

**EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION**

CONTRACT DOCUMENTS
INCLUDING
**NOTICE TO BIDDERS, SPECIAL PROVISIONS, PROPOSAL, AND
CONTRACT**

FOR

U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE PROJECT
PHASE 1

On US Highway 50 in El Dorado County California

June 11, 2013

CONTRACT No. PW 12-30647, CIP No. 71328

03-ED-50

PM 1.02 to R2.40

FOR USE WITH
STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS 2010
STANDARD PLANS 2010

BID OPENING DATE:

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE PROJECT

CONTRACT NO. PW 12-30647, CIP NO. 71328

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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:

U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE PROJECT – PHASE 1
CONTRACT NO. PW 12-30647, CIP NO. 71328

will be received by the Clerk to the Board of Supervisors, at the Board of Supervisors Office, 330 Fair Lane, Placerville, California, until _____ at _____ **PM**, 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No Bid may be withdrawn after the time established for receiving bids or before the award and execution of the Contract, unless the award is delayed for a period exceeding sixty (60)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 U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE PROJECT – PHASE 1"
CONTRACT NO. PW 12-30647, CIP NO. 71328
TO BE OPENED AT PM

LOCATION / DESCRIPTION OF THE WORK:

The project is located near El Dorado Hills in El Dorado County. The Work to be done is shown on the Plans, and generally consists of, but is not limited to:

A new connection to U.S. 50 with new signalized diagonal on- and off-ramps and a loop on-ramp. Each on-ramp will have California Highway Patrol Enforcement Areas and Ramp Metering. The mainline will have an Overcrossing for Silva Valley Parkway and will be improved to include east and west auxiliary lanes between Latrobe Road / El Dorado Hills Boulevard Interchange and the new interchange. Approximately 1,300 feet of auxiliary lane will be constructed for the westbound off-ramp between Bass Lake Road interchange and the new interchange.

Silva Valley Parkway will connect to the existing 4 lane Silva Valley Parkway to the north and will connect to the existing 2 lane White Rock Road to the south. A new signalized intersection will be installed where new Silva Valley Parkway intersects old White Rock Road on the south. New roads will connect the new intersection to the existing roads. Sidewalk will be installed along old Silva Valley Parkway.

A new Tong Road cul-de-sac will be constructed and Old Tong Road will be abandoned.

Safety lighting and signs will be installed.

Utility Work:

- Abandonment of approximately 1,000 feet of recycled water line
- Abandonment of approximately 3,100 feet of potable water line
- Installation of approximately 1,000 feet of recycled water line
- Installation of approximately 800 feet of potable water line
- Relocation of water appurtenances including Pressure Reducing Station and valve boxes,

- Adjusting to grade sanitary sewer manholes and reconstruction of sanitary sewer manholes

Below is a general description of the structures required for the project:

- Silva Valley Parkway Overcrossing (Br. No. 25-0127): This will be a two span, cast-in-place, prestressed concrete box girder bridge approximately 280 feet long by 105 feet wide. The erection and removal of falsework will require directional closures of US 50. Bridge mounted sign structures will be installed on both sides of this structure. The north abutment of the structure is located within an AMA area.
- Silva Valley WB Off-Ramp Bridge (Br. No. 25-0130K): This will be a three span, cast-in-place reinforced concrete box girder bridge approximately 260 feet long by 51 feet wide. The structure will require superelevation transitions along its entirety. It will cross Carson Creek and require Temporary Fence (Type ESA) around several trees within its proximity.
- Silva Valley EB Off-Ramp Undercrossing (Br. No. 25-0128S): This will be a single span, cast-in-place, prestressed concrete box girder approximately 130 feet long by 40 feet wide. The structure will cross over existing Silva Valley Parkway. PG&E will require a utility access road be constructed next to the embankment from the east abutment.
- Silva Valley WB On-Ramp Undercrossing (Br. No. 25-0129K): This will be a three span, cast-in-place, prestressed concrete voided slab approximately 115 feet long by 40 feet wide. The structure will cross over existing Silva Valley Parkway. El Dorado Irrigation District (EID) has facilities in conflict with the structure which you will relocate.
- Bucks Ravine Creek Reinforced Concrete Box Culvert (Extension): This existing double 6'x7' box culvert will be reconstructed and extended approximately 100 feet. The box culvert extension will require a temporary creek diversion and work within Bucks Ravine Creek must be done in accordance with all environmental permits.
- Carson Creek MSE (Br. No. 25E0007): This wall will be an MSE structure approximately 230 feet long by 12 to 15 feet tall. Design H ranges from 8' thru 20'. The wall will require Temporary Fence (Type ESA) around several trees within its proximity.
- Carson Creek Culvert: This will be a prefabricated bottomless arch culvert approximately 144 feet long by 36 feet wide. The culvert requires you to submit construction drawings for approval by the Engineer prior to construction. The bottomless arch culvert will require a temporary creek diversion and work within Carson Creek must be done in accordance with all environmental permits.

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

- A. Bids are required for the entire Work described herein.
- B. The contract time shall be FOUR HUNDRED THIRTY (430) WORKING DAYS. Refer to Section 8-1.10C of the special provisions regarding internal times of completion for this project.
- C. For bonding purposes the anticipated project cost is less than \$ 30,000,000.
- D. A pre-bid meeting is scheduled for this project on _____ at _____ PM at the El Dorado County Department of Transportation, 2441 Headington Road, Placerville, CA. The meeting will be held in the downstairs conference room. Attendance at the pre-bid meeting is not mandatory.

OBTAINING OR INSPECTING CONTRACT DOCUMENTS:

U.S. 50 / Silva Valley Parkway Interchange- Phase 1
Contract No. PW No. 12-30647 / CIP No. 71328
 June 11, 2013

County of El Dorado, DOT
Notice to Bidders
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The Contract Documents book 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, 2850 Fairlane Court, Placerville, California, 95667. The purchase price of each set of Contract Documents book and Plans (half size plans are included in each set) is ONE HUNDRED dollars (\$100.00) and is not refundable.

To receive Contract Documents book and Plans by Federal Express, send request and payment prior to shipping and include an additional FIFTY dollars (\$50.00), for a total of ONE HUNDRED FIFTY dollars (\$150.00), to include shipping and handling. For information regarding the purchase of the Contract Documents book and Plans contact Sheri Woodford at (530) 621-5941. **Only Contract Documents books and project Plans purchased from the Department of Transportation will be acceptable for bid submittal.**

Supplemental Project Information consists of:

- Contract general cross-sections, dated November 2012

Informational handout consists of:

- Installation details for battery backup system
- Geotechnical Design Report, Blackburn Consulting (BCI), October 2012
- Materials Report, BCI, March 2012
- Foundation Reports:
 - Silva Valley Parkway Overcrossing, BCI, April 2012
 - Westbound Off-Ramp Bridge, BCI, April 2012
 - Eastbound Off-Ramp Undercrossing, BCI, May 2012
 - Westbound On-Ramp Undercrossing, BCI, May 2012
- Aerially Deposited Lead Report, BCI, February 2012
- Hydraulic Study Report, Domenichelli & Associates, Inc., May 2012
- As-Builts for existing box culverts on U.S. 50
- Applicable Revised Standard Plans and New Standard Plans.

