sides of Trenches Greater than Five Feet Deep" and no additional compensation will be made. Contractor's attention is directed to Section 5-1.33, "Acceptance of Contract," of these Special Provisions regarding permitting and Section 10-1.22, "Disturbance and Revegetation," of these Special Provisions regarding violation of the above requirements such that disturbance results.

10-1.27 TIMBER REMOVAL PRACTICES

1. Prior to timber harvest, all project temporary erosion control devices must be in place.
2. All care must be taken to minimize damage to trees and other vegetation not marked for removal. If such occurs, damaged vegetation will be removed at Contractor expense. Revegetation of the area will be in accordance with Section 10-1.22, "Disturbance and Revegetation," of these Special Provisions.
3. Contractor shall be liable for damage to utility service lines, fences or other structures.
4. Trees shall be felled to minimize disturbance to surrounding vegetation and traffic flow.
5. Contractor shall be responsible for all traffic control during timber harvest where applicable in accordance with the California MUTCD. This shall include, but is not limited to, two flaggers in constant eye or radio contact. Contractor shall also coordinate traffic control with the emergency service providers.
6. Trees noted to be removed must be cut to stump height sufficient for subsequent easy stump removal to a depth of 2 feet below the bottom of the proposed improvements if the stump and roots will interfere with the installation of the improvements.
7. Within an SEZ, trees to be removed must be felled, bucked to firewood length, and the green wood covered tightly with plastic and left in place, if not removed within 48 hours. Tree removal from the area shall occur when soil is dry and stable. Lengths shall be winched out, lifted with a cherry picker, or carried by hand. No mechanical equipment for tree removal shall be operated within an SEZ (Sheets L-1 and L-2 of the Plans denotes the SEZ areas).
8. All wood products for resale must be removed from the site prior to resale.
9. All trees marked for removal must be removed from the site within 48 hours to reduce the spread of insects.
10. Contractor is responsible for complete site cleanup, including slash disposal. No slash may be stored or burned on site.

Other Requirements:

1. Contractor shall obtain a Timber Operator's License from the California Division of Forestry prior to starting work if the fuel wood or timber is to be sold.
2. Contractor must meet all County requirements for comprehensive and liability insurance prior to starting work.

10-1.28 THERMOPLASTIC TRAFFIC MARKINGS (RECESSED)

Thermoplastic traffic markings (recessed) shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these Special Provisions.

Thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in either State Specification PTH-02ALKYD or PTH-02HYDRO.

Packages of thermoplastic material shall be clearly labeled with "For Recessed Application."

Retroreflectivity of the thermoplastic traffic stripes (recessed) shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes (recessed) shall have a minimum initial retroreflectivity of 250 mcd m⁻² lx⁻¹. Yellow thermoplastic traffic stripes (recessed) shall have a minimum initial retroreflectivity of 175 mcd m⁻² lx⁻¹.

Recesses shall be constructed in the pavement using power-operated, mechanical equipment capable of grinding the pavement without damage to the surfacing to remain in place. The method of recess construction shall be selected by Contractor. Recesses for double traffic stripes shall be constructed in a single pass.

Residue produced from recess construction shall be removed from the roadbed by use of vacuum equipment attached to the recess equipment. Residue from removal operations shall not be permitted to flow across the pavement nor to flow into gutters or other drainage facilities. Residue shall be removed from pavement surfaces concurrently with the recess construction process and before the residue is blown by action of traffic or wind.

The removed residue shall be disposed of in conformance with Section 10-1.10C.6. of these Special Provisions.

Thermoplastic traffic stripe shall be applied before the end of the same work shift when the recesses are constructed. Recesses shall be dry and free of debris. A primer shall be applied to the recesses in conformance with the provisions in Section 84-2.04, "Application," of the Standard Specifications before the application of thermoplastic material.

Recesses shall not be constructed on existing structures.

Thermoplastic traffic stripes (recessed) shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

The contract lump sum price paid for thermoplastic traffic markings (recessed) of the widths and patterns designated 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 applying thermoplastic traffic stripes (recessed), complete in place, including establishing alignment for stripes and layout work, construction of the recesses, removing and disposing the residue from recess construction, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.29 PRE-FABRICATED STEEL TRUSS

The Prefabricated Steel Truss shall be fabricated and installed per the manufacturer's specifications and recommendations. Contractor shall submit an installation plan that complies with the manufacturer's specifications for review prior to construction. Attention is directed to Section 4-1.03, "Contractor Submittals," of these Special Provisions.

GENERAL

These specifications are for a fully engineered three-span bridge of welded steel construction and shall be regarded as minimum standards for design and construction.

Each Bidder is required to identify their intended bridge supplier as part of the bid submittal. Qualified suppliers must have at least five (5) years experience fabricating these type structures.

Pre-approved manufacturers:

CONTECH Construction Products Inc.
Steadfast Bridges
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069 USA
1-800-338-1122
http://www.contech-cpi.com/bridges/products/truss/steadfast_bridges/274

CONTECH Construction Products Inc.
Continental Bridge
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069 USA
1-800-338-1122
http://www.contech-cpi.com/bridges/products/truss/continental_bridges/341

Wheeler Lumber, LLC
9330 James Avenue South
Bloomington MN 55431
1-800 328-3986
<http://www.wheeler-con.com/>

DIMENSIONS

Width: Inside clear width of bridge shall be 12 feet 0 inches.

Length and Span Arrangement: A 252'-6" long three-span half-through truss, (BB to EB as shown on the Plans), which includes 46' 3"-160'-46' 3" spans measured from center to center bridge bearings. The 160' center span consists of two side span trusses cantilevering 23'-10" over intermediate bents supporting a 112'-4" long drop-in truss span.

Depth: Truss bridge depth shall be 10'-10", or less, measured from the soffit of the bottom chord to top of top chord.

Structure Supports and joints: Expansion and bearings devices for shall be provided for the location and type of articulation as shown on Sheet B-01 of the Plans.

Camber: Bridge shall be cambered so as to match the bridge profile shown on Sheet B-01 of the Plans after completion of construction.

All vertical truss members shall be perpendicular to the ground (horizon) after the bridge is erected and dead loads applied.

Attachments: Horizontal safety rails shall be placed on the structure to a minimum height of 4'-6" above the deck surface. The rails shall be so spaced as to prevent a 4" sphere from passing through the rail. Rails may consist of corrosive resistant steel cables, round, square or rectangular hollow steel sections, angles, or other steel section as required. Railing steel shall be fully connected to the truss or indirectly through to seats which are welded to the truss. The cables shall be fully supported to the adjacent truss members by welded rings. In either case they must be in compliance with AASHTO requirements for railings Section 2.7.2. Structural Details.

DESIGN

Half-through truss bridge shall be designed by a licensed Professional Engineer registered in the State of California experienced in pony truss bridge design and checking their stability strength and service requirements as per AASHTO Guide Specifications for Design of Pedestrian Bridges (1997), AISC Manual of Steel Construction (2005), California Building Code (2007), and IBC Structural/Seismic Design Manual (2006).

LOADS

In addition to dead loads and service loads as per AASHTO Guide Specifications (1997), the bridge shall be designed for the snow and special maintenance vehicle loads as specified on Sheet B-02 of the Plans.

MATERIALS

All structural steel members shall have a minimum thickness of material of at least 3/16".

Unpainted **Weathering Steel** bridges shall be fabricated from ASTM A242 or ASTM A588 steel for plates and structural shapes and ASTM A606 or ASTM A847 for tubular sections. Minimum yield (F_y) shall be greater than 50,000 psi.

CONCRETE DECKING

Structural concrete for bridge decks shall be, light-weight concrete and shall have a minimum 28 day compressive strength of 3,600 psi.

The surface of deck concrete shall be finished with a transverse rough broomed finish.

Stay-in-place galvanized metal form deck shall be used and shall be a minimum of 22 gage. Metal form deck shall be secured to the support members with fasteners or weld in accordance with the manufacturer's recommendation. Metal form deck panels shall be of a length to span a minimum of two bays of the truss supports. Metal form deck shall be designed for a construction live load of either 20 psf or a 200 lb moving point load. Dead load deflection due to normal weight wet concrete shall be limited to $L/180$ or $3/4"$.

Reinforced concrete deck with stay-in-place forms shall be designed for the envelope of forces caused by snow, pedestrian, or maintenance vehicle loads.

Deck reinforcing steel shall be A767 Grade 60 for Galvanized bars or A775-Grade 60 for Epoxy coated bars. All bar bends and anchorage shall be in accordance with the Standard Specifications. Reinforcing bars shall have a minimum clearance above the valleys of the form deck of 1.5", top reinforcing shall have a minimum clearance of 1.5" to the top of deck.

FABRICATION AND QUALITY CONTROL

Bridge fabricator shall be certified by the American Institute of Steel Construction to have the personnel, organization, experience, capability, and commitment to produce fabricated structural steel for Conventional Steel Structures and Major Steel Bridge Structures with Sophisticated Paint Endorsement as set forth in the AISC Certification Program.

Design drawing and structural details of the designed and fabricated bridge shall be signed and sealed by manufacturer's structural engineer registered in the State of California. Final set of design drawings and design calculations shall be submitted to County for review and approval **no later than fifteen (15) working days after the receipt of Notice of Award.**

Shop drawings of the bridge members and structural details as signed and sealed by manufacturer's structural engineer shall be submitted to County for review and approval prior to fabrication.

To ensure quality control during bridge fabrication, the bridge supplier shall be the designer and fabricator of the bridge and shall not assign, sublet, or subcontract any part of the bridge fabrication.

Workmanship, fabrication, and shop connections shall be in accordance with AASHTO.

Each bridge shall be inspected by a Certified Weld Inspector (CWI) that is qualified under the AWS QC-1 program. This inspection shall include as a minimum requirement the following: review of shop drawings, weld procedures, welder qualifications and weld testing reports, visual inspection of welds and verification of overall dimensions and geometry of the bridge. A report shall be produced indicating the above items were reviewed. The report shall be signed by the CWI, signifying compliance with AWS D1.1 codes.

All structural elements used in the bridge shall be identified by heat number of the steel member used. Specific mill test reports and individual welder certificates shall be tracked and kept on file to be provided at the request of the owner or engineer.

Welding operators shall be properly accredited experienced operators, each of whom shall submit satisfactory evidence of experience and skill in welding structural steel with the kind of welding to be used in the work, and who have demonstrated the ability to make uniform good welds meeting the size and type of weld required.

All welding shall utilize E70 or E80 series electrodes. The weld process used shall be Flux Core Arc Welding (FCAW) or Gas Metal Arc Welding (GMAW) or Shielded Manual Arc Welding (SMAW per ANSI/AASHTO/AWS D1.5) "Bridge Welding Code."

The connection of bridge end post to top chord should be a mitered joint with the exposed welds ground smooth.

The connection of the floor beam to a pony truss system shall not be solely into the side of a tubular bottom chord without the use of additional stiffeners.

RAILINGS & ACCESSORIES

All railings shall have a smooth inside surface with no protrusions or depressions. All ends of angles and tubes shall be closed and ground smooth. In accordance with AASHTO, railings for bicycle use should be a minimum height of 54" above the floor deck.

Safety Rails: Continuous rails shall be located on the inside of the trusses. The rails will be horizontal safety rails with a maximum opening of 12 inches.

Toe Plate: A 5" steel channel shall be located 2" above the floor deck.

FINISHES

All boldly exposed surfaces of bridges shall be sand blasted in accordance with the Steel Structures Painting Council (SSPC) Surface Preparation Specification No. 6 "Commercial Blast Cleaning."

Bridge shall be painted by the bridge manufacturer. The manufacturer shall have an AISC certified shop with Sophisticated Paint Endorsement. The bridge shall be painted with an epoxy primer ("Devran 4170" by Devoe Coatings) followed by an Aliphatic Urethane Gloss Enamel topcoat ("Devthane 4708" by Devoe Coatings) or approved equal. Bridges shall be provided with paint for touch up after erection.

DELIVERY AND ERECTION

To facilitate and comply with County and other State requirements regarding transportation and erection of the bridge, Contractor may opt to have the bridge fabricated and delivered in a number of sections, then assembled and fully connected in the field prior to erection. Contractor shall advise the all necessary

agencies of the length of the sections and the type of field connections to be delivered and erected at the site. Contractor shall be responsible for providing bridge connections submittals and detailed description of means and methods for assembling, field connection and splicing, and erection procedure to Engineer for review and approval at minimum twenty (20) working days prior to fabrication and delivery.

Bridges segments shall be delivered by truck to a location nearest to the site accessible by roads. Hauling permits and freight charges are the responsibility of the manufacturer.

Contractor shall notify County in advance of the expected arrival time. Information regarding delays after the trucks depart the plant such as inclement weather, delays in permits, re-routing by public agencies or other circumstances will be passed on to County as soon as possible but the expense of such unavoidable delays will not be accepted by the manufacturer.

Contractor shall notify County of the actual means and methods of lifting section, or pre-assembled sections of the bridge, access and verification of support condition, and points of attachment to resist any loads related lifting and erection of the bridge sections and the spans. Contractors' erection submittal shall be submitted to County for review and approval at least twenty (20) working days prior to commencement of any bridge erection.

Contractor shall obtain and verify all necessary information about the bridge support condition prior to fabrication and erection of the bridge.

Contractor is responsible for the construction of the bridge abutments, piers and piles. It is the responsibility of Contractor to verify site and soil conditions, potholing and any potential conflict with the existing utilities. Contractor shall advise County immediately and seek approval prior to continuation of any noted conflict with existing facilities or utilities.

Contractor shall install the anchor bolts in accordance with the manufacturer's anchor bolt spacing dimensions. All grounding and lightning protection shall be the responsibility of Contractor.

WARRANTY

The bridge manufacturer shall provide a warranty against defects in material and workmanship for a period of ten (10) years.

SECTION 11. (NOT USED)

SECTION 12. (NOT USED)

SECTION 13. (NOT USED)

SECTION 14. (NOT USED)

APPENDIX A

AMENDMENTS TO MAY 2006 STANDARD SPECIFICATIONS

AMENDMENTS TO MAY 2006 STANDARD SPECIFICATIONS

UPDATED MAY 2, 2008

SECTION 0: GLOBAL REVISIONS

Issue Date: July 31, 2007

Global revisions are changes to contract documents not specific to a section of the Standard Specifications.

- In each contract document at each occurrence:
 1. Except where existing asphalt concrete is described, replace "asphalt concrete" with "hot mix asphalt"
 2. Except where existing AC is described, replace "AC" with "HMA" where AC means asphalt concrete

SECTION 1: DEFINITIONS AND TERMS

Issue Date: January 18, 2008

Section 1-1.01, "General," of the Standard Specifications is amended by adding the following:

- The Department is gradually changing the style and language of the specifications. The new style and language includes:
 1. Use of:
 - 1.1. Imperative mood
 - 1.2. Introductory modifiers
 - 1.3. Conditional clauses
 2. Elimination of:
 - 2.1. Language variations
 - 2.2. Definitions for industry-standard terms
 - 2.3. Redundant specifications
 - 2.4. Needless cross-references
- The use of this new style does not change the meaning of a specification not yet using this style.
 - The specifications are written to the Bidder before award and the Contractor after. Before award, interpret sentences written in the imperative mood as starting with "The Bidder must" and interpret "you" as "the Bidder" and "your" as "the Bidder's." After award, interpret

sentences written in the imperative mood as starting with "The Contractor must" and interpret "you" as "the Contractor" and "your" as "the Contractor's."

- Unless an object or activity is specified to be less than the total, the quantity or amount is all of the object or activity.
- All items in a list apply unless the items are specified as choices.
- Interpret terms as defined in the Contract documents. A term not defined in the Contract documents has the meaning defined in Means Illustrated Construction Dictionary, Condensed Version, Second Edition.

The 1st table in Section 1-1.02, "Abbreviations," of the Standard Specifications is amended by adding:

SSPC	The Society for Protective Coatings
------	-------------------------------------

Section 1, "Definitions and Terms," of the Standard Specifications is amended by adding the following sections:

1-1.082 BUSINESS DAY

- Day on the calendar except Saturday or holiday.

1-1.084 CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

- The California Manual on Uniform Traffic Control Devices for Streets and Highways (California MUTCD) is issued by the Department of Transportation and is the Federal Highway Administration's MUTCD 2003 Edition, as amended for use in California.

1-1.125 DEDUCTION

- Amount of money permanently taken from progress payment and final payment. Deductions are cumulative and are not retentions under Pub Cont Code § 7107.

1-1.205 FEDERAL-AID CONTRACT

- Contract that has a Federal-aid project number on the cover of the Notice to Contractors and Special Provisions.

1-1.245 HOLIDAY

1. Every Sunday
2. January 1st, New Year's Day
3. 3rd Monday in January, Birthday of Martin Luther King, Jr.
4. February 12th, Lincoln's Birthday
5. 3rd Monday in February, Washington's Birthday
6. March 31st, Cesar Chavez Day
7. Last Monday in May, Memorial Day
8. July 4th, Independence Day
9. 1st Monday in September, Labor Day
10. 2nd Monday in October, Columbus Day
11. November 11th, Veterans Day
12. 4th Thursday in November, Thanksgiving Day
13. Day after Thanksgiving Day
14. December 25th, Christmas Day

- If January 1st, February 12th, March 31st, July 4th, November 11th, or December 25th falls on a Sunday, the Monday following is a holiday. If November 11th falls on a Saturday, the preceding Friday is a holiday. Interpret "legal holiday" as "holiday."

1-1.475 WITHHOLD

- Money temporarily or permanently taken from progress payment. Withholds are cumulative and are not retentions under Pub Cont Code § 7107.

Section 1-1.255, "Legal Holidays," of the Standard Specifications is deleted.

Section 1-1.265, "Manual on Uniform Traffic Control Devices," of the Standard Specifications is deleted.

Section 1-1.266, "Manual on Uniform Traffic Control Devices California Supplement," of the Standard Specifications is deleted.

Section 1-1.39 "State," of the Standard Specifications is amended to read:

1-1.39 STATE

- The State of California, including its agencies, departments, or divisions, whose conduct or action is related to the work.

SECTION 3: AWARD AND EXECUTION OF CONTRACT

Issue Date: August 17, 2007

Section 3-1.025, "Insurance Policies," of the Standard Specifications is amended to read:

3-1.025 INSURANCE POLICIES

- The successful bidder shall submit:
 1. Copy of its commercial general liability policy and its excess policy or binder until such time as a policy is available, including the declarations page, applicable endorsements, riders, and other modifications in effect at the time of contract execution. Standard ISO form No. CG 0001 or similar exclusions are allowed if not inconsistent with Section 7-1.12, "Indemnification and Insurance." Allowance of additional exclusions is at the discretion of the Department.
 2. Certificate of insurance showing all other required coverages. Certificates of insurance, as evidence of required insurance for the auto liability and any other required policy, shall set forth deductible amounts applicable to each policy and all exclusions that are added by endorsement to each policy. The evidence of insurance shall provide that no cancellation, lapse, or reduction of coverage will occur without 10 days prior written notice to the Department.
 3. A declaration under the penalty of perjury by a certified public accountant certifying the accountant has applied Generally Accepted Accounting Principles (GAAP) guidelines confirming the successful bidder has sufficient funds and resources to cover any self-insured retentions if the self-insured retention is \$50,000 or higher.

- If the successful bidder uses any form of self-insurance for workers compensation in lieu of an insurance policy, it shall submit a certificate of consent to self-insure in accordance with the provisions of Section 3700 of the Labor Code.

Section 3-1.03, "Execution of Contract," of the Standard Specifications is amended to read:

3-1.03 EXECUTION OF CONTRACT

- The contract shall be signed by the successful bidder and returned, together with the contract bonds and the documents identified in Section 3-1.025, "Insurance Policies," within 10 business days of receiving the contract for execution.

Section 3-1.04, "Failure to Execute Contract," of the Standard Specifications is amended to read:

3-1.04 FAILURE TO EXECUTE CONTRACT

- Failure of the lowest responsible bidder, the second lowest responsible bidder, or the third lowest responsible bidder to execute the contract as required in Section 3-1.03, "Execution of Contract," within 10 business days of receiving the contract for execution shall be just cause for the forfeiture of the proposal guaranty. The successful bidder may file with the Department a written notice, signed by the bidder or the bidder's authorized representative, specifying that the bidder will refuse to execute the contract if it is presented. The filing of this notice shall have the same force and effect as the failure of the bidder to execute the contract and furnish acceptable bonds within the time specified.

Section 3-1.05, "Return of Proposal Guaranties," of the Standard Specifications is amended to read:

3-1.05 RETURN OF PROPOSAL GUARANTIES

- The Department keeps the proposal guaranties of the 1st, 2nd and 3rd lowest responsible bidders until the contract has been executed. The other bidders' guaranties, other than bidders' bonds, are returned upon determination of the 1st, 2nd, and 3rd apparent lowest bidders, and their bidders' bonds are of no further effect.

SECTION 4: SCOPE OF WORK

Issue Date: August 17, 2007

Section 4-1.01, "Intent of Plans and Specifications," of the Standard Specifications is amended by adding the following:

- Nothing in the specifications voids the Contractor's public safety responsibilities.

SECTION 5: CONTROL OF WORK

Issue Date: February 1, 2008

Section 5, "Control of Work," of the Standard Specifications is amended by adding the following sections:

5-1.005 GENERAL

- Failure to comply with any specification part is a breach of the contract and a waiver of your right to time or payment adjustment.
- After contract approval, submit documents and direct questions to the Engineer. Orders, approvals, and requests to the Contractor are by the Engineer.
- The Engineer furnishes the following in writing:
 1. Approvals
 2. Notifications
 3. Orders
- The Contractor must furnish the following in writing:
 1. Assignments
 2. Notifications
 3. Proposals
 4. Requests, sequentially numbered
 5. Subcontracts
 6. Test results
- The Department rejects a form if it has any error or any omission.
- Convert foreign language documents to English.
- Use contract administration forms available at the Department's Web site.
- If the last day for submitting a document falls on a Saturday or holiday, it may be submitted on the next business day with the same effect as if it had been submitted on the day specified.

5-1.015 RECORD RETENTION, INSPECTION, COPYING, AND AUDITING

- Retain project records and make them available for inspection, copying, and auditing by State representatives from bid preparation through:
 1. Final payment
 2. Resolution of claims, if any
- For at least 3 years after the later of these, retain and make available for inspection, copying, and auditing cost records by State representatives including:
 1. Records pertaining to bid preparation
 2. Overhead
 3. Payroll records and certified payroll
 4. Payments to suppliers and subcontractors
 5. Cost accounting records
 6. Records of subcontractors and suppliers
- Maintain the records in an organized way in the original format, electronic and hard copy, conducive to professional review and audit.

- Before contract acceptance, the State representative notifies the Contractor, subcontractor, or supplier 5 days before inspection, copying, or auditing.
- If an audit is to start more than 30 days after contract acceptance, the State representative notifies the Contractor, subcontractor, or supplier when the audit is to start.

Section 5-1.01, "Authority of Engineer," of the Standard Specifications is amended by adding:

- Failure to enforce a contract provision does not waive enforcement of any contract provision.

Section 5-1.04, "Coordination and Interpretation of Plans, Standard Specifications, and Special Provisions," of the Standard Specifications is amended to read:

5-1.04 CONTRACT COMPONENTS

- A component in one contract part applies as if appearing in each. The parts are complementary and describe and provide for a complete work.
- If a discrepancy exists:

1. The governing ranking of contract parts in descending order is:

- 1.1. Special provisions
- 1.2. Project plans
- 1.3. Revised Standard Plans
- 1.4. Standard Plans
- 1.5. Amendments to the Standard Specifications
- 1.6. Standard Specifications
- 1.7. Project information

2. Written numbers and notes on a drawing govern over graphics

3. A detail drawing governs over a general drawing

4. A detail specification governs over a general specification

5. A specification in a section governs over a specification referenced by that section

- If a discrepancy is found or confusion arises, request correction or clarification.

Section 5-1.07, "Lines and Grades," of the Standard Specifications is replaced with the following:

5-1.07 LINES AND GRADES

- The Engineer places stakes and marks under Chapter 12, "Construction Surveys," of the Department's Surveys Manual.
- Submit your request for Department-furnished stakes:

1. On a Request for Construction Stakes form. Ensure:

- 1.1. Requested staking area is ready for stakes
- 1.2. You use the stakes in a reasonable time

2. A reasonable time before starting an activity using the stakes
 - Establish priorities for stakes and note priorities on the request.
 - Preserve stakes and marks placed by the Engineer. If the stakes or marks are destroyed, the Engineer replaces them at the Engineer's earliest convenience and deducts the cost.

Section 5-1.116, "Differing Site Conditions," is amended to read:

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

5-1.116C Protests

- You may protest the Engineer's decision by:
 1. Submitting an Initial Notice of Potential Claim within 5 business days after receipt of the Engineer's notification
 2. Complying with claim procedures
 - The Initial Notice of Potential Claim must detail the differences in your position from the Engineer's determination and support your position with additional information, including additional geotechnical data. Attach to the Initial Notice of Potential Claim a certification stating that you complied with Section 2-1.03, "Examination of Plans, Specifications, Contract, and Site of Work."
 - Promptly submit supplementary information when obtained.

SECTION 6: CONTROL OF MATERIALS

Issue Date: August 17, 2007

Section 6-1.05, "Trade Names and Alternatives," of the Standard Specifications is amended to read:

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

Section 6, "Control of Materials," of the Standard Specifications is amended by adding the following sections:

6-1.085 BUY AMERICA (23 CFR 635.410)

- For a Federal-aid contract, furnish steel and iron materials to be incorporated into the work that are produced in the United States except:

1. Foreign pig iron and processed, pelletized, and reduced iron ore may be used in the domestic production of the steel and iron materials [60 Fed Reg 15478 (03/24/1995)]
2. If the total combined cost of the materials does not exceed the greater of 0.1 percent of the total bid or \$2,500, material produced outside the United States may be used

- Production includes:

1. Processing steel and iron materials, including smelting or other processes that alter the physical form or shape (such as rolling, extruding, machining, bending, grinding, and drilling) or chemical composition
2. Coating application, including epoxy coating, galvanizing, and painting, that protects or enhances the value of steel and iron materials

- For steel and iron materials to be incorporated into the work, submit a Certificate of Compliance under Section 6-1.07, "Certificates of Compliance," of the Standard Specifications that certifies all production processes occurred in the United States except for the above exceptions.

6-1.087 BUY AMERICA (PUB RES CODE § 42703(d))

- Furnish crumb rubber to be incorporated into the work that is produced in the United States and is derived from waste tires taken from vehicles owned and operated in the United States.
- For crumb rubber to be incorporated into the work, submit a Certificate of Compliance under Section 6-1.07, "Certificates of Compliance," of the Standard Specifications that certifies only crumb rubber manufactured in the United States and derived from waste tires taken from vehicles owned and operated in the United States is used.

The 7th and 8th paragraph of Section 6-2.01, "General," of the Standard Specifications are amended to read:

- Upon the Contractor's written request, the Department tests materials from an untested local source. If satisfactory material from that source is used in the work, the Department does not charge the Contractor for the tests; otherwise, the Department deducts the test cost.

The 2nd sentence of the 7th paragraph of Section 6-2.02, "Possible Local Material Sources," of the Standard Specifications is amended to read:

- The Department deducts the charges for the removed material.

SECTION 7: LEGAL RELATIONS AND RESPONSIBILITIES

Issue Date: May 2, 2008

Section 7-1.01, "Laws To Be Observed," of the Standard Specifications is amended to read:

7-1.01 LAWS TO BE OBSERVED

- Comply with laws, regulations, orders, decrees, and permits applicable to the project. Indemnify and defend the State against any claim or liability arising from the violation of a law, regulation, order, decree, or permit by you or your employees. Immediately report to the Engineer in writing a discrepancy or inconsistency between the contract and a law, regulation, order, decree, or permit.

The 3rd listed requirement of the 1st paragraph of Section 7-1.01A(2), "Prevailing Wage," of the Standard Specifications is amended to read:

3. Upon becoming aware of the subcontractor's failure to pay the specified prevailing rate of wages to the subcontractor's workers, the Contractor must diligently take corrective action to stop or rectify the failure, including withholding sufficient funds due the subcontractor for work performed on the public works project.

The 2nd paragraph of Section 7-1.01A(2), "Prevailing Wage," of the Standard Specifications is amended to read:

- Pursuant to Section 1775 of the Labor Code, the Division of Labor Standards Enforcement must notify the Contractor on a public works project within 15 days of the receipt by the Division of Labor Standards Enforcement of a complaint of the failure of a subcontractor

on that public works project to pay workers the general prevailing rate of per diem wages. If the Division of Labor Standards Enforcement determines that employees of a subcontractor were not paid the general prevailing rate of per diem wages and if the Department did not withhold sufficient money under the contract to pay those employees the balance of wages owed under the general prevailing rate of per diem wages, the Contractor must withhold an amount of moneys due the subcontractor sufficient to pay those employees the general prevailing rate of per diem wages if requested by the Division of Labor Standards Enforcement. The Contractor must pay any money withheld from and owed to a subcontractor upon receipt of notification by the Division of Labor Standards Enforcement that the wage complaint has been resolved. If notice of the resolution of the wage complaint has not been received by the Contractor within 180 days of the filing of a valid notice of completion or acceptance of the public works project, whichever occurs later, the Contractor must pay all moneys withheld from the subcontractor to the Department. The Department withholds these moneys pending the final decision of an enforcement action.

The 2nd paragraph of Section 7-1.01A(3), "Payroll Records," of the Standard Specifications is amended to read:

- The Department withholds the penalties specified in subdivision (g) of Labor Code § 1776 for noncompliance with the requirements in Section 1776.

The 4th paragraph of Section 7-1.01A(3), "Payroll Records," of the Standard Specifications is amended to read:

- The Department withholds for delinquent or inadequate payroll records (Labor Code § 1771.5). If the Contractor has not submitted an adequate payroll record by the month's 15th day for the period ending on or before the 1st of that month, the Department withholds 10 percent of the monthly progress estimate, exclusive of mobilization. The Department does not withhold more than \$10,000 or less than \$1,000.

The 5th paragraph of Section 7-1.01A(3), "Payroll Records," of the Standard Specifications is deleted.

Section 7-1.01A(6), "Workers' Compensation," of the Standard Specifications is amended to read:

7-1.01A(6) (Blank)

The fourth sentence of the second paragraph of Section 7-1.02, "Load Limitations," of the Standard Specifications is amended to read:

- Trucks used to haul treated base, portland cement concrete, or hot mix asphalt shall enter onto the base to dump at the nearest practical entry point ahead of spreading equipment.

Section 7-1.02, "Load Limitations," of the Standard Specifications is amended by adding the following paragraph after the 4th paragraph:

- Loads imposed on existing, new, or partially completed structures shall not exceed the load carrying capacity of the structure or any portion of the structure as determined by AASHTO

LRFD with interims and California Amendments, Design Strength Limit State II. The compressive strength of concrete (f'_c) to be used in computing the load carrying capacity shall be the smaller of the following:

1. Actual compressive strength at the time of loading
2. Value of f'_c shown on the plans for that portion of the structure or 2.5 times the value of f'_c (extreme fiber compressive stress in concrete at service loads) shown on the plans for portions of the structure where no f'_c is shown

The first sentence of the eighth paragraph of Section 7-1.09, "Public Safety," of the Standard Specifications is amended to read:

- Signs, lights, flags, and other warning and safety devices and their use shall conform to the requirements set forth in Part 6 of the California MUTCD.

The sixteenth paragraph of Section 7-1.09, "Public Safety," of the Standard Specifications is amended to read:

- When vertical clearance is temporarily reduced to 15.5 feet or less, low clearance warning signs shall be placed in accordance with Part 2 of the California MUTCD and as directed by the Engineer. Signs shall conform to the dimensions, color, and legend requirements of the California MUTCD and these specifications except that the signs shall have black letters and numbers on an orange retroreflective background. W12-2P signs shall be illuminated so that the signs are clearly visible.

The last sentence of the 2nd paragraph of Section 7-1.11, "Preservation of Property," of the Standard Specifications is amended to read:

- The cost of the repairs must be borne by the Contractor and will be deducted.

Section 7-1.12, "Indemnification and Insurance," of the Standard Specifications is amended to read:

7-1.12 INDEMNIFICATION AND INSURANCE

- The Contractor's obligations regarding indemnification of the State of California and the requirements for insurance shall conform to the provisions in Section 3-1.025, "Insurance Policies," and Sections 7-1.12A, "Indemnification," and 7-1.12B, "Insurance," of this Section 7-1.12.

7-1.12A Indemnification

- The Contractor shall defend, indemnify, and save harmless the State, including its officers, employees, and agents (excluding agents who are design professionals) from any and all claims, demands, causes of action, damages, costs, expenses, actual attorneys' fees, losses or liabilities, in law or in equity (Section 7-1.12A Claims) arising out of or in connection with the Contractor's performance of this contract for:

1. Bodily injury including, but not limited to, bodily injury, sickness or disease, emotional injury or death to persons, including, but not limited to, the public, any employees or agents of the Contractor, the State, or any other contractor; and

2. Damage to property of anyone including loss of use thereof; caused or alleged to be caused in whole or in part by any negligent or otherwise legally actionable act or omission of the Contractor or anyone directly or indirectly employed by the Contractor or anyone for whose acts the Contractor may be liable.

- Except as otherwise provided by law, these requirements apply regardless of the existence or degree of fault of the State. The Contractor is not obligated to indemnify the State for Claims arising from conduct delineated in Civil Code Section 2782 and to Claims arising from any defective or substandard condition of the highway that existed at or before the start of work, unless this condition has been changed by the work or the scope of the work requires the Contractor to maintain existing highway facilities and the Claim arises from the Contractor's failure to maintain. The Contractor's defense and indemnity obligation shall extend to Claims arising after the work is completed and accepted if the Claims are directly related to alleged acts or omissions by the Contractor that occurred during the course of the work. State inspection is not a waiver of full compliance with these requirements.

- The Contractor's obligation to defend and indemnify shall not be excused because of the Contractor's inability to evaluate liability or because the Contractor evaluates liability and determine that the Contractor is not liable. The Contractor shall respond within 30 days to the tender of any Claim for defense and indemnity by the State, unless this time has been extended by the State. If the Contractor fails to accept or reject a tender of defense and indemnity within 30 days, in addition to any other remedy authorized by law, the Department may withhold such funds the State reasonably considers necessary for its defense and indemnity until disposition has been made of the Claim or until the Contractor accepts or rejects the tender of defense, whichever occurs first.

- With respect to third-party claims against the Contractor, the Contractor waives all rights of any type to express or implied indemnity against the State, its officers, employees, or agents (excluding agents who are design professionals).

- Nothing in the Contract is intended to establish a standard of care owed to any member of the public or to extend to the public the status of a third-party beneficiary for any of these indemnification specifications.

7-1.12B Insurance

7-1.12B(1) General

- Nothing in the contract is intended to establish a standard of care owed to any member of the public or to extend to the public the status of a third-party beneficiary for any of these insurance specifications.

7-1.12B(2) Casualty Insurance

- The Contractor shall procure and maintain insurance on all of its operations with companies acceptable to the State as follows:

1. The Contractor shall keep all insurance in full force and effect from the beginning of the work through contract acceptance.
2. All insurance shall be with an insurance company with a rating from A.M. Best Financial Strength Rating of A- or better and a Financial Size Category of VII or better.
3. The Contractor shall maintain completed operations coverage with a carrier acceptable to the State through the expiration of the patent deficiency in construction statute of repose set forth in Code of Civil Procedure Section 337.1.

7-1.12B(3) Workers' Compensation and Employer's Liability Insurance

- In accordance with Labor Code Section 1860, the Contractor shall secure the payment of worker's compensation in accordance with Labor Code Section 3700.
- In accordance with Labor Code Section 1861, the Contractor shall submit to the Department the following certification before performing the work:

I am 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 I will comply with such provisions before commencing the performance of the work of this contract.

- Contract execution constitutes certification submittal.
- The Contractor shall provide Employer's Liability Insurance in amounts not less than:
 1. \$1,000,000 for each accident for bodily injury by accident
 2. \$1,000,000 policy limit for bodily injury by disease
 3. \$1,000,000 for each employee for bodily injury by disease
- If there is an exposure of injury to the Contractor's employees under the U.S. Longshoremen's and Harbor Workers' Compensation Act, the Jones Act, or under laws, regulations, or statutes applicable to maritime employees, coverage shall be included for such injuries or claims.

7-1.12B(4) Liability Insurance

7-1.12B(4)(a) General

- The Contractor shall carry General Liability and Umbrella or Excess Liability Insurance covering all operations by or on behalf of the Contractor providing insurance for bodily injury liability and property damage liability for the following limits and including coverage for:

1. Premises, operations, and mobile equipment
2. Products and completed operations
3. Broad form property damage (including completed operations)
4. Explosion, collapse, and underground hazards
5. Personal injury
6. Contractual liability

7-1.12B(4)(b) Liability Limits/Additional Insureds

- The limits of liability shall be at least the amounts shown in the following table:

Total Bid	For Each Occurrence ¹	Aggregate for Products/Completed Operation	General Aggregate ²	Umbrella or Excess Liability ³
≤\$1,000,000	\$1,000,000	\$2,000,000	\$2,000,000	\$5,000,000
>\$1,000,000	\$1,000,000	\$2,000,000	\$2,000,000	\$10,000,000
≤\$5,000,000				
>\$5,000,000	\$2,000,000	\$2,000,000	\$4,000,000	\$15,000,000
≤\$25,000,000				
>\$25,000,000	\$2,000,000	\$2,000,000	\$4,000,000	\$25,000,000
1. Combined single limit for bodily injury and property damage. 2. This limit shall apply separately to the Contractor's work under this contract. 3. The umbrella or excess policy shall contain a clause stating that it takes effect (drops down) in the event the primary limits are impaired or exhausted.				

- The Contractor shall not require certified Small Business subcontractors to carry Liability Insurance that exceeds the limits in the table above. Notwithstanding the limits specified herein, at the option of the Contractor, the liability insurance limits for certified Small Business subcontractors of any tier may be less than those limits specified in the table. For Small Business subcontracts, "Total Bid" shall be interpreted as the amount of subcontracted work to a certified Small Business.

- The State, including its officers, directors, agents (excluding agents who are design professionals), and employees, shall be named as additional insureds under the General Liability and Umbrella Liability Policies with respect to liability arising out of or connected with work or operations performed by or on behalf of the Contractor under this contract. Coverage for such additional insureds does not extend to liability:

- Arising from any defective or substandard condition of the roadway which existed at or before the time the Contractor started work, unless such condition has been changed by the work or the scope of the work requires the Contractor to maintain existing roadway facilities and the claim arises from the Contractor's failure to maintain;
- For claims occurring after the work is completed and accepted unless these claims are directly related to alleged acts or omissions of the Contractor that occurred during the course of the work; or
- To the extent prohibited by Insurance Code Section 11580.04

- Additional insured coverage shall be provided by a policy provision or by an endorsement providing coverage at least as broad as Additional Insured (Form B) endorsement form CG 2010, as published by the Insurance Services Office (ISO), or other form designated by the Department.

7-1.12B(4)(c) Contractor's Insurance Policy is Primary

- The policy shall stipulate that the insurance afforded the additional insureds applies as primary insurance. Any other insurance or self-insurance maintained by the State is excess only and shall not be called upon to contribute with this insurance.

7-1.12B(5) Automobile Liability Insurance

- The Contractor shall carry automobile liability insurance, including coverage for all owned, hired, and nonowned automobiles. The primary limits of liability shall be not less than \$1,000,000 combined single limit each accident for bodily injury and property damage. The

umbrella or excess liability coverage required under Section 7-1.12B(4)(b) also applies to automobile liability.

7-1.12B(6) Policy Forms, Endorsements, and Certificates

- The Contractor shall provide its General Liability Insurance under Commercial General Liability policy form No. CG0001 as published by the Insurance Services Office (ISO) or under a policy form at least as broad as policy form No. CG0001.

7-1.12B(7) Deductibles

- The State may expressly allow deductible clauses, which it does not consider excessive, overly broad, or harmful to the interests of the State. Regardless of the allowance of exclusions or deductions by the State, the Contractor is responsible for any deductible amount and shall warrant that the coverage provided to the State is in accordance with Section 7-1.12B, "Insurance."

7-1.12B(8) Enforcement

- The Department may assure the Contractor's compliance with its insurance obligations. Ten days before an insurance policy lapses or is canceled during the contract period, the Contractor shall submit to the Department evidence of renewal or replacement of the policy.

- If the Contractor fails to maintain any required insurance coverage, the Department may maintain this coverage and withhold or charge the expense to the Contractor or terminate the Contractor's control of the work in accordance with Section 8-1.08, "Termination of Control."

- The Contractor is not relieved of its duties and responsibilities to indemnify, defend, and hold harmless the State, its officers, agents, and employees by the Department's acceptance of insurance policies and certificates.

- Minimum insurance coverage amounts do not relieve the Contractor for liability in excess of such coverage, nor do they preclude the State from taking other actions available to it, including the withholding of funds under this contract.

7-1.12B(9) Self-Insurance

- Self-insurance programs and self-insured retentions in insurance policies are subject to separate annual review and approval by the State.

- If the Contractor uses a self-insurance program or self-insured retention, the Contractor shall provide the State with the same protection from liability and defense of suits as would be afforded by first-dollar insurance. Execution of the contract is the Contractor's acknowledgement that the Contractor will be bound by all laws as if the Contractor were an insurer as defined under Insurance Code Section 23 and that the self-insurance program or self-insured retention shall operate as insurance as defined under Insurance Code Section 22.

SECTION 8: PROSECUTION AND PROGRESS

Issue Date: August 17, 2007

The 2nd paragraph of Section 8-1.02, "Assignment," of the Standard Specifications is amended to read:

- If the Contractor assigns the right to receive contract payments, the Department accepts the assignment upon the Engineer's receipt of a notice. Assigned payments remain subject to

deductions and withholds described in the contract. The Department may use withheld payments for work completion whether payments are assigned or not.