Supplemental Project Information and Informational Handout will be provided to Contract document holders as .pdf files on the DOT's website: <http://www.edcgov.us/Government/DOT/Bids.aspx>.

CONTRACTORS 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 bids are submitted, and shall maintain a valid license through completion and acceptance of the Work, including the guarantee and acceptance period. Failure of the successful Bidder to obtain proper adequate licensing shall constitute a failure to execute the Contract and shall result in the 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, contractor’s license number and address of each subcontractor 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 shall also describe in the Subcontractor Listing the work to be performed by each subcontractor listed. The work to be performed by the subcontractor shall be shown by listing the bid item number, bid item description, and portion of the work to be performed by the subcontractor in the form of a percentage calculated by dividing the work to be performed by the subcontractor by the respective bid item amount(s) (not by the total bid price). The percentage of each bid item subcontracted may be submitted with the Bidder’s bid or sent via email or fax to Janel Gifford, El Dorado County Department of Transportation, email-Janel.Gifford@edcgov.us, Fax-(530) 626-0387 by 4:00 p.m. on the first business day after the bid opening. The email or fax shall contain the name of each subcontractor submitted with the Bidder’s bid along with the bid item number, the bid item description, and the percentage of each bid item subcontracted, as described above. At the time bids are submitted, all listed subcontractors shall be properly licensed to perform their designated portion of the work. 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.

BRAND-SPECIFIC REQUIREMENT:

The contract bid documents specify brand-specific products. The Board of Supervisors has made the required finding(s) that the Brand SENSYS, VSN 240 Vehicle Sensor Nodes with epoxy (sealant), Wireless Vehicle Detector System is designated in the contract bid documents as brand-specific in order to match other products in use on a particular public improvement either completed or in the course of completion and that the SENSYS Networks Inc., wireless vehicle detectors system is designated in the contract documents as brand-specific in order to obtain the necessary item that is only available from SENSYS Networks Inc.

Where the contract bid documents require a brand-specific item, Contractor must quote brand and model indicated; alternative brands will not be accepted.

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION:

The County of El Dorado affirms that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation.

Bidder will take all necessary affirmative steps to assure that minority firms, women’s business enterprises and labor surplus area firms are used when possible.

NONDISCRIMINATION:

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

U.S. 50 / Silva Valley Parkway Interchange- Phase 1
Contract No. PW No. 12-30647 / CIP No. 71328
June 11, 2013

County of El Dorado, DOT
Notice to Bidders
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**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.

Comply with the fair employment practices provisions in the *Draft Agreement* contained in these Contract Documents that will apply to this Contract.

PREVAILING WAGE REQUIREMENTS:

Contractor's attention is directed to the requirements of Division 2 Part 7, Chapter 1 of the California Labor Code, 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.

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.

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.

This project is subject to the requirements of Title 8, Chapter 8, Subchapter 4.5 of the California Code of Regulations including the obligation to furnish certified payroll records directly to the Compliance Monitoring Unit under the Labor Commissioner within the Department of Industrial Relations Division of Labor Standards Enforcement in accordance with Section 16461.

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 for 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 **on the form provided in the Proposal section of these Contract Documents (do not detach the form).**

BID PROTEST PROCEDURE:

The protest procedure is intended to handle and resolve disputes related to the bid award for this project pursuant to Title 49 Code of Federal Regulations Part 18 Section 18.36 (b) (12)(i)-(ii) and County of El Dorado policies and procedures. A protestor must exhaust all administrative remedies with the County of El Dorado before pursuing a protest with a Federal Agency. Reviews of protests by the Federal agency will be limited to:

- (i.) Violations of Federal law or regulations and the standards of 49 CFR Part 18 Section 18.36 (b) (12) (i)-(ii). Violations of State of California or local law will be under the jurisdiction of the State of California or the County of El Dorado; and
- (ii.) Violation of the County of El Dorado's protest procedures for failure to review a complaint or protest. Protests received by the Federal agency other than those specified above will be referred to the County of El Dorado.

The protest procedure is an extension of the formal bid process and allows those who wish to protest the recommendation of an award after bid the opportunity to be heard.

Policy:

Upon completion of the bid evaluation, the Department of Transportation will notify all bidders of the recommendation of award, the basis therefore, and the date and time on which the recommendation for award will be considered and acted upon by the Board of Supervisors. All bidders may attend the Board of Supervisors meeting at the time the agenda item is considered, address the Board of Supervisors, and be heard.

Procedure:

If a bidder wishes to protest the award, this is the procedure:

1. The Department of Transportation will review the bids received in a timely fashion under the terms and conditions of the Notice to Bidders, and notify the bidders in writing, at the fax number designated in the Proposal, of its recommendation including for award or rejection of bids ("All Bidders Letter").
2. Within five (5) working days from the date of the "All Bidders Letter," the bidder protesting the recommendation for award must submit a letter of protest to and must be received by the County of El Dorado, Department of Transportation, Attention Janel Gifford, 2850 Fairlane Court, Placerville, CA 95667, and state in detail the basis and reasons for the protest. The bidder must provide facts to support the protest, including any evidence it wishes to be considered, together with the law, rule, regulation, or criteria on which the protest is based.
3. If the Department of Transportation finds the protest to be valid, it may modify its award recommendations and notify all bidders of that decision. If the Department of Transportation does not agree with the protest, or otherwise fails to resolve the protest, the Department of Transportation will notify the bid protestor and all interested parties of its decision and the date and time that the recommendation for award will be agendized for the Board of Supervisors' consideration and action. The Department of Transportation will also include in its report to the Board of Supervisors the details of the bid protest.
4. The bidder may attend the Board of Supervisors meeting at which the recommendation and bid protest will be considered. The Board of Supervisors will take comment from the bidder, staff, and members of the public who wish to speak on the item. In the event that the bidder is not in attendance at that time, the bid protest may be dismissed by the Board of Supervisors without further consideration of the merits; and

The decision of the Board of Supervisors on the bid protest will be final.

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 interests 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, responsive, responsible Bidder.

ESCROW BID DOCUMENTS:

Refer to the Special Provision in the Contract Documents entitled "Escrow Bid Documents" for the provisions requiring the successful bidder to submit in a sealed lockable container to the Department of Transportation all documentary information used to prepare its bid.

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 communications relative to the Contract Documents book and Plans shall be directed to Janel Gifford in the El Dorado County Department of Transportation, 2850 Fairlane Court, Placerville, CA 95762, telephone: (530) 621-5974, Janel.Gifford@edcgov.us. 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 book and Plans or written responses to bidders' inquiries. Responses to bidders' inquiries and addenda will be posted on the Department of Transportation website at www.edcgov.us/Government/DOT/Bids.aspx. It is the bidders' responsibility to check this website for responses and addenda during the bid period.

The list of plan holders will also be posted on the Department of Transportation website at www.edcgov.us/Government/DOT/Bids.aspx.

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

Authorized by the Board of Supervisors on June 11, 2013 at Placerville, California.

By _____
Kimberly A. Kerr, Director of Transportation
Acting Community Development Agency Director
County of El Dorado

STANDARD PLANS LIST

The standard plan sheets applicable to this Contract include those listed below. The applicable revised standard plans (RSPs) listed below are included in the project plans.

ABBREVIATIONS, LINES, SYMBOLS AND LEGEND

A10A	Abbreviations (Sheet 1 of 2)
A10B	Abbreviations (Sheet 2 of 2)
A10C	Lines and Symbols (Sheet 1 of 3)
A10D	Lines and Symbols (Sheet 2 of 3)
A10E	Lines and Symbols (Sheet 3 of 3)
A10F	Legend - Soil (Sheet 1 of 2)
A10G	Legend - Soil (Sheet 2 of 2)
A10H	Legend - Rock

PAVEMENT MARKERS, TRAFFIC LINES, AND PAVEMENT MARKINGS

A20A	Pavement Markers and Traffic Lines, Typical Details
A20B	Pavement Markers and Traffic Lines, Typical Details
A20C	Pavement Markers and Traffic Lines, Typical Details
A20D	Pavement Markers and Traffic Lines, Typical Details
RSP A24A	Pavement Markings - Arrows
A24B	Pavement Markings - Arrows and Symbols
RSP A24C	Pavement Markings - Symbols and Numerals
A24D	Pavement Markings - Words
RSP A24E	Pavement Markings – Words, Limit and Yield Lines
RSP A24F	Pavement Markings – Crosswalks

RUMBLE STRIP

A40B	Shoulder Rumble Strip Details - Ground-In Indentations
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EXCAVATION AND BACKFILL

A62A	Excavation and Backfill - Miscellaneous Details
A62B	Limits of Payment for Excavation and Backfill - Bridge Surcharge and Wall
A62C	Limits of Payment for Excavation and Backfill - Bridge
A62D	Excavation and Backfill - Concrete Pipe Culverts
A62DA	Excavation and Backfill - Concrete Pipe Culverts - Indirect Design Method
A62E	Excavation and Backfill - Cast-In-Place Reinforced Concrete Box and Arch Culverts
A62F	Excavation and Backfill - Metal and Plastic Culverts

OBJECT MARKERS, DELINEATORS, CHANNELIZERS AND BARRICADES

A73A	Object Markers
A73B	Markers
A73C	Delineators, Channelizers and Barricades

SURVEY MONUMENTS

A74	Survey Monuments
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CONCRETE BARRIER TYPE 60 SERIES

A76A	Concrete Barrier Type 60
A76B	Concrete Barrier Type 60
A76C	Concrete Barrier Type 60F

	METAL BEAM GUARD RAILING - STANDARD RAILING SECTIONS
A77A1	Metal Beam Guard Railing - Standard Railing Section (Wood Post with Wood Block)
A77B1	Metal Beam Guard Railing - Standard Hardware
A77C1	Metal Beam Guard Railing - Wood Post and Wood Block Details
A77C3	Metal Beam Guard Railing - Typical Line Post Embedment and Hinge Point Offset Details
A77C4	Metal Beam Guard Railing - Typical Railing Delineation and Dike Positioning Details
	METAL BEAM GUARD RAILING – TYPICAL VEGETATION CONTROL
RSP A77C5	Metal Beam Guard Railing - Typical Vegetation Control Standard Railing Section
RSP A77C6	Metal Beam Guard Railing - Typical Vegetation Control for Terminal System End Treatments
RSP A77C7	Metal Beam Guard Railing - Typical Vegetation Control at Structure Approach and Departure
RSP A77C8	Metal Beam Guard Railing - Typical Vegetation Control at Fixed Object
RSP A77C9	Metal Beam Guard Railing - Typical Vegetation Control at Fixed Object
RSP A77C10	Metal Beam Guard Railing - Typical Vegetation Control at Fixed Object
	METAL BEAM GUARD RAILING - TYPICAL LAYOUTS FOR EMBANKMENTS
A77E1	Metal Beam Guard Railing - Typical Layouts for Embankments
A77E2	Metal Beam Guard Railing - Typical Layouts for Embankments
A77E3	Metal Beam Guard Railing - Typical Layouts for Embankments
A77E4	Metal Beam Guard Railing - Typical Layouts for Embankments
A77E5	Metal Beam Guard Railing - Typical Layouts for Embankments
A77E6	Metal Beam Guard Railing - Typical Layouts for Embankments
	METAL BEAM GUARD RAILING - TYPICAL LAYOUTS FOR STRUCTURES
A77F1	Metal Beam Guard Railing - Typical Layouts for Structure Approach
A77F2	Metal Beam Guard Railing - Typical Layouts for Structure Approach and Between Structures
A77F3	Metal Beam Guard Railing - Typical Layouts for Structure Approach
A77F4	Metal Beam Guard Railing - Typical Layouts for Structure Departure
A77F5	Metal Beam Guard Railing - Typical Layouts for Structure Departure
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A77G2	Metal Beam Guard Railing - Typical Layouts for Fixed Objects between Separate Roadbeds (One-Way Traffic)
A77G3	Metal Beam Guard Railing - Typical Layouts for Roadside Fixed Objects
A77G4	Metal Beam Guard Railing - Typical Layouts for Roadside Fixed Objects
A77G5	Metal Beam Guard Railing - Typical Layouts for Roadside Fixed Objects
A77G6	Metal Beam Guard Railing - Typical Layouts for Roadside Fixed Objects
A77G7	Metal Beam Guard Railing - Typical Layouts for Roadside Fixed Objects
A77G8	Metal Beam Guard Railing - Typical Layouts for Roadside Fixed Objects
	METAL BEAM GUARD RAILING - END ANCHORAGE AND RAIL TENSIONING ASSEMBLY
A77H1	Metal Railing - End Anchor Assembly (Type SFT)
A77H2	Metal Railing - Rail Tensioning Assembly

A77H3	Metal Railing - Anchor Cable and Anchor Plate Details
A77I1	Metal Railing - End Anchor Assembly (Type CA)
A77I2	Metal Beam Guard Railing - Buried Post End Anchor METAL BEAM GUARD RAILING - CONNECTIONS DETAILS AND TRANSITION RAILING TO BRIDGE RAILINGS, ABUTMENTS AND WALLS
A77J1	Metal Beam Guard Railing - Connections to Bridge Railings without Sidewalks Details No. 1
A77J2	Metal Beam Guard Railing - Connections to Bridge Railings without Sidewalks Details No. 2
A77J3	Metal Beam Guard Railing - Connections to Abutments and Walls
A77J4	Metal Beam Guard Railing - Transition Railing (Type WB)
A77K1	Metal Beam Guard Railing - Connections to Bridge Railings with Sidewalks Details No. 1
A77K2	Metal Beam Guard Railing - Connections to Bridge Railings with Sidewalks Details No. 2

FENCES

A85	Chain Link Fence
A85A	Chain Link Fence Details
RSP A85B	Chain Link Fence Details
A86	Barbed Wire and Wire Mesh Fences
A86A	Barbed Wire and Wire Mesh Fence Detail on Sharp Break in Grade
A86B	Barbed Wire and Wire Mesh Fence Details
A86C	Barbed Wire and Wire Mesh Fence Details at Ditch Crossing
RSP A86D	Barbed Wire and Wire Mesh Fence – Miscellaneous Details CURBS, DRIVEWAYS, DIKES, CURB RAMPS AND ACCESSIBLE PARKING
A87A	Curbs and Driveways
A87B	Hot Mix Asphalt Dikes
A88A	Curb Ramp Details
A88B	Curb Ramp and Island Passageway Details