SECTION 9: MEASUREMENT AND PAYMENT

Issue Date: August 17, 2007

The last sentence of the 1st paragraph of Section 9-1.02, "Scope of Payment," of the Standard Specifications is amended to read:

- Neither the payment of any estimate nor of any retained percentage or withhold relieves the Contractor of any obligation to make good any defective work or material.

The 6th paragraph of Section 9-1.03C, "Records," of the Standard Specifications is deleted.

The 2nd sentence of the 14th paragraph of Section 9-1.04, "Notice of Potential Claim," of the Standard Specifications is amended to read:

- Administrative disputes are disputes of administrative deductions or withholds, contract item quantities, contract item adjustments, interest payments, protests of contract change orders as provided in Section 4-1.03A, "Procedure and Protest," and protests of the Weekly Statement of Working Days as provided in Section 8-1.06, "Time of Completion."

Section 9-1.05, "Stop Notices," of the Standard Specifications is amended to read:

9-1.05 STOP NOTICE WITHHOLDS

- The Department may withhold payments to cover claims filed under Civ Code § 3179 et seq.

Section 9, "Measurement and Payment," of the Standard Specifications is amended by adding the following sections:

9-1.053 PERFORMANCE FAILURE WITHHOLDS

- During each estimate period you fail to comply with a contract part, including submittal of a document as specified, the Department withholds a part of the progress payment. The documents include quality control plans, schedules, traffic control plans, and water pollution control submittals.
- For 1 performance failure, the Department withholds 25 percent of the progress payment but does not withhold more than 10 percent of the total bid.
- For multiple performance failures, the Department withholds 100 percent of the progress payment but does not withhold more than 10 percent of the total bid.
- The Department returns performance-failure withholds in the progress payment following the correction of noncompliance.

9-1.055 PENALTY WITHHOLDS

- Penalties include fines and damages that are proposed, assessed, or levied against you or the Department by a governmental agency or citizen lawsuit. Penalties are also payments made or costs incurred in settling alleged permit violations of Federal, State, or local laws, regulations,

or requirements. The cost incurred may include the amount spent for mitigation or correcting a violation.

- If you or the Department is assessed a penalty, the Department may withhold the penalty amount until the penalty disposition has been resolved. The Department may withhold penalty funds and notify you within 15 days of the withhold. If the penalty amount is less than the amount being withheld from progress payments for retentions, the Department will not withhold the penalty amount.

- If the penalty is resolved for less than the amount withheld, the Department pays interest at a rate of 6 percent per year on the excess withhold. If the penalty is not resolved, the withhold becomes a deduction.

- Instead of the withhold, you may provide a bond payable to the Department of Transportation equal to the highest estimated liability for any disputed penalties proposed.

9-1.057 PROGRESS WITHHOLDS FOR FEDERAL-AID CONTRACTS

- Section 9-1.057, "Progress Withholds for Federal-Aid Contracts," applies to a Federal-aid contract.

- The Department withholds 10 percent of a partial payment for noncompliant progress. Noncompliant progress occurs when:

1. Total days to date exceed 75 percent of the revised contract working days
2. Percent of working days elapsed exceeds the percent of value of work completed by more than 15 percent

- The Engineer determines the percent of working days elapsed by dividing the total days to date by the revised contract working days and converting the quotient to a percentage.

- The Engineer determines the percent of value of work completed by summing payments made to date and the amount due on the current progress estimate, dividing this sum by the current total estimated value of the work, and converting the quotient to a percentage. These amounts are shown on the Progress Payment Voucher.

- When the percent of working days elapsed minus the percent of value of work completed is less than or equal to 15 percent, the Department returns the withhold in the next progress payment.

The 3rd paragraph of Section 9-1.06, "Partial Payments," of the Standard Specifications is amended to read:

- For a non-Federal-aid project, the Department retains 10 percent of the estimated value of the work done and 10 percent of the value of materials estimated to have been furnished and delivered and unused or furnished and stored as part security for the fulfillment of the contract by the Contractor, except that at any time after 20 percent of the work has been completed, if the Engineer finds that satisfactory progress is being made, the Department may reduce the total amount being retained from payment pursuant to the above requirements to 5 percent of the total estimated value of the work and materials and may also reduce the amount retained from any of the remaining partial payments to 5 percent of the estimated value of the work and materials. In addition, on any partial payment made after 95 percent of the work has been completed, the Department may reduce the amount retained from payment pursuant to the requirements of this Section 9-1.06, to such lesser amount as the Department determines is adequate security for the fulfillment of the balance of the work and other requirements of the contract, but in no event is that amount reduced to less than 125 percent of the estimated value of the work yet to be

completed as determined by the Engineer. The reduction is made only upon the request of the Contractor and must be approved in writing by the surety on the performance bond and by the surety on the payment bond. The approval of the surety must be submitted to the Disbursing Officer of the Department; the signature of the person executing the approval for the surety must be properly acknowledged and the power of attorney authorizing the person to give that consent must either accompany the document or be on file with the Department. The retentions specified in this paragraph are those defined in Pub Cont Code § 7107(b).

The 1st sentence of the 4th paragraph of Section 9-1.06, "Partial Payments," of the Standard Specifications is amended to read:

- The Department shall pay monthly to the Contractor, while carrying on the work, the balance not retained, as aforesaid, after deducting therefrom all previous payments and all sums to be deducted or withheld under the provisions of the contract.

The title and 1st and 2nd paragraphs of Section 9-1.065, "Payment of Withheld Funds," of the Standard Specifications are amended to read:

9-1.065 RELEASE OF RETAINED FUNDS

- The Department releases retained funds if you:
 1. Request release of the retention (Pub Cont Code § 10263) in writing
 2. Deposit securities equivalent to the funds you want released into escrow with the State Treasurer or with a bank acceptable to the Department
 3. Are the beneficial owner of and receive interest on the deposited securities substituted for the retained funds

The 2nd sentence Section 9-1.07A, "Payment Prior to Proposed Final Estimate," of the Standard Specifications is amended to read:

- The Department pays the balance due less previous payments, deductions, withholds, and retentions under the provisions of the contract and those further amounts that the Engineer determines to be necessary pending issuance of the proposed final estimate and payment thereon.

The 1st paragraph of Section 9-1.07B, "Final Payment and Claims," of the Standard Specifications is amended to read:

- After acceptance by the Director, the Engineer makes a proposed final estimate of the total amount payable to the Contractor, including an itemization of the total amount, segregated by contract item quantities, extra work, and other basis for payment, and shows each deduction made or to be made for prior payments and amounts to be deducted, withheld, or retained under the provisions of the contract. Prior estimates and payments are subject to correction in the proposed final estimate. The Contractor must submit written approval of the proposed final estimate or a written statement of claims arising under or by virtue of the contract so that the Engineer receives the written approval or statement of claims no later than close of business of the 30th day after receiving the proposed final estimate. The Contractor's receipt of the proposed final estimate must be evidenced by postal receipt. The Engineer's receipt of the Contractor's written approval or statement of claims must be evidenced by postal receipt or the Engineer's written receipt if delivered by hand.

SECTION 12: CONSTRUCTION AREA TRAFFIC CONTROL DEVICES

Issue Date: October 6, 2006

The first sentence of the second paragraph of Section 12-1.01, "Description," of the Standard Specifications is amended to read:

- Attention is directed to Part 6 of the California MUTCD.

Section 12-2.01, "Flaggers," of the Standard Specifications is amended to read:

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.

The first paragraph of Section 12-3.01, "General," of the Standard Specifications is amended to read:

• 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.

The second sentence of the first paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

- Construction area signs are shown in or referred to in Part 6 of the California MUTCD.

The first sentence of the fourth paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

• 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.

The first sentence of the eighth paragraph of Section 12-3.06, "Construction Area Signs," of the Standard Specifications is amended to read:

• 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 19: EARTHWORK

Issue Date: July 31, 2007

Section 19-1.03, "Grade Tolerance," of the Standard Specifications is amended to read:

- 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.

The first paragraph of Section 19-3.025C, "Soil Cement Bedding," of the Standard Specifications is amended to read:

- 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.

The fourth paragraph of Section 19-3.025C, "Soil Cement Bedding," of the Standard Specifications is amended to read:

- 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.

The first paragraph of Section 19-3.062, "Slurry Cement Backfill," of the Standard Specifications is amended to read:

- Slurry cement backfill shall consist of a fluid, workable mixture of aggregate, cementitious material, and water.

The fifth paragraph of Section 19-3.062, "Slurry Cement Backfill," of the Standard Specifications is amended to read:

- Cementitious material shall conform to the provisions in Section 90-2.01, "Cementitious Materials." Supplementary cementitious material will not be required.

The eighth paragraph of Section 19-3.062, "Slurry Cement Backfill," of the Standard Specifications is amended to read:

- 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

Issue Date: August 17, 2007

Section 20-2.03, "Soil Amendment," of the Standard Specifications is amended to read:

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 contaminants. 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.

The last 3 paragraphs of Section 20-2.10, "Seed," of the Standard Specifications are deleted.

The last paragraph of Section 20-3.04A, "General," of the Standard Specifications is deleted.

Section 20-4.055, "Pruning," of the Standard Specifications is amended to read:

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 25: AGGREGATE SUBBASES

Issue Date: February 16, 2007

The first paragraph of Section 25-1.02A, "Class 1, Class 2, and Class 3 Aggregate Subbases," of the Standard Specifications is amended to read:

- 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

The first paragraph of Section 25-1.02B, "Class 4 Aggregate Subbase," of the Standard Specifications is amended to read:

- 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 26: AGGREGATE BASE

Issue Date: February 16, 2007

The first paragraph of Section 26-1.02A, "Class 2 Aggregate Base," of the Standard Specifications is amended to read:

- 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

The first paragraph of Section 26-1.02B, "Class 3 Aggregate Base," of the Standard Specifications is amended to read:

- 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 27: CEMENT TREATED BASES

Issue Date: July 31, 2007

The first paragraph of Section 27-1.02, "Materials," of the Standard Specifications is amended to read:

- Cement shall be Type II portland cement conforming to the provisions in Section 90-2.01A, "Cement."

The third paragraph of Section 27-1.02, "Materials," of the Standard Specifications is amended to read:

- Aggregate for use in Class A cement treated base shall be of such quality that when mixed with cement in an amount not to exceed 5 percent by weight of the dry aggregate and compacted at optimum moisture content, the compressive strength of a sample of the compacted mixture shall not be less than 750 pounds per square inch at 7 days, when tested by California Test 312.

The fourth paragraph of Section 27-1.02, "Materials," of the Standard Specifications is amended to read:

- Aggregate for use in Class B cement treated base shall have a Resistance (R-value) of not less than 60 before mixing with cement and a Resistance (R-value) of not less than 80 after mixing with cement in an amount not to exceed 2.5 percent by weight of the dry aggregate.

The ninth paragraph of Section 27-1.07, "Compacting," of the Standard Specifications is amended to read:

- When surfacing material is hot mix asphalt, the low areas shall be filled with hot mix asphalt conforming to the requirements for the lowest layer of hot mix asphalt to be placed as surfacing. This filling shall be done as a separate operation prior to placing the lowest layer of surfacing, and full compensation for this filling will be considered as included in the contract price paid for cement treated base and no additional compensation will be allowed therefor.

SECTION 28: LEAN CONCRETE BASE

Issue Date: July 31, 2007

The first paragraph of Section 28-1.02, "Materials," of the Standard Specifications is amended to read:

- Cement shall be Type II portland cement conforming to the provisions in Section 90-2.01A, "Cement."

The sixth paragraph of Section 28-1.02, "Materials," of the Standard Specifications is amended to read:

- Aggregate shall be of such quality that, when mixed with cement in an amount not to exceed 300 pounds per cubic yard, and tested in conformance with the requirements in California Test 548, the compressive strength of a sample will be not less than 700 pounds per square inch at 7 days.

The second paragraph of Section 28-1.06, "Spreading, Compacting and Shaping," of the Standard Specifications is amended to read:

- In advance of curing operations, lean concrete base to be surfaced with hot mix asphalt shall be textured with a drag strip of burlap, a broom or a spring steel tine device which will produce scoring in the finished surface. The scoring shall be parallel with the centerline or transverse thereto. The operation shall be performed at a time and in a manner to produce the coarsest texture practical for the method used.

The second paragraph of Section 28-1.08, "Surfaces Not Within Tolerance," of the Standard Specifications is amended to read:

- Hardened lean concrete base with a surface lower than 0.05-foot below the grade established by the Engineer shall be removed and replaced with lean concrete base which complies with these specifications, or if permitted by the Engineer, the low areas shall be filled with pavement material as follows:

1. When pavement material is hot mix asphalt, the low areas shall be filled with hot mix asphalt conforming to the requirements for the lowest layer of hot mix asphalt to be placed as pavement. This shall be done as a separate operation prior to placing the lowest layer of pavement, and full compensation for this filling will be considered as included in the contract price paid per cubic yard for lean concrete base and no additional compensation will be allowed therefor.
2. When pavement material is portland cement concrete, the low areas shall be filled with pavement concrete at the time and in the same operation that the pavement is placed. Full compensation for this filling will be considered as included in the contract price paid per cubic yard for lean concrete base and no additional compensation will be allowed therefor.

SECTION 29: TREATED PERMEABLE BASES

Issue Date: July 31, 2007

The second paragraph of Section 29-1.02B, "Cement Treated Permeable Base," of the Standard Specifications is amended to read:

- Cement shall be Type II portland cement conforming to the provisions in Section 90-2.01A, "Cement."

The first paragraph of Section 29-1.04A, "Asphalt Treated Permeable Base," of the Standard Specifications is amended to read:

- Aggregates and asphalt for asphalt treated permeable base shall be stored, proportioned and mixed in the same manner provided for storing, proportioning and mixing aggregates and asphalt for hot mix asphalt in Section 39-1.08, "Production," except as follows:

1. The aggregate need not be separated into sizes.
2. The temperature of the aggregate before adding the asphalt binder shall be not less than 275° F nor more than 325° F.
3. Asphalt treated permeable base stored in excess of 2 hours shall not be used in the work.
4. The aggregate shall be combined with 2.5 percent paving asphalt by weight of the dry aggregate. After testing samples of the Contractor's proposed aggregate supply, the Engineer may order an increase or decrease in the asphalt content. If an increase or decrease is ordered, and the increase or decrease exceeds the specified amount by more than 0.1-percent by weight of the dry aggregate, the compensation payable to the Contractor for the asphalt treated permeable base will be increased or decreased on the basis of the total increase or decrease in asphalt.
5. The asphalt content of the asphalt mixture will be determined, at the option of the Engineer, by extraction tests in conformance with the requirements in California Test 310 or 362, or will be determined in conformance with the requirements in California Test 379. The bitumen ratio pounds of asphalt per 100 pounds of dry aggregate shall not vary by more than 0.5-pound of asphalt above or 0.5-pound of asphalt below the amount designated by the Engineer. Compliance with this requirement will be determined either by taking samples from trucks at the plant or from the mat behind the paver before rolling. If the sample is taken from the mat behind the paver, the bitumen ratio shall be

not less than the amount designated by the Engineer, less 0.7-pound of asphalt per 100 pounds of dry aggregate.

The second paragraph of Section 29-1.04B, "Cement Treated Permeable Base," of the Standard Specifications is amended to read:

- Cement treated permeable base shall contain not less than 287 pounds of cement per cubic yard.

The first paragraph of Section 29-1.05, "Spreading and Compacting Asphalt Treated Permeable Base," of the Standard Specifications is amended to read:

- Asphalt treated permeable base shall be spread and compacted as specified for hot mix asphalt under the "Method" construction process in Section 39, "Hot Mix Asphalt," and these specifications.

The second paragraph of Section 29-1.07, "Surfaces Not Within Tolerance," of the Standard Specifications is amended to read:

- Hardened treated permeable base with a surface lower than 0.05-foot below the grade established by the Engineer shall be removed and replaced with treated permeable base which complies with these specifications, or if permitted by the Engineer, the low areas shall be filled with pavement material as follows:

1. When pavement material is hot mix asphalt, the low areas shall be filled with hot mix asphalt conforming to the requirements for the lowest layer of hot mix asphalt to be placed as pavement. This shall be done as a separate operation prior to placing the lowest layer of pavement.
2. When pavement material is portland cement concrete, the low areas shall be filled with pavement concrete at the time and in the same operation in which the pavement is placed.
3. Full compensation for filling low areas will be considered as included in the contract price paid per cubic yard for treated permeable base and no additional compensation will be allowed therefor.

SECTION 37: BITUMINOUS SEALS

Issue Date: August 17, 2007

The fourth through sixth paragraphs in Section 37-1.03, "Maintaining Traffic," of the Standard Specifications are amended to read:

- On 2-lane two-way roadways, W8-7 "LOOSE GRAVEL" signs and W13-1 (35) speed advisory signs shall be furnished and placed adjacent to both sides of the traveled way where screenings are being spread on a traffic lane. The first W8-7 sign in each direction shall be placed where traffic first encounters loose screenings, regardless of which lane the screenings are being spread on. The W13-1 (35) signs need not be placed in those areas with posted speed limits of less than 40 MPH. The signs shall be placed at maximum 2,000-foot intervals along each side of the traveled way and at public roads or streets entering the seal coat area as directed by the Engineer.

- On multilane roadways (freeways, expressways and multilane conventional highways) where screenings are being spread on a traffic lane, W8-7 "LOOSE GRAVEL" signs and W13-1 (35) speed advisory signs shall be furnished and placed adjacent to the outside edge of the traveled way nearest to the lane being worked on. The first W8-7 sign shall be placed where the screenings begin with respect to the direction of travel on that lane. The W13-1 (35) signs need not be placed in those areas with posted speed limits of less than 40 MPH. The signs shall be placed at maximum 2,000-foot intervals along the edge of traveled way and at on-ramps, public roads or streets entering the seal coat area as directed by the Engineer.

- The W8-7 and W13-1 signs shall be maintained in place at each location until final brooming of the seal coat surface at that location is completed. The W8-7 and W13-1 signs shall conform to the provisions for construction area signs in Section 12, "Construction Area Traffic Control Devices." The signs may be set on temporary portable supports with the W13-1 below the W8-7 or on barricades with the W13-1 sign alternating with the W8-7 sign.

The second paragraph of Section 37-1.07, "Finishing," of the Standard Specifications is amended to read:

- Rollers shall be oscillating type pneumatic-tired rollers. A minimum of 2 pneumatic-tired rollers conforming to the provisions in Section 39-3.03 "Spreading and Compacting Equipment," shall be furnished.

The second paragraph in Section 37-1.09, "Payment," of the Standard Specifications is amended to read:

- The above prices and payments shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in applying seal coat, complete in place, including furnishing, placing, maintaining, and removing W8-7 and W13-1 signs, when required, and temporary supports or barricades for the signs, as shown on the plans, and as specified in these specifications and the special provisions, and as directed by the Engineer.

SECTION 39 HOT MIX ASPHALT

Issue Date: March 21, 2008

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 reinforcing fabric in Section 88, "Engineering Fabrics."

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.

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 ($\times 10^{-6}$) at 100 °C	D 445	$X \pm 3^a$
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.

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 @ 350 °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
K _c factor (max.)	CT 303	1.7	1.7	1.7	--
K _f factor (max.)	CT 303	1.7	1.7	1.7	--

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.

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 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 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 FOR JOB MIX FORMULA

- Determine the proposed JMF from a mix design that complies with:

Hot Mix Asphalt for Job Mix Formula

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, prepare 3 briquettes separately at the proposed JMF 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 12 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. If you choose to determine bulk specific gravity with new briquettes and your tests fail, you may not test again using the stability briquettes.

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 dated within 12 months of production start, if applicable
 4. Materials Safety Data Sheets (MSDS) for:
 - 4.1. Asphalt binder
 - 4.2. Base asphalt binder used in asphalt rubber binder
 - 4.3. CRM and asphalt modifier used in asphalt rubber binder
 - 4.4. Blended asphalt rubber binder mixture

- 4.5. Supplemental fine aggregate except fines from dust collectors
- 4.6. Antistrip additives

- If the JMF must be verified or if the Engineer requests, submit samples of the following materials in labeled containers weighing no more than 50 pounds each (notify the Engineer at least 2 business days before sampling materials):

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.

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

- Test samples from the HMA plant to be used to determine possible JMF adjustments.
- 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. The Engineer verifies each proposed JMF within 20 days of receiving a complete JMF submittal and verification samples. Verification is testing for compliance with the specifications for:

1. Aggregate quality
2. Aggregate gradation (JMF TV \pm tolerance)
3. Asphalt binder content (JMF TV \pm tolerance)
4. HMA quality specified in the table Hot Mix Asphalt for Job Mix Formula 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 ± 0.3 percent from optimum binder content)
 - 4.3. Dust proportion (report only if an adjustment for asphalt binder content target value is less than ± 0.3 percent from optimum binder content)
- If you request in writing, the Engineer verifies RHMA-G quality requirements within 3 business days of sampling.
 - In the Engineer's presence, under California Test 125, 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 from any of the following locations:
 1. The plant
 2. A truck
 3. A windrow
 4. Behind a 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 prepares 3 briquettes from a single split sample. To verify the JMF for stability, 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 12 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 may prepare 3 new briquettes and determine a new bulk specific gravity. If the Engineer chooses to determine bulk specific gravity with new briquettes and the Engineer's tests fail, the Engineer may not test again using the stability briquettes.
 - 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 re-verifies 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 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.

39-1.04B PREPAVING CONFERENCE

- Meet with the Engineer at a pre-paving 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 CORES

- For Standard and QC / QA projects, take 4-inch or 6-inch diameter cores at least once every 5 business days. Take 1 core for every 250 tons of HMA from random locations the Engineer designates. Take cores in the Engineer's presence and backfill and compact holes with material authorized by the Engineer. Before submitting a core to the Engineer, mark it with the core's location and place it in a protective container.
 - If a core is damaged, replace it with a core taken within 1 foot longitudinally from the original core. Relocate any 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 separately for each stability 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 the same briquettes and tests using bulk specific gravity fail, you may prepare 3 new briquettes and determine a new bulk specific gravity. If you choose to determine bulk specific gravity with new briquettes and your tests fail, you may not test again using the stability briquettes.

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. Sampling must be statistically-based and random.
 - The Engineer takes HMA and aggregate samples during production and splits each sample into 2 parts. The Engineer tests 1 part to verify quality control test results and reserves and stores the remaining part. 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 separately for each stability 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 12 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 may prepare 3 new briquettes and determine a new bulk specific gravity. If the Engineer chooses to determine bulk specific gravity with new briquettes and the Engineer tests fail, the Engineer may not test again using the stability briquettes.

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. 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 for compliance with specifications. You and the Engineer must report test results in writing within 3 business days of sampling.

- For Standard and QC / QA projects, take 4-inch or 6-inch diameter cores within the first 750 tons on the first day of HMA production. For each 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 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 350 °F and 425 °F when mixed with aggregate.
- Aggregate must not be more than 325 °F when mixed with asphalt binder. 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, the asphalt binder must be between 350 °F and 425 °F when you add asphalt modifier. Mix them for at least 20 minutes. When you add CRM, the asphalt binder and asphalt modifier must be between 350 °F and 425 °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 10 °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 350 °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 Overlay 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

- 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 change tack coat rates.
- 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

- 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 \pm 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. Private drives
 6. Curve widenings
 7. Chain control lanes
 8. Turnouts
 9. Left turn pockets
 - If the number of lanes change, pave each through lane's top layer before paving a changing 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 total layer thickness is between 0.125 foot and 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," if either:

1. Total paved thickness is less than 0.15 foot.
2. Total 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. Detours not included in the final roadway prism
 - 3.4. 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 and areas around manholes or drainage transitions
6. Acceleration and deceleration lanes for at-grade intersections
7. Shoulders and miscellaneous areas
8. 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 an overlay 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

- After correcting for smoothness, measure the corrected HMA pavement surface with a profilograph and a 12-foot straightedge until the pavement is 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.

39-1.14 SHOULDER RUMBLE STRIP

- Construct shoulder rumble strips by rolling or grinding indentations in the top layer of new HMA surfacing.
 - Select the method and equipment for constructing ground-in indentations.
 - Do not construct shoulder rumble strips on structures or approach slabs.
 - Construct rumble strips within 2 inches of the specified alignment. Roller or grinding equipment must be equipped with a sighting device enabling the operator to maintain the rumble strip alignment.
 - Rolled-in indentations must not vary from the specified dimensions by more than 10 percent.
 - Ground-in indentations must comply with the specified dimensions within 0.06 inch in depth or 10 percent in length and width.
 - The Engineer orders grinding or removal and replacement of noncompliant rumble strips to bring them within specified tolerances. Ground surface areas must be neat and uniform in appearance.
 - The grinding equipment must be equipped with a vacuum attachment to remove residue.
 - Dispose of removed material under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way."
 - On ground areas, apply fog seal coat under Section 37-1, "Seal Coats."

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

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 -0.70
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} No. 4 and 3/8" gradings 1/2" and 3/4" gradings	CT 366	One per 4,000 tons or 2 per 5 bus-iness days, which-ever is more	30	30	--	--
			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.) 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 designat-ed in the QCP. At least once per project	90	25	--	90
			75	--	90	75
			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		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 rubber binder viscosity @ 350 °F, centipoises	Section 39-1.02D	--	--	--	1,500 – 4,000	1,500 – 4,000
Crumb rubber modifier	Section 39-1.02D	--	--	--	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 total 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 ± 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 ± 0.5	JMF +0.50 -0.70			
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} No. 4 and 3/8" gradings 1/2" and 3/4" gradings	CT 366	30	30	--	--			
		37	35	23	--			
Air voids content (%) ^{d, 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	25	--	90			
		75	--	90	75			
		70	20	70	90			
Los Angeles Rattler (% max.) Loss at 100 rev. Loss at 500 rev.	CT 211	12	--	12	12			
		45	50	40	40			
Fine aggregate angularity (% min.)	AASHTO T 304, Method A	Report only	Report only	Report only	--			
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	76.0 – 80.0	Report only	--			
		73.0 – 76.0	73.0 – 76.0					
		65.0 – 75.0	65.0 – 75.0					
		65.0 – 75.0	65.0 – 75.0					
Voids in mineral aggregate (% min.) ⁱ No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-2	17.0	17.0	--	--			
		15.0	15.0	--				
		14.0	14.0	18.0 – 23.0 ^j				
		13.0	13.0	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	0.9 – 2.0	Report only	--			
		0.6 – 1.3	0.6 – 1.3					
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 total 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 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 ± 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 core you take from each 250 tons of HMA production. 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.

- If the 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 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 ± 0.5	JMF +0.50 -0.70
HMA moisture content (% max.)	CT 226 or CT 370	1.0	1.0	1.0	1.0
Stabilometer value (min.) ^{c, d} No. 4 and 3/8" gradings 1/2" and 3/4" gradings	CT 366				
		30	30	--	--
		37	35	23	--
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 75	25 --	-- 90	90 75
		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
Air voids content (%) ^{c, e}	CT 367	4 ± 2	4 ± 2	Specification ± 2	--
Fine aggregate angularity (% min.)	AASHTO T 304, Method A	Report only	Report only	Report only	--
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 No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-3	76.0 – 80.0	76.0 – 80.0	Report only	--
		73.0 – 76.0	73.0 – 76.0		
		65.0 – 75.0	65.0 – 75.0		
		65.0 – 75.0	65.0 – 75.0		
Voids in mineral aggregate (% min.) ^f No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-2	17.0	17.0	--	--
		15.0	15.0	--	
		14.0	14.0	18.0 – 23.0 ^g	
		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-	Section 92-

				1.02(C) and Section 39-1.02D	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

^aThe Engineer determines combined aggregate gradations containing RAP under Laboratory Procedure LP-9.

^bThe tolerances must comply with the allowable tolerances in Section 39-1.02E, "Aggregate."

^cThe Engineer reports the average of 3 tests from a single split sample.

^dModify 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."

^eThe 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.

^fReport only if the adjustment for asphalt binder content target value is less than ± 0.3 percent from OBC.

^gVoids 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	Minimum Atmospheric and Surface Temperatures			
	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 subplot is 750 tons except HMA paved at day's end greater than 250 tons is a subplot. If HMA paved at day's end is less than 250 tons, you may either make this quantity a subplot or include it in the previous subplot'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_{QC_i} , to control your process and evaluate 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	Minimum Sampling and Testing Frequency	HMA Type			Location of Sampling	Max. Reporting Time Allowance
			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 production	--	--	--	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, h} No. 4 and 3/8" gradings 1/2" and 3/4" gradings	CT 366	1 per 4,000 tons or 2 per 5 business days, whichever is more	30 37	30 35	-- 23		48 hours
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	As necessary and designated in QCP. At least once per project.	90	25	--	CT 125	48 hours	
			75	--	90			
			70	20	70			
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			Report only	Report only	Report only		CT 125
Flat and elongated particle (% max. by mass @ 5:1)	ASTM D 4791							CT 125
Voids filled with asphalt (%) ⁱ No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-2			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-2
Voids in mineral aggregate (% min.) ⁱ No. 4 grading 3/8" grading 1/2" grading 3/4" grading	LP-3		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-3		
Dust proportion ¹ 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 total 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 ± 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, $Q_{F_{QC_i}}$ for $i = 3, 4,$ or $5,$ is below 0.90 determined under Section 39-4.03F, "Statistical Evaluation"
2. An individual quality factor, $Q_{F_{QC_i}}$ for $i = 1$ or $2,$ is below 0.75
3. Quality characteristics for which a quality factor, $Q_{F_{QC_i}}$, 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 Production and Placement," 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 total paved thickness is less than 0.15 foot
2. Areas where the total 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. Detours not part of the finished roadway prism
6. 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 (\bar{X}) of the test values

$$\bar{X} = \frac{\sum x}{n}$$

where:

- x = individual test values
- n = number of test values

2. Calculate the standard deviation

$$s = \sqrt{\frac{n(\sum x^2) - (\sum x)^2}{n(n-1)}}$$

where:

$$\begin{aligned} \sum(x^2) &= \text{sum of the squares of individual test values} \\ (\sum x)^2 &= \text{sum of the individual test values squared} \\ n &= \text{number of test values} \end{aligned}$$

3. Calculate the upper quality index (Q_U)

$$Q_U = \frac{USL - \bar{X}}{s}$$

where:

$$\begin{aligned} USL &= \text{target value plus the production tolerance or upper specification limit} \\ s &= \text{standard deviation} \\ \bar{X} &= \text{arithmetic mean} \end{aligned}$$

4. Calculate the lower quality index (Q_L);

$$Q_L = \frac{\bar{X} - LSL}{s}$$

where:

$$\begin{aligned} LSL &= \text{target value minus production tolerance or lower specification limit} \\ s &= \text{standard deviation} \\ \bar{X} &= \text{arithmetic mean} \end{aligned}$$

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:

$$\begin{aligned} P_U &= \text{the estimated percentage of work outside the USL.} \\ P_U &= 0, \text{ when USL is not specified.} \end{aligned}$$

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:

$$\begin{aligned} P_L &= \text{the estimated percentage of work outside the LSL.} \\ P_L &= 0, \text{ when LSL is not specified.} \end{aligned}$$

7. Calculate the total estimated percentage of work outside the USL and LSL, percent defective

$$\text{Percent defective} = P_U + P_L$$

- 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_{QC_i} , using percent defective = $P_U + P_L$ and:

Quality Factor	Quality Factors												
	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
Reject	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
	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:

- 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. When there are less than 20 sequential sublots, the Engineer uses the maximum number of sequential sublots available. The 21st subplot becomes the 1st subplot ($n = 1$) in the next lot.
- The t-value for a group of test data is computed as follows:

$$t = \frac{|\bar{X}_c - \bar{X}_v|}{S_p \sqrt{\frac{1}{n_c} + \frac{1}{n_v}}} \quad \text{and} \quad S_p^2 = \frac{S_c^2(n_c - 1) + S_v^2(n_v - 1)}{n_c + n_v - 2}$$

where:

- n_c = Number of quality control tests (2 minimum, 20 maximum).
 n_v = Number of verification tests (minimum of 1 required).
 \bar{X}_c = Mean of quality control tests.
 \bar{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 $\alpha = 0.025$. 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 $\alpha = 0.025$)	Degrees of freedom (n_c+n_v-2)	t_{crit} (for $\alpha = 0.025$)
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 \bar{X}_v and \bar{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:

- $|\bar{X}_v - \bar{X}_c| \leq 1.0$ percent for any grading
- $|\bar{X}_v - \bar{X}_c| \leq 0.1$ percent for asphalt binder content

- If the t -value computed is greater than t_{crit} and the $|\bar{X}_v - \bar{X}_c|$ for grading and asphalt binder content are greater than the allowable differences, quality control test results are not verified and:

- The Engineer notifies you in writing.
- You and the Engineer must investigate why the difference exist.
- 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				Weight -ing Factor (w)	Test Method	HMA Type		
							A	B	RHMA-G
	Aggregate gradation ^a					CT 202	JMF ± Tolerance ^c		
	Sieve	3/4"	1/2"	3/8"					
1	1/2"	X ^b	--	--	0.05				
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	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	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	Report only	Report only	Report only
	Flat and elongated particle (% max. by mass @ 5:1)					ASTM D 4791	Report only	Report only	Report only
	Voids in mineral aggregate (% min.) ¹ 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 (%) ¹ 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 ¹ 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 total 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 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 ± 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 cores you take from every 750 tons of production or part thereof divided by the maximum theoretical density.

- If the 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 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_{QC_i} for i = 3, 4, or 5, is below 0.90 determined under Section 39-4.03F, "Statistical Evaluation"
2. An individual quality factor, QF_{QC_i} for i = 1 or 2, is below 0.75
3. Quality characteristics for which a quality factor, QF_{QC_i}, 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_{QC_i}, 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_{QC_i} , 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_{QC_i} 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_{QC_5} , using the total number of test result values from 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_{QC_i} , determined for each quality characteristic in the table "HMA Acceptance – QC / QA" 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_{QC_i} for $i = 3, 4,$ and $5,$ is 0.90 or greater
3. Each individual quality factor, QF_{QC_i} 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:

$$PA = \sum_{i=1}^n HMA_{CP} * w_i * [QF_{QC_i} * (HMA_{TT} - WHMA_{TT}) + WHMA_{TT}] - (HMA_{CP} * HMA_{TT})$$

where:

PA = Payment adjustment rounded to 2 decimal places.
 HMA_{CP} = HMA contract price.
 HMA_{TT} = HMA total tons represented in the lot.

$WHMATT_i =$	Total tons of waived quality characteristic HMA.
$QF_{QC_i} =$	Running quality factor for the individual quality characteristic. QF_{QC_i} for $i = 1$ through 4 must be from verified Contractor's QC results. QF_{QC_5} must be determined from the Engineer's results on 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 subplot becomes the 1st subplot ($n = 1$) in the next lot. When the 21st sequential subplot becomes the 1st subplot, 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_{QC_i} , or verification test result, every subplot in that lot must be retested.

- Referee tests must be performed under the specifications for acceptance testing.
- Any quality factor, QF_{QC_i} , must be determined using the referee tests.
- For any quality factor, QF_{QC_i} , for $i = 1$ through 5, dispute resolution:

1. If the difference between the quality factors for QF_{QC_i} 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_{QC_i} 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 shoulder rumble strips is measured by the station along each shoulder on which the rumble strips are constructed without deductions for gaps between indentations.

- 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 prepping 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 contract prices paid per station for rumble strips 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 rumble strips, including fog seal 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 State will pay 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.

- If there is no item for tack coat and the work is specified, full compensation for tack coat is included in the contract price paid per ton for hot mix asphalt as designated in the Engineer's Estimate and no separate payment will be made therefor.

- 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 40: PORTLAND CEMENT CONCRETE PAVEMENT

Issue Date: January 5, 2007

Section 40-1.015, "Cement Content," is deleted.

Section 40-1.05, "Proportioning," of the Standard Specifications is amended to read:

- Aggregate and cementitious material proportioning shall conform to the provisions in Section 90-5, "Proportioning."

The first paragraph in Section 40-1.105, "Exit Ramp Termini," of the Standard Specifications is amended to read:

- Concrete pavement shall be constructed at the ends of exit ramps when required by the plans or the special provisions. Texturing for exit ramp termini shall be by means of heavy brooming in a direction normal to ramp centerline. The hardened surface shall have a coefficient of friction not less than 0.35 as determined by California Test 342. Minimum cementitious material content of concrete in pavement for exit ramp termini shall be 590 pounds per cubic yard.

The first paragraph in Section 40-1.14, "Payment," of the Standard Specifications is amended to read:

- The contract price paid per cubic yard for concrete pavement shall include full compensation for furnishing all labor, materials (including cementitious material in the amount specified), tools, equipment, and incidentals, and for doing all the work involved in constructing the portland cement concrete pavement, complete in place, as shown on the plans, and as specified in these specifications and the special provisions, and as directed by the Engineer.

SECTION 41: PAVEMENT SUBSEALING AND JACKING

Issue Date: January 5, 2007

The second paragraph of Section 41-1.02, "Materials," of the Standard Specifications is amended to read:

- Cement for grout shall be Type II portland cement conforming to the provisions in Section 90-2.01A, "Cement."

The third paragraph of Section 41-1.02, "Materials," of the Standard Specifications is amended to read:

- Fly ash shall conform to the requirements in AASHTO Designation: M 295 for either Class C or for Class F. The brand of fly ash used in the work shall conform to the provisions for approval of admixture brands in Section 90-4.03, "Admixture Approval."

The fifth paragraph of Section 41-1.02, "Materials," of the Standard Specifications is amended to read:

- Chemical admixtures and calcium chloride may be used. Chemical admixtures in the grout mix shall conform to the provisions in Section 90-4, "Admixtures." Calcium chloride shall conform to ASTM Designation: D 98.

SECTION 49: PILING

Issue Date: January 5, 2007

The first sentence of the sixth paragraph of Section 49-1.03, "Determination of Length," of the Standard Specifications is amended to read:

- Indicator compression pile load testing shall conform to the requirements in ASTM Designation: D 1143-81.

The first sentence of the seventh paragraph of Section 49-1.03, "Determination of Length," of the Standard Specifications is amended to read:

- Indicator tension pile load testing shall conform to the requirements in ASTM Designation: D 3689-90.

The sixth paragraph in Section 49-1.04, "Load Test Piles," of the Standard Specifications is amended to read:

- The Contractor may use additional cementitious material in the concrete for the load test and anchor piles.

SECTION 50: PRESTRESSING CONCRETE

Issue Date: April 4, 2008

The 2nd paragraph in Section 50-1.07, "Ducts," of the Standard Specifications is amended to read:

- Ducts shall be fabricated with either welded or interlocked seams. Galvanizing of the welded seam will not be required. Ducts shall have sufficient strength to maintain their correct alignment during placing of concrete. Joints between sections of duct shall be positive metallic connections which do not result in angle changes at the joints. Waterproof tape shall be used at the connections. Ducts shall be bent without crimping or flattening. Transition couplings

connecting the ducts to anchoring devices shall be either ferrous metal or polyolefin. Ferrous metal transition couplings need not be galvanized.

The 3rd paragraph in Section 50-1.05, "Prestressing Steel," of the Standard Specifications is amended by deleting item A.

The seventh paragraph in Section 50-1.07, "Ducts," of the Standard Specifications is amended to read:

- All ducts with a total length of 400 feet or more shall be vented. Vents shall be placed at intervals of not more than 400 feet and shall be located within 6 feet of every high point in the duct profile. Vents shall be 1/2 inch minimum diameter standard pipe or suitable plastic pipe. Connections to ducts shall be made with metallic or plastic structural fasteners. Plastic components, if selected, shall not react with the concrete or enhance corrosion of the prestressing steel and shall be free of water soluble chlorides. The vents shall be mortar tight, taped as necessary, and shall provide means for injection of grout through the vents and for sealing the vents. Ends of vents shall be removed one inch below the roadway surface after grouting has been completed.

Item B of the eleventh paragraph in Section 50-1.08, "Prestressing," of the Standard Specifications is amended to read:

B. When the concrete is designated by class or cementitious material content, either the concrete compressive strength shall have reached the strength shown on the plans at the time of stressing or at least 28 days shall have elapsed since the last concrete to be prestressed has been placed, whichever occurs first.

The second and third paragraphs in Section 50-1.09, "Bonding and Grouting," of the Standard Specifications are amended to read:

- Grout shall consist of cement and water and may contain an admixture if approved by the Engineer.
- Cement shall conform to the provisions in Section 90-2.01A, "Cement."

The first paragraph in Section 50-1.11, "Payment," of the Standard Specifications is amended to read:

- No separate payment will be made for pretensioning precast concrete members. Payment for pretensioning precast concrete members shall be considered as included in the contract price paid for furnish precast members as provided for in Section 51, "Concrete Structures."

SECTION 51: CONCRETE STRUCTURES

Issue Date: May 2, 2008

The first sentence of the eleventh paragraph of Section 51-1.05, "Forms," of the Standard Specifications is amended to read:

- Form panels for exposed surfaces shall be furnished and placed in uniform widths of not less than 3 feet and in uniform lengths of not less than 6 feet, except at the end of continuously formed surfaces where the final panel length required is less than 6 feet.

The first sentence of the eleventh paragraph of Section 51-1.06C, "Removing Falsework," of the Standard Specifications is amended to read:

- Falsework for box culverts and other structures with decks lower than the roadway pavement and with span lengths of 14 feet or less shall not be released until the last placed concrete has attained a compressive strength of 1,600 psi, provided that curing of the concrete is not interrupted.

The 6th paragraph of Section 51-1.11, "Construction Methods," of the Standard Specifications is amended to read:

- Construction methods and equipment employed by the Contractor shall conform to the provisions in Section 7-1.02, "Load Limitations."

The fourth paragraph in Section 51-1.12D, "Sheet Packing, Preformed Pads, and Board Fillers," of the Standard Specifications is amended to read:

- Expanded polystyrene shall be a commercially available polystyrene board. Expanded polystyrene shall have a minimum flexural strength of 35 psi determined in conformance with the requirements in ASTM Designation: C 203 and a compressive yield strength of between 16 and 40 psi at 5 percent compression. Surfaces of expanded polystyrene against which concrete is placed shall be faced with hardboard. Hardboard shall be 1/8 inch minimum thickness, conforming to ANSI A135.4, any class. Other facing materials may be used provided they furnish equivalent protection. Boards shall be held in place by nails, waterproof adhesive, or other means approved by the Engineer.

The 3rd paragraph of Section 51-1.12F, "Sealed Joints," of the Standard Specifications is amended to read:

- Type A and AL joint seals shall consist of a groove in the concrete that is filled with field-mixed silicone sealant.

The table in the 6th paragraph of Section 51-1.12F, "Sealed Joints," of the Standard Specifications is amended to read:

Movement Rating (MR)	Seal Type
MR ≤ 1 inch	Type A or Type B
1 inch < MR ≤ 2 inches	Type B
2 inches < MR ≤ 4 inches	Joint Seal Assembly (Strip Seal)
MR > 4 inches	Joint Seal Assembly (Modular Unit) or Seismic Joint

The 1st paragraph of Section 51-1.12F(3)(a), "Type A and AL Seal, " of the Standard Specifications is amended to read:

- The sealant must consist of a 2-component silicone sealant that will withstand up to ± 50 percent movement.

The 2nd paragraph of Section 51-1.12F(3)(a), "Type A and AL Seal," of the Standard Specifications is amended to read:

- Silicone sealants must be tested under California Test 435 and must comply with the following:

Specification	Requirement
Modulus at 150 percent elongation	8–75 psi
Recovery	21/32 inch max.
Notch Test	Notched or loss of bond 1/4 inch, max.
Water Resistance	Notched or loss of bond 1/4 inch, max.
Ultraviolet Exposure ASTM Designation: G 154, Table X2.1, Cycle 2.	No more than slight checking or cracking.
Cone Penetration	4.5-12.0 mm

The 3rd paragraph of Section 51-1.12F(3)(a), "Type A and AL Seal," of the Standard Specifications is deleted.

The 8th paragraph of Section 51-1.12F(3)(a), "Type A and AL Seal," of the Standard Specifications is deleted.

The 10th paragraph of Section 51-1.12F(3)(a), "Type A and AL Seal," of the Standard Specifications is amended to read:

- A Certificate of Compliance accompanied by a certified test report must be furnished for each batch of silicone sealant in conformance with the provisions in Section 6-1.07, "Certificates of Compliance."

The 2nd paragraph of Section 51-1.12F(3)(b), "Type B Seal," of the Standard Specifications is amended to read:

- The preformed elastomeric joint seal must conform to the requirements in ASTM D 2628 and the following:

1. The seal must consist of a multichannel, nonporous, homogeneous material furnished in a finished extruded form.
2. The minimum depth of the seal measured at the contact surface must be at least 95 percent of the minimum uncompressed width of the seal as designated by the manufacturer.
3. When tested in conformance with the requirements in California Test 673 for Type B seals, joint seals must provide a movement rating (MR) of not less than that shown on the plans.
4. The top and bottom edges of the joint seal must maintain continuous contact with the sides of the groove over the entire range of joint movement.

5. The seal must be furnished full length for each joint with no more than 1 shop splice in any 60-foot length of seal.
6. The Contractor must demonstrate the adequacy of the procedures to be used in the work before installing seals in the joints.
7. One field splice per joint may be made at locations and by methods approved by the Engineer. The seals are to be manufactured full length for the intended joint, then cut at the approved splice section and rematched before splicing. The Contractor must submit splicing details prepared by the joint seal manufacturer for approval before beginning splicing work.
8. Shop splices and field splices must have no visible offset of exterior surfaces and must show no evidence of bond failure.
9. At all open ends of the seal that would admit water or debris, each cell must be filled to a depth of 3 inches with commercial quality open cell polyurethane foam or closed by other means subject to approval by the Engineer.

The 7th paragraph of Section 51-1.12F(3)(b), "Type B Seal," of the Standard Specifications is amended to read:

- The joint seal must be installed full length for each joint with equipment that does not twist or distort the seal, elongate the seal longitudinally, or otherwise cause damage to the seal or to the concrete forming the groove.

The first sentence of the eleventh paragraph of Section 51-1.12F(3)(b), "Type B Seal," of the Standard Specifications is amended to read:

- Samples of the prefabricated joint seals, not less than 3 feet in length, will be taken by the Engineer from each lot of material.

The fourth and fifth sentences of the sixth paragraph of Section 51-1.12H(1), "Plain and Fabric Reinforced Elastomeric Bearing Pads," of the Standard Specifications are amended to read:

- Each ply of fabric shall have a breaking strength of not less than 800 pounds per inch of width in each thread direction when 3" x 36" samples are tested on split drum grips. The bond between double plies shall have a minimum peel strength of 20 pounds per inch.

The hardness (Type A) requirement in the table in the eighth paragraph of Section 51-1.12H(1), "Plain and Fabric Reinforced Elastomeric Bearing Pads," of the Standard Specifications is amended to read:

Hardness (Type A)	D 2240 with 2kg mass.	55 ±5
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The first sentence of subparagraph A of the first paragraph of Section 51-1.12H(2), "Steel Reinforced Elastomeric Bearings," of the Standard Specifications is amended to read:

- The bearings shall consist of alternating steel laminates and internal elastomer laminates with top and bottom elastomer covers. Steel laminates shall have a nominal thickness of 0.075 inch (14 gage).

The first paragraph in Section 51-1.135, "Mortar," of the Standard Specifications is amended to read:

- Mortar shall be composed of cementitious material, sand, and water proportioned and mixed as specified in this Section 51-1.135.

The third paragraph in Section 51-1.135, "Mortar," of the Standard Specifications is amended to read:

- The proportion of cementitious material to sand, measured by volume, shall be one to 2 unless otherwise specified.

The third sentence of the fourth paragraph of Section 51-1.17, "Finishing Bridge Decks," of the Standard Specifications is amended to read:

- The surfaces shall have a profile trace showing no high points in excess of 0.25 inch, and the portions of the surfaces within the traveled way shall have a profile count of 5 or less in any 100-foot section.

Section 51-1.17, "Finishing Bridge Decks," of the Standard Specifications is amended by adding the following subsection:

51-1.17A DECK CRACK TREATMENT

- The Contractor shall use all means necessary to minimize the development of shrinkage cracks.
- The Contractor shall remove all equipment and materials from the deck and clean the surface as necessary for the Engineer to measure the surface crack intensity. Surface crack intensity will be determined by the Engineer after completion of concrete cure, before prestressing, and before the release of falsework. In any 500 square foot portion of deck within the limits of the new concrete deck, should the intensity of cracking be such that there are more than 16 feet of cracks whose width at any location exceeds 0.02 inch, the deck shall be treated with methacrylate resin. The area of deck to be treated shall have a width that extends for the entire width of new deck inside the concrete barriers and a length that extends at least 5 feet beyond the furthest single continuous crack outside the 500 square foot portion, measured from where that crack exceeds 0.02 inch in width, as determined by the Engineer.
- Deck crack treatment shall include furnishing, testing, and application of methacrylate resin and sand. If grinding is required, deck treatment shall take place before grinding.

51-1.17A(1) Submittals

• Before starting deck treatment, the Contractor shall submit plans in conformance with Section 5-1.02, "Plans and Working Drawings," for the following:

1. Public safety plan for the use of methacrylate resin
2. Placement plan for the construction operation

- The plans shall identify materials, equipment, and methods to be used.
- The public safety plan for the use of methacrylate resin shall include details for the following:

1. Shipping
2. Storage
3. Handling
4. Disposal of residual methacrylate resin and the containers

- The placement plan for construction shall include the following:

1. Schedule of deck treatment for each bridge. The schedule shall be consistent with "Maintaining Traffic" of the special provisions and shall include time for the Engineer to perform California Test 342.

2. Methods and materials to be used, including the following:

- 2.1. Description of equipment for applying the resin
- 2.2. Description of equipment for applying the sand
- 2.3. Gel time range and final cure time for the resin

- If the measures proposed in the safety plan are inadequate to provide for public safety associated with the use of methacrylate resin, the Engineer will reject the plan and direct the Contractor to revise the plan. Directions for revisions will be in writing and include detailed comments. The Engineer will notify the Contractor of the approval or rejection of a submitted or revised plan within 15 days of receipt of that plan.

- In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays."

51-1.17A(2) Materials

- Before using methacrylate resin, a Material Safety Data Sheet shall be submitted for each shipment of resin.

- Methacrylate resin shall be low odor and have a high molecular weight. Before adding initiator, the resin shall have a maximum volatile content of 30 percent when tested in conformance with the requirements in ASTM Designation: D 2369, and shall conform to the following:

PROPERTY	REQUIREMENT	TEST METHOD
* Viscosity	25 cP, maximum, (Brookfield RVT with UL adaptor, 50 RPM at 77°F	ASTM D 2196
* Specific Gravity	0.90 minimum, at 77°F	ASTM D 1475
* Flash Point	180°F, minimum	ASTM D 3278
* Vapor Pressure	1.0 mm Hg, maximum, at 77°F	ASTM D 323
Tack-free Time	400 minutes, maximum at 25°C	Specimen prepared per California Test 551
PCC Saturated Surface-Dry Bond Strength	3.5 MPa, minimum at 24 hours and 21±1°C	California Test 551
* Test shall be performed before adding initiator.		

51-1.17A(3) Testing

- The Contractor shall allow 20 days for sampling and testing by the Engineer of the methacrylate resin before proposed use. If bulk resin is to be used, the Contractor shall notify the Engineer in writing at least 15 days before the delivery of the bulk resin to the job site. Bulk resin is any resin stored in containers in excess of 55 gallons.

- Before starting production treatment, the Contractor shall treat a test area of approximately 500 square feet that is within the project limits and at a location approved by the Engineer. When available the test area shall be outside of the traveled way. Weather and pavement conditions during the test treatment shall be similar to those expected on the deck. Equipment used for testing shall be similar to those used for deck treating operations.

- During test and production deck treatment, test tiles shall be used to evaluate the resin cure time. The Contractor shall coat at least one 4" x 4" commercial quality smooth glazed tile for each batch of methacrylate resin. The coated tile shall be placed adjacent to the corresponding treated area. Sand shall not be applied to the test tiles.

- The acceptance criteria for a treated area is as follows:

- The test tiles are dry to the touch.
- The treated deck surface is tack free (non-oily).
- The sand cover adheres and resists brushing by hand.
- Excess sand has been removed by vacuuming or sweeping.
- The coefficient of friction is at least 0.35 when tested in conformance with California Test 342.

- Deck treatment on the test area shall demonstrate that the methods and materials meet the acceptance criteria and that the production work will be completed within the specified time for maintaining traffic.

- If a test or production area fails to meet the acceptance criteria, as determined by the Engineer, the treatment will be rejected, and the treatment shall be removed and replaced until the area complies with the acceptance criteria.

51-1.17A(4) Construction

- Equipment shall be fitted with suitable traps, filters, drip pans, or other devices as necessary to prevent oil or other deleterious material from being deposited on the deck.
- Before deck treatment with methacrylate resin, the bridge deck surface shall be cleaned by abrasive blasting, and all loose material shall be blown from visible cracks using high-pressure air. Concrete curing seals shall be cleaned from the deck surface to be treated, and the deck shall be dry when blast cleaning is performed. If the deck surface becomes contaminated at any time before placing the resin, the deck surface shall be cleaned by abrasive blasting.
- Where abrasive blasting is being performed within 10 feet of a lane occupied by public traffic, the residue including dust shall be removed immediately after contact between the abrasive and the surface being treated. The removal shall be by a vacuum attachment operating concurrently with the abrasive blasting operation.
- A compatible promoter/initiator system shall be capable of providing the resin gel time range shown on the placement plan. Gel time shall be adjusted to compensate for the changes in temperature throughout treatment application.
- Resin shall be applied by machine and by using a two-part resin system with a promoted resin for one part and an initiated resin for the other part. This two-part resin system shall be combined at equal volumes to the spray bars through separate positive displacement pumps. Combining of the 2 components shall be by either static in-line mixers or by external intersecting spray fans. The pump pressure at the spray bars shall not be great enough to cause appreciable atomization of the resin. Compressed air shall not be used to produce the spray. A shroud shall be used to enclose the spray bar apparatus.
- At the Contractor's option, manual application may be used. For manual application, (1) the quantity of resin mixed with promoter and initiator shall be limited to 5 gallons at a time, and (2) the resin shall be distributed by squeegees and brooms within 10 minutes after application.
- The Contractor shall apply methacrylate resin only to the specified area. Barriers, railing, joints, and drainage facilities shall be adequately protected to prevent contamination by the treatment material. Contaminated items shall be repaired at the Contractor's expense.
- The relative humidity shall be less than 90 percent at the time of treatment. The prepared area shall be dry and the surface temperature shall be at least 50°F and not more than 100°F when the resin is applied. The rate of application of promoted/initiated resin shall be approximately 90 square feet per gallon; the exact rate shall be determined by the Engineer.
- The deck surfaces to be treated shall be completely covered with resin so the resin penetrates and fills all cracks. The resin shall be applied within 5 minutes after complete mixing. A significant increase in viscosity shall be cause for rejection. Excess material shall be redistributed by squeegees or brooms within 10 minutes after application. For textured deck surfaces, including grooved surfaces, excess material shall be removed from the texture indentations.
- After the resin has been applied, at least 20 minutes shall elapse before applying sand. The sand shall be commercial quality dry blast sand. At least 95 percent of the sand shall pass the No. 8 sieve and at least 95 percent shall be retained on the No. 20 sieve. The sand shall be applied at a rate of approximately 2 pounds per square yard or until refusal as determined by the Engineer.
- Traffic will not be allowed on treated areas until the acceptance criteria has been met as determined by the Engineer.

The second paragraph in Section 51-1.18C, "Class 2 Surface Finish (Gun Finish)," of the Standard Specifications is amended to read:

- When Class 2 surface finish (gun finish) is specified, ordinary surface finish shall first be completed. The concrete surfaces shall then be abrasive blasted to a rough texture and thoroughly washed down with water. While the washed surfaces are damp, but not wet, a finish coating of machine applied mortar, approximately 1/4 inch thick, shall be applied in not less than 2 passes. The coating shall be pneumatically applied and shall consist of either (1) sand, cementitious material, and water mechanically mixed prior to its introduction to the nozzle, or (2) premixed sand and cementitious material to which water is added prior to its expulsion from the nozzle. The use of admixtures shall be subject to the approval of the Engineer as provided in Section 90, "Portland Cement Concrete." Unless otherwise specified, supplementary cementitious materials will not be required. The proportion of cementitious material to sand shall be not less than one to 4, unless otherwise directed by the Engineer. Sand shall be of a grading suitable for the purpose intended. The machines shall be operated and the coating shall be applied in conformance with standard practice. The coating shall be firmly bonded to the concrete surfaces on which it is applied.

The fifth paragraph in Section 51-1.18C, "Class 2 Surface Finish (Gun Finish)," of the Standard Specifications is amended to read:

- When surfaces to be finished are in pedestrian undercrossings, the sand shall be silica sand and the cementitious material shall be standard white portland cement.

Section 51-1.23, "Payment," of the Standard Specifications is amended by adding the following:

- Full compensation for deck crack treatment, including execution of the public safety plan, shall be considered as included in the contract price paid per cubic yard for structural concrete, bridge, and no additional compensation will be allowed therefor.

SECTION 52: REINFORCEMENT

Issue Date: December 7, 2007

The table in the eleventh paragraph of Section 52-1.07, "Placing," of the Standard Specifications is amended to read:

Height Zone (H) (Feet above ground)	Wind Pressure Value (psf)
$H \leq 30$	20
$30 < H \leq 50$	25
$50 < H \leq 100$	30
$H > 100$	35

The table in the second paragraph of Section 52-1.08B(1), "Mechanical Splices," of the Standard Specifications is amended to read:

Reinforcing Bar Number	Total Slip
4	0.010-inch
5	0.010-inch
6	0.010-inch
7	0.014-inch
8	0.014-inch
9	0.014-inch
10	0.018-inch
11	0.018-inch
14	0.024-inch
18	0.030-inch

The subparagraph under the sixth paragraph of Section 52-1.08B(2), "Butt Welded Splices," of the Standard Specifications is amended to read:

- The minimum preheat and interpass temperatures shall be 400° F for Grade 40 bars and 600° F for Grade 60 bars. Immediately after completing the welding, at least 6 inches of the bar on each side of the splice shall be covered by an insulated wrapping to control the rate of cooling. The insulated wrapping shall remain in place until the bar has cooled below 200° F.

Item A of the 3rd paragraph of Section 52-1.08C, "Service Splice and Ultimate Butt Splice Testing Requirements," of the Standard Specifications is amended to read:

- A. Proper facilities, including a calibrated tensile testing machine capable of breaking the largest size of reinforcing bar to be tested.

The 5th paragraph of Section 52-1.08C, "Service Splice and Ultimate Butt Splice Testing Requirements," of the Standard Specifications is amended to read:

- Prequalification and production sample splices and testing shall conform to California Test 670 and these specifications.

The 6th paragraph of Section 52-1.08C, "Service Splice and Ultimate Butt Splice Testing Requirements," of the Standard Specifications is deleted.

The 5th paragraph of Section 52-1.08C(2)(a), "Production Test Requirements for Service Splices," of the Standard Specifications is amended to read:

- If 3 or more sample splices from a production test conform to the provisions in this Section 52-1.08C(2), "Service Splice Test Criteria," all splices in the lot represented by this production test will be considered acceptable.

The 2nd paragraph of Section 52-1.08C(3), "Ultimate Butt Splice Test Criteria," of the Standard Specifications is amended to read:

- A minimum of 1 control bar shall be removed from the same bar as, and adjacent to, all ultimate prequalification, production, and quality assurance sample splices. The lengths of control bars shall conform to the lengths specified for sample splices in California Test 670. The portion of adjacent bar remaining in the work shall also be identified with weatherproof markings that correspond to its adjacent control bar.

The 2nd sentence of the 6th paragraph of Section 52-1.08C(3), "Ultimate Butt Splice Test Criteria," of the Standard Specifications is amended to read:

- In addition, necking of the bar, as defined in California Test 670, shall occur at rupture regardless of whether the bar breaks inside or outside the affected zone.

SECTION 53: SHOTCRETE

Issue Date: November 2, 2007

The third paragraph in Section 53-1.01, "Description," of the Standard Specifications is amended to read:

- The dry-mix process shall consist of delivering dry mixed aggregate and cementitious material pneumatically or mechanically to the nozzle body and adding water and mixing the materials in the nozzle body. The wet-mix process shall consist of delivering mixed aggregate, cement, and water pneumatically to the nozzle and adding any admixture at the nozzle.

The first through fourth paragraphs in Section 53-1.02, "Materials," of the Standard Specifications is amended to read:

- Cementitious material, fine aggregate, and mixing water shall conform to the provisions in Section 90, "Portland Cement Concrete."
 - Shotcrete to be mixed and applied by the dry-mix process shall consist of one part cementitious material to not more than 4.5 parts fine aggregate, thoroughly mixed in a dry state before being charged into the machine. Measurement may be either by volume or by weight. The fine aggregate shall contain not more than 6 percent moisture by weight.
 - Shotcrete to be mixed and applied by the wet-mix process shall consist of cementitious material, fine aggregate, and water and shall contain not less than 632 pounds of cementitious material per cubic yard. A maximum of 30 percent pea gravel may be substituted for fine aggregate. The maximum size of pea gravel shall be such that 100 percent passes the 1/2 inch screen and at least 90 percent passes the 3/8 inch screen.
 - Admixtures may be added to shotcrete and shall conform to the provisions in Section 90-4, "Admixtures."

Item C of the third paragraph in Section 53-1.04, "Placing Shotcrete," of the Standard Specifications is amended to read:

- C. Aggregate and cementitious material that have been mixed for more than 45 minutes shall not be used unless otherwise permitted by the Engineer.

Section 53-1.07, "Measurement," of the Standard Specifications is amended to read:

- Quantities of shotcrete will be measured by the cubic yard computed from measurements, along the slope, of actual areas placed and the theoretical thickness shown on the plans. The Department does not pay for shotcrete placed outside the dimensions shown on the plans or to fill low foundation.

Section 53-1.08, "Payment," of the Standard Specifications is amended to read:

- The contract price paid per cubic yard for shotcrete shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in placing shotcrete, including preparing the foundation, wire reinforcement, structure backfill, joint filling material, and if required by the plans, drains with sacked pervious backfill material, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.

SECTION 55: STEEL STRUCTURES

Issue Date: May 2, 2008

The 3rd paragraph of Section 55-1.05, "Falsework," of the Standard Specifications is amended to read:

- Construction methods and equipment employed by the Contractor shall conform to the provisions in Section 7-1.02, "Load Limitations."

The CVN impact value for Grade HPS 50W in the table in the fifth paragraph of Section 55-2.01, "Description," of the Standard Specifications is amended to read:

Grade HPS 50W* (4 inches and under in thickness)	20 at 10° F
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The first paragraph in Section 55-3.05, "Flatness of Faying and Bearing Surfaces," of the Standard Specifications is amended to read:

- Surfaces of bearing and base plates and other metal surfaces that are to come in contact with each other or with ground concrete surfaces or with asbestos sheet packing shall be flat to within 1/32-inch tolerance in 12 inches and to within 1/16-inch tolerance overall. Surfaces of bearing and base plates and other metal bearing surfaces that are to come in contact with preformed fabric pads, elastomeric bearing pads, or mortar shall be flat to within 1/8-inch tolerance in 12 inches and to within 3/16-inch tolerance overall.

Item B of the first paragraph of Section 55-3.10, "Fastener Threads," of the Standard Specifications is amended to read:

B. Internal threads shall conform to the requirements in ASTM Designation: A 563.

The third paragraph in Section 55-3.19, "Bearings and Anchorages," of the Standard Specifications is amended to read:

- Immediately before setting bearing assemblies or masonry plates directly on ground concrete surfaces, the Contractor shall thoroughly clean the surfaces of the concrete and the metal to be in contact and shall apply a coating of nonsag polysulfide or polyurethane caulking conforming to the requirements in ASTM Designation: C 920 to contact areas to provide full bedding.

The fifth paragraph in Section 55-3.19, "Bearings and Anchorages," of the Standard Specifications is amended to read:

- Mortar to be placed below masonry plates or bearing plates of the bearing assemblies and in anchor bolt sleeves or canisters shall conform to the provisions in Section 51-1.135, "Mortar," except that the proportion of cementitious material to sand shall be 1:3.

Item D of the first paragraph of Section 55-4.01, "Measurement," of the Standard Specifications is amended to read:

- D. To determine the pay quantities of galvanized metal, the weight to be added to the calculated weight of the base metal for the galvanizing will be determined from the table of weights of zinc coatings specified in ASTM Designation: A 153/A 153M.

SECTION 56: SIGNS

Issue Date: March 16, 2007

The fifth paragraph in Section 56-1.03, "Fabrication," of the Standard Specifications is amended to read:

- Clips, eyes, or removable brackets shall be affixed to all signs and all posts and shall be used to secure the sign during shipping and for lifting and moving during erection as necessary to prevent damage to the finished galvanized or painted surfaces. Brackets on tubular sign structures shall be removed after erection. Details of the devices shall be shown on the working drawings.

The fourth paragraph of Section 56-1.10, "Payment," of the Standard Specifications is amended to read:

- The contract price paid per pound for install sign structure of the type or types designated 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 sign structures, complete in place, including installing anchor bolt assemblies, removable sign panel frames, and sign panels and performing any welding, painting or galvanizing required during installation, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.

The fourth paragraph in Section 56-2.03, "Construction," of the Standard Specifications is amended to read:

- Backfill material for metal posts shall consist of minor concrete conforming to the provisions in Section 90-10, "Minor Concrete," and shall contain not less than 463 pounds of cementitious material per cubic yard.

SECTION 59: PAINTING

Issue Date: May 1, 2006

The third paragraph of Section 59-2.12, "Painting," of the Standard Specifications is amended to read:

- Contact surfaces of stiffeners, railings, built up members or open seam exceeding 6 mils in width that would retain moisture, shall be caulked with polysulfide or polyurethane sealing compound conforming to the requirements in ASTM Designation: C 920, Type S, Grade NS, Class 25, Use O, or other approved material.

The fourth paragraph of Section 59-2.12, "Painting," of the Standard Specifications is amended to read:

- The dry film thickness of the paint will be measured in place with a calibrated Type 2 magnetic film thickness gage in conformance with the requirements in SSPC-PA 2, "Measurement of Dry Coating Thickness with Magnetic Gages," of the "SSPC: The Society for Protective Coatings," except that there shall be no limit to the number or location of spot measurements to verify compliance with specified thickness requirements.

SECTION 64: PLASTIC PIPE

Issue Date: July 31, 2007

The first paragraph of Section 64-1.06, "Concrete Backfill," of the Standard Specifications is amended to read:

- 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.

The third paragraph of Section 64-1.06, "Concrete Backfill," of the Standard Specifications is amended to read:

- 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 65: REINFORCED CONCRETE PIPE

Issue Date: July 31, 2007

The first paragraph of Section 65-1.02, "Materials," of the Standard Specifications is amended to read:

- Cementitious material and aggregate shall conform to the provisions in Section 90-2, "Materials" except that mortar strengths relative to Ottawa sand and grading requirements shall not apply to the aggregate. Use of supplemental cementitious material shall conform to AASHTO Designation: M 170.

Subparagraph "c" of the eleventh paragraph of Section 65-1.02A(1) "Circular Reinforced Concrete Pipe (Designated or Selected by Class)," of the Standard Specifications is amended to read:

- c. Cementitious material and aggregate for non-reinforced concrete pipe shall conform to the provisions in Section 65-1.02, "Materials."

The first paragraph of Section 65-1.035, "Concrete Backfill," of the Standard Specifications is amended to read:

- 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 in conformance with 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.

The third paragraph of Section 65-1.035, "Concrete Backfill," of the Standard Specifications is amended to read:

- 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.

The first subparagraph of the second paragraph of Section 65-1.06, "Joints," of the Standard Specifications is amended to read:

- Cement Mortar.- Mortar shall be composed of one part cementitious material and 2 parts sand by volume. Supplementary cementitious material will not be required.

SECTION 66: CORRUGATED METAL PIPE

Issue Date: July 31, 2007

The first paragraph of Section 66-1.045, "Concrete Backfill," of the Standard Specifications is amended to read:

- 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.

The third paragraph of Section 66-1.045, "Concrete Backfill," of the Standard Specifications is amended to read:

- 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

Issue Date: July 31, 2007

The first and second paragraphs of Section 68-3.02D, "Miscellaneous," of the Standard Specifications are amended to read:

- 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."

The thirteenth paragraph of Section 68-3.03, "Installation," of the Standard Specifications is amended to read:

- 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.

The seventeenth and eighteenth paragraphs of Section 68-3.03, "Installation," of the Standard Specifications are amended to read:

- 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.

The twentieth paragraph of Section 68-3.03, "Installation," of the Standard Specifications is amended to read:

- 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.

Section 68-3.05, "Payment," of the Standard Specifications is amended to read:

- 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 69: OVERSIDE DRAINS

Issue Date: July 31, 2007

The first paragraph of Section 69-1.01, "Description," of the Standard Specifications is amended to read:

- This work shall consist of furnishing and installing entrance tapers, pipe downdrains, tapered inlets, flume downdrains, anchor assemblies, reducers, slip joints and hot mix asphalt overside drains to collect and carry surface drainage down the roadway slopes as shown on the plans or as directed by the Engineer and as specified in these specifications and the special provisions.

Section 69-1.02D, "Asphalt Concrete," of the Standard Specifications is amended to read:

69-1.02D Hot Mix Asphalt

- Hot mix asphalt for overside drains shall conform to the provisions in Section 39-1.13, "Miscellaneous Areas."

Section 69-1.04, "Asphalt Concrete Overside Drains," is amended to read:

69-1.04 HOT MIX ASPHALT OVERSIDE DRAINS

- Hot mix asphalt overside drains shall be constructed as shown on the plans or as directed by the Engineer. The hot mix asphalt shall be placed in conformance with the provisions in Section 39-1.13, "Miscellaneous Areas."

The second paragraph of Section 69-1.06, "Payment," of the Standard Specifications is amended to read:

- Quantities of hot mix asphalt placed for overside drains will be paid for as provided in Section 39-5, "Measurement and Payment," for hot mix asphalt placed in miscellaneous areas.

SECTION 70: MISCELLANEOUS FACILITIES

Issue Date: January 5, 2007

The second paragraph of Section 70-1.02C, "Flared End Sections," of the Standard Specifications is amended to read:

- 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 mortar strengths relative to Ottawa sand and 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 meter 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.

The first paragraph of Section 70-1.02H, "Precast Concrete Structures," of the Standard Specifications is amended to read:

- 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 mortar strengths relative to Ottawa sand and grading requirements shall not apply to the aggregate. Use of supplementary cementitious material shall conform to the requirements in AASHTO Designation: M 170.

The second paragraph of Section 70-1.03, "Installation," of the Standard Specifications is amended to read:

- 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 73: CONCRETE CURBS AND SIDEWALKS

Issue Date: July 31, 2007

The second subparagraph of the second paragraph of Section 73-1.01, "Description," of the Standard Specifications is amended to read:

2. Minor concrete shall contain not less than 463 pounds of cementitious material per cubic yard except that when extruded or slip-formed curbs are constructed using

3/8-inch maximum size aggregate, minor concrete shall contain not less than 548 pounds of cementitious material per cubic yard.

The fifteenth paragraph of Section 73-1.06, "Sidewalk, Gutter Depression, Island Paving, Curb Ramp (Wheelchair Ramp) and Driveway Construction," of the Standard Specifications is amended to read:

- Where hot mix asphalt or portland cement concrete pavements are to be placed around or adjacent to manholes, pipe inlets or other miscellaneous structures in sidewalk, gutter depression, island paving, curb ramps or driveway areas, the structures shall not be constructed to final grade until after the pavements have been constructed for a reasonable distance on each side of the structures.

SECTION 75: MISCELLANEOUS METAL

Issue Date: January 18, 2008

The 13th paragraph of Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications is amended to read:

- Concrete anchorage devices shall be mechanical expansion or resin capsule types installed in drilled holes or cast-in-place insert types. The anchorage devices shall be selected from the Department's Pre-Qualified Products List at:

http://www.dot.ca.gov/hq/esc/approved_products_list

- The anchorage devices shall be a complete system, including threaded studs, hex nuts, and cut washers. Thread dimensions for externally threaded concrete anchorage devices prior to zinc coating, shall conform to the requirements in ANSI Standard: B1.1 having Class 2A tolerances or ANSI Standard: B1.13M having Grade 6g tolerances. Thread dimensions for internally threaded concrete anchorage devices shall conform to the requirements in ASTM A 563.

The 18th paragraph of Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications is amended to read:

- Mechanical expansion anchors shall, when installed in accordance with the manufacturer's instructions and these specifications and tested in conformance with the requirements in California Test 681, withstand the application of a sustained tension test load of at least the following values for at least 48 hours with a movement not greater than 0.035 inch:

Stud Diameter (inches)	Sustained Tension Test Load (pounds)
*3/4	5,000
5/8	4,100
1/2	3,200
3/8	2,100
1/4	1,000

* Maximum stud diameter permitted for mechanical expansion anchors.

- Resin capsule anchors shall, when installed in accordance with the manufacturer's instructions and these specifications and tested in conformance with the requirements in California Test 681, withstand the application of a sustained tension test load of at least the following values for at least 48 hours with a movement not greater than 0.010 inch:

Stud Diameter (inches)	Sustained Tension Test Load (pounds)
1-1/4	31,000
1	17,900
7/8	14,400
3/4	5,000
5/8	4,100
1/2	3,200
3/8	2,100
1/4	1,000

- At least 25 days before use, the Contractor shall submit one sample of each resin capsule anchor per lot to the Transportation Laboratory for testing. A lot of resin capsule anchors is 100 units, or fraction thereof, of the same brand and product name.

The 20th paragraph of Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications is amended to read:

- The Pre-Qualified Products List for concrete anchorage devices has been developed from data previously furnished by suppliers or manufacturers for each type and size. Approval of additional anchorage device types and sizes is contingent upon the Contractor submitting to the Engineer one sample of each type of concrete anchorage device, manufacturer's installation instructions, and certified results of tests, either by a private testing laboratory or the manufacturer, indicating compliance with the above requirements.

The twenty-fourth paragraph of Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications is amended to read:

- Sealing compound, for caulking and adhesive sealing, shall be a polysulfide or polyurethane material conforming to the requirements in ASTM Designation: C 920, Type S, Grade NS, Class 25, Use O.

The 1st sentence of the 3rd paragraph of Section 75-1.035, "Bridge Joint Restrainer Units." of the Standard Specifications is amended to read:

Cables 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.

Item C of the fourth paragraph of Section 75-1.035, "Bridge Joint Restrainer Units," of the Standard Specifications is amended to read:

- C. Nuts shall conform to the requirements in ASTM Designation: A 563 including Appendix X1, except lubrication is not required.

The twelfth paragraph in Section 75-1.035, "Bridge Joint Restrainer Units," of the Standard Specifications is amended to read:

- Concrete for filling cable drum units shall conform to the provisions in Section 90-10, "Minor Concrete," or at the option of the Contractor, may be a mix with 3/8-inch maximum size aggregate and not less than 675 pounds of cementitious material per cubic yard.

The sixth paragraph of Section 75-1.05, "Galvanizing," of the Standard Specifications is amended to read:

- Galvanizing of iron and steel hardware and nuts and bolts, when specified or shown on the plans, shall conform to the requirements in ASTM Designation: A 153/A 153M, except whenever threaded studs, bolts, nuts, and washers are specified to conform to the requirements in ASTM Designation: A 307, A 325, A 449, A 563, or F 436 and zinc coating is required, they shall be hot-dip zinc coated or mechanically zinc coated in conformance with the requirements in the ASTM Designations. Unless otherwise specified, galvanizing shall be performed after fabrication.

The eighth paragraph of Section 75-1.05, "Galvanizing," of the Standard Specifications is amended to read:

- Tapping of nuts or other internally threaded parts to be used with zinc coated bolts, anchor bars or studs shall be done after galvanizing and shall conform to the requirements for thread dimensions and overtapping allowances in ASTM Designation: A 563.

SECTION 80: FENCES

Issue Date: January 5, 2007

The fourth paragraph of Section 80-3.01F, "Miscellaneous," of the Standard Specifications is amended to read:

- Portland cement concrete for metal post and brace footings and for deadmen shall be 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.

The fourth paragraph of Section 80-4.01C, "Miscellaneous," of the Standard Specifications is amended to read:

- Portland cement concrete for metal post and for deadmen 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.

SECTION 83: RAILINGS AND BARRIERS

Issue Date: August 17, 2007

The seventh paragraph in Section 83-1.02, "Materials and Construction," of the Standard Specifications is amended to read:

- 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.

The 1st sentence of the 8th subparagraph of the 24th paragraph of Section 83-1.02B, "Metal Beam Guard Railing," of the Standard Specifications is amended to read:

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.

The 2nd sentence of the 6th paragraph of Section 83-1.02E, "Cable Railing," of the Standard Specifications is amended to read:

Cable shall be galvanized in conformance with the requirements in Federal Specification RR-W-410.

The 5th paragraph of Section 83-1.02I, "Chain Link Railing," of the Standard Specifications is amended to read:

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.

The 14th paragraph of Section 83-1.02I, "Chain Link Railing," of the Standard Specifications is amended to read:

Chain link fabric shall be either 11-gage Type I zinc-coated fabric conforming to the requirements in AASHTO M 181 or 11-gage Type IV polyvinyl chloride (PVC) coated fabric conforming to the requirements in Federal Specification RR-F-191/1.

Item b of the first paragraph in Section 83-2.02D(2), "Materials," of the Standard Specifications is amended to read:

- 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.

The third paragraph in Section 83-2.02D(2), "Materials," of the Standard Specifications is amended to read:

- 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 85: PAVEMENT MARKERS

Issue Date: July 31, 2007

The sixth paragraph in Section 85-1.06, "Placement," of the Standard Specifications is amended to read:

- Pavement markers shall not be placed on new hot mix asphalt surfacing or seal coat until the surfacing or seal coat has been opened to public traffic for a period of not less than 7 days when hot melt bituminous adhesive is used, and not less than 14 days when epoxy adhesive is used.

The second sentence of the fourteenth paragraph in Section 85-1.06, "Placement," of the Standard Specifications is amended to read:

- Cleaning shall be done by blast cleaning on all surfaces regardless of age or type, except that blast cleaning of clean, new hot mix asphalt and clean, new seal coat surfaces will not be required when hot melt bituminous adhesive is used.

SECTION 86: SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS

Issue Date: July 31, 2007

The first sentence of the first paragraph of Section 86-2.02, "Removing and Replacing Improvements," of the Standard Specifications is amended to read:

- Improvements such as sidewalks, curbs, gutters, portland cement concrete and hot mix asphalt pavement, underlying material, lawns and plants and any other improvements removed, broken or damaged by the Contractor's operations, shall be replaced or reconstructed with the same kind of material as found on the work or with materials of equal quality.

The fourth paragraph in Section 86-2.03, "Foundations," of the Standard Specifications is amended to read:

- After each post, standard, and pedestal on structures is in proper position, mortar shall be placed under the base plate as shown on the plans. The exposed portions shall be formed to

present a neat appearance. Mortar shall conform to Section 51-1.135, "Mortar," except the mortar shall consist of one part by volume of cementitious material and 3 parts of clean sand and shall contain only sufficient moisture to permit packing. Mortar shall be cured by keeping it damp for 3 days.

Item D of the eighteenth paragraph in Section 86-2.05C, "Installation," of the Standard Specifications is amended to read:

- D. The conduit shall be placed in the bottom of the trench, and the trench shall be backfilled with minor concrete conforming to the provisions in Section 90-10, "Minor Concrete." Minor concrete shall contain not less than 590 pounds of cementitious material per cubic yard. Concrete backfill shall be placed to the pavement surface except, when the trench is in hot mix asphalt pavement and additional pavement is not being placed, the top 0.10 foot of the trench shall be backfilled with hot mix asphalt produced from commercial quality paving asphalt and aggregates.

Item E of the eighteenth paragraph in Section 86-2.05C, "Installation," of the Standard Specifications is amended to read:

- E. Prior to spreading hot mix asphalt, tack coat shall be applied in conformance with the provisions in Section 39, "Hot Mix Asphalt." Spreading and compacting of hot mix asphalt shall be performed by any method which will produce a hot mix asphalt surfacing of uniform smoothness, texture and density.

Item C of the twenty-third paragraph in Section 86-2.05C, "Installation," of the Standard Specifications is amended to read:

- C. Precast concrete conduit cradles shall conform to the dimensions shown on the plans and shall be constructed of minor concrete and commercial quality welded wire fabric. Minor concrete shall conform to the provisions in Section 90-10, "Minor Concrete," and shall contain not less than 590 pounds of cementitious material per cubic yard. The cradles shall be moist cured for not less than 3 days.

Item G of the twenty-third paragraph in Section 86-2.05C, "Installation," of the Standard Specifications is amended to read:

- G. The space around conduits through bridge abutment walls shall be filled with mortar conforming to the provisions in Section 51-1.135, "Mortar," except that the proportion of cementitious material to sand shall be one to 3.

The fifth paragraph in Section 86-2.07, "Traffic Pull Boxes," of the Standard Specifications is amended to read:

- Concrete placed around and under traffic pull boxes as shown on the plans shall be minor concrete conforming to the provisions in Section 90-10, "Minor Concrete."

The traffic signal controller cabinet requirement in the table in Section 86-2.08A, "Conductor Identification," of the Standard Specifications is amended to read:

Traffic Signal	Ungrounded Circuit Conductor	Blk	None	CON-1	6
Controller Cabinet	Grounded Circuit Conductor	Wht	None	CON-2	6

The first sentence of the first paragraph of Section 86-4.06, "Pedestrian Signal Faces," of the Standard Specifications is amended to read:

- Message symbols for pedestrian signal faces shall be white WALKING PERSON and Portland orange UPRAISED HAND conforming to the requirements in the Institute of Transportation Engineers Standards: "Pedestrian Traffic Control Signal Indications" and the "California MUTCD."

The second sentence of the tenth paragraph of Section 86-4.07, "Light Emitting Diode Pedestrian Signal Face 'Upraised Hand' Module," of the Standard Specifications is amended to read:

- The color of "UPRAISED HAND" shall be Portland orange conforming to the requirements of the Institute of Transportation Engineers Standards: "Pedestrian Traffic Control Signal Indications" and the "California MUTCD."

The second sentence of the first paragraph of subsection, "Elastomeric Sealant," of Section 86-5.01A(5), "Installation Details," of the Standard Specifications is amended to read:

- Sealant shall be suitable for use in both hot mix asphalt and portland cement concrete.

The first sentence of the first paragraph of subsection, "Asphatic Emulsion Sealant," of Section 86-5.01A(5), "Installation Details," of the Standard Specifications is amended to read:

- Asphaltic emulsion sealant shall conform to the requirements in State Specification 8040-41A-15 and shall be used only for filling slots in hot mix asphalt pavement.

The third sentence of the first paragraph of subsection, "Hot-Melt Rubberized Asphalt Sealant," of Section 86-5.01A(5), "Installation Details," of the Standard Specifications is amended to read:

- Sealant shall be suitable for use in both hot mix asphalt and portland cement concrete.

The tenth paragraph of subsection, "Hot-Melt Rubberized Asphalt Sealant," of Section 86-5.01A(5), "Installation Details," of the Standard Specifications is amended to read:

- If hot mix asphalt surfacing is to be placed, the loop conductors shall be installed prior to placing the uppermost layer of hot mix asphalt. The conductors shall be installed, as shown on the plans, in the compacted layer of hot mix asphalt immediately below the uppermost layer. Installation details shall be as shown on the plans, except the sealant shall fill the slot flush to the surface.