PAVEMENTS

P70	Hot Mix Asphalt Paving (Longitudinal Tapered Notched Wedge Joint)
RSP P74	Pavement Edge Treatments
RSP P75	Pavement Edge Treatments - Overlays
RSP P76	Pavement Edge Treatments - New Construction

DRAINAGE INLETS, PIPE INLETS AND GRATES

D71	Drainage Inlet Markers
D72	Drainage Inlets
RSP D73	Drainage Inlets
D73A	Drainage Inlets (Precast)
D74B	Drainage Inlets
D74C	Drainage Inlet Details
D75A	Steel Pipe Inlets
D75B	Concrete Pipe Inlets
D75C	Pipe Inlets - Ladder and Trash Rack Details
RSP D77A	Grate Details
RSP D77B	Bicycle Proof Grate Details

D77C	Alternative Hinged Cover for Type OL and OS Inlets and Trash Rack for Type OCP Inlet
	GUTTER AND INLET DEPRESSIONS
D78A	Gutter Depressions
D78B	Inlet Depressions - Concrete Shoulders
D78C	Inlet Depressions - Hot Mix Asphalt Shoulders
	BOX CULVERTS
D81	Cast-In-Place Reinforced Concrete - Double Box Culvert
D82	Cast-In-Place Reinforced Concrete Box Culvert - Miscellaneous Details
D83A	Precast Reinforced Concrete Box Culvert
D83B	Precast Reinforced Concrete Box Culvert - Miscellaneous Details
D84	Box Culvert Wingwalls - Types A, B and C
D86A	Box Culvert Warped Wingwalls
	PIPE DOWNDRAINS, ANCHORAGE SYSTEMS AND OVERSIDE DRAINS
D87A	Corrugated Metal Pipe Downdrain Details
D87B	Plastic Pipe Downdrain Details
D87C	Cable Anchorage System
D87D	Overside Drains
	FLARED END SECTIONS
D94A	Metal and Plastic Flared End Sections
D94B	Concrete Flared End Sections
	PIPE COUPLING AND JOINT DETAILS
D97A	Corrugated Metal Pipe Coupling Details No. 1 - Annular Coupling Band Bar and Strap and Angle Connections
	GABIONS AND UNDERDRAINS
D102	Underdrains
	LANDSCAPE AND EROSION CONTROL
H1	Landscape and Erosion Control - Abbreviations
H51	Erosion Control Details - Fiber Roll and Compost Sock
	TEMPORARY CRASH CUSHIONS, RAILING AND TRAFFIC SCREEN
T1A	Temporary Crash Cushion, Sand Filled (Unidirectional)
T1B	Temporary Crash Cushion, Sand Filled (Bidirectional)
T2	Temporary Crash Cushion, Sand Filled (Shoulder Installations)
T3A	Temporary Railing (Type K)
T3B	Temporary Railing (Type K)
	TEMPORARY WATER POLLUTION CONTROL
T51	Temporary Water Pollution Control Details (Temporary Silt Fence)
T56	Temporary Water Pollution Control Details (Temporary Fiber Roll)
T57	Temporary Water Pollution Control Details (Temporary Check Dam)
T58	Temporary Water Pollution Control Details (Temporary Construction Entrance)
T59	Temporary Water Pollution Control Details (Temporary Concrete Washout Facility)
T61	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T62	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T63	Temporary Water Pollution Control Details (Temporary Drainage Inlet

	Protection)
T64	Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)
T65	Temporary Water Pollution Control Details [Temporary Fence (Type ESA)]
	BRIDGE DETAILS
B0-1	Bridge Details
B0-3	Bridge Details
B0-5	Bridge Details
B0-13	Bridge Details
	RETAINING WALLS
RSP B3-1B	Retaining Wall Type 1 (Case 2)
RSP B3-5	Retaining Wall Details No. 1
B3-6	Retaining Wall Details No. 2
	JOINT SEALS
B6-21	Joint Seals (Maximum Movement Rating = 2")
	BOX GIRDER DETAILS
B7-1	Box Girder Details
	DECK DRAINS
B7-6	Deck Drains - Types D-1 and D-2
B7-7	Deck Drain - Type D-3
B7-8	Deck Drainage Details
	CAST-IN-PLACE PRESTRESSED GIRDER
B8-5	Cast-In-Place Prestressed Girder Details
	CHAIN LINK RAILING, CABLE RAILING AND TUBULAR HAND RAILING
RSP B11-47	Cable Railing
	BRIDGE CONCRETE BARRIERS
B11-55	Concrete Barrier Type 732
B11-56	Concrete Barrier Type 736
B11-57	Concrete Barrier Type 742
	WATER SUPPLY LINE (BRIDGE)
B14-5	Water Supply Line (Details) (Pipe Sizes Less Than 4")
	ROADSIDE SIGNS
RS1	Roadside Signs, Typical Installation Details No. 1
RS2	Roadside Signs - Wood Post, Typical Installation Details No. 2
RS4	Roadside Signs, Typical Installation Details No. 4
	OVERHEAD SIGNS (TRUSS)
S1	Overhead Signs - Truss, Instructions and Examples
S2	Overhead Signs - Truss, Single Post Type - Post Types II thru IX
S3	Overhead Signs - Truss, Single Post Type - Base Plate and Anchorage Details
S4	Overhead Signs - Truss, Single Post Type - Structural Frame Members Details No. 1
S5	Overhead Signs - Truss, Single Post Type - Structural Frame Members Details No. 2
S6	Overhead Signs - Truss, Gusset Plate Details
S8	Overhead Signs - Truss, Single Post Type - Round Pedestal Pile Foundation
S12	Overhead Signs - Truss, Structural Frame Details
S13	Overhead Signs - Truss, Frame Juncture Details