The first paragraph in Section 86-5.01D, "Removing or Abandoning Existing Pressure-Sensitive Detectors," of the Standard Specifications is amended to read:

- When a foundation for a pressure-sensitive vehicle detector is to be removed, the hole left by removing the detector frame and foundation shall be filled with minor concrete, except the roadway surface shall be reconstructed with material to match existing surfacing. Minor concrete shall conform to the provisions in Section 90-10, "Minor Concrete," except that the concrete shall contain not less than 420 pounds of cementitious material per cubic yard for hot mix asphalt surfaced roadways and not less than 590 pounds of cementitious material per cubic yard for portland cement concrete surfaced roadways.

The first paragraph of Section 86-8.01, "Payment," of the Standard Specifications is amended to read:

- The contract lump sum price or prices paid for signal, ramp metering, flashing beacon, lighting, sign illumination, traffic monitoring station, highway advisory radio systems, closed circuit television systems, or combinations thereof; for modifying or removing those systems; for temporary systems; or the lump sum or unit prices paid for various units of those systems; or the lump sum or per foot price paid for conduit of the various sizes, types and installation methods listed 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 furnishing and installing, modifying, or removing the systems, combinations or units thereof, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer, including any necessary pull boxes (except when the type required is shown as a separate contract item); excavation and backfill; concrete foundations (except when shown as a separate contract item); pedestrian barricades; furnishing and installing illuminated street name signs; installing sign panels on pedestrian barricades, on flashing beacon standards, and on traffic signal mast arms; restoring sidewalk, pavement and appurtenances damaged or destroyed during construction; salvaging existing materials; and making all required tests.

SECTION 90: PORTLAND CEMENT CONCRETE

Issue Date: January 5, 2007

Section 90, "Portland Cement Concrete," of the Standard Specifications is amended to read:

SECTION 90: PORTLAND CEMENT CONCRETE

90-1 GENERAL

90-1.01 DESCRIPTION

- Portland cement concrete shall be composed of cementitious material, fine aggregate, coarse aggregate, admixtures if used, and water, proportioned and mixed as specified in these specifications.
- The Contractor shall determine the mix proportions for concrete in conformance with these specifications.
- Class 1 concrete shall contain not less than 675 pounds of cementitious material per cubic yard.
- Class 2 concrete shall contain not less than 590 pounds of cementitious material per cubic yard.
- Class 3 concrete shall contain not less than 505 pounds of cementitious material per cubic yard.

- Class 4 concrete shall contain not less than 420 pounds of cementitious material per cubic yard.
- Minor concrete shall contain not less than 550 pounds of cementitious material per cubic yard unless otherwise specified in these specifications or the special provisions.
- Unless otherwise designated on the plans or specified in these specifications or the special provisions, the amount of cementitious material used per cubic yard of concrete in structures or portions of structures shall conform to the following:

Use	Cementitious Material Content (Pounds/CY)
Concrete designated by compressive strength:	
Deck slabs and slab spans of bridges	675 min., 800 max.
Roof sections of exposed top box culverts	675 min., 800 max.
Other portions of structures	590 min., 800 max.
Concrete not designated by compressive strength:	
Deck slabs and slab spans of bridges	675 min.
Roof sections of exposed top box culverts	675 min.
Prestressed members	675 min.
Seal courses	675 min.
Other portions of structures	590 min.
Concrete for precast members	590 min., 925 max.

- Whenever the 28-day compressive strength shown on the plans is greater than 3,600 pounds per square inch, the concrete shall be designated by compressive strength. If the plans show a 28-day compressive strength that is 4,000 pounds per square inch or greater, an additional 14 days will be allowed to obtain the specified strength. The 28-day compressive strengths shown on the plans that are 3,600 pounds per square inch or less are shown for design information only and are not a requirement for acceptance of the concrete.
- Concrete designated by compressive strength shall be proportioned such that the concrete will attain the strength shown on the plans or specified in the special provisions.
- Before using concrete for which the mix proportions have been determined by the Contractor, or in advance of revising those mix proportions, the Contractor shall submit in writing to the Engineer a copy of the mix design.
- Compliance with cementitious material content requirements will be verified in conformance with procedures described in California Test 518 for cement content. For testing purposes, supplementary cementitious material shall be considered to be cement. Batch proportions shall be adjusted as necessary to produce concrete having the specified cementitious material content.
- If any concrete has a cementitious material, portland cement, or supplementary cementitious material content that is less than the minimum required, the concrete shall be removed. However, if the Engineer determines that the concrete is structurally adequate, the concrete may remain in place and the Contractor shall pay to the State \$0.25 for each pound of cementitious material, portland cement, or supplementary cementitious material that is less than the minimum required. The Department may deduct the amount from any moneys due, or that may become due, the Contractor under the contract. The deductions will not be made unless the difference between the contents required and those actually provided exceeds the batching tolerances permitted by Section 90-5, "Proportioning." No deductions will be made based on the results of California Test 518.
- The requirements of the preceding paragraph shall not apply to minor concrete or commercial quality concrete.

90-2 MATERIALS

90-2.01 CEMENTITIOUS MATERIALS

- Unless otherwise specified, cementitious material shall be either a combination of Type II or Type V portland cement and a supplementary cementitious material, or a blended cement.
- Cementitious materials used in cast-in-place concrete for exposed surfaces of like elements of a structure shall be from the same sources and of the same proportions.
- Cementitious materials shall be protected from moisture until used. Sacked cementitious materials shall be piled to permit access for tallying, inspecting, and identifying each shipment.
- Facilities shall be provided to ensure that cementitious materials meeting this Section 90-2.01 are kept separate from other cementitious materials. Sampling cementitious materials shall be in conformance with California Test 125.
- The Contractor shall furnish a Certificate of Compliance for cementitious materials in conformance with the provisions in Section 6-1.07, "Certificates of Compliance." The Certificate of Compliance shall indicate the source by name and location (including country, state, and city). If cementitious material is delivered directly to the job site, the Certificate of Compliance shall be signed by the cementitious material supplier. If the cementitious material is used in ready-mixed concrete or in precast concrete products purchased as such by the Contractor, the Certificate of Compliance shall be signed by the manufacturer of the concrete or product.

90-2.01A CEMENT

- Portland cement shall conform to the requirements in ASTM Designation: C 150 except, using a 10-sample moving average, limestone shall not exceed 2.5 percent. The C_3S content of Type II cement shall not exceed 65 percent.
- Blended cement shall conform to the requirements for Portland Blast-Furnace Slag, Cement Type IS (MS) or Portland-Pozzolan Cement, Type IP (MS) in AASHTO Designation: M 240 and shall be comprised of an intimate and uniform blend of Type II or Type V cement and supplementary cementitious material in an amount conforming to the requirements in Section 90-2.01C, "Required Use of Supplementary Cementitious Materials."
- In addition, blended cement, Type II portland cement, and Type V portland cement shall conform to the following requirements:
 - A. The cement shall not contain more than 0.60-percent by mass of alkalis, calculated as the percentage of Na_2O plus 0.658 times the percentage of K_2O , when determined by methods as required in AASHTO Designation: T 105;
 - B. The autoclave expansion shall not exceed 0.50-percent; and
 - C. Mortar, containing the cement to be used and Ottawa sand, when tested in conformance with California Test 527, shall not expand in water more than 0.010-percent and shall not contract in air more than 0.048-percent, except that when cement is to be used for precast prestressed concrete piling, precast prestressed concrete members, or steam cured concrete products, the mortar shall not contract in air more than 0.053-percent.
- Type III portland cement shall be used only as specified in the special provisions or with the approval of the Engineer. Type III portland cement shall conform to the additional requirements listed above for Type II portland cement, except when tested in conformance with California Test 527, mortar containing Type III portland cement shall not contract in air more than 0.075-percent.

90-2.01B SUPPLEMENTARY CEMENTITIOUS MATERIALS (SCM)

- Fly ash shall conform to the requirements in AASHTO Designation: M 295, Class F, and the following:

- A. Calcium oxide content shall not exceed 10 percent.
- B. The available alkali, as sodium oxide equivalent, shall not exceed 1.5 percent when determined in conformance with the requirements in ASTM Designation: C 311 or the total alkali, as sodium oxide equivalent, shall not exceed 5.0 percent when determined in conformance with the requirements in AASHTO Designation: T 105.
- C. Commingling of fly ash from different sources at uncontrolled ratios is permissible only if the following criteria are satisfied:
 1. Sources of fly ash to be commingled shall be on the approved list of materials for use in concrete.
 2. Testing of the commingled product is the responsibility of the fly ash supplier.
 3. Each fly ash's running average of density shall not differ from any other by more than 0.01-pound per cubic inch at the time of commingling.
 4. Each fly ash's running average of loss on ignition shall not differ from any other by more than one percent at the time of commingling.
 5. The final product of commingled fly ash shall conform to the requirement in AASHTO Designation: M 295.

- Raw or calcined natural pozzolans shall conform to the requirements in AASHTO Designation: M 295, Class N and the following requirements:

- A. Calcium oxide content shall not exceed 10 percent.
- B. The available alkali, as sodium oxide equivalent, shall not exceed 1.5 percent when determined in conformance with the requirements in ASTM Designation: C 311 or the total alkali, as sodium oxide equivalent, shall not exceed 5.0 percent when determined in conformance with the requirements in AASHTO Designation: T 105.

- Ground Granulated Blast Furnace Slag (GGBFS) shall conform to the requirements in AASHTO Designation: M 302, Grade 100 or Grade 120.

- Silica Fume shall conform to the requirements of AASHTO Designation: M 307, with reduction in mortar expansion of 80 percent, minimum, using the cement from the proposed mix design.

90-2.01C REQUIRED USE OF SUPPLEMENTARY CEMENTITIOUS MATERIALS

- The amount of portland cement and SCM used in portland cement concrete shall conform to the minimum cementitious material content provisions in Section 90-1.01, "Description," or Section 90-4.05, "Optional Use of Chemical Admixtures," and the following:

- A. If a blended cement conforming to the provisions in Section 90-2.01A, "Cement," is used, the minimum amount of SCM incorporated into the cement shall conform to the provisions in this Section 90-2.01C.
- B. Fly ash or natural pozzolan, silica fume, or GGBFS shall not be used with Type IP or Type IS cements.

- Use of SCMs shall conform to the following:

A. If fly ash or natural pozzolan is used:

1. The minimum amount of portland cement shall not be less than 75 percent by weight of the specified minimum cementitious material content.
2. The minimum amount of fly ash or natural pozzolan shall be:
 - a. Fifteen percent by weight of the total amount of cementitious material if the calcium oxide content of fly ash or natural pozzolan is equal to or less than 2 percent by weight;
 - b. Twenty-five percent by weight of the total amount of cementitious material if the calcium oxide content of fly ash or natural pozzolan is greater than 2 percent by weight.
3. The total amount of fly ash or natural pozzolan shall not exceed 35 percent by weight of the total amount of cementitious material to be used in the mix. If Section 90-1.01, "Description," specifies a maximum cementitious material content in pounds per cubic yard, the total weight of portland cement and fly ash or natural pozzolan per cubic yard shall not exceed the specified maximum cementitious material content.

B. If silica fume is used:

1. The amount of silica fume shall not be less than 10 percent by weight of the total amount of cementitious material.
2. The amount of portland cement shall not be less than 75 percent by weight of the specified minimum cementitious material content.
3. If Section 90-1.01, "Description," specifies a maximum cementitious material content in pounds per cubic yard, the total weight of portland cement and silica fume per cubic yard shall not exceed the specified maximum cementitious material content.

C. If GGBFS is used:

1. The minimum amount of GGBFS shall be either:
 - a. Forty percent of the total cementitious material to be used, if the aggregates used in the concrete are on the Department's list of "Approved Aggregates For Use in Concrete with Reduced Fly Ash."
 - b. No less than 50 percent.
2. The amount of GGBFS shall not exceed 60 percent by weight of the total amount of cementitious materials to be used.

90-2.02 AGGREGATES

- Aggregates shall be free from deleterious coatings, clay balls, roots, bark, sticks, rags, and other extraneous material.
- The Contractor shall provide safe and suitable facilities, including necessary splitting devices for obtaining samples of aggregates, in conformance with California Test 125.
- Aggregates shall be of such character that it will be possible to produce workable concrete within the limits of water content provided in Section 90-6.06, "Amount of Water and Penetration."

- Aggregates shall have not more than 10 percent loss when tested for soundness in conformance with the requirements in California Test 214. The soundness requirement for fine aggregate will be waived, provided that the durability index, D_f , of the fine aggregate is 60 or greater when tested for durability in conformance with California Test 229.

- If the results of any one or more of the Cleanness Value, Sand Equivalent, or aggregate grading tests do not meet the requirements specified for "Operating Range" but all meet the "Contract Compliance" requirements, the placement of concrete shall be suspended at the completion of the current pour until tests or other information indicate that the next material to be used in the work will comply with the requirements specified for "Operating Range."

- If the results of either or both the Cleanness Value and coarse aggregate grading tests do not meet the requirements specified for "Contract Compliance," the concrete that is represented by the tests shall be removed. However, if the Engineer determines that the concrete is structurally adequate, the concrete may remain in place, and the Contractor shall pay to the State \$3.50 per cubic yard for paving concrete and \$5.50 per cubic yard for all other concrete for the concrete represented by these tests and left in place. The Department may deduct the amount from any moneys due, or that may become due, the Contractor under the contract.

- If the results of either or both the Sand Equivalent and fine aggregate grading tests do not meet the requirements specified for "Contract Compliance," the concrete which is represented by the tests shall be removed. However, if the Engineer determines that the concrete is structurally adequate, the concrete may remain in place, and the Contractor shall pay to the State \$3.50 per cubic yard for paving concrete and \$5.50 per cubic yard for all other concrete for the concrete represented by these tests and left in place. The Department may deduct the amount from any moneys due, or that may become due, the Contractor under the contract.

- The 2 preceding paragraphs apply individually to the "Contract Compliance" requirements for coarse aggregate and fine aggregate. When both coarse aggregate and fine aggregate do not conform to the "Contract Compliance" requirements, both paragraphs shall apply. The payments specified in those paragraphs are in addition to any payments made in conformance with the provisions in Section 90-1.01, "Description."

- No single Cleanness Value, Sand Equivalent, or aggregate grading test shall represent more than 300 cubic yards of concrete or one day's pour, whichever is smaller.

- When the source of an aggregate is changed, the Contractor shall adjust the mix proportions and submit in writing to the Engineer a copy of the mix design before using the aggregates.

90-2.02A COARSE AGGREGATE

- Coarse aggregate shall consist of gravel, crushed gravel, crushed rock, reclaimed aggregate, crushed air-cooled iron blast furnace slag or combinations thereof. Crushed air-cooled blast furnace slag shall not be used in reinforced or prestressed concrete.

- Reclaimed aggregate is aggregate that has been recovered from plastic concrete by washing away the cementitious material. Reclaimed aggregate shall conform to all aggregate requirements.

- Coarse aggregate shall conform to the following quality requirements:

Tests	California Test	Requirements
Loss in Los Angeles Rattler (after 500 revolutions)	211	45% max.
Cleanness Value		
Operating Range	227	75 min.
Contract Compliance	227	71 min.

- In lieu of the above Cleanness Value requirements, a Cleanness Value "Operating Range" limit of 71, minimum, and a Cleanness Value "Contract Compliance" limit of 68, minimum, will be used to determine the acceptability of the coarse aggregate if the Contractor furnishes a Certificate of Compliance, as provided in Section 6-1.07, "Certificates of Compliance," certifying that:

- A. Coarse aggregate sampled at the completion of processing at the aggregate production plant had a Cleanness Value of not less than 82 when tested in conformance with the requirements in California Test 227; and
- B. Prequalification tests performed in conformance with the requirements in California Test 549 indicated that the aggregate would develop a relative strength of not less than 95 percent and would have a relative shrinkage not greater than 105 percent, based on concrete.

90-2.02B FINE AGGREGATE

- Fine aggregate shall consist of natural sand, manufactured sand produced from larger aggregate or a combination thereof. Manufactured sand shall be well graded.
- Fine aggregate shall conform to the following quality requirements:

Test	California Test	Requirements
Organic Impurities	213	Satisfactory ^a
Mortar Strengths Relative to Ottawa Sand	515	95%, min.
Sand Equivalent:		
Operating Range	217	75, min.
Contract Compliance	217	71, min.

a Fine aggregate developing a color darker than the reference standard color solution may be accepted if it is determined by the Engineer, from mortar strength tests, that a darker color is acceptable.

- In lieu of the above Sand Equivalent requirements, a Sand Equivalent "Operating Range" limit of 71, minimum, and a Sand Equivalent "Contract Compliance" limit of 68, minimum, will be used to determine the acceptability of the fine aggregate if the Contractor furnishes a Certificate of Compliance, as provided in Section 6-1.07, "Certificates of Compliance," certifying that:

- A. Fine aggregate sampled at the completion of processing at the aggregate production plant had a Sand Equivalent value of not less than 82 when tested by California Test 217; and
- B. Prequalification tests performed in conformance with California Test 549 indicated that the aggregate would develop a relative strength of not less than 95 percent and would have a relative shrinkage not greater than 105 percent, based on concrete.

90-2.03 WATER

- In conventionally reinforced concrete work, the water for curing, for washing aggregates, and for mixing shall be free from oil and shall not contain more than 1,000 parts per million of chlorides as Cl, when tested in conformance with California Test 422, nor more than 1,300 parts per million of sulfates as SO₄, when tested in conformance with California Test 417. In prestressed concrete work, the water for curing, for washing aggregates, and for mixing shall be free from oil and shall not contain more than 650 parts per million of chlorides as Cl, when tested in conformance with California Test 422, nor more than 1,300 parts per million of sulfates as SO₄, when tested in conformance with California Test 417. In no case shall the water contain an amount of impurities that will cause either: 1) a change in the setting time of cement of more than 25 percent when tested in conformance with the requirements in ASTM Designation: C 191 or ASTM Designation: C 266 or 2) a reduction in the compressive strength of mortar at 14 days of more than 5 percent, when tested in conformance with the requirements in ASTM Designation: C 109, when compared to the results obtained with distilled water or deionized water, tested in conformance with the requirements in ASTM Designation: C 109.

- In nonreinforced concrete work, the water for curing, for washing aggregates and for mixing shall be free from oil and shall not contain more than 2,000 parts per million of chlorides as Cl, when tested in conformance with California Test 422, or more than 1,500 parts per million of sulfates as SO₄, when tested in conformance with California Test 417.

- In addition to the above provisions, water for curing concrete shall not contain impurities in a sufficient amount to cause discoloration of the concrete or produce etching of the surface.

- Water reclaimed from mixer wash-out operations may be used in mixing concrete. The water shall not contain coloring agents or more than 300 parts per million of alkalis (Na₂O + 0.658 K₂O) as determined on the filtrate. The specific gravity of the water shall not exceed 1.03 and shall not vary more than ±0.010 during a day's operations.

90-2.04 ADMIXTURE MATERIALS

- Admixture materials shall conform to the requirements in the following ASTM Designations:

- A. Chemical Admixtures—ASTM Designation: C 494.

- B. Air-entraining Admixtures—ASTM Designation: C 260.

90-3 AGGREGATE GRADINGS

90-3.01 GENERAL

- Before beginning concrete work, the Contractor shall submit in writing to the Engineer the gradation of the primary aggregate nominal sizes that the Contractor proposes to furnish. If a primary coarse aggregate or the fine aggregate is separated into 2 or more sizes, the proposed gradation shall consist of the gradation for each individual size, and the proposed proportions of each individual size, combined mathematically to indicate one proposed gradation. The proposed gradation shall meet the grading requirements shown in the table in this section, and shall show the percentage passing each of the sieve sizes used in determining the end result.

- The Engineer may waive, in writing, the gradation requirements in this Section 90-3.01 and in Sections 90-3.02, "Coarse Aggregate Grading," 90-3.03, "Fine Aggregate Grading," and 90-3.04, "Combined Aggregate Gradings," if, in the Engineer's opinion, furnishing the gradation is not necessary for the type or amount of concrete work to be constructed.

- Gradations proposed by the Contractor shall be within the following percentage passing limits:

Primary Aggregate Nominal Size	Sieve Size	Limits of Proposed Gradation
1 1/2" x 3/4"	1"	19 - 41
1" x No. 4	3/4"	52 - 85
1" x No. 4	3/8"	15 - 38
1/2" x No. 4	3/8"	40 - 78
3/8" x No. 8	3/8"	50 - 85
Fine Aggregate	No. 16	55 - 75
Fine Aggregate	No. 30	34 - 46
Fine Aggregate	No. 50	16 - 29

- Should the Contractor change the source of supply, the Contractor shall submit in writing to the Engineer the new gradations before their intended use.

90-3.02 COARSE AGGREGATE GRADING

- The grading requirements for coarse aggregates are shown in the following table for each size of coarse aggregate:

Sieve Sizes	Percentage Passing Primary Aggregate Nominal Sizes							
	1 1/2" x 3/4"		1" x No. 4		1/2" x No. 4		3/8" x No. 8	
	Operating Range	Contract Compliance	Operating Range	Contract Compliance	Operating Range	Contract Compliance	Operating Range	Contract Compliance
2"	100	100	—	—	—	—	—	—
1 1/2"	88 - 100	85 - 100	100	100	—	—	—	—
1"	X ±18	X ±25	88 - 100	86 - 100	—	—	—	—
3/4"	0 - 17	0 - 20	X ±15	X ±22	100	100	—	—
1/2"	—	—	—	—	82 - 100	80 - 100	100	100
3/8"	0 - 7	0 - 9	X ±15	X ±22	X ±15	X ±22	X ±15	X ±20
No. 4	—	—	0 - 16	0 - 18	0 - 15	0 - 18	0 - 25	0 - 28
No. 8	—	—	0 - 6	0 - 7	0 - 6	0 - 7	0 - 6	0 - 7

- In the above table, the symbol X is the gradation that the Contractor proposes to furnish for the specific sieve size as provided in Section 90-3.01, "General."

- Coarse aggregate for the 1 1/2 inch, maximum, combined aggregate grading as provided in Section 90-3.04, "Combined Aggregate Gradings," shall be furnished in 2 or more primary aggregate nominal sizes. Each primary aggregate nominal size may be separated into 2 sizes and stored separately, provided that the combined material conforms to the grading requirements for that particular primary aggregate nominal size.

- When the one inch, maximum, combined aggregate grading as provided in Section 90-3.04, "Combined Aggregate Gradings," is to be used, the coarse aggregate may be separated into 2 sizes and stored separately, provided that the combined material shall conform to the grading requirements for the 1" x No. 4 primary aggregate nominal size.

90-3.03 FINE AGGREGATE GRADING

- Fine aggregate shall be graded within the following limits:

Sieve Sizes	Percentage Passing	
	Operating Range	Contract Compliance
3/8"	100	100
No. 4	95 - 100	93 - 100
No. 8	65 - 95	61 - 99
No. 16	X ±10	X ±13
No. 30	X ±9	X ±12
No. 50	X ±6	X ±9
No. 100	2 - 12	1 - 15
No. 200	0 - 8	0 - 10

- In the above table, the symbol X is the gradation that the Contractor proposes to furnish for the specific sieve size as provided in Section 90-3.01, "General."
- In addition to the above required grading analysis, the distribution of the fine aggregate sizes shall be such that the difference between the total percentage passing the No. 16 sieve and the total percentage passing the No. 30 sieve shall be between 10 and 40, and the difference between the percentage passing the No. 30 and No. 50 sieves shall be between 10 and 40.
- Fine aggregate may be separated into 2 or more sizes and stored separately, provided that the combined material conforms to the grading requirements specified in this Section 90-3.03.

90-3.04 COMBINED AGGREGATE GRADINGS

- Combined aggregate grading limits shall be used only for the design of concrete mixes. Concrete mixes shall be designed so that aggregates are combined in proportions that shall produce a mixture within the grading limits for combined aggregates as specified herein.
- The combined aggregate grading, except when otherwise specified in these specifications or the special provisions, shall be either the 1 1/2 inch, maximum grading, or the 1 inch, maximum grading, at the option of the Contractor.

Grading Limits of Combined Aggregates

Sieve Sizes	Percentage Passing			
	1 1/2" Max.	1" Max.	1/2" Max.	3/8" Max.
2"	100	—	—	—
1 1/2"	90 - 100	100	—	—
1"	50 - 86	90 - 100	—	—
3/4"	45 - 75	55 - 100	100	—
1/2"	—	—	90 - 100	100
3/8"	38 - 55	45 - 75	55 - 86	50 - 100
No. 4	30 - 45	35 - 60	45 - 63	45 - 63
No. 8	23 - 38	27 - 45	35 - 49	35 - 49
No. 16	17 - 33	20 - 35	25 - 37	25 - 37
No. 30	10 - 22	12 - 25	15 - 25	15 - 25
No. 50	4 - 10	5 - 15	5 - 15	5 - 15
No. 100	1 - 6	1 - 8	1 - 8	1 - 8
No. 200	0 - 3	0 - 4	0 - 4	0 - 4

- Changes from one grading to another shall not be made during the progress of the work unless permitted by the Engineer.

90-4 ADMIXTURES

90-4.01 GENERAL

- Admixtures used in portland cement concrete shall conform to and be used in conformance with the provisions in this Section 90-4 and the special provisions. Admixtures

shall be used when specified or ordered by the Engineer and may be used at the Contractor's option as provided herein.

- Chemical admixtures and air-entraining admixtures containing chlorides as Cl in excess of one percent by weight of admixture, as determined by California Test 415, shall not be used.
- Admixtures shall be uniform in properties throughout their use in the work. Should it be found that an admixture as furnished is not uniform in properties, its use shall be discontinued.
- If more than one admixture is used, the admixtures shall be compatible with each other so that the desirable effects of all admixtures used will be realized.
- Chemical admixtures shall be used in conformance with the manufacturer's written recommendations.

90-4.02 MATERIALS

- Admixture materials shall conform to the provisions in Section 90-2.04, "Admixture Materials."

90-4.03 ADMIXTURE APPROVAL

- No admixture brand shall be used in the work unless it is on the Department's current list of approved brands for the type of admixture involved.
- Admixture brands will be considered for addition to the approved list if the manufacturer of the admixture submits to the Transportation Laboratory a sample of the admixture accompanied by certified test results demonstrating that the admixture complies with the requirements in the appropriate ASTM Designation and these specifications. The sample shall be sufficient to permit performance of all required tests. Approval of admixture brands will be dependent upon a determination as to compliance with the requirements, based on the certified test results submitted, together with tests the Department may elect to perform.
- If the Contractor proposes to use an admixture of a brand and type on the current list of approved admixture brands, the Contractor shall furnish a Certificate of Compliance from the manufacturer, as provided in Section 6-1.07, "Certificates of Compliance," certifying that the admixture furnished is the same as that previously approved. If a previously approved admixture is not accompanied by a Certificate of Compliance, the admixture shall not be used in the work until the Engineer has had sufficient time to make the appropriate tests and has approved the admixture for use. The Engineer may take samples for testing at any time, whether or not the admixture has been accompanied by a Certificate of Compliance.

90-4.04 REQUIRED USE OF CHEMICAL ADMIXTURES

- If the use of a chemical admixture is specified, the admixture shall be used at the dosage specified, except that if no dosage is specified, the admixture shall be used at the dosage normally recommended by the manufacturer of the admixture.

90-4.05 OPTIONAL USE OF CHEMICAL ADMIXTURES

- The Contractor may use Type A or F, water-reducing; Type B, retarding; or Type D or G, water-reducing and retarding admixtures as described in ASTM Designation: C 494 to conserve cementitious material or to facilitate any concrete construction application subject to the following conditions:

- A. If a water-reducing admixture or a water-reducing and retarding admixture is used, the cementitious material content specified or ordered may be reduced by a maximum of

- 5 percent by weight, except that the resultant cementitious material content shall be not less than 505 pounds per cubic yard; and
- B. When a reduction in cementitious material content is made, the dosage of admixture used shall be the dosage used in determining approval of the admixture.

- Unless otherwise specified, a Type C accelerating chemical admixture conforming to the requirements in ASTM Designation: C 494, may be used in portland cement concrete. Inclusion in the mix design submitted for approval will not be required provided that the admixture is added to counteract changing conditions that contribute to delayed setting of the portland cement concrete, and the use or change in dosage of the admixture is approved in writing by the Engineer.

90-4.06 REQUIRED USE OF AIR-ENTRAINING ADMIXTURES

- When air-entrainment is specified or ordered by the Engineer, the air-entraining admixture shall be used in amounts to produce a concrete having the specified air content as determined by California Test 504.

90-4.07 OPTIONAL USE OF AIR-ENTRAINING ADMIXTURES

- When air-entrainment has not been specified or ordered by the Engineer, the Contractor will be permitted to use an air-entraining admixture to facilitate the use of any construction procedure or equipment provided that the average air content, as determined by California Test 504, of 3 successive tests does not exceed 4 percent, and no single test value exceeds 5.5 percent. If the Contractor elects to use an air-entraining admixture in concrete for pavement, the Contractor shall so indicate at the time the Contractor designates the source of aggregate.

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90-4.10 PROPORTIONING AND DISPENSING LIQUID ADMIXTURES

- Chemical admixtures and air-entraining admixtures shall be dispensed in liquid form. Dispensers for liquid admixtures shall have sufficient capacity to measure at one time the prescribed quantity required for each batch of concrete. Each dispenser shall include a graduated measuring unit into which liquid admixtures are measured to within ± 5 percent of the prescribed quantity for each batch. Dispensers shall be located and maintained so that the graduations can be accurately read from the point at which proportioning operations are controlled to permit a visual check of batching accuracy prior to discharge. Each measuring unit shall be clearly marked for the type and quantity of admixture.

- Each liquid admixture dispensing system shall be equipped with a sampling device consisting of a valve located in a safe and readily accessible position such that a sample of the admixture may be withdrawn slowly by the Engineer.

- If more than one liquid admixture is used in the concrete mix, each liquid admixture shall have a separate measuring unit and shall be dispensed by injecting equipment located in such a manner that the admixtures are not mixed at high concentrations and do not interfere with the effectiveness of each other. When air-entraining admixtures are used in conjunction with other liquid admixtures, the air-entraining admixture shall be the first to be incorporated into the mix, unless it is demonstrated that a different sequence improves performance.

- When automatic proportioning devices are required for concrete pavement, dispensers for liquid admixtures shall operate automatically with the batching control equipment. The dispensers shall be equipped with an automatic warning system in good operating condition that will provide a visible or audible signal at the point at which proportioning operations are controlled when the quantity of admixture measured for each batch of concrete varies from the preselected dosage by more than 5 percent, or when the entire contents of the measuring unit are not emptied from the dispenser into each batch of concrete.

- Unless liquid admixtures are added to premeasured water for the batch, their discharge into the batch shall be arranged to flow into the stream of water so that the admixtures are well dispersed throughout the batch, except that air-entraining admixtures may be dispensed directly into moist sand in the batching bins provided that adequate control of the air content of the concrete can be maintained.

- Liquid admixtures requiring dosages greater than one-half gallon per cubic yard shall be considered to be water when determining the total amount of free water as specified in Section 90-6.06, "Amount of Water and Penetration."

90-4.11 BLANK

90-5 PROPORTIONING

90-5.01 STORAGE OF AGGREGATES

- Aggregates shall be stored or stockpiled in such a manner that separation of coarse and fine particles of each size shall be avoided and the various sizes shall not become intermixed before proportioning.

- Aggregates shall be stored or stockpiled and handled in a manner that prevent contamination by foreign materials. In addition, storage of aggregates at batching or mixing facilities that are erected subsequent to the award of the contract and that furnish concrete to the project shall conform to the following:

A. Intermingling of the different sizes of aggregates shall be positively prevented. The Contractor shall take the necessary measures to prevent intermingling. The preventive measures may include, but are not necessarily limited to, physical separation of stockpiles or construction of bulkheads of adequate length and height; and

B. Contamination of aggregates by contact with the ground shall be positively prevented. The Contractor shall take the necessary measures to prevent contamination. The preventive measures shall include, but are not necessarily limited to, placing aggregates on wooden platforms or on hardened surfaces consisting of portland cement concrete, asphalt concrete, or cement treated material.

- In placing aggregates in storage or in moving the aggregates from storage to the weigh hopper of the batching plant, any method that may cause segregation, degradation, or the combining of materials of different gradings that will result in any size of aggregate at the weigh hopper failing to meet the grading requirements, shall be discontinued. Any method of handling aggregates that results in excessive breakage of particles shall be discontinued. The use of suitable devices to reduce impact of falling aggregates may be required by the Engineer.

90-5.02 PROPORTIONING DEVICES

- Weighing, measuring, or metering devices used for proportioning materials shall conform to the requirements in Section 9-1.01, "Measurement of Quantities," and this Section 90-5.02. In

addition, automatic weighing systems shall comply with the requirements for automatic proportioning devices in Section 90-5.03A, "Proportioning for Pavement." Automatic devices shall be automatic to the extent that the only manual operation required for proportioning the aggregates, cement, and supplementary cementitious material for one batch of concrete is a single operation of a switch or starter.

- Proportioning devices shall be tested as frequently as the Engineer may deem necessary to ensure their accuracy.

- Weighing equipment shall be insulated against vibration or movement of other operating equipment in the plant. When the plant is in operation, the weight of each batch of material shall not vary from the weight designated by the Engineer by more than the tolerances specified herein.

- Equipment for cumulative weighing of aggregate shall have a zero tolerance of ± 0.5 percent of the designated total batch weight of the aggregate. For systems with individual weigh hoppers for the various sizes of aggregate, the zero tolerance shall be ± 0.5 percent of the individual batch weight designated for each size of aggregate. Equipment for cumulative weighing of cement and supplementary cementitious material shall have a zero tolerance of ± 0.5 percent of the designated total batch weight of the cement and supplementary cementitious material. Equipment for weighing cement or supplementary cementitious material separately shall have a zero tolerance of ± 0.5 percent of their designated individual batch weights. Equipment for measuring water shall have a zero tolerance of ± 0.5 percent of its designated weight or volume.

- The weight indicated for any batch of material shall not vary from the preselected scale setting by more than the following:

- A. Aggregate weighed cumulatively shall be within 1.0 percent of the designated total batch weight of the aggregate. Aggregates weighed individually shall be within 1.5 percent of their respective designated batch weights; and
- B. Cement shall be 99 to 102 percent of its designated batch weight. When weighed individually, supplementary cementitious material shall be 99 to 102 percent of its designated batch weight. When supplementary cementitious material and cement are permitted to be weighed cumulatively, cement shall be weighed first to 99 to 102 percent of its designated batch weight, and the total for cement and supplementary cementitious material shall be 99 to 102 percent of the sum of their designated batch weights; and
- C. Water shall be within 1.5 percent of its designated weight or volume.

- Each scale graduation shall be approximately 0.001 of the total capacity of the scale. The capacity of scales for weighing cement, supplementary cementitious material, or cement plus supplementary cementitious material and aggregates shall not exceed that of commercially available scales having single graduations indicating a weight not exceeding the maximum permissible weight variation above, except that no scale shall be required having a capacity of less than 1,000 pounds, with one pound graduations.

90-5.03 PROPORTIONING

- Proportioning shall consist of dividing the aggregates into the specified sizes, each stored in a separate bin, and combining them with cementitious material and water as provided in these specifications. Aggregates shall be proportioned by weight.

- At the time of batching, aggregates shall have been dried or drained sufficiently to result in a stable moisture content such that no visible separation of water from aggregate will take place during transportation from the proportioning plant to the point of mixing. In no event shall

the free moisture content of the fine aggregate at the time of batching exceed 8 percent of its saturated, surface-dry weight.

- Should separate supplies of aggregate material of the same size group, but of different moisture content or specific gravity or surface characteristics affecting workability, be available at the proportioning plant, withdrawals shall be made from one supply exclusively and the materials therein completely exhausted before starting upon another.

- Bulk Type IP (MS) cement shall be weighed in an individual hopper and shall be kept separate from the aggregates until the ingredients are released for discharge into the mixer.

- Bulk cement and supplementary cementitious material may be weighed in separate, individual weigh hoppers or may be weighed in the same weigh hopper and shall be kept separate from the aggregates until the ingredients are released for discharge into the mixer. If the cement and supplementary cementitious material are weighed cumulatively, the cement shall be weighed first.

- If cement and supplementary cementitious material are weighed in separate weigh hoppers, the weigh systems for the proportioning of the aggregate, the cement, and the supplementary cementitious material shall be individual and distinct from all other weigh systems. Each weigh system shall be equipped with a hopper, a lever system, and an indicator to constitute an individual and independent material-weighing device. The cement and the supplementary cementitious material shall be discharged into the mixer simultaneously with the aggregate.

- The scales and weigh hoppers for bulk weighing cement, supplementary cementitious material, or cement plus supplementary cementitious material shall be separate and distinct from the aggregate weighing equipment.

- For batches of one cubic yard or more, the batching equipment shall conform to one of the following combinations:

- A. Separate boxes and separate scale and indicator for weighing each size of aggregate.

- B. Single box and scale indicator for all aggregates.

- C. Single box or separate boxes and automatic weighing mechanism for all aggregates.

- In order to check the accuracy of batch weights, the gross weight and tare weight of batch trucks, truck mixers, truck agitators, and non-agitating hauling equipment shall be determined when ordered by the Engineer. The equipment shall be weighed on scales designated by the Engineer.

90-5.03A PROPORTIONING FOR PAVEMENT

- Aggregates and bulk supplementary cementitious material for use in pavement shall be proportioned by weight by means of automatic proportioning devices of approved type conforming to these specifications.

- The Contractor shall install and maintain in operating condition an electronically actuated moisture meter that will indicate, on a readily visible scale, changes in the moisture content of the fine aggregate as it is batched within a sensitivity of 0.5 percent by weight of the fine aggregate.

- The batching of cement, supplementary cementitious material, or cement plus supplementary cementitious material and aggregate shall be interlocked so that a new batch cannot be started until all weigh hoppers are empty, the proportioning devices are within zero tolerance, and the discharge gates are closed. The interlock shall permit no part of the batch to be discharged until all aggregate hoppers and the cement and supplementary cementitious material hoppers or the cement plus supplementary cementitious material hopper are charged

with weights that are within the tolerances specified in Section 90-5.02, "Proportioning Devices."

- If interlocks are required for cement and supplementary cementitious material charging mechanisms and cement and supplementary cementitious material are weighed cumulatively, their charging mechanisms shall be interlocked to prevent the introduction of mineral admixture until the weight of cement in the cement weigh hopper is within the tolerances specified in Section 90-5.02, "Proportioning Devices."

- If concrete is completely mixed in stationary paving mixers, the supplementary cementitious materials shall be weighed in a separate weigh hopper and the supplementary cementitious material and cement shall be introduced simultaneously into the mixer proportionately with the aggregate. If the Contractor provides certification that the stationary mixer is capable of mixing the cement, supplementary cementitious material, aggregates, and water uniformly before discharge, weighing the supplementary cementitious material cumulatively with the cement is permitted. Certification shall contain the following:

- A. Test results for 2 compressive strength test cylinders of concrete taken within the first one-third and 2 compressive strength test cylinders of concrete taken within the last one-third of the concrete discharged from a single batch from the stationary paving mixer. Strength tests and cylinder preparation will be in conformance with the provisions of Section 90-9, "Compressive Strength";
- B. Calculations demonstrating that the difference in the averages of 2 compressive strengths taken in the first one-third is no greater than 7.5 percent different than the averages of 2 compressive strengths taken in the last one-third of the concrete discharged from a single batch from the stationary paving mixer. Strength tests and cylinder preparation will be in conformance with the provisions of Section 90-9, "Compressive Strength;" and
- C. The mixer rotation speed and time of mixing before discharge that are required to produce a mix that meets the requirements above.

- The discharge gate on the cement and supplementary cementitious material hoppers or the cement plus supplementary cementitious material hopper shall be designed to permit regulating the flow of cement, supplementary cementitious material, or cement plus supplementary cementitious material into the aggregate as directed by the Engineer.

- If separate weigh boxes are used for each size of aggregate, the discharge gates shall permit regulating the flow of each size of aggregate as directed by the Engineer.

- Material discharged from the several bins shall be controlled by gates or by mechanical conveyors. The means of withdrawal from the several bins, and of discharge from the weigh box, shall be interlocked so that not more than one bin can discharge at a time, and so that the weigh box cannot be tripped until the required quantity from each of the several bins has been deposited therein. Should a separate weigh box be used for each size of aggregate, all may be operated and discharged simultaneously.

- If the discharge from the several bins is controlled by gates, each gate shall be actuated automatically so that the required mass is discharged into the weigh box, after which the gate shall automatically close and lock.

- The automatic weighing system shall be designed so that all proportions required may be set on the weighing controller at the same time.

90-6 MIXING AND TRANSPORTING

90-6.01 GENERAL

- Concrete shall be mixed in mechanically operated mixers, except that when permitted by the Engineer, batches not exceeding 1/3 cubic yard may be mixed by hand methods in conformance with the provisions in Section 90-6.05, "Hand-Mixing."
- Equipment having components made of aluminum or magnesium alloys that would have contact with plastic concrete during mixing, transporting, or pumping of portland cement concrete shall not be used.
- Concrete shall be homogeneous and thoroughly mixed, and there shall be no lumps or evidence of undispersed cementitious material.
- Uniformity of concrete mixtures will be determined by differences in penetration as determined by California Test 533, or slump as determined by ASTM Designation: C 143, and by variations in the proportion of coarse aggregate as determined by California Test 529.
- When the mix design specifies a penetration value, the difference in penetration, determined by comparing penetration tests on 2 samples of mixed concrete from the same batch or truck mixer load, shall not exceed 1/2-inch. When the mix design specifies a slump value, the difference in slump, determined by comparing slump tests on 2 samples of mixed concrete from the same batch or truck mixer load, shall not exceed the values given in the table below. Variation in the proportion of coarse aggregate will be determined by comparing the results of tests of 2 samples of mixed concrete from the same batch or truck mixer load and the difference between the 2 results shall not exceed 170 pounds per cubic yard of concrete.

Average Slump	Maximum Permissible Difference
Less than 4"	1"
4" to 6"	1 1/2"
Greater than 6" to 9"	2"

- The Contractor shall furnish samples of the freshly mixed concrete and provide satisfactory facilities for obtaining the samples.

90-6.02 MACHINE MIXING

- Concrete mixers may be of the revolving drum or the revolving blade type, and the mixing drum or blades shall be operated uniformly at the mixing speed recommended by the manufacturer. Mixers and agitators that have an accumulation of hard concrete or mortar shall not be used.
- The temperature of mixed concrete, immediately before placing, shall be not less than 50° F or more than 90° F. Aggregates and water shall be heated or cooled as necessary to produce concrete within these temperature limits. Neither aggregates nor mixing water shall be heated to exceed 150° F. If ice is used to cool the concrete, discharge of the mixer will not be permitted until all ice is melted.
- The batch shall be so charged into the mixer that some water will enter in advance of cementitious materials and aggregates. All water shall be in the drum by the end of the first one-fourth of the specified mixing time.
- Cementitious materials shall be batched and charged into the mixer by means that will not result either in loss of cementitious materials due to the effect of wind, in accumulation of cementitious materials on surfaces of conveyors or hoppers, or in other conditions that reduce or vary the required quantity of cementitious material in the concrete mixture.

- Paving and stationary mixers shall be operated with an automatic timing device. The timing device and discharge mechanism shall be interlocked so that during normal operation no part of the batch will be discharged until the specified mixing time has elapsed.
- The total elapsed time between the intermingling of damp aggregates and all cementitious materials and the start of mixing shall not exceed 30 minutes.
- The size of batch shall not exceed the manufacturer's guaranteed capacity.
- When producing concrete for pavement or base, suitable batch counters shall be installed and maintained in good operating condition at job site batching plants and stationary mixers. The batch counters shall indicate the exact number of batches proportioned and mixed.
- Concrete shall be mixed and delivered to the job site by means of one of the following combinations of operations:

- A. Mixed completely in a stationary mixer and the mixed concrete transported to the point of delivery in truck agitators or in nonagitating hauling equipment (central-mixed concrete).
- B. Mixed partially in a stationary mixer, and the mixing completed in a truck mixer (shrink-mixed concrete).
- C. Mixed completely in a truck mixer (transit-mixed concrete).
- D. Mixed completely in a paving mixer.

- Agitators may be truck mixers operating at agitating speed or truck agitators. Each mixer and agitator shall have attached thereto in a prominent place a metal plate or plates on which is plainly marked the various uses for which the equipment is designed, the manufacturer's guaranteed capacity of the drum or container in terms of the volume of mixed concrete and the speed of rotation of the mixing drum or blades.
- Truck mixers shall be equipped with electrically or mechanically actuated revolution counters by which the number of revolutions of the drum or blades may readily be verified.
- When shrink-mixed concrete is furnished, concrete that has been partially mixed at a central plant shall be transferred to a truck mixer and all requirements for transit-mixed concrete shall apply. No credit in the number of revolutions at mixing speed will be allowed for partial mixing in a central plant.

90-6.03 TRANSPORTING MIXED CONCRETE

- Mixed concrete may be transported to the delivery point in truck agitators or truck mixers operating at the speed designated by the manufacturer of the equipment as agitating speed, or in non-agitating hauling equipment, provided the consistency and workability of the mixed concrete upon discharge at the delivery point is suitable for adequate placement and consolidation in place, and provided the mixed concrete after hauling to the delivery point conforms to the provisions in Section 90-6.01, "General."
- Truck agitators shall be loaded not to exceed the manufacturer's guaranteed capacity and shall maintain the mixed concrete in a thoroughly mixed and uniform mass during hauling.
- Bodies of nonagitating hauling equipment shall be constructed so that leakage of the concrete mix, or any part thereof, will not occur at any time.
- Concrete hauled in open-top vehicles shall be protected during hauling against rain or against exposure to the sun for more than 20 minutes when the ambient temperature exceeds 75° F.
- No additional mixing water shall be incorporated into the concrete during hauling or after arrival at the delivery point, unless authorized by the Engineer. If the Engineer authorizes additional water to be incorporated into the concrete, the drum shall be revolved not less than 30 revolutions at mixing speed after the water is added and before discharge is commenced.

- The rate of discharge of mixed concrete from truck mixer-agitators shall be controlled by the speed of rotation of the drum in the discharge direction with the discharge gate fully open.
- If a truck mixer or agitator is used for transporting concrete to the delivery point, discharge shall be completed within 1.5 hours or before 250 revolutions of the drum or blades, whichever occurs first, after the introduction of the cement to the aggregates. Under conditions contributing to quick stiffening of the concrete, or if the temperature of the concrete is 85° F or above, the time allowed may be less than 1.5 hours. If an admixture is used to retard the set time, the temperature of the concrete shall not exceed 85° F, the time limit shall be 2 hours, and the revolution limitation shall be 300.
- If nonagitating hauling equipment is used for transporting concrete to the delivery point, discharge shall be completed within one hour after the addition of the cement to the aggregates. Under conditions contributing to quick stiffening of the concrete, or when the temperature of the concrete is 85° F or above, the time between the introduction of cement to the aggregates and discharge shall not exceed 45 minutes.
- Each load of concrete delivered at the job site shall be accompanied by a weighmaster certificate showing the mix identification number, nonrepeating load number, date and time at which the materials were batched, the total amount of water added to the load, and for transit-mixed concrete, the reading of the revolution counter at the time the truck mixer is charged with cement. This weighmaster certificate shall also show the actual scale weights (pounds) for the ingredients batched. Theoretical or target batch weights shall not be used as a substitute for actual scale weights.
- Weighmaster certificates shall be provided in printed form, or if approved by the Engineer, the data may be submitted in electronic media. Electronic media shall be presented in a tab-delimited format on a 3 1/2-inch diskette with a capacity of at least 1.4 megabytes. Captured data, for the ingredients represented by each batch shall be "line feed, carriage return" (LFCR) and "one line, separate record" with allowances for sufficient fields to satisfy the amount of data required by these specifications.
- The Contractor may furnish a weighmaster certificate accompanied by a separate certificate that lists the actual batch weights or measurements for a load of concrete provided that both certificates are imprinted with the same nonrepeating load number that is unique to the contract and delivered to the jobsite with the load.
- Weighmaster certificates furnished by the Contractor shall conform to the provisions in Section 9-1.01, "Measurement of Quantities."

90-6.04 TIME OR AMOUNT OF MIXING

- Mixing of concrete in paving or stationary mixers shall continue for the required mixing time after all ingredients, except water and admixture, if added with the water, are in the mixing compartment of the mixer before any part of the batch is released. Transfer time in multiple drum mixers shall not be counted as part of the required mixing time.
- The required mixing time, in paving or stationary mixers, of concrete used for concrete structures, except minor structures, shall be not less than 90 seconds or more than 5 minutes, except that when directed by the Engineer in writing, the requirements of the following paragraph shall apply.
- The required mixing time, in paving or stationary mixers, except as provided in the preceding paragraph, shall be not less than 50 seconds or more than 5 minutes.
- The minimum required revolutions at the mixing speed for transit-mixed concrete shall not be less than that recommended by the mixer manufacturer, but in no case shall the number of revolutions be less than that required to consistently produce concrete conforming to the provisions for uniformity in Section 90-6.01, "General."

- When a high range water-reducing admixture is added to the concrete at the job site, the total number of revolutions shall not exceed 300.

90-6.05 HAND-MIXING

- Hand-mixed concrete shall be made in batches of not more than 1/3 cubic yard and shall be mixed on a watertight, level platform. The proper amount of coarse aggregate shall be measured in measuring boxes and spread on the platform and the fine aggregate shall be spread on this layer, the 2 layers being not more than one foot in total depth. On this mixture shall be spread the dry cementitious materials and the whole mass turned no fewer than 2 times dry; then sufficient clean water shall be added, evenly distributed, and the whole mass again turned no fewer than 3 times, not including placing in the carriers or forms.

90-6.06 AMOUNT OF WATER AND PENETRATION

- The amount of water used in concrete mixes shall be regulated so that the penetration of the concrete as determined by California Test 533 or the slump of the concrete as determined by ASTM Designation: C 143 is within the nominal values shown in the following table. When the penetration or slump of the concrete is found to exceed the nominal values listed, the mixture of subsequent batches shall be adjusted to reduce the penetration or slump to a value within the nominal range shown. Batches of concrete with a penetration or slump exceeding the maximum values listed shall not be used in the work. If Type F or Type G chemical admixtures are added to the mix, the penetration requirements shall not apply and the slump shall not exceed 9 inches after the chemical admixtures are added.

Type of Work	Nominal		Maximum	
	Penetration (inches)	Slump (inches)	Penetration (inches)	Slump (inches)
Concrete Pavement	0 - 1	—	1 1/2	—
Non-reinforced concrete facilities	0 - 1 1/2	—	2	—
Reinforced concrete structures				
Sections over 12 inches thick	0 - 1 1/2	—	2 1/2	—
Sections 12 inches thick or less	0 - 2	—	3	—
Concrete placed under water	—	6 - 8	—	9
Cast-in-place concrete piles	2 1/2 - 3 1/2	5 - 7	4	8

- The amount of free water used in concrete shall not exceed 310 pounds per cubic yard, plus 20 pounds for each required 100 pounds of cementitious material in excess of 550 pounds per cubic yard.
 - The term free water is defined as the total water in the mixture minus the water absorbed by the aggregates in reaching a saturated surface-dry condition.
 - If there are adverse or difficult conditions that affect the placing of concrete, the above specified penetration and free water content limitations may be exceeded providing the Contractor is granted permission by the Engineer in writing to increase the cementitious material content per cubic yard of concrete. The increase in water and cementitious material shall be at a ratio not to exceed 30 pounds of water per added 100 pounds of cementitious material per cubic yard. Full compensation for additional cementitious material and water added under these conditions shall be considered as included in the contract price paid for the concrete work involved and no additional compensation will be allowed therefor.
 - The equipment for supplying water to the mixer shall be constructed and arranged so that the amount of water added can be measured accurately. Any method of discharging water into the mixer for a batch shall be accurate within 1.5 percent of the quantity of water required to be

added to the mix for any position of the mixer. Tanks used to measure water shall be designed so that water cannot enter while water is being discharged into the mixer and discharge into the mixer shall be made rapidly in one operation without dribbling. All equipment shall be arranged so as to permit checking the amount of water delivered by discharging into measured containers.

90-7 CURING CONCRETE

90-7.01 METHODS OF CURING

- Newly placed concrete shall be cured by the methods specified in this Section 90-7.01 and the special provisions.

90-7.01A WATER METHOD

- The concrete shall be kept continuously wet by the application of water for a minimum curing period of 7 days after the concrete has been placed.

- Cotton mats, rugs, carpets, or earth or sand blankets may be used as a curing medium to retain the moisture during the curing period.

- If a curing medium consisting of cotton mats, rugs, carpets, polyethylene sheeting, polyethylene sheeting on burlap, or earth or sand blankets is to be used to retain the moisture, the entire surface of the concrete shall be kept damp by applying water with a nozzle that so atomizes the flow that a mist and not a spray is formed, until the surface of the concrete is covered with the curing medium. The moisture from the nozzle shall not be applied under pressure directly upon the concrete and shall not be allowed to accumulate on the concrete in a quantity sufficient to cause a flow or wash the surface. At the expiration of the curing period, the concrete surfaces shall be cleared of all curing media.

- At the option of the Contractor, a curing medium consisting of white opaque polyethylene sheeting extruded onto burlap may be used to cure concrete structures. The polyethylene sheeting shall have a minimum thickness of 4-mil, and shall be extruded onto 10-ounce burlap.

- At the option of the Contractor, a curing medium consisting of polyethylene sheeting may be used to cure concrete columns. The polyethylene sheeting shall have a minimum thickness of 10-mil achieved in a single layer of material.

- If the Contractor chooses to use polyethylene sheeting or polyethylene sheeting on burlap as a curing medium, these media and any joints therein shall be secured as necessary to provide moisture retention and shall be within 3 inches of the concrete at all points along the surface being cured. When these media are used, the temperature of the concrete shall be monitored during curing. If the temperature of the concrete cannot be maintained below 140° F, use of these curing media shall be disallowed.

- When concrete bridge decks and flat slabs are to be cured without the use of a curing medium, the entire surface of the bridge deck or slab shall be kept damp by the application of water with an atomizing nozzle as specified above, until the concrete has set, after which the entire surface of the concrete shall be sprinkled continuously with water for a period of not less than 7 days.

90-7.01B CURING COMPOUND METHOD

- Surfaces of the concrete that are exposed to the air shall be sprayed uniformly with a curing compound.

- Curing compounds to be used shall be as follows:

1. Pigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 2, Class B, except the resin type shall be poly-alpha-methylstyrene.
2. Pigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 2, Class B.
3. Pigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 2, Class A.
4. Nonpigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 1, Class B.
5. Nonpigmented curing compound conforming to the requirements in ASTM Designation: C 309, Type 1, Class A.
6. Nonpigmented curing compound with fugitive dye conforming to the requirements in ASTM Designation: C 309, Type 1-D, Class A.

- The infrared scan for the dried vehicle from curing compound (1) shall match the infrared scan on file at the Transportation Laboratory.

- The loss of water for each type of curing compound, when tested in conformance with the requirements in California Test 534, shall not be more than 0.28-pounds per square yard in 24 hours.

- The curing compound to be used will be specified elsewhere in these specifications or in the special provisions.

- If the use of curing compound is required or permitted elsewhere in these specifications or in the special provisions and no specific kind is specified, any of the curing compounds listed above may be used.

- Curing compound shall be applied at a nominal rate of one gallon per 150 square feet, unless otherwise specified.

- At any point, the application rate shall be within ± 50 square feet per gallon of the nominal rate specified, and the average application rate shall be within ± 25 square feet per gallon of the nominal rate specified when tested in conformance with the requirements in California Test 535. Runs, sags, thin areas, skips, or holidays in the applied curing compound shall be evidence that the application is not satisfactory.

- Curing compounds shall be applied using power operated spray equipment. The power operated spraying equipment shall be equipped with an operational pressure gage and a means of controlling the pressure. Hand spraying of small and irregular areas that are not reasonably accessible to mechanical spraying equipment, in the opinion of the Engineer, may be permitted.

- The curing compound shall be applied to the concrete following the surface finishing operation, immediately before the moisture sheen disappears from the surface, but before any drying shrinkage or craze cracks begin to appear. In the event of any drying or cracking of the surface, application of water with an atomizing nozzle as specified in Section 90-7.01A, "Water Method," shall be started immediately and shall be continued until application of the compound is resumed or started; however, the compound shall not be applied over any resulting freestanding water. Should the film of compound be damaged from any cause before the expiration of 7 days after the concrete is placed in the case of structures and 72 hours in the case of pavement, the damaged portion shall be repaired immediately with additional compound.

- At the time of use, compounds containing pigments shall be in a thoroughly mixed condition with the pigment uniformly dispersed throughout the vehicle. A paddle shall be used to loosen all settled pigment from the bottom of the container, and a power driven agitator shall be used to disperse the pigment uniformly throughout the vehicle.

- Agitation shall not introduce air or other foreign substance into the curing compound.

- The manufacturer shall include in the curing compound the necessary additives for control of sagging, pigment settling, leveling, de-emulsification, or other requisite qualities of a satisfactory working material. Pigmented curing compounds shall be manufactured so that the pigment does not settle badly, does not cake or thicken in the container, and does not become granular or curdled. Settlement of pigment shall be a thoroughly wetted, soft, mushy mass permitting the complete and easy vertical penetration of a paddle. Settled pigment shall be easily redispersed, with minimum resistance to the sideways manual motion of the paddle across the bottom of the container, to form a smooth uniform product of the proper consistency.

- Curing compounds shall remain sprayable at temperatures above 40° F and shall not be diluted or altered after manufacture.

- The curing compound shall be packaged in clean 274-gallon totes, 55-gallon barrels or 5-gallon pails shall be supplied from a suitable storage tank located at the jobsite. The containers shall comply with "Title 49, Code of Federal Regulations, Hazardous Materials Regulations." The 274-gallon totes and the 55-gallon barrels shall have removable lids and airtight fasteners. The 5-gallon pails shall be round and have standard full open head and bail. Lids with bungholes will not be permitted. Settling or separation of solids in containers, except tanks, must be completely redispersed with low speed mixing prior to use, in conformance with these specifications and the manufacturer's recommendations. Mixing shall be accomplished either manually by use of a paddle or by use of a mixing blade driven by a drill motor, at low speed. Mixing blades shall be the type used for mixing paint. On-site storage tanks shall be kept clean and free of contaminants. Each tank shall have a permanent system designed to completely redisperse settled material without introducing air or other foreign substances.

- Steel containers and lids shall be lined with a coating that will prevent destructive action by the compound or chemical agents in the air space above the compound. The coating shall not come off the container or lid as skins. Containers shall be filled in a manner that will prevent skinning. Plastic containers shall not react with the compound.

- Each container shall be labeled with the manufacturer's name, kind of curing compound, batch number, volume, date of manufacture, and volatile organic compound (VOC) content. The label shall also warn that the curing compound containing pigment shall be well stirred before use. Precautions concerning the handling and the application of curing compound shall be shown on the label of the curing compound containers in conformance with the Construction Safety Orders and General Industry Safety Orders of the State.

- Containers of curing compound shall be labeled to indicate that the contents fully comply with the rules and regulations concerning air pollution control in the State.

- When the curing compound is shipped in tanks or tank trucks, a shipping invoice shall accompany each load. The invoice shall contain the same information as that required herein for container labels.

- Curing compound will be sampled by the Engineer at the source of supply, at the job site, or at both locations.

- Curing compound shall be formulated so as to maintain the specified properties for a minimum of one year. The Engineer may require additional testing before use to determine compliance with these specifications if the compound has not been used within one year or whenever the Engineer has reason to believe the compound is no longer satisfactory.

- Tests will be conducted in conformance with the latest ASTM test methods and methods in use by the Transportation Laboratory.

90-7.01C WATERPROOF MEMBRANE METHOD

- The exposed finished surfaces of concrete shall be sprayed with water, using a nozzle that so atomizes the flow that a mist and not a spray is formed, until the concrete has set, after which

the curing membrane, shall be placed. The curing membrane shall remain in place for a period of not less than 72 hours.

- Sheeting material for curing concrete shall conform to the requirements in AASHTO Designation: M 171 for white reflective materials.

- The sheeting material shall be fabricated into sheets of such width as to provide a complete cover for the entire concrete surface. Joints in the sheets shall be securely cemented together in such a manner as to provide a waterproof joint. The joint seams shall have a minimum lap of 0.33-foot.

- The sheets shall be securely weighted down by placing a bank of earth on the edges of the sheets or by other means satisfactory to the Engineer.

- Should any portion of the sheets be broken or damaged before the expiration of 72 hours after being placed, the broken or damaged portions shall be immediately repaired with new sheets properly cemented into place.

- Sections of membrane that have lost their waterproof qualities or have been damaged to such an extent as to render them unfit for curing the concrete shall not be used.

90-7.01D FORMS-IN-PLACE METHOD

- Formed surfaces of concrete may be cured by retaining the forms in place. The forms shall remain in place for a minimum period of 7 days after the concrete has been placed, except that for members over 20 inches in least dimension the forms shall remain in place for a minimum period of 5 days.

- Joints in the forms and the joints between the end of forms and concrete shall be kept moisture tight during the curing period. Cracks in the forms and cracks between the forms and the concrete shall be resealed by methods subject to the approval of the Engineer.

90-7.02 CURING PAVEMENT

- The entire exposed area of the pavement, including edges, shall be cured by the waterproof membrane method, or curing compound method using curing compound (1) or (2) as the Contractor may elect. Should the side forms be removed before the expiration of 72 hours following the start of curing, the exposed pavement edges shall also be cured. If the pavement is cured by means of the curing compound method, the sawcut and all portions of the curing compound that have been disturbed by sawing operations shall be restored by spraying with additional curing compound.

- Curing shall commence as soon as the finishing process provided in Section 40-1.10, "Final Finishing," has been completed. The method selected shall conform to the provisions in Section 90-7.01, "Methods of Curing."

- When the curing compound method is used, the compound shall be applied to the entire pavement surface by mechanical sprayers. Spraying equipment shall be of the fully atomizing type equipped with a tank agitator that provides for continual agitation of the curing compound during the time of application. The spray shall be adequately protected against wind, and the nozzles shall be so oriented or moved mechanically transversely as to result in the minimum specified rate of coverage being applied uniformly on exposed faces. Hand spraying of small and irregular areas, and areas inaccessible to mechanical spraying equipment, in the opinion of the Engineer, will be permitted. When the ambient air temperature is above 60° F, the Contractor shall fog the surface of the concrete with a fine spray of water as specified in Section 90-7.01A, "Water Method." The surface of the pavement shall be kept moist between the hours of 10:00 a.m. and 4:30 p.m. on the day the concrete is placed. However, the fogging done after the curing compound has been applied shall not begin until the compound has set

sufficiently to prevent displacement. Fogging shall be discontinued if ordered in writing by the Engineer.

90-7.03 CURING STRUCTURES

- Newly placed concrete for cast-in-place structures, other than highway bridge decks, shall be cured by the water method, the forms-in-place method, or, as permitted herein, by the curing compound method, in conformance with the provisions in Section 90-7.01, "Methods of Curing."

- The curing compound method using a pigmented curing compound may be used on concrete surfaces of construction joints, surfaces that are to be buried underground, and surfaces where only ordinary surface finish is to be applied and on which a uniform color is not required and that will not be visible from a public traveled way. If the Contractor elects to use the curing compound method on the bottom slab of box girder spans, the curing compound shall be curing compound (1).

- The top surface of highway bridge decks shall be cured by both the curing compound method and the water method. The curing compound shall be curing compound (1).

- Concrete surfaces of minor structures, as defined in Section 51-1.02, "Minor Structures," shall be cured by the water method, the forms-in-place method or the curing compound method.

- When deemed necessary by the Engineer during periods of hot weather, water shall be applied to concrete surfaces being cured by the curing compound method or by the forms-in-place method, until the Engineer determines that a cooling effect is no longer required. Application of water for this purpose will be paid for as extra work as provided in Section 4-1.03D, "Extra Work."

90-7.04 CURING PRECAST CONCRETE MEMBERS

- Precast concrete members shall be cured in conformance with any of the methods specified in Section 90-7.01, "Methods of Curing." Curing shall be provided for the minimum time specified for each method or until the concrete reaches its design strength, whichever is less. Steam curing may also be used for precast members and shall conform to the following provisions:

- A. After placement of the concrete, members shall be held for a minimum 4-hour presteaming period. If the ambient air temperature is below 50° F, steam shall be applied during the presteaming period to hold the air surrounding the member at a temperature between 50° F and 90° F.
- B. To prevent moisture loss on exposed surfaces during the presteaming period, members shall be covered as soon as possible after casting or the exposed surfaces shall be kept wet by fog spray or wet blankets.
- C. Enclosures for steam curing shall allow free circulation of steam about the member and shall be constructed to contain the live steam with a minimum moisture loss. The use of tarpaulins or similar flexible covers will be permitted, provided they are kept in good repair and secured in such a manner as to prevent the loss of steam and moisture.
- D. Steam at the jets shall be at low pressure and in a saturated condition. Steam jets shall not impinge directly on the concrete, test cylinders, or forms. During application of the steam, the temperature rise within the enclosure shall not exceed 40° F per hour. The curing temperature throughout the enclosure shall not exceed 150° F and shall be maintained at a constant level for a sufficient time necessary to develop the required transfer strength. Control cylinders shall be covered to prevent moisture loss and shall be

- placed in a location where temperature is representative of the average temperature of the enclosure.
- E. Temperature recording devices that will provide an accurate, continuous, permanent record of the curing temperature shall be provided. A minimum of one temperature recording device per 200 feet of continuous bed length will be required for checking temperature.
 - F. Members in pretension beds shall be detensioned immediately after the termination of steam curing while the concrete and forms are still warm, or the temperature under the enclosure shall be maintained above 60° F until the stress is transferred to the concrete.
 - G. Curing of precast concrete will be considered completed after termination of the steam curing cycle.

90-7.05 CURING PRECAST PRESTRESSED CONCRETE PILES

- Newly placed concrete for precast prestressed concrete piles shall be cured in conformance with the provisions in Section 90-7.04, "Curing Precast Concrete Members," except that piles in a corrosive environment shall be cured as follows:

- A. Piles shall be either steam cured or water cured. If water curing is used, the piles shall be kept continuously wet by the application of water in conformance with the provisions in Section 90-7.01A, "Water Method."
- B. If steam curing is used, the steam curing provisions in Section 90-7.04, "Curing Precast Concrete Members," shall apply except that the piles shall be kept continuously wet for their entire length for a period of not less than 3 days, including the holding and steam curing periods.

90-7.06 CURING SLOPE PROTECTION

- Concrete slope protection shall be cured in conformance with any of the methods specified in Section 90-7.01, "Methods of Curing."
- Concreted-rock slope protection shall be cured in conformance with any of the methods specified in Section 90-7.01, "Methods of Curing," with a blanket of earth kept wet for 72 hours, or by sprinkling with a fine spray of water every 2 hours during the daytime for a period of 3 days.

90-7.07 CURING MISCELLANEOUS CONCRETE WORK

- Exposed surfaces of curbs shall be cured by pigmented curing compounds as specified in Section 90-7.01B, "Curing Compound Method."
- Concrete sidewalks, gutter depressions, island paving, curb ramps, driveways, and other miscellaneous concrete areas shall be cured in conformance with any of the methods specified in Section 90-7.01, "Methods of Curing."
- Shotcrete shall be cured for at least 72 hours by spraying with water, by a moist earth blanket, or by any of the methods provided in Section 90-7.01, "Methods of Curing."
- Mortar and grout shall be cured by keeping the surface damp for 3 days.
- After placing, the exposed surfaces of sign structure foundations, including pedestal portions, if constructed, shall be cured for at least 72 hours by spraying with water, by a moist earth blanket, or by any of the methods provided in Section 90-7.01, "Methods of Curing."

90-8 PROTECTING CONCRETE

90-8.01 GENERAL

- In addition to the provisions in Section 7-1.16, "Contractor's Responsibility for the Work and Materials," the Contractor shall protect concrete as provided in this Section 90-8. If required by the Engineer, the Contractor shall submit a written outline of the proposed methods for protecting the concrete.
 - The Contractor shall protect concrete from damage from any cause, which shall include, but not be limited to: rain, heat, cold, wind, Contractor's actions, and actions of others.
 - Concrete shall not be placed on frozen or ice-coated ground or subgrade nor on ice-coated forms, reinforcing steel, structural steel, conduits, precast members, or construction joints.
 - Under rainy conditions, placing of concrete shall be stopped before the quantity of surface water is sufficient to damage surface mortar or cause a flow or wash of the concrete surface, unless the Contractor provides adequate protection against damage.
 - Concrete that has been frozen or damaged by other causes, as determined by the Engineer, shall be removed and replaced by the Contractor at the Contractor's expense.

90-8.02 PROTECTING CONCRETE STRUCTURES

- Structure concrete and shotcrete used as structure concrete shall be maintained at a temperature of not less than 45° F for 72 hours after placing and at not less than 40° F for an additional 4 days.

90-8.03 PROTECTING CONCRETE PAVEMENT

- Pavement concrete shall be maintained at a temperature of not less than 40° F for 72 hours.
 - Except as provided in Section 7-1.08, "Public Convenience," the Contractor shall protect concrete pavement against construction and other activities that abrade, scar, discolor, reduce texture depth, lower coefficient of friction, or otherwise damage the surface. Stockpiling, drifting, or excessive spillage of soil, gravel, petroleum products, and concrete or asphalt mixes on the surface of concrete pavement is prohibited unless otherwise specified in these specifications, the special provisions or permitted by the Engineer.
 - If ordered by the Engineer or shown on the plans or specified in the special provisions, pavement crossings shall be constructed for the convenience of public traffic. The material and work necessary for the construction of the crossings, and their subsequent removal and disposal, will be paid for at the contract unit prices for the items of work involved and if there are no contract items for the work involved, payment for pavement crossings will be made by extra work as provided in Section 4-1.03D, "Extra Work.". Where public traffic will be required to cross over the new pavement, Type III portland cement may be used in concrete, if permitted in writing by the Engineer. The pavement may be opened to traffic as soon as the concrete has developed a modulus of rupture of 550 pounds per square inch. The modulus of rupture will be determined by California Test 523.
 - No traffic or Contractor's equipment, except as hereinafter provided, will be permitted on the pavement before a period of 10 days has elapsed after the concrete has been placed, nor before the concrete has developed a modulus of rupture of at least 550 pounds per square inch. Concrete that fails to attain a modulus of rupture of 550 pounds per square inch within 10 days shall not be opened to traffic until directed by the Engineer.
 - Equipment for sawing weakened plane joints will be permitted on the pavement as specified in Section 40-1.08B, "Weakened Plane Joints."

- When requested in writing by the Contractor, the tracks on one side of paving equipment will be permitted on the pavement after a modulus of rupture of 350 pounds per square inch has been attained, provided that:

- A. Unit pressure exerted on the pavement by the paver shall not exceed 20 pounds per square inch;
- B. Tracks with cleats, grousers, or similar protuberances shall be modified or shall travel on planks or equivalent protective material, so that the pavement is not damaged; and
- C. No part of the track shall be closer than one foot from the edge of pavement.

- In case of visible cracking of, or other damage to the pavement, operation of the paving equipment on the pavement shall be immediately discontinued.

- Damage to the pavement resulting from early use of pavement by the Contractor's equipment as provided above shall be repaired by the Contractor.

- The State will furnish the molds and machines for testing the concrete for modulus of rupture, and the Contractor, at the Contractor's expense, shall furnish the material and whatever labor the Engineer may require.

90-9 COMPRESSIVE STRENGTH

90-9.01 GENERAL

- Concrete compressive strength requirements consist of a minimum strength that shall be attained before various loads or stresses are applied to the concrete and, for concrete designated by strength, a minimum strength at the age of 28 days or at the age otherwise allowed in Section 90-1.01, "Description." The various strengths required are specified in these specifications or the special provisions or are shown on the plans.

- The compressive strength of concrete will be determined from test cylinders that have been fabricated from concrete sampled in conformance with the requirements of California Test 539. Test cylinders will be molded and initially field cured in conformance with California Test 540. Test cylinders will be cured and tested after receipt at the testing laboratory in conformance with the requirements of California Test 521. A strength test shall consist of the average strength of 2 cylinders fabricated from material taken from a single load of concrete, except that, if any cylinder should show evidence of improper sampling, molding, or testing, that cylinder shall be discarded and the strength test shall consist of the strength of the remaining cylinder.

- When concrete compressive strength is specified as a prerequisite to applying loads or stresses to a concrete structure or member, test cylinders for other than steam cured concrete will be cured in conformance with Method 1 of California Test 540. The compressive strength of concrete determined for these purposes will be evaluated on the basis of individual tests.

- When concrete is designated by 28-day compressive strength rather than by cementitious material content, the concrete strength to be used as a basis for acceptance of other than steam cured concrete will be determined from cylinders cured in conformance with Method 1 of California Test 540. If the result of a single compressive strength test at the maximum age specified or allowed is below the specified strength but is 95 percent or more of the specified strength, the Contractor shall make corrective changes, subject to approval of the Engineer, in the mix proportions or in the concrete fabrication procedures, before placing additional concrete, and shall pay to the State \$10 for each in-place cubic yard of concrete represented by the deficient test. If the result of a single compressive strength test at the maximum age specified or allowed is below 95 percent of the specified strength, but is 85 percent or more of the specified strength, the Contractor shall make the corrective changes specified above, and shall pay to the

State \$15 for each in-place cubic yard of concrete represented by the deficient test. In addition, such corrective changes shall be made when the compressive strength of concrete tested at 7 days indicates, in the judgment of the Engineer, that the concrete will not attain the required compressive strength at the maximum age specified or allowed. Concrete represented by a single test that indicates a compressive strength of less than 85 percent of the specified 28-day compressive strength will be rejected in conformance with the provisions in Section 6-1.04, "Defective Materials."

- If the test result indicates that the compressive strength at the maximum curing age specified or allowed is below the specified strength, but is 85 percent or more of the specified strength, payments to the State as required above shall be made, unless the Contractor, at the Contractor's expense, obtains and submits evidence acceptable to the Engineer that the strength of the concrete placed in the work meets or exceeds the specified 28-day compressive strength. If the test result indicates a compressive strength at the maximum curing age specified or allowed below 85 percent, the concrete represented by that test will be rejected, unless the Contractor, at the Contractor's expense, obtains and submits evidence acceptable to the Engineer that the strength and quality of the concrete placed in the work are acceptable. If the evidence consists of tests made on cores taken from the work, the cores shall be obtained and tested in conformance with the requirements in ASTM Designation: C 42.

- No single compressive strength test shall represent more than 320 cubic yards.

- If a precast concrete member is steam cured, the compressive strength of the concrete will be determined from test cylinders that have been handled and stored in conformance with Method 3 of California Test 540. The compressive strength of steam cured concrete will be evaluated on the basis of individual tests representing specific portions of production. If the concrete is designated by 28-day compressive strength rather than by cementitious material content, the concrete shall be considered to be acceptable whenever its compressive strength reaches the specified 28-day compressive strength provided that strength is reached in not more than the maximum number of days specified or allowed after the member is cast.

- When concrete is specified by compressive strength, prequalification of materials, mix proportions, mixing equipment, and procedures proposed for use will be required prior to placement of the concrete. Prequalification shall be accomplished by the submission of acceptable certified test data or trial batch reports by the Contractor. Prequalification data shall be based on the use of materials, mix proportions, mixing equipment, procedures, and size of batch proposed for use in the work.

- Certified test data, in order to be acceptable, shall indicate that not less than 90 percent of at least 20 consecutive tests exceed the specified strength at the maximum number of cure days specified or allowed, and none of those tests are less than 95 percent of specified strength. Strength tests included in the data shall be the most recent tests made on concrete of the proposed mix design and all shall have been made within one year of the proposed use of the concrete.

- Trial batch test reports, in order to be acceptable, shall indicate that the average compressive strength of 5 consecutive concrete cylinders, taken from a single batch, at not more than 28 days (or the maximum age allowed) after molding shall be at least 580 pounds per square inch greater than the specified 28-day compressive strength, and no individual cylinder shall have a strength less than the specified strength at the maximum age specified or allowed. Data contained in the report shall be from trial batches that were produced within one year of the proposed use of specified strength concrete in the project. Whenever air-entrainment is required, the air content of trial batches shall be equal to or greater than the air content specified for the concrete without reduction due to tolerances.

- Tests shall be performed in conformance with either the appropriate California Test methods or the comparable ASTM test methods. Equipment employed in testing shall be in good condition and shall be properly calibrated. If the tests are performed during the life of the contract, the Engineer shall be notified sufficiently in advance of performing the tests in order to witness the test procedures.

- The certified test data and trial batch test reports shall include the following information:
 - A. Date of mixing.
 - B. Mixing equipment and procedures used.
 - C. The size of batch in cubic yards and the weight, type, and source of all ingredients used.
 - D. Penetration or slump (if the concrete will be placed under water or placed in cast-in-place concrete piles) of the concrete.
 - E. The air content of the concrete if an air-entraining admixture is used.
 - F. The age at time of testing and strength of all concrete cylinders tested.

- Certified test data and trial batch test reports shall be signed by an official of the firm that performed the tests.

- When approved by the Engineer, concrete from trial batches may be used in the work at locations where concrete of a lower quality is required and the concrete will be paid for as the type or class of concrete required at that location.

- After materials, mix proportions, mixing equipment, and procedures for concrete have been prequalified for use, additional prequalification by testing of trial batches will be required prior to making changes that, in the judgment of the Engineer, could result in a strength of concrete below that specified.

- The Contractor's attention is directed to the time required to test trial batches and the Contractor shall be responsible for production of trial batches at a sufficiently early date so that the progress of the work is not delayed.

- When precast concrete members are manufactured at the plant of an established manufacturer of precast concrete members, the mix proportions of the concrete shall be determined by the Contractor, and a trial batch and prequalification of the materials, mix proportions, mixing equipment, and procedures will not be required.

90-10 MINOR CONCRETE

90-10.01 GENERAL

- Concrete for minor structures, slope paving, curbs, sidewalks and other concrete work, when designated as minor concrete on the plans, in the specifications, or in the contract item, shall conform to the provisions specified herein.

- The Engineer, at the Engineer's discretion, will inspect and test the facilities, materials and methods for producing the concrete to ensure that minor concrete of the quality suitable for use in the work is obtained.

90-10.02 MATERIALS

- Minor concrete shall conform to the following requirements:

90-10.02A CEMENTITIOUS MATERIAL

- Cementitious material shall conform to the provisions in Section 90-1.01, "Description."

90-10.02B AGGREGATE

- Aggregate shall be clean and free from deleterious coatings, clay balls, roots, and other extraneous materials.
- Use of crushed concrete or reclaimed aggregate is acceptable only if the aggregate satisfies all aggregate requirements.
- The Contractor shall submit to the Engineer for approval, a grading of the combined aggregate proposed for use in the minor concrete. After acceptance of the grading, aggregate furnished for minor concrete shall conform to that grading, unless a change is authorized in writing by the Engineer.
- The Engineer may require the Contractor to furnish periodic test reports of the aggregate grading furnished. The maximum size of aggregate used shall be at the option of the Contractor, but in no case shall the maximum size be larger than 1 1/2-inch or smaller than 3/4-inch.
- The Engineer may waive, in writing, the gradation requirements in this Section 90-10.02B, if, in the Engineer's opinion, the furnishing of the gradation is not necessary for the type or amount of concrete work to be constructed.

90-10.02C WATER

- Water used for washing, mixing, and curing shall be free from oil, salts, and other impurities that would discolor or etch the surface or have an adverse affect on the quality of the concrete.

90-10.02D ADMIXTURES

- The use of admixtures shall conform to the provisions in Section 90-4, "Admixtures."

90-10.03 PRODUCTION

- Cementitious material, water, aggregate, and admixtures shall be stored, proportioned, mixed, transported, and discharged in conformance with recognized standards of good practice that will result in concrete that is thoroughly and uniformly mixed, that is suitable for the use intended, and that conforms to requirements specified herein. Recognized standards of good practice are outlined in various industry publications such as are issued by American Concrete Institute, AASHTO, or the Department.
- The cementitious material content of minor concrete shall conform to the provisions in Section 90-1.01, "Description."
- The amount of water used shall result in a consistency of concrete conforming to the provisions in Section 90-6.06, "Amount of Water and Penetration." Additional mixing water shall not be incorporated into the concrete during hauling or after arrival at the delivery point, unless authorized by the Engineer.
- Discharge of ready-mixed concrete from the transporting vehicle shall be made while the concrete is still plastic and before stiffening occurs. An elapsed time of 1.5 hours (one hour in non-agitating hauling equipment), or more than 250 revolutions of the drum or blades, after the introduction of the cementitious material to the aggregates, or a temperature of concrete of more than 90° F will be considered conditions contributing to the quick stiffening of concrete. The Contractor shall take whatever action is necessary to eliminate quick stiffening, except that the addition of water will not be permitted.
- The required mixing time in stationary mixers shall be not less than 50 seconds or more than 5 minutes.

- The minimum required revolutions at mixing speed for transit-mixed concrete shall be not less than that recommended by the mixer manufacturer, and shall be increased, if necessary, to produce thoroughly and uniformly mixed concrete.
- When a high range water-reducing admixture is added to the concrete at the job site, the total number of revolutions shall not exceed 300.
- Each load of ready-mixed concrete shall be accompanied by a weighmaster certificate that shall be delivered to the Engineer at the discharge location of the concrete, unless otherwise directed by the Engineer. The weighmaster certificate shall be clearly marked with the date and time of day when the load left the batching plant and, if hauled in truck mixers or agitators, the time the mixing cycle started.
- A Certificate of Compliance conforming to the provisions in Section 6-1.07, "Certificates of Compliance," shall be furnished to the Engineer, prior to placing minor concrete from a source not previously used on the contract, stating that minor concrete to be furnished meets contract requirements, including minimum cementitious material content specified.

90-10.04 CURING MINOR CONCRETE

- Curing minor concrete shall conform to the provisions in Section 90-7, "Curing Concrete."

90-10.05 PROTECTING MINOR CONCRETE

- Protecting minor concrete shall conform to the provisions in Section 90-8, "Protecting Concrete," except the concrete shall be maintained at a temperature of not less than 40° F for 72 hours after placing.

90-10.06 MEASUREMENT AND PAYMENT

- Minor concrete will be measured and paid for in conformance with the provisions specified in the various sections of these specifications covering concrete construction when minor concrete is specified in the specifications, shown on the plans, or indicated by contract item in the Engineer's Estimate.

90-11 MEASUREMENT AND PAYMENT

90-11.01 MEASUREMENT

- Portland cement concrete will be measured in conformance with the provisions specified in the various sections of these specifications covering construction requiring concrete.
- For concrete measured at the mixer, the volume in cubic feet shall be computed as the total weight of the batch in pounds divided by the density of the concrete in pounds per cubic foot. The total weight of the batch shall be calculated as the sum of all materials, including water, entering the batch. The density of the concrete will be determined in conformance with the requirements in California Test 518.

90-11.02 PAYMENT

- Portland cement concrete will be paid for in conformance with the provisions specified in the various sections of these specifications covering construction requiring concrete.
- Full compensation for furnishing and incorporating admixtures required by these specifications or the special provisions will be considered as included in the contract prices paid for the concrete involved and no additional compensation will be allowed therefor.
- Should the Engineer order the Contractor to incorporate any admixtures in the concrete when their use is not required by these specifications or the special provisions, furnishing the

admixtures and adding them to the concrete will be paid for as extra work as provided in Section 4-1.03D, "Extra Work."

- Should the Contractor use admixtures in conformance with the provisions in Section 90-4.05, "Optional Use of Chemical Admixtures," or Section 90-4.07, "Optional Use of Air-entraining Admixtures," or should the Contractor request and obtain permission to use other admixtures for the Contractor's benefit, the Contractor shall furnish those admixtures and incorporate them into the concrete at the Contractor's expense and no additional compensation will be allowed therefor.