S16	Overhead Signs - Walkway Details No. 1
S17	Overhead Signs - Walkway Details No. 2
S17A	Overhead Signs - Walkway Details No. 3
S18	Overhead Signs - Walkway Safety Railing Details
S19	Overhead Signs - Truss, Sign Mounting Details - Laminated Panel - Type A
	OVERHEAD AND ROADSIDE SIGNS PANELS
S81	Overhead Laminated Sign - Single or Multiple Panel, Type A (1" Thick)
S82	Roadside Laminated Sign - Single or Multiple Panel, Type B (1" Thick)
S85	Seam Closure, "H" Section Extrusion and Post Spacing Tables, Multi-Horizontal Laminated Panel Aluminum Signs
S86	Laminated Panel Details - Extrusions for Type A, B and H Panels
S87	Type A-1 Mounting Hardware - Overhead Laminated Type A Panel, Truss and Lightweight Sign Structures
S88	Type A-2 Mounting Hardware - Overhead Laminated Type A Panel, Bridge Mounted and Tubular Sign Structures
S93	Framing Details for Framed Single Sheet Aluminum Signs, Rectangular Shape
S94	Roadside Framed Single Sheet Aluminum Signs, Rectangular Shape
S95	Roadside Single Sheet Aluminum Signs, Diamond Shape
	ELECTRICAL SYSTEMS - LEGEND, NOTES AND ABBREVIATIONS
ES-1A	Electrical Systems (Legend, Notes and Abbreviations)
ES-1B	Electrical Systems (Legend, Notes and Abbreviations)
ES-1C	Electrical Systems (Legend, Notes and Abbreviations)
	ELECTRICAL SYSTEMS - SERVICE EQUIPMENT AND WIRING DIAGRAMS
ES-2A	Electrical Systems (Service Equipment)
ES-2C	Electrical Systems (Service Equipment Notes, Type III Series)
ES-2D	Electrical Systems (Service Equipment Enclosure and Typical Wiring Diagram, Type III - A Series)
	ELECTRICAL SYSTEMS - CONTROLLER CABINETS
ES-3A	Electrical Systems (Controller Cabinet Details)
ES-3C	Electrical Systems (Controller Cabinet Foundation Details)
	ELECTRICAL SYSTEMS - IRRIGATION CONTROLLER ENCLOSURE CABINET
ES-3H	Electrical Systems (Irrigation Controller Enclosure Cabinet)
	ELECTRICAL SYSTEMS - SIGNAL HEADS, SIGNAL FACES AND MOUNTINGS
ES-4A	Electrical Systems (Signal Heads and Mountings)
ES-4B	Electrical Systems (Pedestrian Signal and Ramp Metering)
ES-4C	Electrical Systems (Vehicular Signal Heads and Mountings)
ES-4D	Electrical Systems (Signal Mounting)
ES-4E	Electrical Systems (Signal Faces and Emergency Vehicle Detector Mountings)
	ELECTRICAL SYSTEMS - DETECTORS
ES-5A	Electrical Systems (Detectors)
ES-5B	Electrical Systems (Detectors)
ES-5C	Electrical Systems (Detector, Pedestrian Push Button and Signs)
ES-5D	Electrical Systems (Curb Termination and Handhole)
	ELECTRICAL SYSTEMS - LIGHTING STANDARDS
ES-6A	Electrical Systems (Lighting Standard, Types 15 and 21)
ES-6E	Electrical Systems (Lighting Standard, Types 30 and 31)
ES-6F	Electrical Systems (Lighting Standard, Slip Base Plate)

ES-6G	Electrical Systems (Lighting Standard, Type 32) ELECTRICAL SYSTEMS - SIGNAL AND LIGHTING STANDARD, TYPE TS, AND PEDESTRIAN PUSH BUTTON POST
ES-7A	Electrical Systems (Signal and Lighting Standard, Type TS, and Pedestrian Push Button Post) ELECTRICAL SYSTEMS - SIGNAL AND LIGHTING STANDARDS
ES-7B	Electrical Systems (Signal and Lighting Standard - Type 1 and Equipment Numbering)
ES-7E	Electrical Systems (Signal and Lighting Standard - Case 3 Signal Mast Arm Loading, Wind Velocity = 100 mph and Signal Mast Arm Lengths 15' to 45')
ES-7F	Electrical Systems (Signal and Lighting Standard - Case 4 Signal Mast Arm Loading, Wind Velocity = 100 mph and Signal Mast Arm Lengths 25' to 45')
ES-7G	Electrical Systems (Signal And Lighting Standard - Case 5 Signal Mast Arm Loading, Wind Velocity = 100 mph and Signal Mast Arm Lengths 50' to 55') ELECTRICAL SYSTEMS - SIGNAL AND LIGHTING STANDARD DETAILS
ES-7M	Electrical Systems (Signal and Lighting Standard - Detail No. 1)
ES-7N	Electrical Systems (Signal and Lighting Standard - Detail No. 2)
ES-7O	Electrical Systems (Signal and Lighting Standard - Detail No. 3) ELECTRICAL SYSTEMS - PEDESTRIAN BARRICADES
ES-7Q	Electrical Systems (Pedestrian Barricades) ELECTRICAL SYSTEMS - PULL BOX
RSP ES-8A	Electrical Systems (Pull Box)
RSP ES-8B	Electrical Systems (Traffic Rated Pull Box) ELECTRICAL SYSTEMS - STRUCTURE INSTALLATIONS
ES-9A	Electrical Systems (Structure Pull Box Installations)
ES-9B	Electrical Systems (Conduit Riser and Expansion Fitting, Structure Installations)
ES-9C	Electrical Systems (Structure Pull Box)
ES-9D	Electrical Systems (Structure Pull Box Installations)
ES-9E	Electrical Systems (Flush Soffit, Pendant soffit and Wall Luminaire, Structure Installations)
ES-9F	Electrical Systems (Flush Soffit Luminaire Details) ELECTRICAL SYSTEMS - ISOFOOTCANDLE DIAGRAMS AND FOUNDATION DETAILS
RSP ES-10A	Electrical Systems (Isofootcandle Diagrams)
RSP ES-10B	Electrical Systems (Isofootcandle Diagrams)
ES-11	Electrical Systems (Foundation Installations) ELECTRICAL SYSTEMS - SPLICING, FUSE RATING, KINKING AND BANDING DETAILS
ES-13A	Electrical Systems (Splicing Details)
ES-13B	Electrical Systems (Fuse Rating, Kinking and Banding Detail) ELECTRICAL SYSTEMS - SIGN ILLUMINATION EQUIPMENT AND CONTROLS
ES-15A	Electrical Systems (Sign Illumination Equipment)
ES-15C	Electrical Systems (Sign Illumination Equipment)
ES-15D	Electrical Systems (Lighting and Sign Illumination Control)

CANCELED STANDARD PLANS LIST

The standard plan sheets listed below are canceled and not applicable to this contract.

RETAINING WALLS

B3-1 Canceled on April 20, 2012
B3-2 Canceled on April 20, 2012
B3-3 Canceled on April 20, 2012
B3-4 Canceled on April 20, 2012
B3-7 Canceled on April 20, 2012
B3-8 Canceled on April 20, 2012

ELECTRICAL SYSTEMS - PULL BOX

ES-8 Canceled on January 20, 2012

ELECTRICAL SYSTEMS - ISOFOOTCANDLE DIAGRAMS AND FOUNDATION DETAILS

ES-10 Canceled on July 20, 2012

SPECIAL PROVISIONS

DIVISION I GENERAL PROVISIONS
1 GENERAL

Add to section 1-1.01:

Bid Items and Applicable Sections

Item code	Item description	Applicable section
072007	EXCAVATION SAFETY	7
120140A	STREET BARRICADE	83
129110A	TEMPORARY CRASH CUSHION (TYPE ARRAY TS14)	12
129110B	TEMPORARY CRASH CUSHION (TYPE ABSORB 350)	12
149001A	ASBESTOS DUST MITIGATION PLAN	14
150204A	ABANDON UNDER DRAIN	15
150204B	ABANDON 12" AC WATER LINE	15
150204C	ABANDON 8" WATER LINE	15
150204D	ABANDON 12" AC WATER LINE (EID)	15
150776A	REMOVE VALVE (EID)	77
150809B	REMOVE WATER LINE (EID)	77
151508A	RECONSTRUCT MANHOLE (EID)	77
152351	RELOCATE HYDRANT (EID)	77
152375A	RELOCATE PRESSURE RECUDING STATION	77
152375B	RELOCATE BLOW OFF VALVE	77
152375C	RELOCATE AIR RELEASE VALVE	77
152375D	RELOCATE AIR RELEASE VALVE (EID)	77
152375E	RELOCATE GATE VALVE (EID)	77
152375F	RELOCATE SAMPLING STATION (EID)	77
152451A	ADJUST WATER VALVE TO GRADE (EID)	77
152475A	ADJUST SSMH TO GRADE (EID)	77
194001A	BIOSWALE	19
208591A	BLOWOFF VALVE (EID)	77
208591B	INSTALL BLIND FLANGE (EID)	77
208591C	BLOWOFF VALVE	77
210600A	COMPOST (INCORPORATE)	21
510501A	MINOR CONCRETE (MEDIAN)	51
510502A	MINOR CONCRETE (ENCASEMENT)	77
511035A	ARCHITECTURAL TREATMENT (DRY STACK ROCK TEXTURE)	51
519200	PRECAST BRIDGE SYSTEM	51
568001A	INSTALL SIGN (BARRICADE MOUNTED)	56
680905A	8" PLASTIC PIPE UNDERDRAIN OUTLET	68
681107A	3" PVC PIPE	68
681132A	GEOCOMPOSITE DRAIN (RETAINING WALL)	68
700001A	8" WATER LINE (CL-150)	77
700001B	12" WATER LINE (CL-150)	77
700001C	12" WATER LINE (DR-14) (EID)	77
702600A	TEE ENERGY DISSIPATOR	70
801300	DUAL PIPE GATE	80
833090A	TUBULAR BICYCLE RAILING	83
839701A	CONCRETE BARRIER (TYPE 60 MOD)	83

839704A	CONCRETE BARRIER (TYPE 60D MOD)	83
839735A	CONCRETE BARRIER (TYPE 742 MOD)	83
861100A	RAMP METERING SYSTEM AND TMS ELEMENTS	86
869001A	EMERGENCY VEHICLE PREEMPTION SYSTEM (LOCATIONS 1 THRU 3)	86
869050A	GUARD POST (REMOVABLE)	86

Replace the definition of Bid Item List in section 1-1.07B with:

Bid Item List: List of bid items and the associated quantities. The Proposal Pay Items and Bid Price Schedule in the Proposal section is the Bid Item List. The verified Bid Item List is Exhibit A Contractor's Bid and Bid Price Schedule in the fully-executed contract for the project.

Add to section 1-1.07B:

Contract approval: Execution of the Contract by the Board of Supervisors, County of El Dorado.

Contract award package: The Notice of Award of Contract letter, two originals of the Agreement, Payment and Performance bond forms, and other forms the successful Bidder must complete for Contract Execution.

Contract Documents: See Article 2 "Contract Documents" of the Draft Agreement.

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

Replace the corresponding definitions in section 1-1.07B with:

Contract acceptance: County Clerk/Recorder's recordation after County Board of Supervisors' approval and execution of the written Notice of Acceptance of a completed Contract.

Department: The Department of Transportation as created by the Board of Supervisors for County of El Dorado or Department of Transportation as defined in St & Hwy Code § 20 and authorized in St & Hwy Code § 90; its authorized representatives.

Engineer– The Director of Transportation for County of El Dorado, or authorized representative (Resident Engineer) responsible for the Contract's administration; the Resident Engineer's authorized representatives.

Delete estimated cost in section 1-1.07B.

Add to section 1-1.07B:

EID: El Dorado Irrigation District

Delete informal-bid contract in section 1-1.07B.

Add to section 1-1.07B:

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

Office Engineer: The Office Engineer in the County of El Dorado Department of Transportation or, depending on context, Caltrans Office Engineer

Proposal: The Proposal section of the Contract Documents book, or the Bidder's bid.

Replace the corresponding definitions in section 1-1.07B with:

2. revised standard specifications: New or revised standard specifications. These specifications are in a section titled *Revised Standard Specifications* of a book titled *Contract Documents including Notice to Bidders, Special Provisions, Proposal, and Contract*.

The Contract Documents book includes the *Notice to Bidders*, revised standard specifications, special provisions, Proposal, and Contract.

Delete the 4th paragraph of section 2-1.06A.

Replace the 1st paragraph of the RSS for section 2-1.06 with:

If an *Informational Handout* or cross sections are available you may view them at <http://www.edcgov.us/Government/DOT/Bids.aspx>

Add to section 2-1.06B:

The Department makes the following supplemental project information available:

Supplemental Project Information

Means	Description
Included in <i>Information Handout</i>	Installation details for battery backup system Geotechnical Design Report, BCI, October 2012 Materials Report, BCI, March 2012 Foundation Reports: <ul style="list-style-type: none"> • Silva Valley Parkway Overcrossing, BCI, April 2012 • Westbound Off-Ramp Bridge, BCI, April 2012 • Eastbound Off-Ramp Undercrossing, BCI, May 2012 • Westbound On-Ramp Undercrossing, BCI, May 2012 Aerially Deposited Lead Report, BCI, February 2012 Hydraulic Study Report, Domenichelli & Associates, Inc., May 2012 As-Builts for existing box culverts on U.S. 50 Applicable Revised Standard Plans and New Standard Plans.
Available as specified in the <i>Notice to Bidders</i>	Contract general cross-sections dated November 2012

Add to section 2-1.12B(1):

The Contractor shall also carry out applicable requirements of 49 CFR Part 18 in the award and administration of this UNITED STATES DEPARTMENT OF TRANSPORTATION (USDOT)-assisted Contract. The applicable requirements of 49 CFR Part 18 are as follows:

(a) *Contracting with small and minority firms, women's business enterprise and labor surplus area firms.*

- (1) Contractor will take all necessary affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible.
- (2) Affirmative steps shall include:
 - (i) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
 - (ii) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

- (iii) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;
- (iv) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises;
- (v) Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce; and
- (vi) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (a)(2) (i) through (v) of this section.

Bidder will take all necessary affirmative steps to assure that minority firms, women's business enterprises and labor surplus area firms are used when possible.

**Replace section 2-1.15 "Disabled Veterans Business Enterprise" with:
2-1.15 RESERVED**

**Replace section 2-1.18 "Small Business and Non-Small Business Subcontractor Preferences" with:
2-1.18 RESERVED**

Delete the 1st and 2nd paragraph of section 2-1.24.

**Replace section 2-1.27 "California Companies" with:
2-1.27 RESERVED**

Replace the 1st paragraph of section 2-1.33A with:

Complete the Proposal in the Contract Documents book. Submit the Proposal bound to the Contract Documents book. Failure to submit the Proposal bound to the Contract Documents book results in a non-responsive bid.

Delete the 3rd paragraph of section 2-1.33C.

Replace the 2nd paragraph of section 2-1.33C and added paragraph shown in RSS 1-18-13 for section 2-1.33C with:

The Subcontractor List in the Proposal must show the name, contractor's license number, and address of and work portions to be performed by each subcontractor listed. The work portion to be performed must be shown by listing the bid item number, bid item description, and portion of the work to be performed by the subcontractor in the form of a percentage calculated by dividing the work to be performed by the subcontractor by the respective bid item amount(s) (not by the total bid price). You may submit the percentage of each bid item subcontracted with your Proposal or email or fax to Office Engineer, email-

Janel.Gifford@edcgov.us, Fax-(530) 626-0387 by 4:00 p.m. on the first business day after the bid opening. The email or fax must contain the name of each subcontractor submitted with your Proposal along with the bid item number, bid item description, and the percentage of each bid item subcontracted. Failure to do so results in a non-responsive bid.