SECTION 91: PAINT

Issue Date: May 1, 2006

Section 91-3, "Paints for Timber," of the Standard Specifications is amended to read:

91-3 PAINTS FOR TIMBER

91-3.01 WOOD PRIMER, LATEX-BASE

Classification:

- This specification covers a ready-mixed priming paint for use on unpainted wood or exterior woodwork. It shall conform with the requirements in the Detailed Performance Standards of the Master Painters Institute (MPI) for exterior wood primers, and be listed on the Exterior Latex Wood Primer MPI List Number 6.

91-3.02 PAINT; LATEX-BASE FOR EXTERIOR WOOD, WHITE AND TINTS

Classification:

- This specification covers a ready-mixed paint for use on wood surfaces subject to outside exposures. This paint shall conform to the requirements in the Detailed Performance Standards of the Master Painters Institute (MPI) for Paint, Latex, Exterior, and shall be listed on the following MPI Approved Products List:

- A. Exterior Latex, Flat MPI Gloss Level 1, MPI List Number 10.
- B. Exterior Latex, Semi-Gloss, MPI Gloss Level 5, MPI List Number 11.
- C. Exterior Latex, Gloss, MPI Gloss Level 6, MPI List Number 119.

- Unpainted wood shall first be primed with wood primer conforming to the provisions in Section 91-3.01, "Wood Primer, Latex-Base."

Section 91-4, "Miscellaneous Paints," of the Standard Specifications is amended to read:

91-4 MISCELLANEOUS PAINTS

91-4.01 THROUGH 91-4.04 (BLANK)

91-4.05 PAINT; ACRYLIC EMULSION, EXTERIOR WHITE AND LIGHT AND MEDIUM TINTS

Classification:

- This specification covers an acrylic emulsion paint designed for use on exterior masonry. This paint shall conform to the requirements in the Detailed Performance Standards of the

Master Painters Institute (MPI) for Paint, Latex, Exterior, and shall be listed on the following MPI Approved Products Lists:

- A. Exterior Latex, Flat MPI Gloss Level 1, MPI List Number 10.
 - B. Exterior Latex, Semi-Gloss, MPI Gloss Level 5, MPI List Number 11.
 - C. Exterior Latex, Gloss, MPI Gloss Level 6, MPI List Number 119.
- This paint may be tinted by using "universal" or "all purpose" concentrates.

SECTION 92: ASPHALTS

Issue Date: March 21, 2008

Section 92, "Asphalts," of the Standard Specifications is amended to read:

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 Maximum, Pa·s	T 316	3.0	3.0	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	58 1.00	64 1.00	64 1.00	64 1.00	70 1.00
RTFO Test, ^e Mass Loss, Maximum, %	T 240	1.00	1.00	1.00	1.00	1.00
RTFO Test Aged Binder						
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum G*/sin(delta), kPa	T 315	58 2.20	64 2.20	64 2.20	64 2.20	70 2.20
Ductility at 25°C Minimum, cm	T 51	75	75	75	75	75
PAV ^f Aging, Temperature, °C	R 28	100	100	100	100	110
RTFO Test and PAV Aged Binder						
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum G*/sin(delta), kPa	T 315	22 ^d 5000	31 ^d 5000	28 ^d 5000	22 ^d 5000	34 ^d 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, Mpa Minimum M-value	T 313	-12 300 0.300	0 300 0.300	-6 300 0.300	-18 300 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 Minimum G*/sin(delta), kPa	T 315	58 1.00	64 1.00	76 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 Minimum G*/sin(delta), kPa	T 315	58 2.20	64 2.20	76 2.20
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum (delta), %	T 315	Note e 80	Note e 80	Note e 80
Elastic Recovery ^f , Test Temp., °C Minimum recovery, %	T 301	25 75	25 75	25 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 Maximum G*sin(delta), kPa	T 315	16 5000	22 5000	31 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, MPa Minimum M-value	T 313	-24 300 0.300	-18 300 0.300	-12 300 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."

SECTION 93: LIQUID ASPHALTS

Issue Date: November 3, 2006

The ninth paragraph of Section 93-1.04, "Measurement," of the Standard Specifications is amended to read:

- The following Legend and Conversion Table is to be used for converting volumes of liquid asphalt products, Grades 70 to 3000, inclusive, and paving asphalt Grades PG 58-22, PG 64-10, PG 64-16, PG 64-28, and PG 70-10, and Grades PG 58-34 PM, PG 64-28 PM, and PG 76-22 PM.

END OF AMENDMENTS

APPENDIX B

Spill Contingency Plan

SAWMILL 1B BIKE PATH PROJECT

SPILL CONTINGENCY PLAN

I. SEWAGE SPILLS:

A. Agency Contacts:

Agency:	Contact Person	Phone
1. South Tahoe Public Utility District	Jim Hoggatt	544-6474 x 206
2. El Dorado County Environmental Management	Ginger Huber	573-3450
3. Water Quality Control Board Lahontan Region	Bob Larsen	542-5439
4. El Dorado County Department of Transportation	Steve Kooyman Alfred Knotts Brendan Ferry Dick Bird	573-7910 573-7921 573-7905 573-7911

B. Contractor Representative:

Clean up operation shall be directed by _____,
phone number _____ in cooperation with agencies listed in A.

C. Containment and Disposal:

Spills shall be contained with earthen berms or other approved methods. Liquid sewage shall be disinfected as necessary, and pumped to an adjacent sewer or transported to South Tahoe Public Utility District facilities by approved methods as instructed by South Tahoe Public Utility District.

II. PETROLEUM AND CHEMICAL SPILLS

A. Agency Contacts:

Agency:	Contact Person	Phone
1. South Tahoe Public Utility District	Jim Hoggatt	544-6474 x 206
2. El Dorado County Environmental Management	Ginger Huber	573-3450
3. Water Quality Control Board Lahontan Region	Robert Larsen	542-5439

4. El Dorado County Department of Transportation

Steve Kooyman	573-7910
Alfred Knotts	573-7921
Brendan Ferry	573-7905
Dick Bird	573-7911

B. Contractor Representation:

Clean up operation shall be directed by _____ - (Hazardous License # _____) in cooperation with agencies listed in A.

C. Materials shall be excavated with a backhoe or other excavation equipment and placed on an impermeable membrane _____ (type) _____ and covered with such membrane, as required for containment..

D Materials shall be disposed of as directed by El Dorado County Environmental Management.

Minor Spills – South Tahoe Refuse – Geni 542-8366
Major Spills – Forward Inc. Manteca, CA (209) 466-4482
Or as approved by Environmental Management

E. The contractor shall keep petroleum and chemical absorbent materials on site at all times.

APPENDIX C

SAMPLE PAY ESTIMATE

ITEM #	DESCRIPTION	QUANTITY	UNITS	CONTRACT SUMMARY		PREVIOUS TOTALS		THIS ESTIMATE		TOTAL TO DATE		
				UNIT PRICE	AMOUNT	QUANTITY	AMOUNT	THIS ESTIMATE	AMOUNT	QUANTITY	AMOUNT	% OF TOTAL
1	Mobilization	1	LS	\$	-				\$	-	\$	-
2	Traffic Control	1	LS	\$	-				\$	-	\$	-
3	Temporary Railing (Type K)	360	LF	\$	-				\$	-	\$	-
4	Temporary Crash Cushion (Array TS14)	2	EA	\$	-				\$	-	\$	-
5	Install and Maintain Tree Protection and Construction Limit Fence	1,567	LF	\$	-				\$	-	\$	-
6	Install and Maintain Type 2 Filter Fence	1,903	LF	\$	-				\$	-	\$	-
7	Install and Maintain Type 3 Filter Fence	40	LF	\$	-				\$	-	\$	-
8	Class 1 Asphalt Concrete Bike Path	18,650	SF	\$	-				\$	-	\$	-
9	Caltrans GCP Inlet	2	EA	\$	-				\$	-	\$	-
10	18" CMP Culvert	86	LF	\$	-				\$	-	\$	-
11	18" Flared End Section	3	EA	\$	-				\$	-	\$	-
12	Rock-Lined Ditch	162	LF	\$	-				\$	-	\$	-
13	Diversion for STA 169+03 and STA 174+90	2	EA	\$	-				\$	-	\$	-
14	Rock Bow	153	SF	\$	-				\$	-	\$	-
15	Remove Existing Wood Fence	160	LF	\$	-				\$	-	\$	-
16	Rock Dissipator	36	SF	\$	-				\$	-	\$	-
17	Dewatering STA 169+03 and 174+90	2	EA	\$	-				\$	-	\$	-
18	Dewatering for Structures	4	EA	\$	-				\$	-	\$	-
19	Revegetation - Type SM	13,487	SF	\$	-				\$	-	\$	-
20	Revegetation - Type MSS	8,266	SF	\$	-				\$	-	\$	-
21	Coir Logs	3	EA	\$	-				\$	-	\$	-
22	Striping and Markings	810	SF	\$	-				\$	-	\$	-
23	Recessed Thermoplastic Markings	200	SF	\$	-				\$	-	\$	-
24	Peelercore Bollards	4	EA	\$	-				\$	-	\$	-
25	Removable Bollards	2	EA	\$	-				\$	-	\$	-
26	Concrete Retaining Wall - Caltrans Type 5	195	SF	\$	-				\$	-	\$	-
27	Concrete Retaining Wall - Caltrans Type 1	1,808	SF	\$	-				\$	-	\$	-
28	Tubular Steel Railing	265	LF	\$	-				\$	-	\$	-
29	Adjust SMH Rim to Grade	3	EA	\$	-				\$	-	\$	-
30	Sweeping	1	LS	\$	-				\$	-	\$	-
31	Rock Fracturing and Removal	25	CY	\$	-				\$	-	\$	-
32	Relocate Existing Roadway Sign	2	EA	\$	-				\$	-	\$	-
33	Roadway Signs - Type 1	4	EA	\$	-				\$	-	\$	-
34	Roadway Signs - Type 2	6	EA	\$	-				\$	-	\$	-
35	Roadway Signs - Type 3	1	EA	\$	-				\$	-	\$	-
36	Overexcavation and Remove Unsuitable Material	25	CY	\$	-				\$	-	\$	-
37	Remove and Reconstruct Metal Beam Guardrail	60	LF	\$	-				\$	-	\$	-
38	Asphalt Concrete Dike, Type F	60	LF	\$	-				\$	-	\$	-
39	Install and Maintain Tire Wash Area On Pavement	1	EA	\$	-				\$	-	\$	-
40	Install and Maintain Concrete Wash Out Area	1	EA	\$	-				\$	-	\$	-
41	Install and Maintain Staging Area	1	EA	\$	-				\$	-	\$	-
42	Tree Removal	24	EA	\$	-				\$	-	\$	-
43	Earthwork - Bridge (F)	170	CY	\$	-				\$	-	\$	-
44	Precast & Prestressed Concrete Piles	725	LF	\$	-				\$	-	\$	-
45	Structural Concrete - Bridge	48	CY	\$	-				\$	-	\$	-
46	Pre-Fabricated Steel Truss	1	LS	\$	-				\$	-	\$	-
47	Miscellaneous Grading	50	CY	\$	-				\$	-	\$	-
48	Shoring, Bracing or Sloping the Sides of Trenches greater than Five Feet Deep	1	LS	\$	-				\$	-	\$	-
49	Winterization	1	LS	\$	-				\$	-	\$	-

ITEM #	DESCRIPTION	QUANTITY	UNITS	CONTRACT SUMMARY		PREVIOUS TOTALS		THIS ESTIMATE		TOTAL TO DATE		
				UNIT PRICE	AMOUNT	QUANTITY	AMOUNT	THIS ESTIMATE	AMOUNT	QUANTITY	AMOUNT	% OF TOTAL
	SUBTOTAL ORIGINAL CONTRACT ITEMS				\$ -				\$ -		\$ -	
	CONTRACT CHANGE ORDERS											
CCO #1				\$ -	\$ -			\$ -	-	\$ -	-	
CCO #2				\$ -	\$ -			\$ -	-	\$ -	-	
	SUBTOTAL CONTRACT CHANGE ORDERS				\$ -			\$ -	-	\$ -	-	
	TOTAL				\$ -			\$ -	-	\$ -	-	
TOTAL CONTRACT ITEMS				\$ -	-	\$ -	-	\$ -	-	\$ -	-	
TOTAL CCOs				\$ -	-	\$ -	-	\$ -	-	\$ -	-	
OVERALL TOTAL				\$ -	-	\$ -	-	\$ -	-	\$ -	-	
Submitted: _____						Ret. Withheld	\$ -	\$ -	-	\$ -	-	
				Date		Amt Paid	\$ -	\$ -	-	\$ -	-	
Approved By: _____												
Steve Kooyman, Supervising Civil Engineer				Date								
AUTHORIZED PAYMENT THIS ESTIMATE										\$ -		

APPENDIX D

GEOTECHNICAL INVESTIGATION REPORT

**Foundation Report
Mill Bike Path Bridge @ Upper Truckee River
El Dorado County, California**



Foundation Report
Sawmill Bike Path Bridge @ Upper Truckee River
El Dorado County, California

Prepared for:
Stantec Consulting, Inc.

Prepared by:
Blackburn Consulting, Inc.
11521 Blocker Drive, Suite 110
Auburn, CA 95603
(530) 887-1494

February 2006

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APPENDIX A

Figure 1 – Vicinity Map

Figure 2 – ARS Curve

APPENDIX B:

Laboratory Results

Log of Test Borings

Previous Log of Test Borings (Caltrans, 1969)

Previous Log of Test Borings (Taber, 1989)

APPENDIX C: Design Calculations

11521 Blocker Dr, Ste 110 ■ Auburn, CA 95603
(530) 887-1494 ■ Fax: (530) 887-1495



2437 Front St. ■ West Sacramento, CA 95691
(916) 375-8706 ■ Fax: (916) 375-8709

Geotechnical ■ Geo-Environmental ■ Forensics ■ Construction Services

File No. 811.1
February 8, 2006

Mr. John Klemunes
Stantec Consulting, Inc.
2590 Venture Oaks Way
Sacramento, California 95833-3288

Subject: **Foundation Report
Sawmill Bike Bridge @ Upper Truckee River
El Dorado County, California**

Dear Mr. Klemunes,

Blackburn Consulting, Inc. (BCI) prepared this Foundation Report for the proposed Sawmill Bike Bridge at the Upper Truckee River. This report contains a summary of our observations of exploratory subsurface conditions, bridge foundation recommendations, and construction considerations. Our work was performed in accordance with our proposal of July 2005, which was amended during December 2005.

The results of the investigation indicate that competent bearing material for the bridge abutments is located at or below Elevation 6,230 feet. Groundwater was located approximately 15 feet below grade at the time of the investigation. Driven, pre-cast, pre-stressed concrete piles are recommended.

Please call if you have questions or require additional information. Thank you.

Sincerely,

BLACKBURN CONSULTING, INC.

Prepared by,
Alfred P. Worcester, PG, CEG
Senior Engineering Geologist

Reviewed by,
Rick Sowers, P.E., C.E.G.
Senior Project Manager



SITE GEOLOGY AND SUBSURFACE CONDITIONS

General Site Geology

The site is located in the southern portion of the Lake Tahoe Basin, within the Sierra Nevada geomorphic province. The regional geology is comprised largely of Jurassic and Cretaceous-age granitic rocks that were intruded into older (Paleozoic and Mesozoic) volcanic and sedimentary rocks. Prior to the main uplift of the Sierra Nevada, rivers carved channels and deposited accumulations of gravel, sand and silt derived from erosion of the older rocks. The river channels also carried volcanic flows and debris from later (Tertiary) volcanism.

During the Pleistocene age, glaciation shaped the landscape, forming moraines that shaped the nearby valleys, lakes and bays. Faulting has continued to shape the area, with extensional type faulting creating west-tilted blocks bounded by east-dipping faults.

Based on the Geologic Map of the Lake Tahoe Basin, California and Nevada (California Geological Survey, Map No. 4, 2005), Quaternary flood-plain sediments immediately underlie the project site. These sediments typically consist of gravelly to silty sand and sandy to clayey silt. The topographically-higher areas beyond the valley are comprised of Pleistocene glacial deposits and Cretaceous granodiorite. Based on the 1969 LOTB, we expect bedrock at the site to consist of variably weathered, granitic rock, located at depths greater than 70 feet.

Subsurface Soil Conditions

Caltrans completed two sampled test borings and two cone penetration tests, to depths of 60-80 ft, as part of subsurface exploration for the 1969 bridge widening. The "As-Built" Log of Test Borings drawing shows loose fill and channel deposits to a depth of about 6-10 feet, underlain by generally compact to dense sand with silt. Uniformly dense sediments are indicated below depth 35 feet, and granitic bedrock is "assumed" in one boring at depth 70 feet.

In 1989, Taber Consultants completed five sampled test borings and one cone penetration test along the west (upstream) side of the bridge as supplemental data for the new (replacement) bridge. Their data show a similar soil profile, with loose to compact sand and gravel to depth 6-8 feet, compact to dense sandy silt and silty sand to about depth 30 feet, and dense to very dense sand and silty sand below. No bedrock was encountered to the maximum depth of exploration (65 feet).

We show the locations of both the 1969 Caltrans borings and 1989 Taber Consultants borings on Figure 2. "Log of Test Borings" for each study is included in Appendix B.

Our subsurface investigation revealed that layers of sand, gravel, and silt underlie the site. The soil profile is predominantly medium dense to very dense, granular soils with some minor interbedded layers of stiff to hard silts. The following is a summary of the overall soil profile, with depth below the existing ground surface, located at approximately Elevation 6,272 feet.

Depth 0 to 14 feet - predominantly medium dense to dense, gravelly sand (fill).

Depth 14 to 33 feet - predominantly medium dense, silty sand with gravel and firm to stiff sandy silt.

Depth 33 to 66 feet - predominantly dense to very dense, well graded sand and interbedded, very stiff to hard sandy silt. Variable amounts of fines content.

The above descriptions are general. Refer to the Log of Test Borings in Appendix B for more specific soil descriptions, laboratory test results, and blow count data.

Groundwater

Groundwater is shown on the 1968 Caltrans borings (drilled in August 1968) within a few feet of ground surface, although these borings appear to have been drilled from a ground elevation near channel bottom. Groundwater is shown on the Taber borings (drilled in October 1989, from near road grade) at a depth of approximately 14 feet, corresponding to an approximate elevation of 6,258 feet. Groundwater was observed in Boring B-1 at an approximate depth of 15.5 feet during our investigation of November 2005. The groundwater levels from all studies appear to closely approximate the water surface in the channel at the times of drilling.

Based on the existing data, we expect groundwater to be present within the granular sediments at levels equal to existing water levels within the stream channel. Due to the relatively clean and unconsolidated nature of these soils, we expect they are saturated and yield significant water to open excavations.

SITE SEISMICITY

Seismic Design

Our review of published geologic mapping and preliminary site review did not reveal the presence of Late Quaternary (displacement within the last 700,000 years) or younger faults within or adjacent to the project site.

Based on published geologic maps and the State of California, Department of Transportation, California Seismic Hazard Map (1996), the closest recognized Late Quaternary or younger faults are the following:

- 1) Genoa Fault, located approximately 9.6 mi east of the site, M=7.25
- 2) Lake Tahoe Fault, located approximately 9.6 mi northwest of the site, M=6.5
- 3) Unnamed fault, located approximately 14.4 mi southeast of the site, M=6.5

The controlling fault for design is the Genoa Fault, a Normal-style fault with an estimated maximum Magnitude of 7.25. The Peak Horizontal Bedrock Acceleration (PHBA) at the site is 0.4g based on the California Seismic Hazard Map (Mualchin, 1996). Based on the boring data, we classify the site soil profile as Type D.

Use the 0.4g peak horizontal rock acceleration curve (0.44g peak ground acceleration) from Figure B.8 (Soil Profile Type D for a Magnitude of 7.25 ± 0.25) of the Caltrans Seismic Design Criteria (2004, Version 1.3). The proposed structure is located more than 15 km (9 miles) from the

controlling fault and no adjustment to the response spectra is required. A design ARS curve is provided on Figure 2, Appendix A.

Liquefaction Potential

Liquefaction can occur when loose to medium dense, granular, saturated soils (generally within 50 feet of the surface) are subjected to ground shaking. The boring data indicate that the site is underlain primarily by medium dense to very dense sands with 5 to 15 percent fines.

We used the 1996 modifications of the "Simplified Procedure" by Seed and Idriss, 1971, published in the "Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils." To evaluate site liquefaction, the analysis predicts factor of safety (FS) from the ratio of Cyclic Resistance Ratio (CRR) to Cyclic Stress Ratio (CSR). Required variables include peak horizontal acceleration, $(N1)_{60CS}$ values, r_d (soil flexibility reduction), and total and effective unit weights.

We used a peak ground acceleration of 0.4g $(N1)_{60CS}$ values (field N values corrected for sampler type, overburden, energy efficiency, rod length, hole diameter, and estimated fines content), and r_d as recommended in the NCEER Proceedings. We assumed a uniform groundwater at depth elevation of 6,258 feet.

Our analysis indicated factors of safety of 1.3 or greater, which indicates a very low potential for ground settlement and/or strength loss due to liquefaction. Post-construction factors of safety at abutments will be even greater considering the additional vertical stress from abutment fills. Based on our analysis, design considerations for liquefaction potential are not necessary. The results of our analysis are included in Appendix C.

CORROSION EVALUATION

Caltrans considers a site corrosive to foundation elements (Corrosion Guidelines, September 2003, VI.0) if one or more of the following conditions exist for the representative soil samples taken at the site:

- Chloride concentration is 500 parts per million (ppm) or greater,
- Has a minimum resistivity of less than 1,000 ohm-cm,
- Sulfate concentration is 2000 ppm or greater,
- pH is 5.5 or less.

We obtained a sample of representative soil for corrosion analyses from Boring B-1, at a depth of approximately 21 feet. Our test results (shown in Appendix B) indicate less than 13 ppm chlorides, less than 0.5 ppm sulfates, and a pH of 6.9. Therefore, the site is considered non-corrosive. Additionally, the site is not within 1,000 feet of salt or brackish water.

SCOUR

The new foundations will be located behind rock slope protection near the channel banks, and are, therefore, not expected to be susceptible to scour. Based on the previous subsurface data and data obtained for this study, we estimate a minimum scour depth of approximately 6 feet below the present channel bottom. Our estimate of scour should be checked against hydraulic data and scour estimates available for design of the existing highway bridge, and updated to reflect current channel conditions.

FOUNDATION RECOMMENDATIONS

The subsurface conditions are conducive for driven, pre-cast, pre-stressed (PCPS) concrete piles. Shallow spread-footing foundations are not as desirable due to weak, native soils and the presence of shallow groundwater at the abutments. The use of CIDH piling is considered inappropriate due to unfavorable groundwater conditions.

Stantec provided us with the following proposed pile foundation design elements:

- Alternative “Y” (15-inch diameter), 45-ton and 70-ton, pre-cast, pre-stressed, concrete piles are desired at the abutments and bents, respectively.
- The top of the piles at the proposed abutments will be approximately 8 feet below existing grade (along and adjacent to the existing bridge abutments), and approximately 8 feet above existing grade (pile extensions) at the bents.
- The project plan shows three piles at each abutment and 4 piles at each bent. The bent column connection (of the pile extensions to the bridge soffit) will be fixed.
- Proposed lateral loading requirements are 56 kips at each abutment structure, and 225 kips at each bent structure. The estimated tension requirement is 33 kips at the bents.

Compressive Resistance

Based on the above information, required nominal resistance values determined by Stantec, and our geotechnical analysis, we provide pile tip elevations in Table 1. The piles obtain resistance in skin friction and end bearing. We determined the compressive resistance and tensional requirements using the computer program DRIVEN 1.2 (2001). The results of our analyses are located in Appendix C.

TABLE 1
Bridge Pile Data Table

Location	Pile Type	Design Loading (tons)	Nominal Resistance		Cut-Off Elevation (feet)	Design Tip Elevations (feet)	Specified Tip Elevation (feet)
			Compression (kips)	Tension (kips)			
Abut 1	15-inch, PCPS	45	180	0	6,267.5	6,236 ⁽¹⁾ 6,248 ⁽²⁾	6,233
Bent 2	15-inch, PCPS	70	280	66	6,268.3	6,231 ⁽¹⁾ 6,242 ⁽²⁾ 6,235 ⁽³⁾	6,228
Bent 3	15-inch, PCPS	70	280	66	6,267.5	6,231 ⁽¹⁾ 6,242 ⁽²⁾ 6,235 ⁽³⁾	6,228
Abut 4	15-inch, PCPS	45	180	0	6,267.6	6,236 ⁽¹⁾ 6,248 ⁽²⁾	6,233

Design tip elevation is based on the following load condition: (1) Compression, (2) Lateral, and (3) Tension.

Lateral Load Analysis

We used LPILE Plus Version 4.0 software, and Stantec's design loads to determine the minimum tip elevation due to lateral loads. The specified pile length for lateral requirements is shown on Table 1, above. For a fixed-head condition for the PCPS piles located at the bents, our analysis indicates up to 1.2 inches of lateral movement at the top of the of the pile under a maximum design lateral force

of 11 kips (and a vertical force of 0 kips) applied at the top of the pile. The proposed abutment piles have a lateral capacity of 19 kips applied at the top of the pile, with 0.25 inches of deflection and a free-head pile condition. The results of our analyses are located in Appendix C.

Settlement

We calculated pile settlement of less than 0.6 inches for either 45 or 70 ton piles, by the method outlined in Chapter 12, Section 4.a of the 1982, NAVFAC Design Manual 7.2. The results of our analysis are located in Appendix C.

Negative Skin Friction

Because the subsurface soil is relatively dense granular material, with no soft clay layers and factors of safety against liquefaction settlement of greater than 1.3, we do not anticipate negative skin friction at the abutments or bents.

APPROACH FILLS

Fill Material

A limited amount of approach fill is anticipated. The sources of borrow material for construction of any approach fills have not been identified. Proposed borrow must be tested and approved for use by the project engineer prior to transporting to the site.

Settlement

Some "immediate" ground settlement will occur during fill placement at abutments. Because there are no soft, saturated, clay or silt layers underlying the site, we do not anticipate "long-term" consolidation settlement. Therefore, we expect post-construction settlement between the abutment backwall and adjacent approach fills to be less than 0.5 inches. A waiting period is not necessary.

CONSTRUCTION CONSIDERATIONS

Excavating

All sheet piling, shoring, and other means of temporary support should be installed in accordance with Section 19-1.02 of Caltrans Standard Specifications.

The owner and contractor should be familiar with applicable local, state, and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards. Construction site safety is generally the sole responsibility of the Contractor, who will also be solely responsible for the means, methods, and sequencing of construction operations. We are providing this information as a service to our client for design. Under no circumstances should the information provided below be interpreted to mean that BCI is assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.

Due to the observed conditions with which we drilled our exploratory borings above the underlying bedrock, excavations should be possible with conventional trenching equipment. Groundwater was encountered at a depth of 14 feet in our borings, and so water seeps may occur from the saturated alluvium where excavations to around that depth occur, particularly if work is conducted during the rainy season. Excavating should be timed to occur later in the year when river flow is at a minimum. The proximity of the existing highway abutments should be considered when constructing the proposed bent foundations.

According to the Federal Register, 29 CFR Part 1926, Occupational Safety and Health Standards-Excavations, the soil is classified as a Type C soil based on lab tests and soil conditions observed in our exploratory borings. Based on a classification of Type C, all temporary excavations less than 14 feet in depth may be sloped at a gradient of 1:1.5 (v:h) or flatter. However, loose fill soil may be encountered in isolated areas and may require flatter slopes.

If vertical excavations over 5 feet deep are necessary, they should be shored. Shoring could be designed using parameters for Type C soil but this classification must be verified at the time of construction. Design of shoring is beyond the scope of our work.

Foundations

Verify pile capacity during placement per Caltrans Standard Specification 49-1.08. A pile load test is not necessary. Piles shall be driven to a bearing value not less than the design loading shown on the plans.

The depth to competent bearing material is variable. If piles develop the required compressive capacity (design loading shown on the pile data table) before reaching the Specified Tip Elevation, the pile may be cut-off with BCI's and the Resident Engineer's approval. Cut-off is not expected to exceed 3 to 6 feet.

RISK MANAGEMENT

Our experience and that of our profession clearly indicates that the risks of costly design, construction, and maintenance problems can be significantly lowered by retaining the geotechnical engineer of record to provide additional services. For this project, BCI should be retained to:

- Review and provide written comments on the (civil, structural) plans and specifications prior to construction.
- Monitor construction to check and document our report assumptions. At a minimum, we should monitor pile installation, and observe and test fill construction.
- Update this report if design changes occur, 2 years lapse between this report and construction, or site conditions change.

If BCI is not retained to perform the above applicable services, we are not responsible for any other party's interpretation of our report, and subsequent addendums, letters, and discussions.

LIMITATIONS

This report is based on limited information and is not intended for final design. BCI will provide additional analysis and recommendations, as needed, for final design. BCI performed services in accordance with generally accepted geotechnical engineering principles and practices currently used in this area. We do not warranty our services.

The analyses, conclusions, and recommendations contained in our report are based on site conditions as they existed at the time of our study, and further assume that probes such as exploratory borings are representative of the subsurface conditions throughout the site; i.e., the subsurface conditions everywhere are not significantly different from those disclosed by the probes.

If during construction different subsurface conditions from those encountered during our exploration or different from those assumed in the design are observed or appear to be present, or where variations from our design recommendations are made, we must be advised promptly so that we can review these conditions and modify the applicable recommendations if necessary. We cannot be held responsible for differing site conditions, changes in design, or modified geotechnical recommendations not brought to our attention.

Soil conditions cannot be fully determined by borings and, therefore, unanticipated soil conditions are commonly encountered. Such unexpected soil conditions often require that additional expenditures be made to attain a properly constructed project. Therefore, some contingency funding is recommended to accommodate potential extra costs.

Foundation dimensions recommended herein are based upon geotechnical and construction considerations and are not offered in lieu of foundation design by an engineer. A determination of flooding potential or the existence of wetlands was beyond the scope of this report.

This geotechnical study did not include an investigation regarding the existence, location, or type of possible hazardous materials. If an investigation is necessary, we should be advised. In addition, if any hazardous materials are encountered during construction of the project, the proper regulatory officials should be notified immediately.

Other standards or documents referenced in any given standard cited in this report, or otherwise relied upon by the authors of this report, are only mentioned in the given standard; they are not incorporated into it or "included by reference" as that latter term is used relative to contracts or other matters of law.

REFERENCES

California Division of Mines and Geology, 1966, Geology of Northern California, Bulletin 190.

Hart, E.W. and Bryant, W.A., 1997, Fault-Rupture Hazard Zones in California: California Department of Conservation, Division of Mines and Geology, Special Publication 42.

Jennings, Charles W., 1992, Fault Activity Map of California and Adjacent Areas with location and ages of Recent Volcanic Eruption.

Mualchin, L., 1996, California Seismic Hazard Map; prepared for State of California, Department of Transportation.

State of California, Department of Conservation, 1997, Guidelines for Evaluating and Mitigating Seismic Hazards in California; Special Publication 117.

State of California, Department of Transportation, 2002, Caltrans Standard Specifications.

State of California, Department of Transportation, February 2004, Caltrans Seismic Design Criteria, Version 1.3.

INTRODUCTION

Purpose

BCI prepared this Foundation Report for the Sawmill Bicycle Path Bridge at the Upper Truckee River, located near the town of Meyers, El Dorado County, California. This report contains a summary of our subsurface exploration, Log of Test Borings (LOTB), lab testing results, and foundation recommendations for the proposed bridge structure.

This report is intended for Stantec Consulting, Inc. and El Dorado County Department of Transportation to use during the design and construction of this project. Do not use or rely upon this report for locations or improvements other than the described project site without the written consent of BCI.

Scope of Services

To prepare this report, BCI:

- Discussed the project with Stantec Consulting, Inc,
- Reviewed Caltrans "As-Built" plans for the existing U.S. 50 Bridge at the Upper Truckee River, constructed in 1996,
- Reviewed the foundation report, prepared by Taber Consultants, for the 1996 bridge replacement,
- Reviewed subsurface data obtained by Caltrans for bridge widening in 1969,
- Conducted a site review on June 16, 2005,
- Reviewed geologic and seismic maps/documents pertaining to the site,
- Obtained an encroachment permit from Caltrans and a drilling permit from El Dorado County Health Department,
- Marked the site for USAAlert,
- Advanced two borings at the bridge site,
- Prepared an LOTB,
- Conducted geotechnical lab analysis on select soil samples, and
- Performed geotechnical analysis to determine pile tip elevations and foundation recommendations.

PROJECT DESCRIPTION

Location and Topography

The project is located near South Lake Tahoe, along State Route (SR) 50, between Meyers and Tahoe Valley. The site is at an elevation of approximately 6,250 feet above mean sea level. The site latitude is 38.8753°N, and the longitude is 120.0044°W. We show the site location on Figure 1.

The site is within a relatively narrow valley surrounded by mountains. At this location the Upper Truckee River flows northeasterly toward Lake Tahoe. The river channel is approximately 50 feet wide and is incised approximately 10 feet below the adjacent banks. A vicinity map shows the approximate site location, Figure 1, Appendix A.

Existing Bridge

The proposed bicycle bridge is located adjacent and upstream (west) of an existing SR50 bridge across the Upper Truckee River (Bridge No. 25-15). The bridge was constructed in 1996 and

consists of a 134-foot long, 55-foot wide, two-span, concrete box girder structure. The existing bridge replaced a previous three-span concrete bridge built in 1936 and widened in 1969.

The Caltrans "As-Built" plans for the 1996 replacement show the new bridge supported on steel HP 10x57 piles with 70-ton design loads. These piles were driven to tip elevations of about 6,220 feet at the abutments 1 and 3, and 6,214 feet at pier 2 (middle bent). Pile lengths are approximately 40 feet at the abutments and 33 feet at the pier.

Proposed Structure

We understand that the new bridge will clear-span the channel with a prefabricated, 14-foot wide structure, or similar type structure. Span length is estimated at about 250 feet. Transition to the existing banks may require short, 40-foot long approach spans.

Stantec indicates the main span may be supported on single-column piers, possibly constructed as pile-extensions. The south column may be cantilevered to accommodate a sharp upstream bend in the channel. Structure loads are presently defined as HS-10.

SUBSURFACE INVESTIGATION

A BCI engineer or geologist logged the borings and described the soils in accordance with the Unified Soil Classification System (USCS). To characterize the subsurface conditions and obtain soil samples for laboratory testing, BCI retained Major Drilling, Inc. to drill and sample two exploratory borings at the site. Major used a Mobile B-61, truck-mounted rig to drill the borings on November 14 and 15, 2005 to a maximum depth 66.5 feet. The drill rig used 8-inch diameter hollow stem augers (HAS) and 4-inch diameter, mud-rotary methods to advance the borings. To observe groundwater, Boring B-1 was advanced to approximately 25 feet using HSA methods, and then switched to mud drilling. Boring B-2 was advanced using only mud-rotary methods.

Soil sampling and blow count data was completed using a Modified California Sampler (MCS) equipped with 2.375-inch I.D. brass liners. We used a 140-lb, automatic trip, safety hammer falling 30-inches to drive the sampler.

LABORATORY TESTING

In addition to field blow count testing, we completed the following laboratory tests on representative soil samples from the exploratory borings:

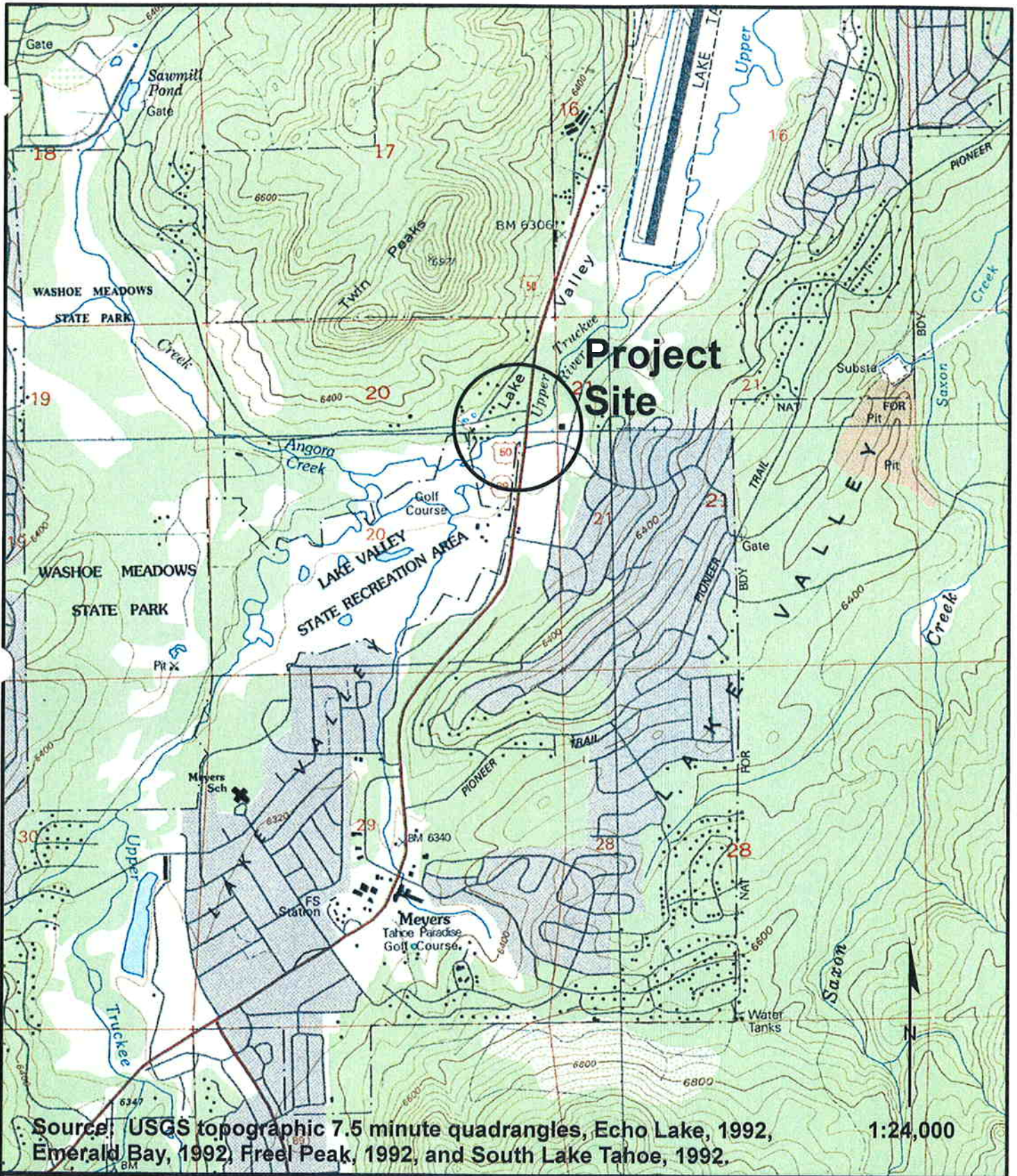
- Moisture content (ASTM D2216) and unit weight (ASTM D2937)
- Plasticity Index (ASTM D4318)
- Direct shear (ASTM D3080)
- Sieve Analysis (ASTM D422)
- Sulfate content (CTM 417), chloride content (CTM 422), pH (CTM 643) and resistivity testing (CTM 643).

Laboratory test results are located in Appendix B.



Figure 1 – Vicinity Map

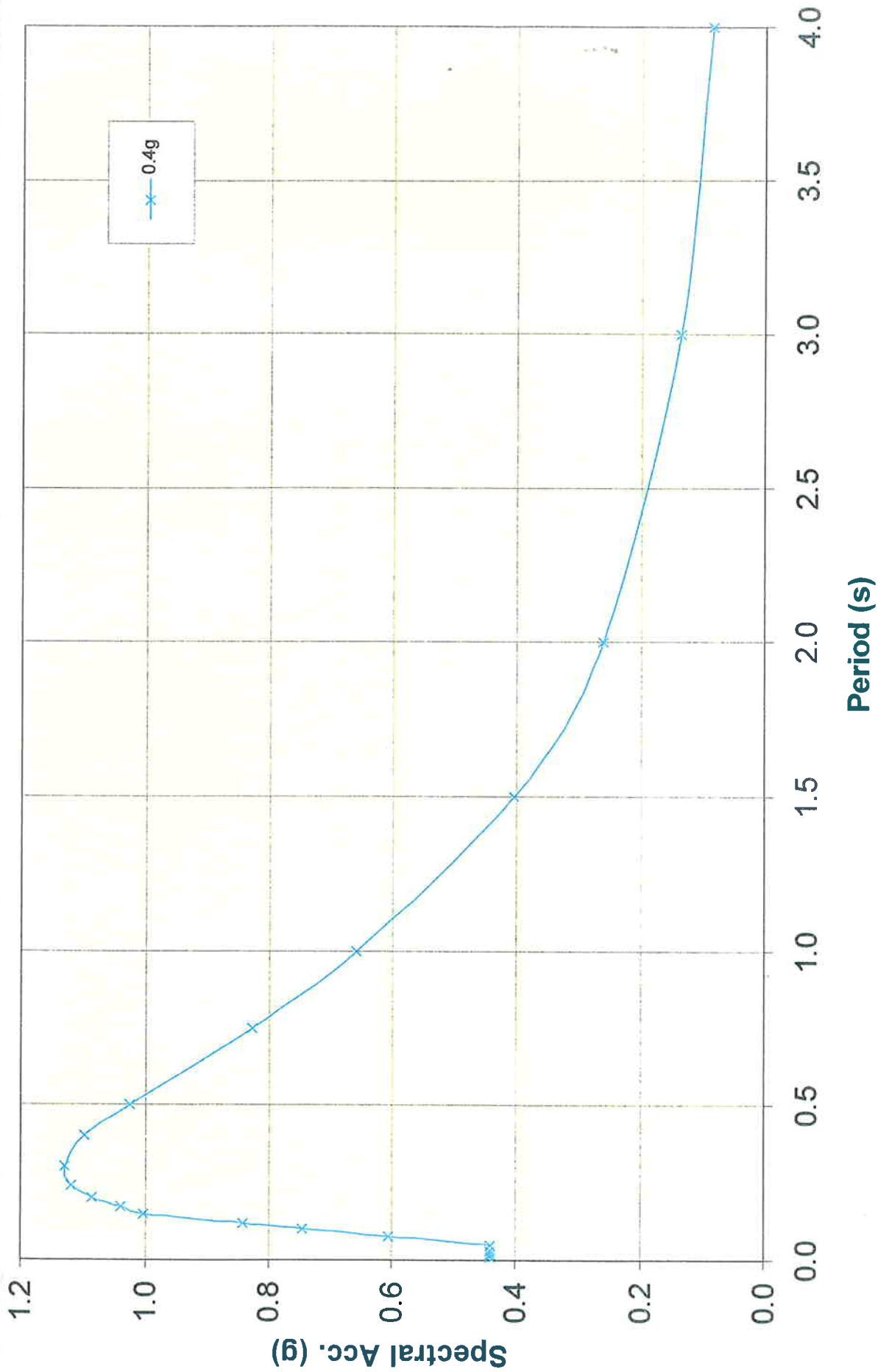
Figure 2 – ARS Curve



11521 Blocker Drive, Suite 110
 Auburn, CA 95603
 (530) 887-1494
 (530) 887-1495 Fax
 blackburnconsulting.com

Vicinity Map
 Sawmill Bike Path Bridge
 El Dorado County, CA

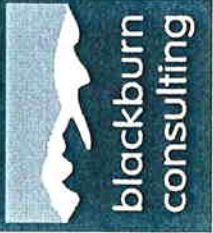
Job: 811.1
 Date: Feb. 2006
 Figure: 1



Job: 811.1
 Date: Feb. 2006
 Figure: 2

ARS CURVE
Sawmill Bike Path Bridge
El Dorado County, CA

11521 Blocker Drive, Suite 110
 Auburn, CA 95603
 (530) 887-1494
 (530) 887-1495-Fax
 www.blackburnconsulting.com



APPENDIX

B

Laboratory Results

Log of Test Borings

**Previous Log of Test Borings
(Caltrans, 1969**

**Previous Log of Test Borings
(Taber, 1989**

LABORATORY TESTING

Samples obtained from the field exploration were contained in sealed brass tubes and bulk sample bags depending on the technique used during sampling. These samples were transported to our laboratory for testing. The following tests were performed on selected samples.

Laboratory Soil Classification

Some of the field classification was checked in the laboratory by visual examination and by ASTM methods in accordance with the Unified Soil Classification System. The final soil classification is shown on the Log of Test Borings.

Moisture-Density

Moisture-density tests were completed in general accordance with ASTM D 2216 and ASTM D 2937 test methods. The in-situ dry unit weight and field moisture content were determined for selected, relatively undisturbed samples, and the results are shown on the Log of Test Borings.

Strength Tests

Strength parameters were determined by unconfined compression testing (ASTM D2166). Unconfined compression tests were performed on samples by confining a sample between a fixed plate and a vertical loading table with no lateral confinement around the soil. Vertical load was increased and measurements of vertical movement were recorded to determine an ultimate loading capacity for the soil.

TABLE II-1

UNCONFINED COMPRESSION TEST RESULTS		
Sample No.	Depth (feet)	Unconfined Compressive Strength (psf)
B-1-65	65	660
B-2-41	41	960
B-2-56	56	1,260

Chemical Testing

Selected samples were tested for pH, resistivity, sulfate, and chloride content.

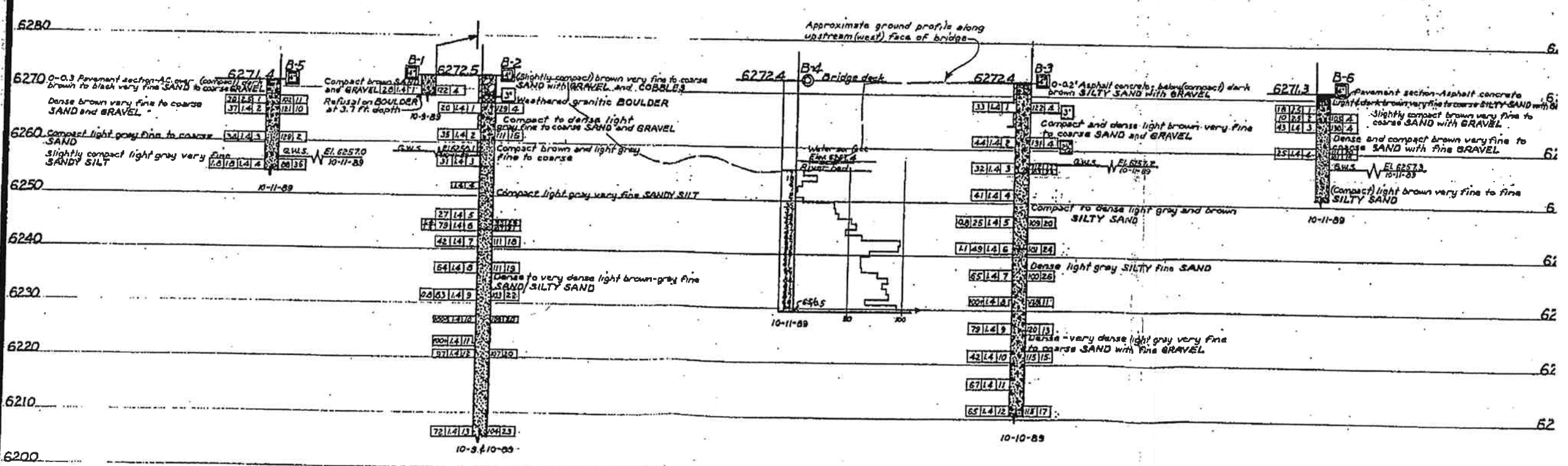
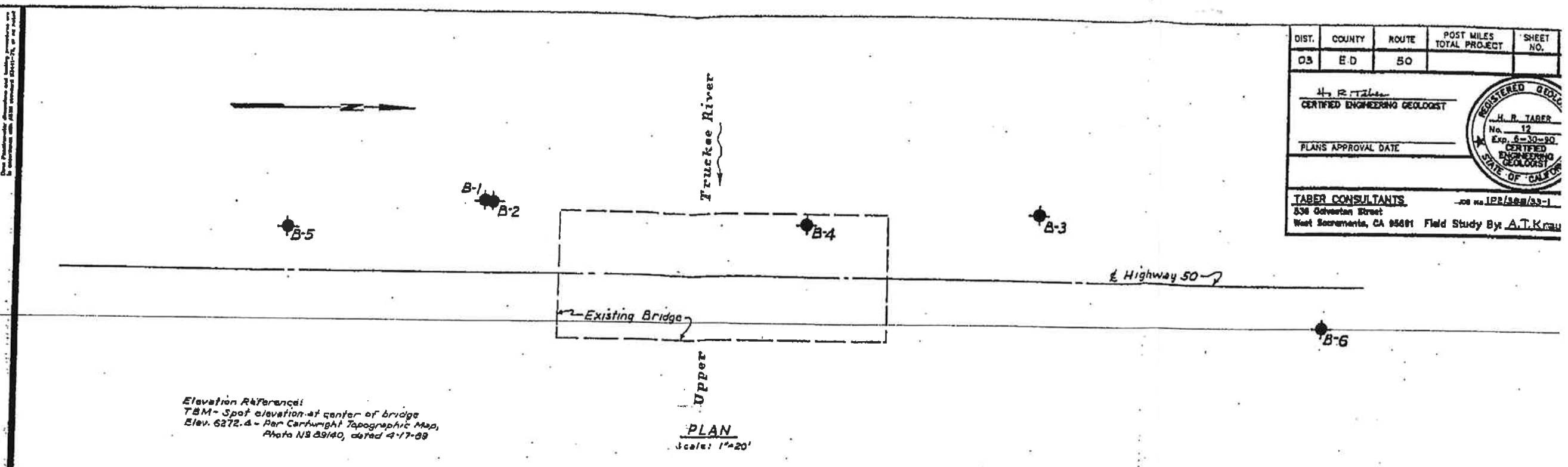
TABLE II-2

CORROSIVITY TEST RESULTS					
Sample No.	Depth (feet)	PH	Minimum Resistivity (ohm-cm)	Sulfate Content (ppm)	Chloride Content (ppm)
B-1-21	21	6.93	10,450	0.5	12.9

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.
03	ED	50		

H. R. Taber CERTIFIED ENGINEERING GEOLOGIST		REGISTERED GEOLOGIST H. R. TABER No. 12 Exp. 6-30-90 CERTIFIED ENGINEERING GEOLOGIST STATE OF CALIFORNIA
PLANS APPROVAL DATE		

TABER CONSULTANTS 838 Colvinton Street West Sacramento, CA 95601	Field Study By: A.T.K. Krau
--	-----------------------------



LEGEND OF BORING OPERATIONS

2.1 FT. CONC. PROTECTIVE PIPE
2.1 FT. CONC. PROTECTIVE PIPE
2.1 FT. CONC. PROTECTIVE PIPE

2.1 FT. CONC. PROTECTIVE PIPE
2.1 FT. CONC. PROTECTIVE PIPE
2.1 FT. CONC. PROTECTIVE PIPE

2.1 FT. CONC. PROTECTIVE PIPE
2.1 FT. CONC. PROTECTIVE PIPE
2.1 FT. CONC. PROTECTIVE PIPE

2.1 FT. CONC. PROTECTIVE PIPE
2.1 FT. CONC. PROTECTIVE PIPE
2.1 FT. CONC. PROTECTIVE PIPE

LEGEND OF EARTH MATERIALS

Symbol	Description
[Symbol]	CLAYEY SILT
[Symbol]	SILT
[Symbol]	SAND
[Symbol]	GRAVEL
[Symbol]	CLAY
[Symbol]	SANDY CLAY
[Symbol]	CLAYEY SAND
[Symbol]	SANDY SILT
[Symbol]	SILT CLAY
[Symbol]	CLAYEY SAND
[Symbol]	SANDY SILT
[Symbol]	SILT CLAY

EXPLANATION

According to the Standard Penetration Test

Blow Count (60') (ft)	Soil Condition
0-4	Very soft
5-15	Soft
16-30	Medium
31-45	Stiff
46-60	Very stiff
61-75	Hard
76-90	Very hard

NOTE: Classification of earth materials as shown on this sheet is based upon field observations and laboratory test results. It is not to be considered as a final classification.

ENGINEERING GEOLOGY BRANCH - TRANSPORTATION LABORATORY

PREPARED FOR:
State of CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
STRUCTURE DESIGN

BRIDGE NO. 25-15
POST MILE 72.66
HIGHWAY 50 BRIDGE AT UPPER TRUCKEE RIVE
LOG OF TEST BORINGS

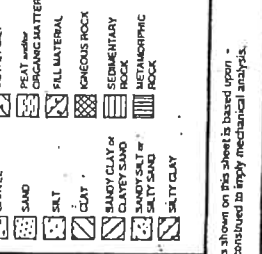
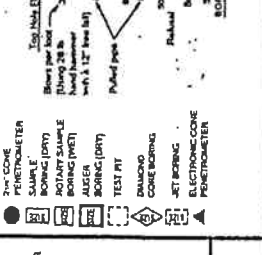
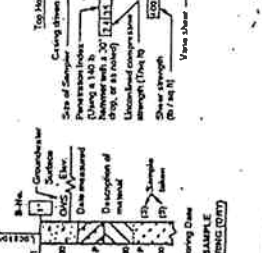
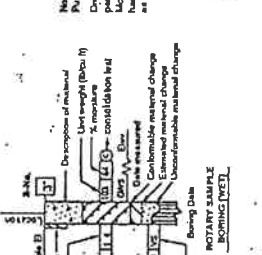
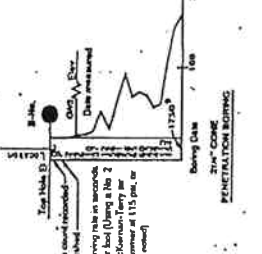
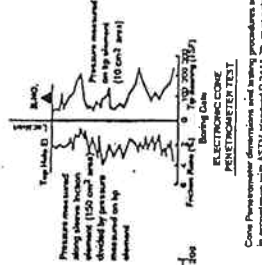
DRAWN BY J.O.D. 11-89
CHECKED BY A.T.K. 1-90

PROJECT ENGINEER

Scale: As shown

To accompany plans dated 1-3-94

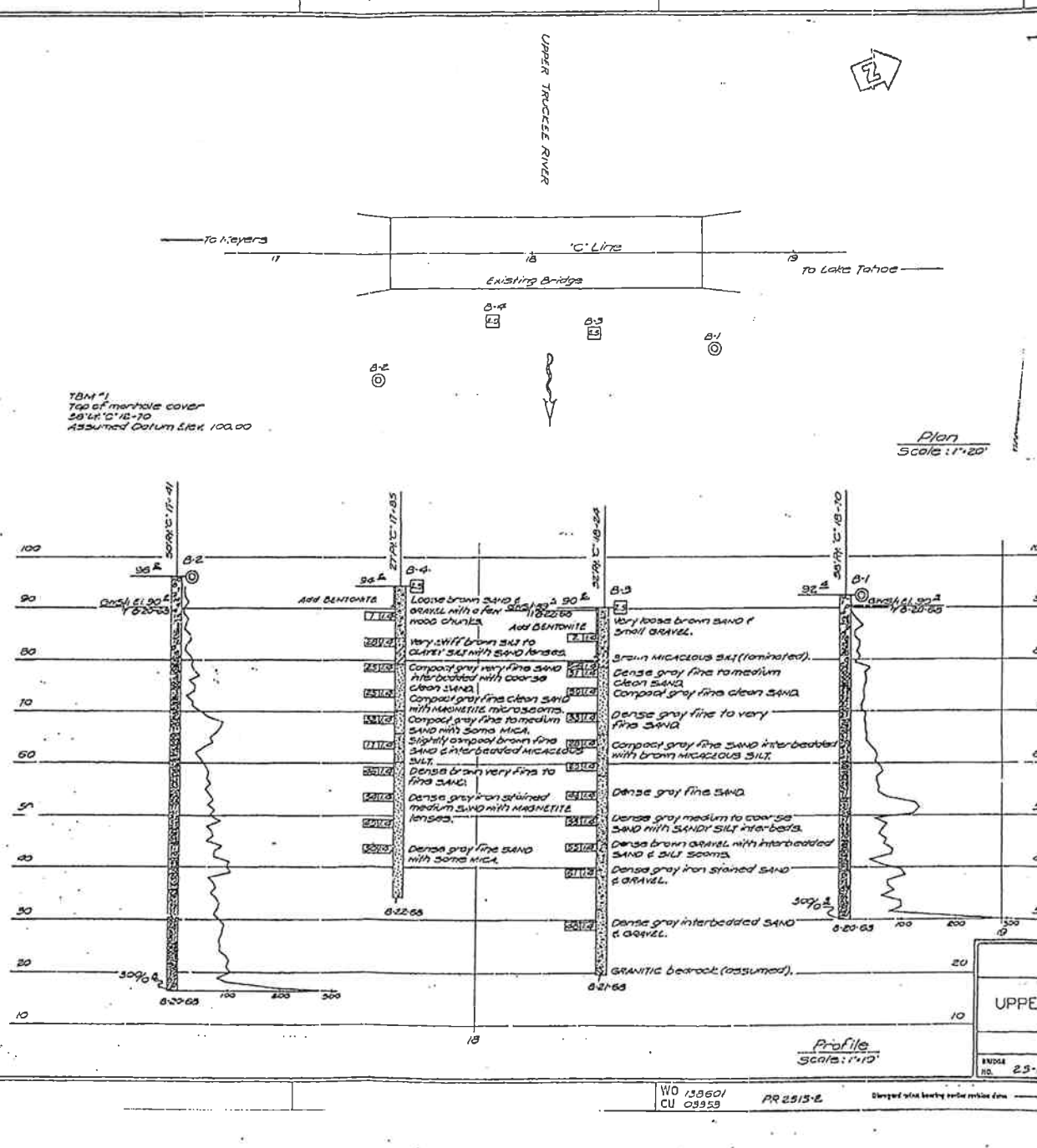
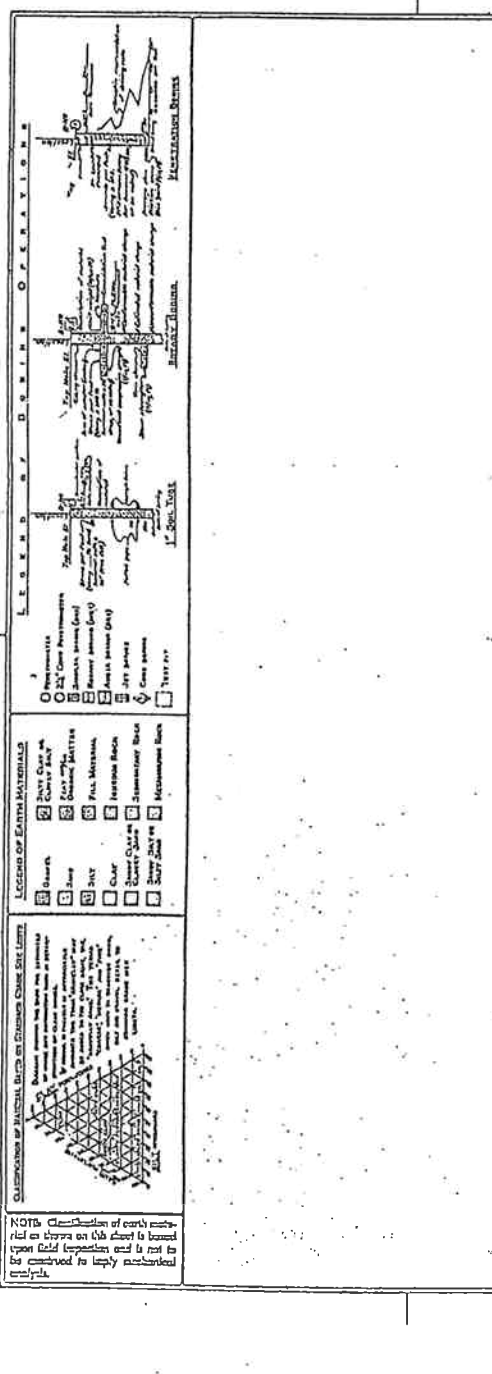
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	72.6177.4	72	72



CONSISTENCY CLASSIFICATION FOR SOILS	
According to the Standard Penetration Test	
Penetration Index (Blows / Ft)	Consistency
0-4	Very soft
5-9	Soft
10-19	Stiff
20-34	Very stiff
35-59	Hard
60-100	Very hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

BRIDGE DEPARTMENT
ENGINEERING DIVISION SECTION



AS BUILT PLANS
Contract No. 03-138604
Date Completed 12-5-69
Document No. 30000 814

AS BUILT
CORRECTIONS BY No. 23 Built Corrections
CONTRACT NO. 03-138604
DATE 12-3-69 to 1-16-70

NO CHANGES
AS BUILT 9-12-78
CORRECTIONS BY Loren C. Newell
CONTRACT NO. 03-314304
DATE 11-9-96

STATE OF CALIFORNIA TRANSPORTATION AGENCY DEPARTMENT OF PUBLIC WORKS DIVISION OF HIGHWAYS			
UPPER TRUCKEE RIVER BRIDGE (WIDEN)			
LOG OF TEST BORINGS			
BORING NO.	POST MILE	DATE	SHEET NO.
25-15	72.7	5-15-72	12

14
DRAWN BY: *John P. McConaha*
CHECKED BY: _____
DATE: 11/12/93

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

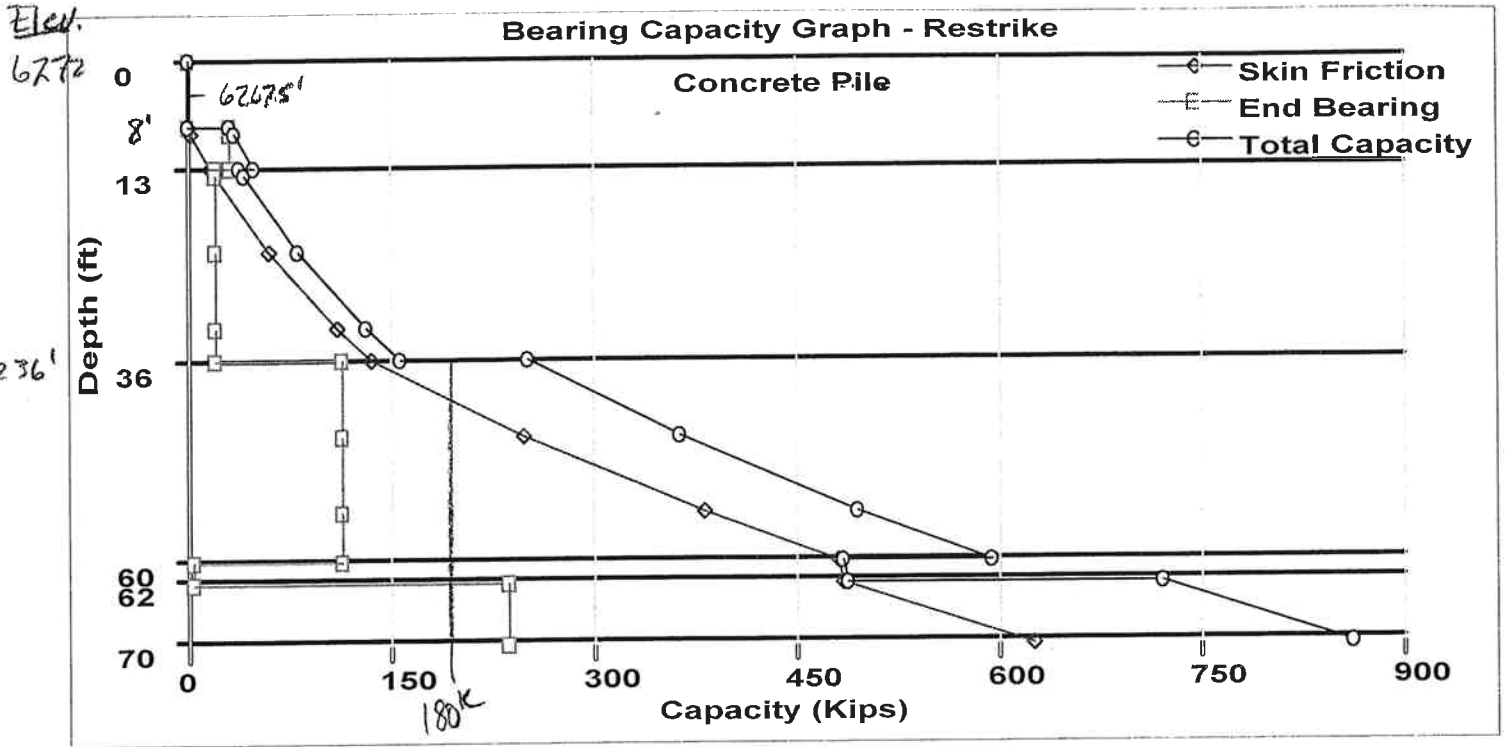
BRIDGE NO. 25-15
POST MILE 72.66
UPPER TRUCKEE RIVER BRIDGE (REPLACE)
AS-BUILT LOG OF TEST BORINGS

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	CU 03 EA 314801	BRIDGE NO. 25-15 POST MILE 72.66 DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET 14 OF 14
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APPENDIX

C

Design Calculations



Abutments 1 & 2

AT Y, 45T 15" ϕ PCPS

FS = 2.0

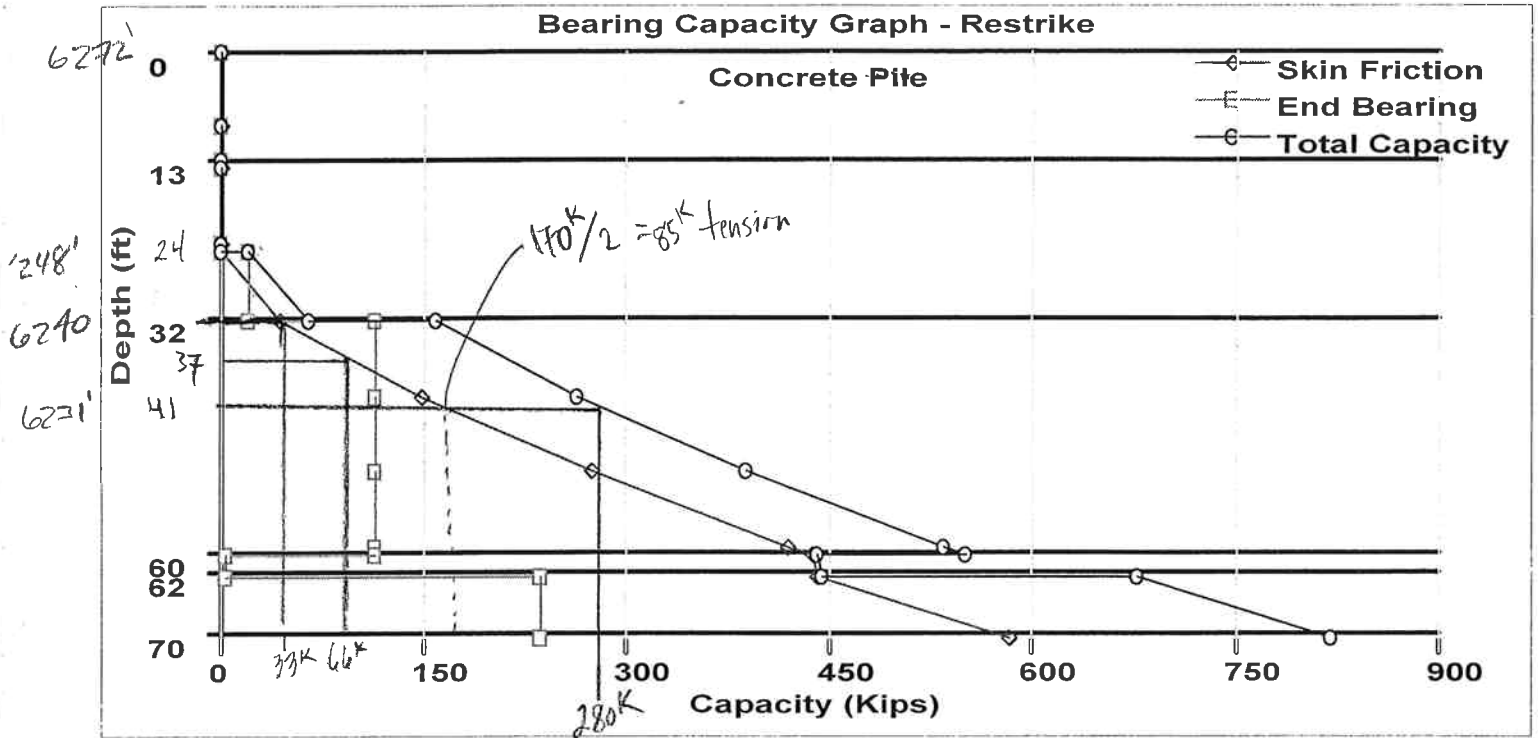
Nominal Resist. = 180K

Approx G.S. Elev = 6272'

Approx pile cutoff Elev. = 6267.5'

Pile Tip Elev. 6236'

Pile length = 31.5'



Bents 3 & 4

33K

AH Y 70^T PCPS, 15" ϕ

FS = 2.0

Nominal Resis. = 280K

GS elev @ pile = 6248'

Approx top of pile (as an extension) = Elev. 6269.5'

Pile length needed 36.5' Pile Tip Elev: 6231'

Tension Design Load = 33K = 66K Nominal Resistance

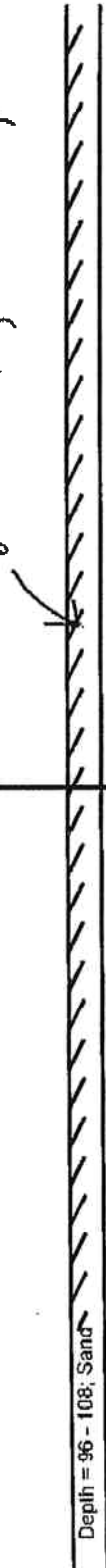
Pile Tip Elev: 6235'

To Alfred - 8 pages
Dave

Bent (Boring 1)

Used "Sand (Reese)" for all

$\gamma = .0752 \text{ lb/in}^3, K = 150 \text{ pc.f}, \phi = 35^\circ$



Depth = 96 - 108; Sand

Depth = 108 - 138; Sand

$\gamma = .0694, K = 100, \phi = 35^\circ$

Depth = 138 - 180; Sand

$\gamma = .0394, K = 80, \phi = 35^\circ$

Depth = 180 - 240; Sand

$\gamma = .0382, K = 60, \phi = 33^\circ$

Depth = 240 - 336; Sand

$\gamma = .0272, K = 50, \phi = 32^\circ$

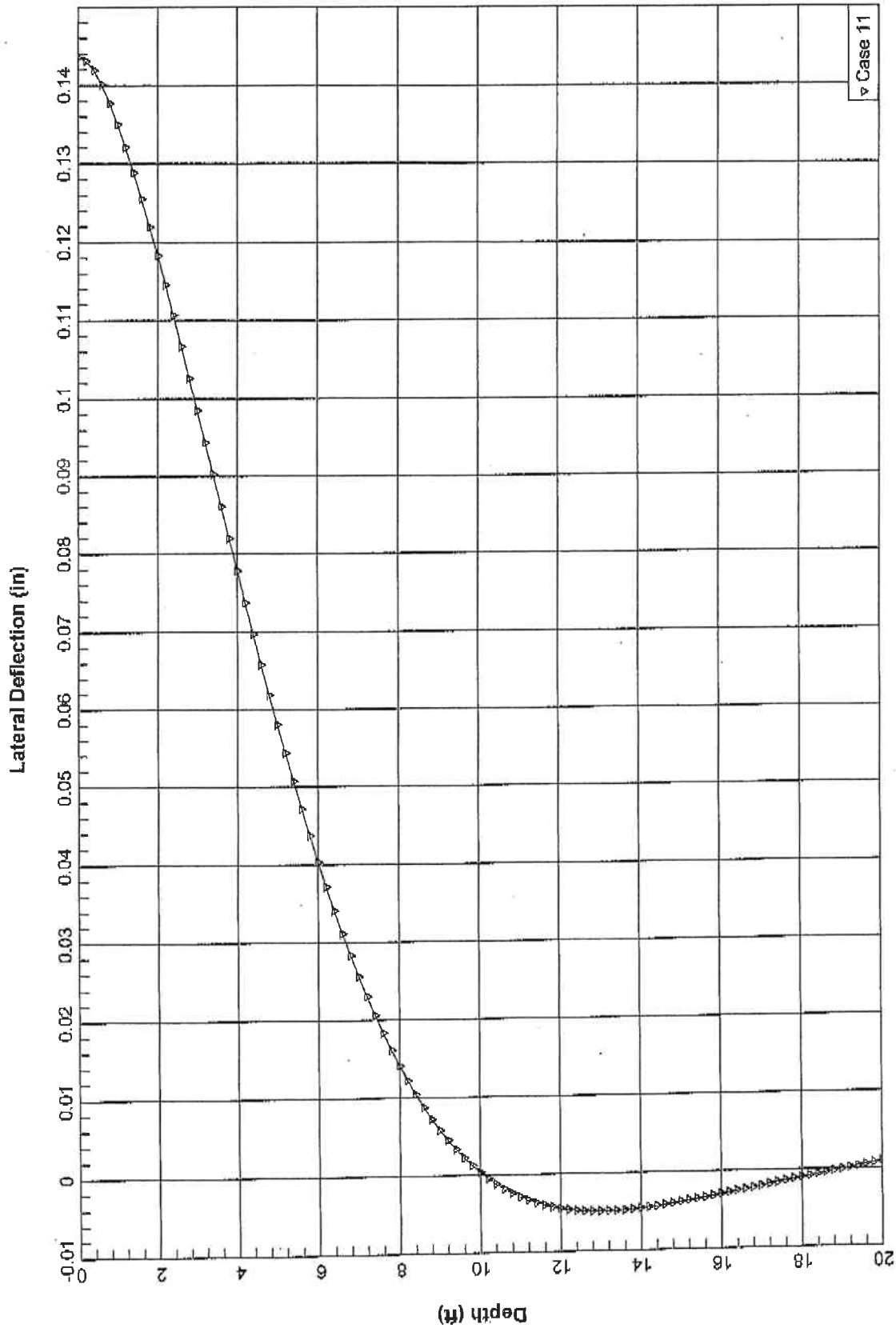
Depth = 336 - 408; Sand

$\gamma = .0423, K = 125, \phi = 38^\circ$

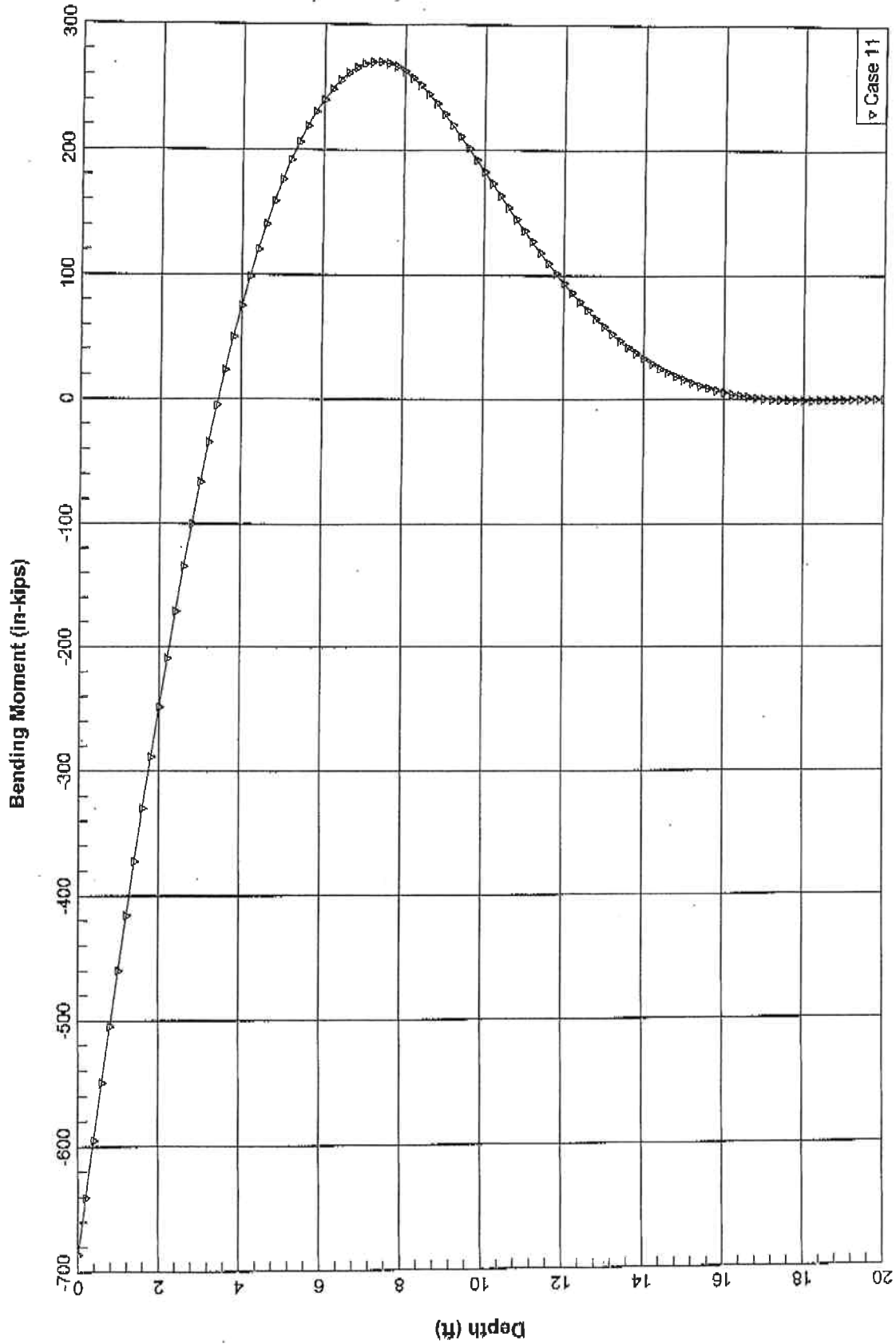
Abutment (Boring 1)

Sand (Reverse)

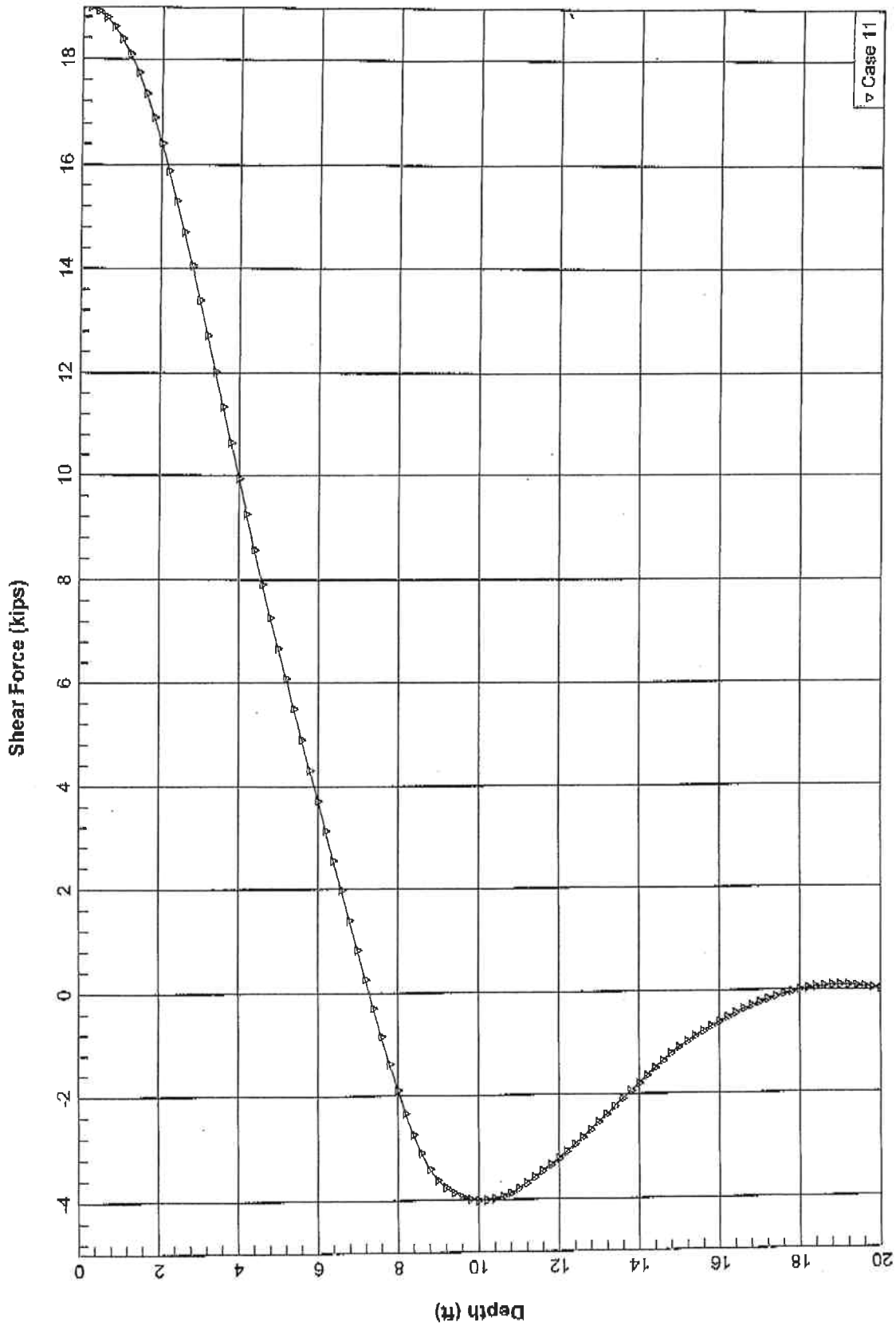
<p>Depth = 0 - 108; Sand</p> <p>$\gamma = 0.0752 \text{ lb/in}^3, K = 150 \text{ pc}^2, \phi = 35^\circ$</p>	
<p>Depth = 108 - 138; Sand</p> <p>$\gamma = 0.0694, K = 100, \phi = 35^\circ$</p>	
<p>Depth = 138 - 180; Sand</p> <p>$\gamma = 0.0394, K = 80, \phi = 35^\circ$</p>	
<p>Depth = 180 - 240; Sand</p> <p>$\gamma = 0.0382, K = 60, \phi = 33^\circ$</p>	
<p>Depth = 240 - 336; Sand</p> <p>$\gamma = 0.0272, K = 50, \phi = 32^\circ$</p>	
<p>Depth = 336 - 408; Sand</p>	