Replace the 4th item of the 1st paragraph of section 2-1.34 with:

4. Bidder's bond signed by an authorized representative of a surety insurer who is licensed in California. The authorized representative's signature must be notarized and authorization documentation must be provided.

Replace the last paragraph of section 2-1.34 with:

You must complete the Bidder's bond form included in the Proposal bound to the Contract Documents book. Copy the form and staple the executed form to the form included in the Proposal, or unbind the form for execution, and rebind it. Failure to submit the entire Proposal bound to the Contract Documents book results in a non-responsive bid.

If applicable, submit proof of each required SSPC QP certification with your Proposal. Failure to do so results in a non-responsive bid.

Replace "Reserved" in section 2-1.36 with:

2-1.36 PRE-FABRICATED BRIDGE MANUFACTURER CERTIFICATION PRE-AWARD QUALIFICATION

Submit Certification of Bidder's Pre-fabricated Bridge Manufacturer's Qualifications required under this section with your Proposal. Failure to submit the certification results in a non-responsive bid.

Replace the 1st paragraph of section 2-1.37 with:

For Proposal submittal comply with the instructions in the *Notice to Bidders* and Section 2-1.33A.

Replace "Reserved" in section 2-1.44 with:

2-1.44 BID PROTEST PROCEDURE

The protest procedure is intended to handle and resolve disputes related to the bid award for this project pursuant to Title 49 Code of Federal Regulations Part 18 Section 18.36 (b) (12)(i)-(ii) and County policies and procedures. A protestor must exhaust all administrative remedies with County before pursuing a protest with a Federal Agency. Reviews of protests by the Federal agency will be limited to:

(i.) Violations of Federal law or regulations and the standards of 49 CFR Part 18 Section 18.36 (b) (12)(i)-(ii). Violations of State of California or local law will be under the jurisdiction of the State or County; and

(ii.) Violation of County's protest procedures for failure to review a complaint or protest. Protests received by the Federal agency other than those specified above will be referred to County.

The protest procedure is an extension of the formal bid process and allows those who wish to protest the recommendation of an award after bid the opportunity to be heard.

3 CONTRACT AWARD AND EXECUTION

Delete the 1st paragraph of section 3-1.04.

Replace the 2nd and 3rd paragraphs of section 3-1.04 with:

County Board of Supervisors will consider bids for award. County 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 interests of County. The award of the Contract, if it be awarded, will be to the lowest, responsive, responsible bidder whose Proposal complies with all the requirements prescribed. This award, if made, will be made within sixty (60) days after the opening of the bids. This period will be subject to extension 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 work to be done.

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

Delete the addition of section 3-1.04 listed in the RSS 10-19-12.

Replace section 3-1.05 with:

3-1.05 CONTRACT BONDS (PUB CONT CODE § 7103)

The successful Bidder must furnish two bonds:

- 1) Payment bond to secure the claim payments of laborers, workers, mechanics, or materialmen providing goods, labor, or services under the Contract. This bond must be in a sum not less than one hundred percent (100%) of the total amount payable by the terms of the contract, naming the County as obligee.
- 2) Performance bond to guarantee faithful performance of the Contract. This bond must be in a sum not less than one hundred percent (100%) of the total amount payable by the terms of the contract, naming the County as obligee.

The Payment and Performance Bond forms are included with the Draft Agreement section of the Contract Documents book. The Department furnishes the successful Bidder bond forms with the Contract award package.

Replace the 1st paragraph and the 1st item of the 2nd paragraph of section 3-1.06 with:

For a federal-aid contract, the Contractor must be properly licensed as a contractor from contract award (Pub Cont Code § 20103.5) through completion and acceptance of the Work, including the guarantee period. Failure to obtain proper and adequate licensing for an award of a Contract constitutes a failure to execute the Contract and results in the forfeiture of the security of the bidder.

1. The Contractor must be properly licensed as a contractor from bid opening (Bus & Prof Code § 7028.15) through completion and acceptance of the Work, including the guarantee period. Failure to obtain proper and adequate licensing constitutes a failure to execute the Contract and results in the forfeiture of the security of the bidder.

Replace section 3-1.08 “Small Business Participation Report” with:

3-1.08 RESERVED

Replace section 3-1.11 with:

3-1.11 COUNTY PAYEE DATA RECORD FORM

Complete and sign the County *Payee Data Record* form included in the Contract award package.

Delete section 3-1.12.

Replace “Reserved” in section 3-1.14 with:

3-1.14 ESCROW BID DOCUMENTS

Scope

The successful Bidder must submit to Office Engineer within ten (10) business days of the date of the Notice of Award of the Contract letter, one sealed copy of all documentary information generated in preparation of bid prices for this project. This material is hereinafter referred to as Escrow Bid Documents (EBDs). The EBDs of the successful bidder will be held in escrow for the duration of the contract.

The successful Bidder agrees, as a condition of execution of the Contract, that the EBDs constitute the only complete documentary information used in preparation of its bid. No other bid preparation information will be considered in resolving disputes.

Nothing in the EBDs will change or modify the terms or conditions of the Contract.

Ownership

The EBDs are and must always remain your property subject only to joint review by you and County, except as provided for herein.

County stipulates and expressly acknowledges that the EBDs, as defined herein, constitute trade secrets. This acknowledgment is based on County’s express understanding that the information contained in the EBDs is not known outside your business, is known only to a limited extent and only by a limited number of your employees, is safeguarded while in your possession, and is extremely valuable to competitors by virtue of it reflecting your contemplated techniques of construction.

County acknowledges that EBDs and the information contained therein are made available to County only because such action is an express prerequisite to execution of the Contract by County. County acknowledges that the EBDs include a compilation of information used in your business, intended to give you an opportunity to obtain an advantage over competitors who do not know of or use the contents of the documentation. County agrees to safeguard the EBDs and all information contained therein to the fullest extent permitted by law.

Purpose

EBDs will be used to assist in the negotiation of price adjustments and variations and in the settlement of disputes, claims and other controversies. They will not be used for evaluation of your anticipated methods of construction or to assess your qualifications for performing the Work.

Format and Contents

You may submit EBDs in their usual cost estimating format. It is not intended that extra work is required in preparing the bid but to ensure that the EBDs will be adequate to enable complete and proper understanding and proper interpretation for their intended use. The EBDs must be in the English language only.

The EBDs must clearly itemize the estimated costs of performing the work of each item contained in the Proposal Pay Items and Bid Schedule. Items should be separated into sub-items as required to present a complete and detailed cost estimate and allow a detailed cost review. The EBDs must include all quantity take-offs, crews, assumed overtime, equipment, calculations of rates of production and progress, acceleration costs, copies of quotations from Subcontractors and suppliers, and memoranda, narratives, consultants reports, add/deduct sheets, and all other information you used to arrive at the prices contained in the bid. Estimated costs must be broken down into your usual estimate categories such as direct labor, repair labor, equipment operation, equipment ownership, expendable materials, permanent materials, and subcontract costs as appropriate. Plant and equipment and indirect costs should be detailed in your usual format. Your allocation of plant and equipment, indirect costs, contingencies, mark-up, and other items to each bid item must be clearly indicated.