ABUT 1: 15" Diameter, 45-ton, 19 kip lateral

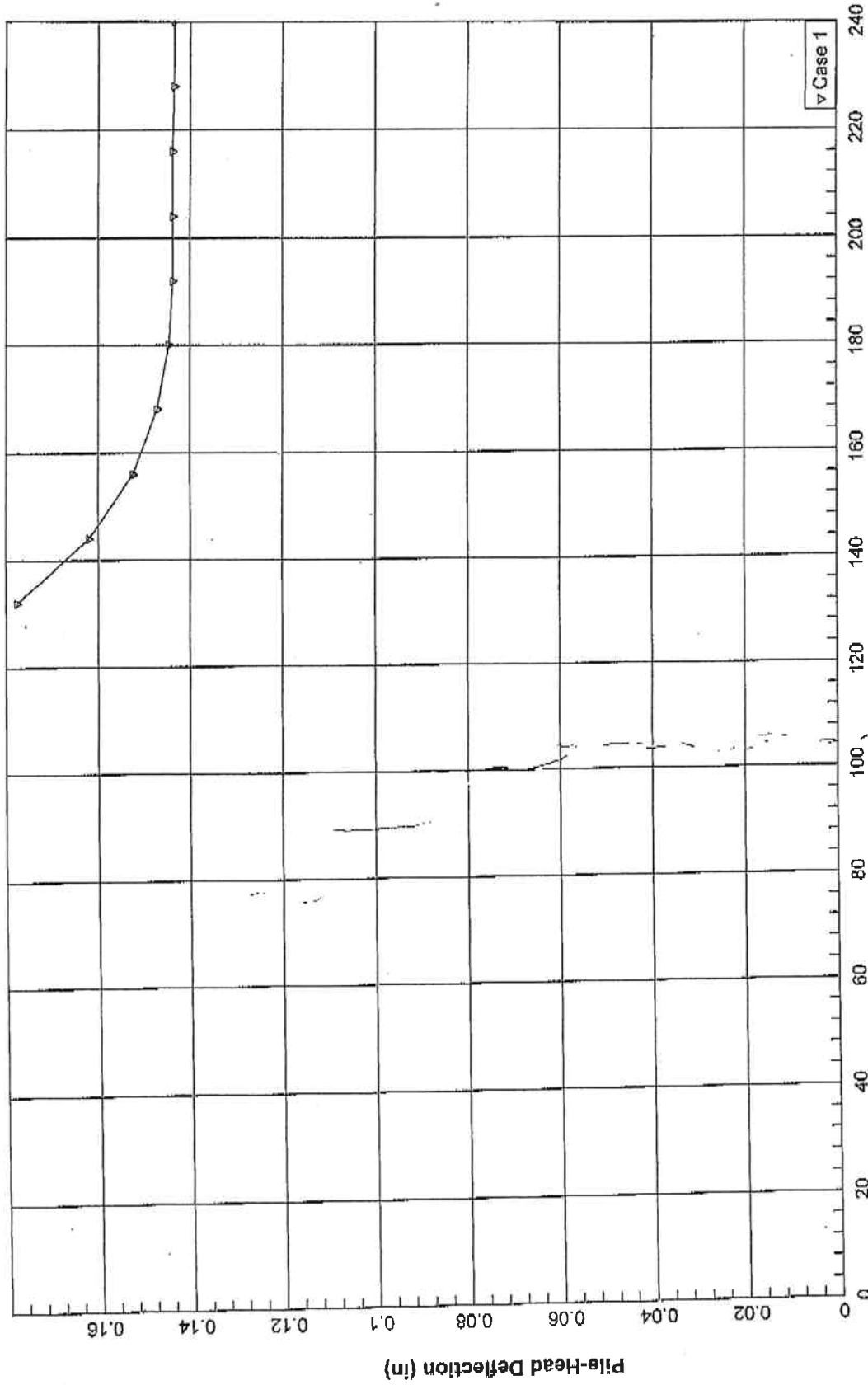


ABUT 1: 15" Diameter, 45-ton, 19 kip lateral

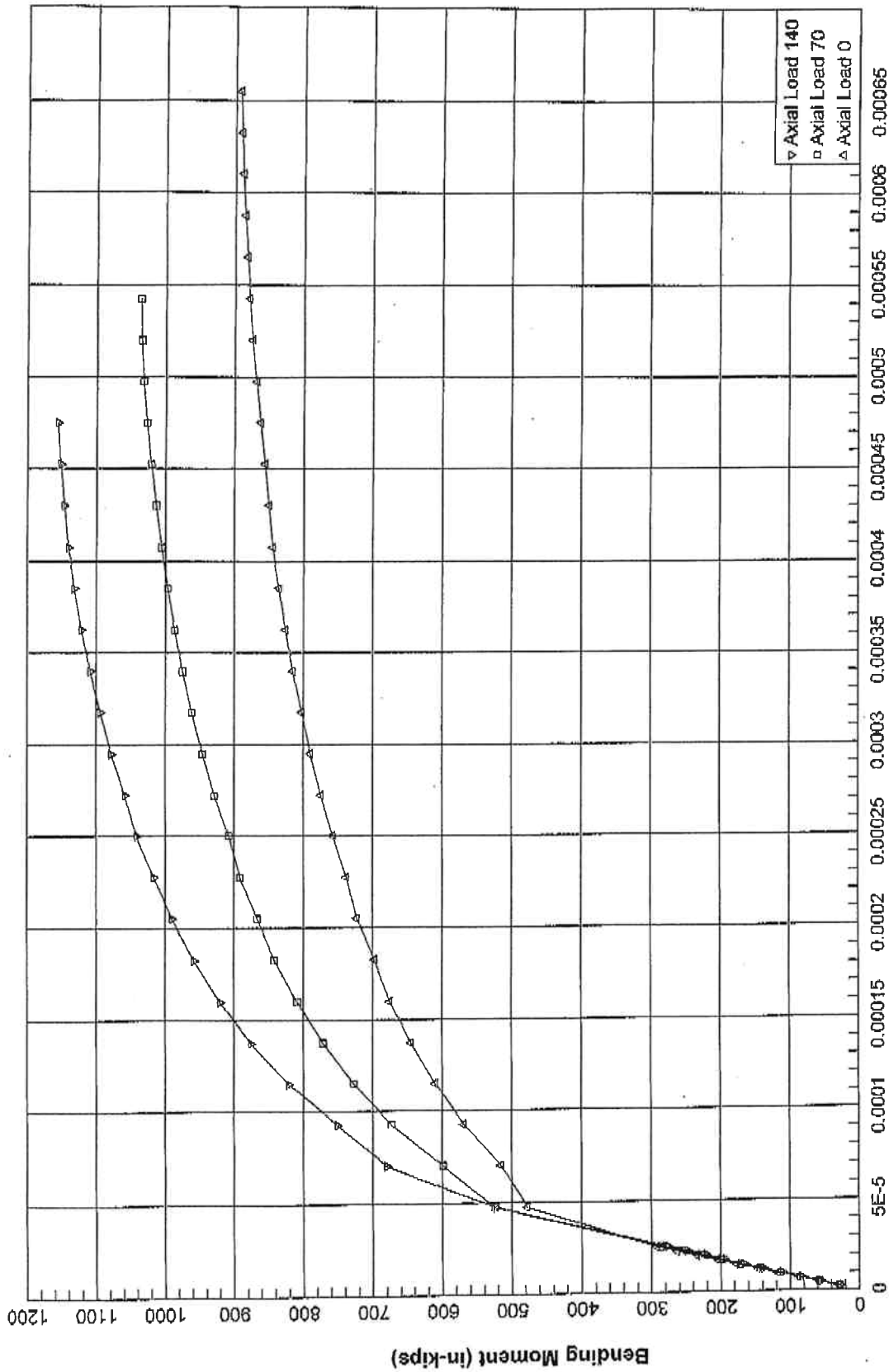


ABUT 1: 15" Diameter, 45-ton, 19 kip lateral

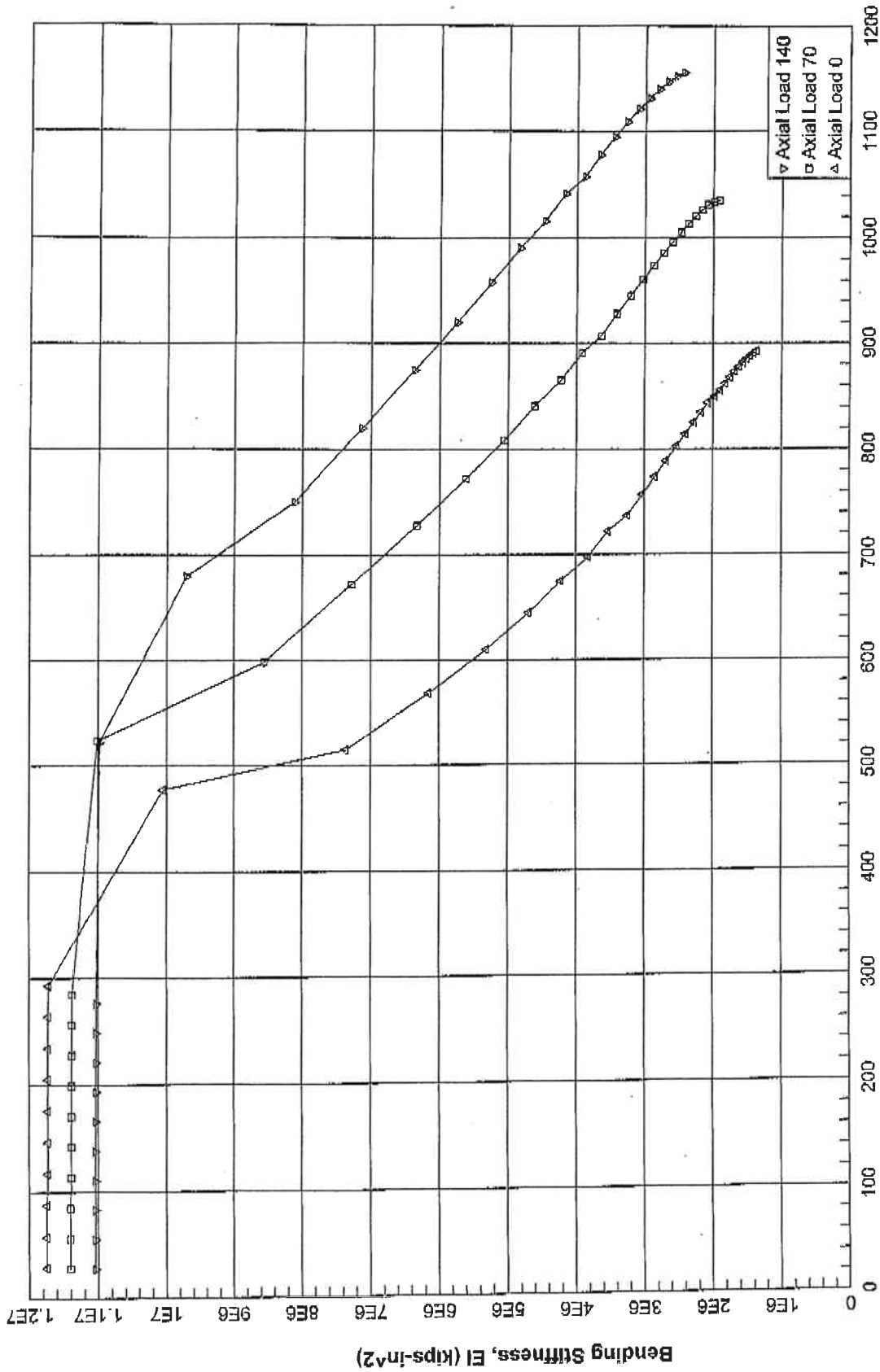
Fixity = 2nd "O" stud
Pile Top @ 6267.5
Fixity length = 18.5'
Elev = 6249



Pile Length (in)
ABUT 1: 15" Diameter, 45-ton, 19 kip lateral

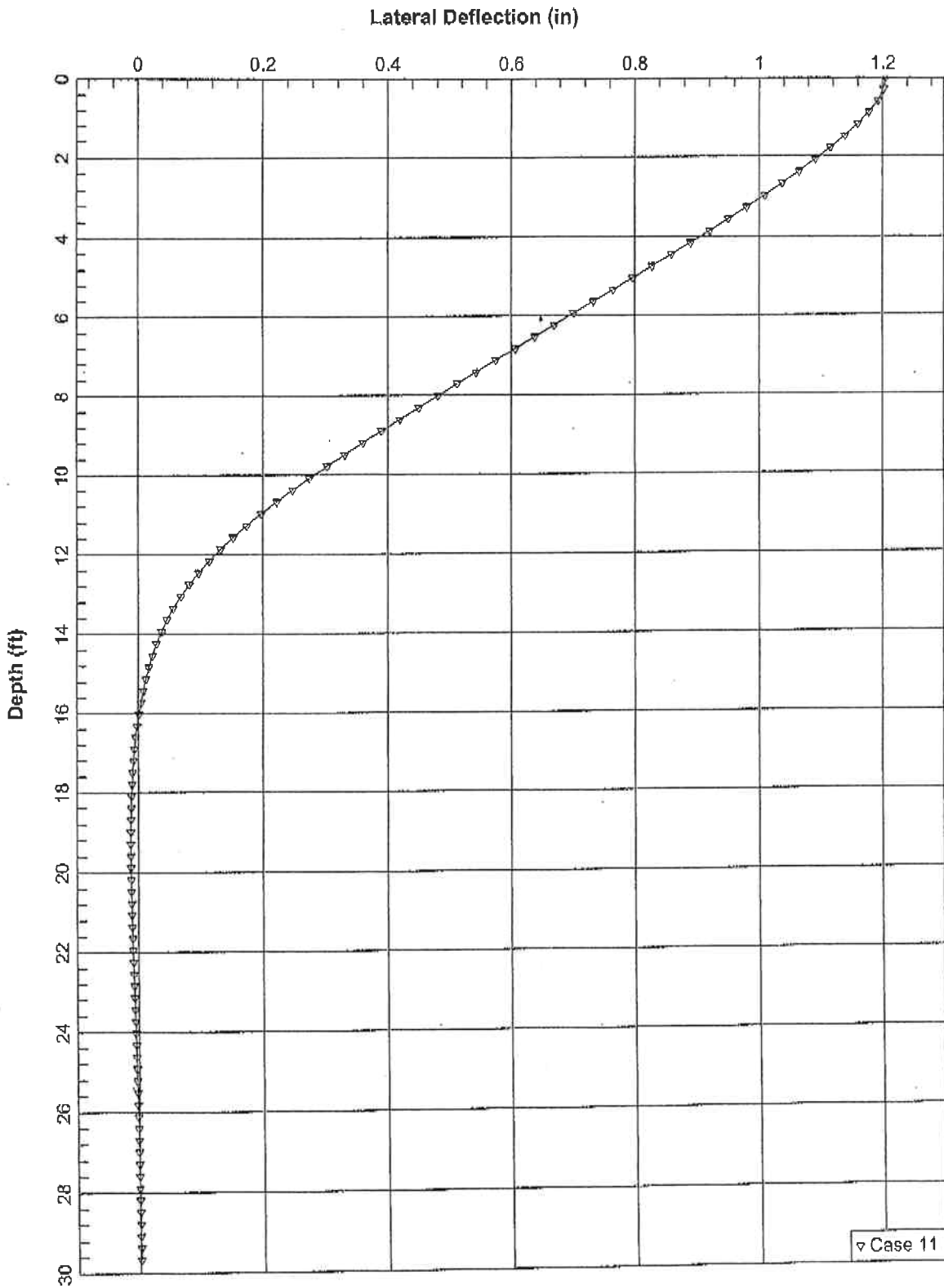


Bending Curvature (rad/in)
ABUT 1: 15" Diameter, 45-ton, 19 kip lateral



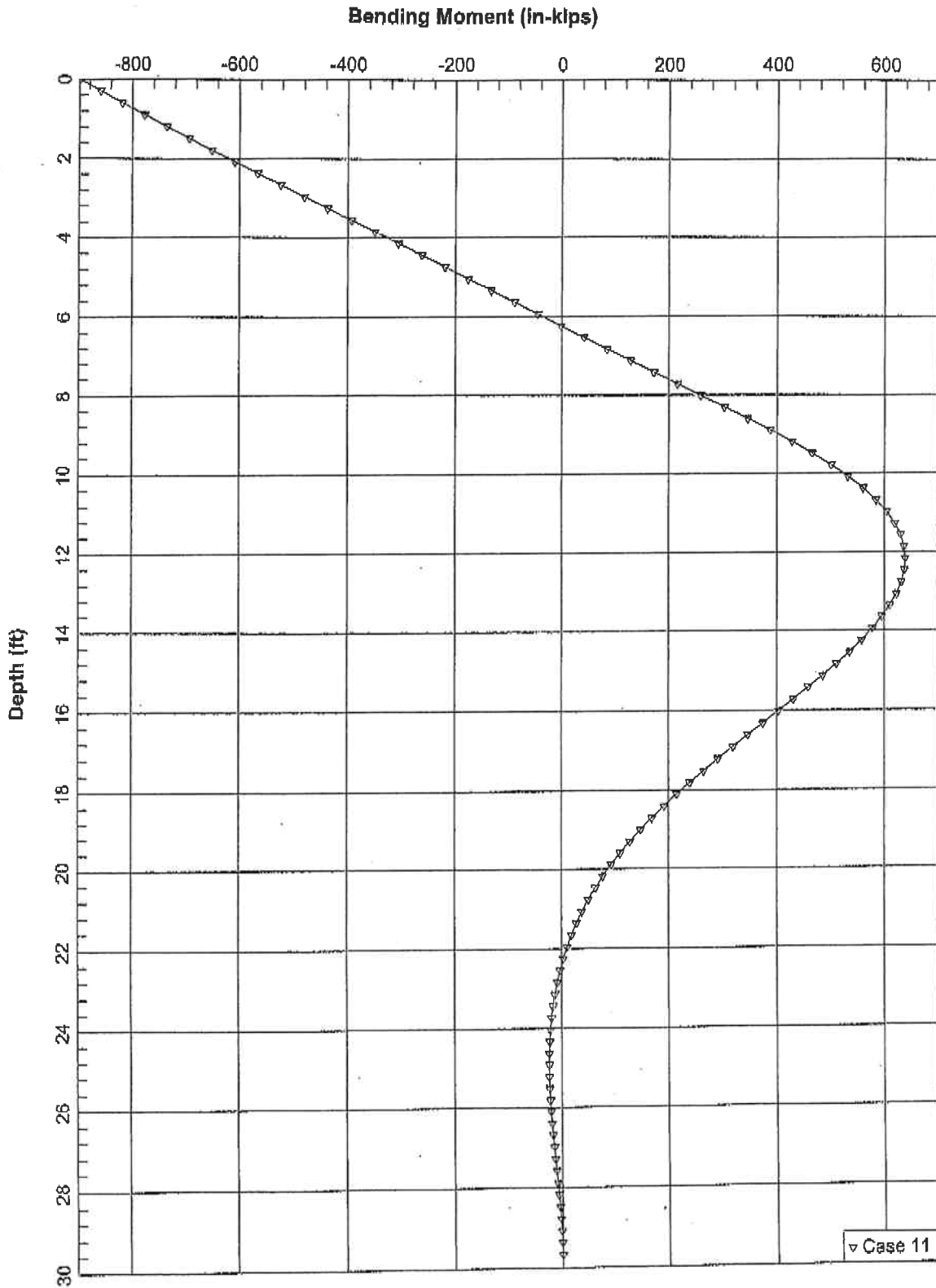
Bending Moment (in-kips)
ABUT 1: 15" Diameter, 45-ton, 19 kip lateral

To Alfred: 6 pages

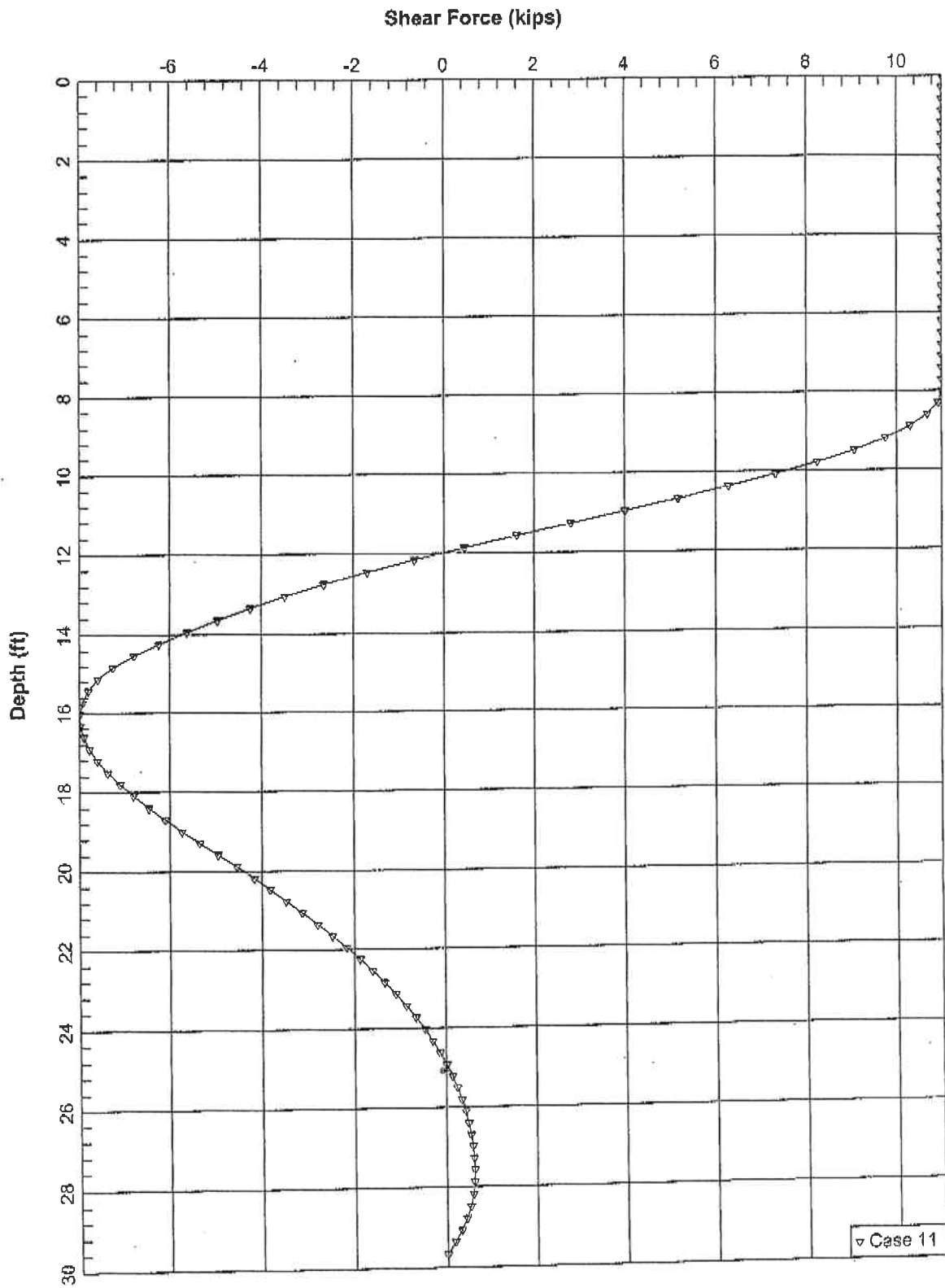


BENT 2 PILE EXTENSION: 11 kip lateral, fixed, 8' Pile Extension

~~X~~ Fails at 12 kips



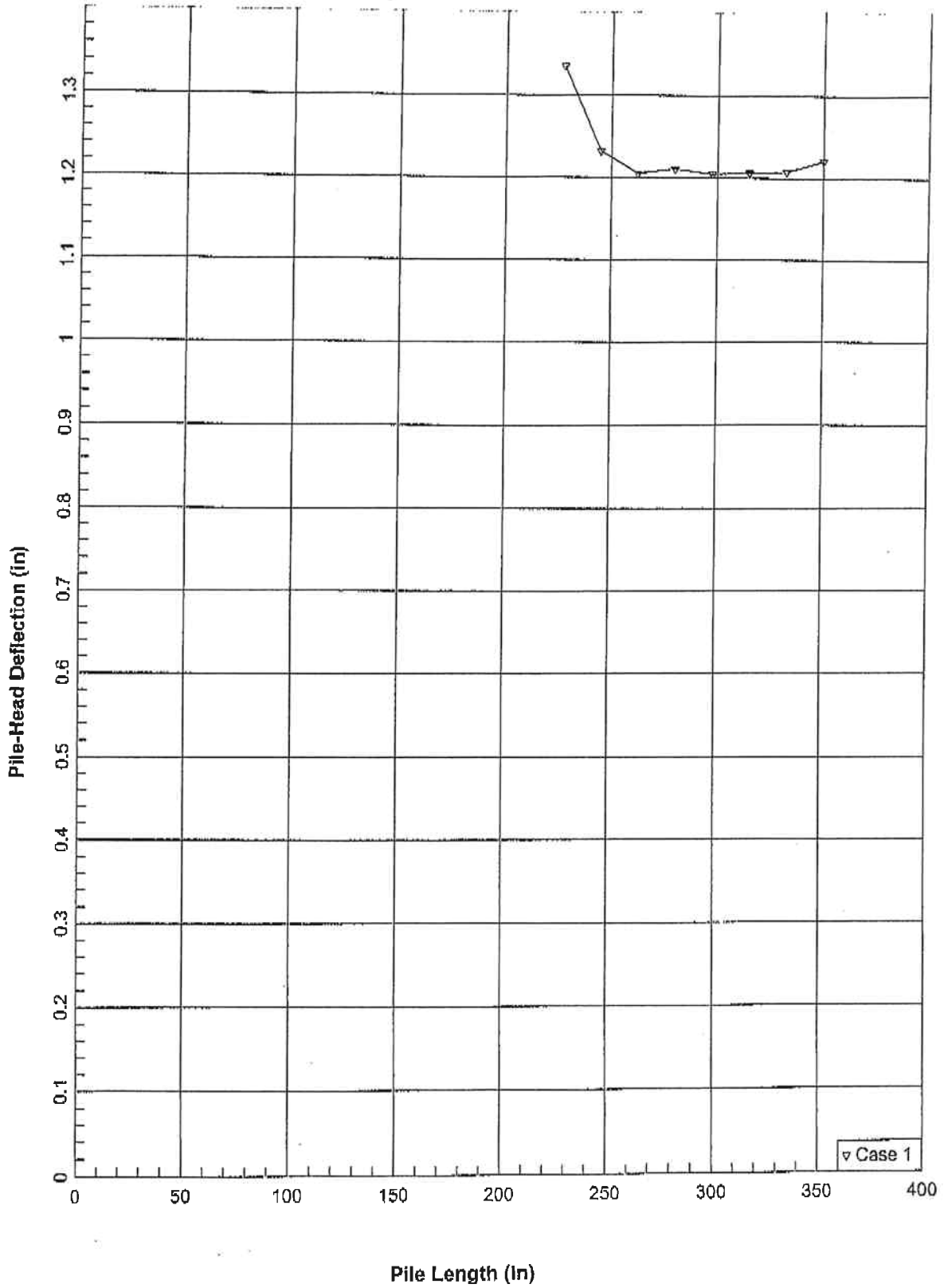
BENT 2 PILE EXTENSION: 11 kip lateral, fixed, 8' Pile Extension



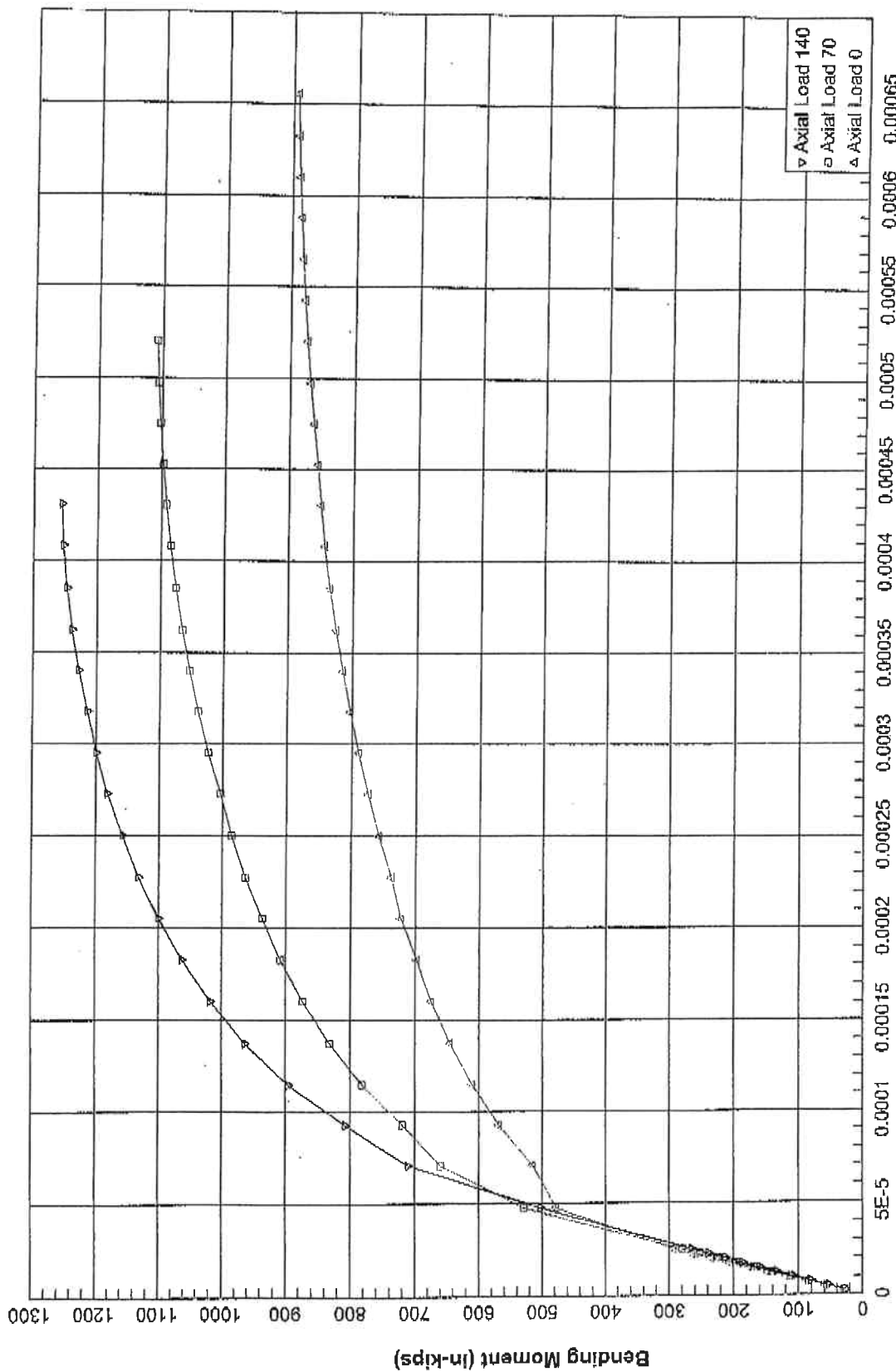
BENT 2 PILE EXTENSION: 11 kip lateral, fixed, 8' Pile Extension

Top of pile = 6267.5'
2nd "0" shear = 25' depth

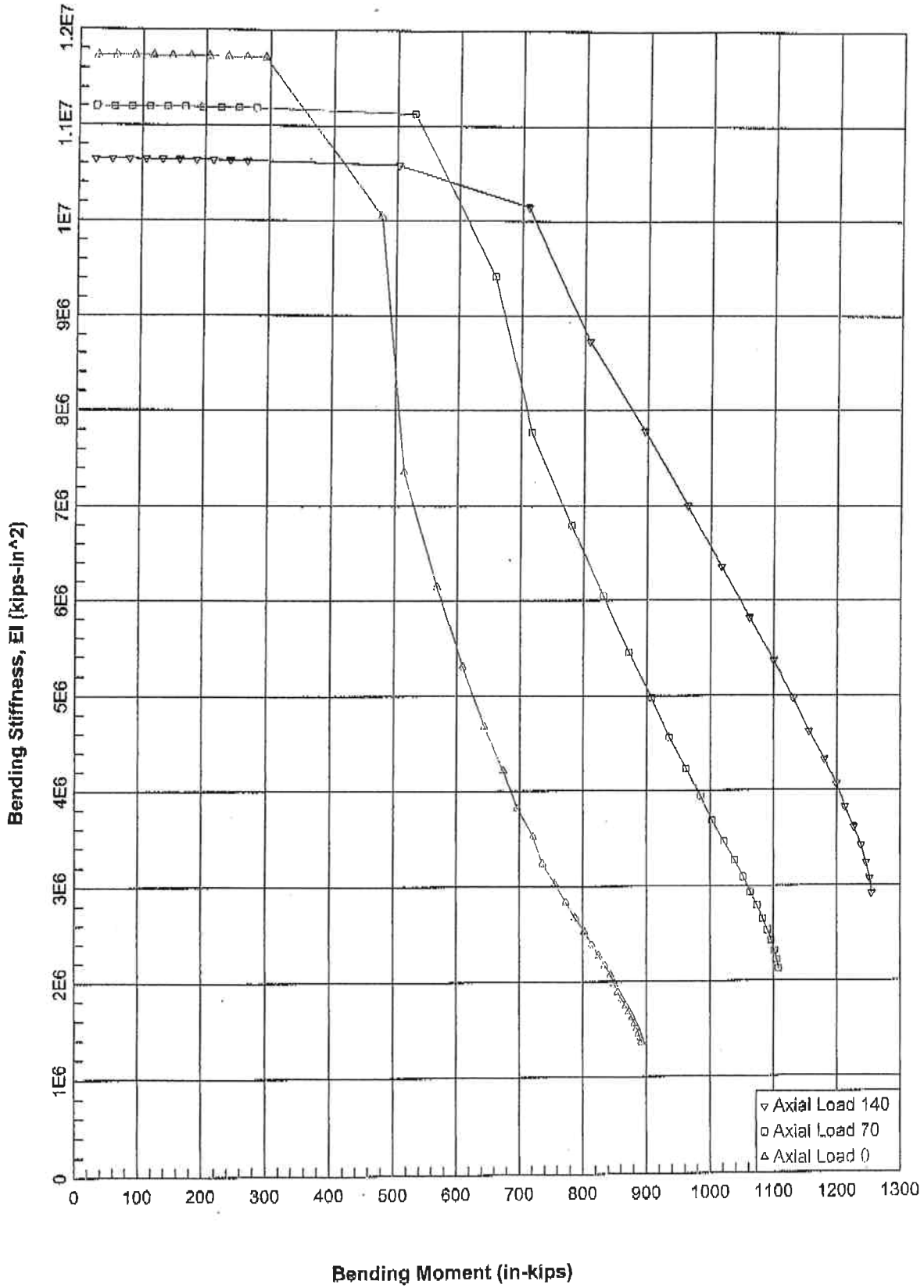
Depth to fixity = 6242.5'



BENT 2 PILE EXTENSION: 11 kip lateral, fixed, 8' Pile Extension



Bending Curvature (rad/in)
BENT 2 PILE EXTENSION: 11 kip lateral, fixed, 8' Pile Extension



BENT 2 PILE EXTENSION: 11 kip lateral, fixed, 8' Pile Extension



Project	Sawmill Creek	Client	Stantec	Page No.	of
Subject	Settlement of piles	File #	811.1	By	AKW
				Date	6.16.06

for coarse grained soils: $\sigma_v = \text{settlement of pile} =$

$$\frac{2gB^2}{K_{vi}(B+1)^2}$$

From Fig 11.8, Soil conditions are: relative density = 90 (v. dense)

$$K_{vi} = 310 T / ft^2 \quad (211 T) \\ = 422 T / 14'' \text{ sq pile} = 411 K \\ \text{when below GW}$$

$$B = 1.166$$

$$g = 26\% \text{ of } 70 T \text{ pile} = 36 K \\ 42\% \text{ of } 45 T \text{ pile} = 38 K$$

$$\sigma_v = \frac{(2)(38)(1.166)^2}{422(2.166)^2} = 0.05 \text{ ft} = 0.6 \text{ inches settlement}$$

**Liquefaction Spreadsheet - based on NCEER 1996 workshop
Simplified Procedure - Standard Penetration Test Analysis**

note applicable to sloping ground surfaces greater than about 6%

Moment Magnitude, $M_w = 7.25$

$PGA = 0.4 \text{ g}$

assumed depth to groundwater = 15 ft

depth to groundwater during drilling = 15 ft

estimated age of sand deposit = 5000 years

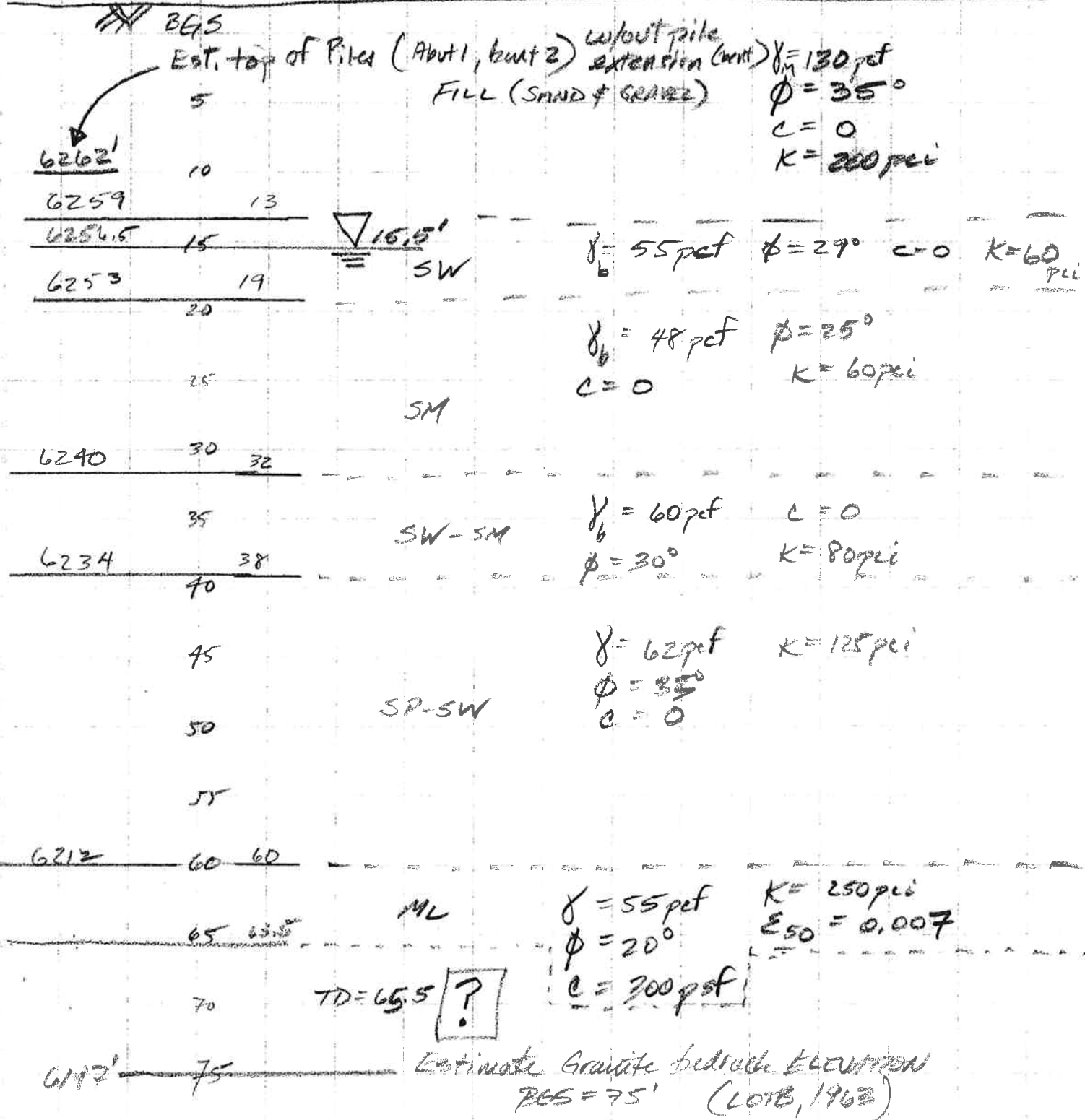
sample depth (ft)	Required Input Data				assumed σ'_{vo} (lb/ft ²)	during drilling σ'_{vo} (lb/ft ²)	Cyclic Stress Ratio		Analysis based on SPT Blow Counts						
	1=CL,ML,CH 2=SP,SM,SC	γ_s (lb/ft ³)	Field "N" (bpf)	Fines %			PI %	r_d	CSR	(N ₁) ₆₀ (bpf)	(N ₁) _{60cs} (bpf)	CRR _{7.5}	MSF	K _c	Corrected CRR
13	2	130	22	15	0	1690	1690	0.970	0.2521	23	27	0.3173	1.10	0.350395	1.39
15	2	125	27	5	0	1940	1940	0.965	0.2509	27	27	0.3265	1.10	0.3606143	1.44
19	1	118	16	40	0	2412	2162	0.956	0.2772	16	16	NA	1.10	NA	NA
32	2	130	34	5	0	4102	3041	0.913	0.3203	29	29	0.3883	1.10	0.4288	1.34
38	2	132	55	15	0	4894	3459	0.865	0.3181	45	50	-0.9213	1.10	-1.0174	-3.20
60	2	125	70	5	0	7644	4836	0.685	0.2817	49	49	-0.9615	1.10	-1.0618	-3.77
65	1	120	90	2	0	8244	5124	0.645	0.2697	90	90	NA	1.10	NA	NA
75	2	120	50	3	0	9444	5700	0.563	0.2426	33	33	-0.4402	1.10	0.4861	2.00
76						9444	5638	0.559	0.2433	0	0	0.0480	1.10	0.0530	0.22
77						9444	5575	0.556	0.2449	0	0	0.0480	1.10	0.0530	0.22
78						9444	5513	0.554	0.2466	0	0	0.0480	1.10	0.0530	0.21
79						9444	5450	0.551	0.2483	0	0	0.0480	1.10	0.0530	0.21
80						9444	5388	0.549	0.2501	0	0	0.0480	1.10	0.0530	0.21
81						9444	5326	0.546	0.2519	0	0	0.0480	1.10	0.0530	0.21
82						9444	5263	0.544	0.2538	0	0	0.0480	1.10	0.0530	0.21
83						9444	5201	0.541	0.2556	0	0	0.0480	1.10	0.0530	0.21
84						9444	5138	0.539	0.2576	0	0	0.0480	1.10	0.0530	0.21
90						9444	4764	0.524	0.2703	0	0	0.0480	1.10	0.0530	0.21
100						9444	4140	0.500	0.2966	0	0	0.0480	1.10	0.0530	0.18



Project	Upper Truckee River	Client	Stantec	Page No.	1 of 2
Subject	Soil profile B-1	File #	811.1	By	AW
				Date	12.20.05

Scale: 1" = 10'

Elev = 6272 ft = E.G





Project	Upper Truckee River	Client	Stantec	Page No.	2 of 2
Subject	Soil Profile B-2	File #	811.1	By	PRW
			Date	11.20.05	

Scale: 1" = 10'

RUEV = 6272'