The EBDs must clearly show in calculations, text, or both, the relationship between baseline indications presented in the Contract Documents and assumptions that form the basis for your means, methods, equipment selection, rates of production, and costs.

All costs must be identified. For bid items where the extended amount is less than \$10,000 estimated unit costs are acceptable without a detailed cost estimate, providing that labor, equipment, materials and subcontracts, as applicable, are included and provided that indirect costs, contingencies, and mark-up, as applicable, are allocated.

Bid Documents provided by County should not be included in the EBDs unless needed to comply with the above requirements.

Submittal

The EBDs must be submitted by the successful bidder in a sealed lockable container within ten (10) business days of the date of the Notice of Award of the Contract letter. The container must be clearly marked on the outside with the Bidder's name, date of submittal, project name, Contract No., and the words "Escrow Bid Documents".

The EBDs must be accompanied by the "Bid Documentation Certification", signed by an individual authorized by the Bidder to execute the bid, stating that the material in the Escrow Bid Documentation constitutes all the documentary information used in the preparation of the bid and that he or she has personally examined the contents of the EBDs container and has found that the documents in the container are complete.

"Escrow Bid Document Certification"

THE UNDERSIGNED HEREBY CERTIFIES THAT THE BID DOCUMENTATION CONTAINED HEREIN CONSTITUTES ALL THE INFORMATION USED IN PREPARATION OF THE BID AND THAT I HAVE PERSONALLY EXAMINED THESE CONTENTS AND HAVE FOUND THAT THIS BID DOCUMENTATION IS COMPLETE.

SIGNATURE:

NAME:

(Print)

TITLE:

FIRM:

DATE:

Prior to execution of the Contract by County, the EBDs of the successful bidder will be examined, organized and inventoried by representatives of County, together with members of your staff who are knowledgeable in how the bid was prepared. This examination is to ensure that the EBDs are authentic, legible, and complete. It will not include review of and will not constitute approval of proposed construction methods, estimating assumptions, or interpretations of the Contract Documents. Examination will not alter any condition(s) or term(s) of the Contract.

If all documentation required in the "Format and Contents" has not been included in the original submittal, additional documentation must be submitted, at County's discretion, prior to execution of the Contract by County. The detailed breakdown of estimated costs must be reconciled and revised, if appropriate, by agreement between you and County before execution of the Contract by County.

Failure of the successful bidder to furnish the EBDs in accordance with section 3-1.13 constitutes a failure to execute and return the Contract as required resulting in forfeiture of Bidder's security. County will then recommend that the Board of Supervisors award the Contract to the second lowest bidder, who must comply with the EBDs provisions herein.

If the Bidder's Proposal is based on subcontracting any part of the Work, each Subcontractor whose total subcontract price exceeds five percent of the total contract price proposed by the bidder, must provide separate EBDs to be included with those of the Bidder. These documents will be opened and examined in the same manner and at the same time as the examination described above for the apparent successful Bidder.

If you wish to subcontract any portion of the Work after award, County retains the right to require you to submit EBDs from the Subcontractor for subcontracts that exceed 5% of the total contract amount before the subcontract is approved.

Storage

The EBDs will be stored with the Office Engineer at 2850 Fairlane Court, Placerville, CA. in the lockable container. You must provide the lockable container and you must maintain possession of the key.

Examination

The EBDs must be examined by both you and County, at any time deemed necessary by either you or County, to assist in the negotiation of price adjustments and change orders, or the settlement of disputes.

Examination of the EBDs is subject to the following conditions:

- a. As trade secrets, the EBDs are proprietary and confidential as described above.
- b. You and County must each designate, in writing to the other party a minimum of ten calendar days prior to examination, representatives who are authorized to examine the EBDs. No other person will have access to the EBDs.
- c. Access to the EBDs will take place only in the presence of duly designated representatives of both you and County.

Final Disposition

County will return the EBDs and the lockable container to you when the Contract has been completed and final settlement has been achieved.

Delete section 5-1.09.

Replace the 6th paragraph of section 5-1.13A with:

Each subcontract must include the provisions of this contract and each subcontractor must comply with the applicable terms and conditions of this contract.

Replace the 7th paragraph of section 5-1.13A with:

The Department encourages you to and, for USDOT federal-aid assisted projects, you must include a dispute resolution process in each subcontract.

Replace section 5-1.13C “Disabled Veterans Business Enterprise” with:

5-1.13C RESERVED

Replace section 5-1.13D “Non-Small Business” with:

5-1.13D RESERVED

Add to section 5-1.20A:

During the progress of the work under this Contract, work under the following contracts may be in progress at or near the job site of this Contract:

Coincident or Adjacent Contracts

Contract no.	County–Route–Post Mile	Contractor	Type of work
PW 12-30639	ED-50-PM 1	DeSilva Gates	Ramp Improvements

Add to section 5-1.20B(1):

The Department has obtained and included in Appendix B:

1. U.S. Army Corps of Engineers, Letter of Permission (LOP) Regulatory Division (SPK-2005-00070), December 28, 2012.
2. Central Valley Regional Water Quality Control Board Clean Water Act 401 Technically Conditioned Water Quality Certification (WDID#5B09CR00018), June 29, 2012
3. Department of Fish and Game, Final Lake or Streambed Alteration Agreement (Notification No. 1600-2012-0026-R2), July 9, 2012
4. U.S. Fish & Wildlife Service - Informal Endangered Species Act Consultation (SPK-2005-00070), August 7, 2012
5. Historic Properties Treatment Plan, November 28, 2012
6. State of California Encroachment Permit

Replace item 2 of the 1st paragraph section 5-1.20B(4):

2. Request, execute, and submit Department-supplied *Release from Liability* form.

Add to the 1st paragraph of section 5-1.20B(4):

3. Obtain authorization to start.

Add section 5-1.20B(5):

The Department has obtained easements from:

Parcel #	APN	Property Owner	Description
1	122-720-09-100	E.D. Hills 52 Partners	Slope & Drainage Easement
1A	122-720-09-100	Douglas Grant Line, Associates, et al	Utility Easement
4	122-720-05-100	Presbytery of Sacramento	Temporary Construction Easement Slope & Drainage Easement Utility Easement
5	122-720-06	Ruminson-Grado	Temporary Construction Easement
6	122-720-07	Hardy Trust / Bricolla	Temporary Construction Easement
9	121-280-01	E.D. Hills Investors LTD	Utility Easement
10	118-170-01	E.D. Hills Investors LTD	Utility Easement
11	118-170-04-100	Huddinge Partners	Temporary Construction Easement Slope & Drainage Easement Utility Easement
12	121-280-12-100	Huddinge Partners	Temporary Construction Easement Slope & Drainage Easement
15	121-160-03	Serrano Associates, LLC	Utility Easement
16	121-120-22	Serrano Associates, LLC	Utility Easement
19	118-170-02-100	Hardy Trust / Bricolla	Utility Easement
20	122-590-01	Serrano Associates, LLC	Slope & Drainage Easement

Replace section 5-1.20D with:

5-1.20D Occupied Improvements within the Right-of-Way

Occupied improvements are within the right-of-way at:

Parcel #	APN	Property Owner	Specific Sheet	Utility Owner	Description
1A	122-720-09-100	Douglas Grant Line, Associates, et al	U-5	PG&E	PG&E overhead lines and poles to be relocated by others
4	122-720-05-100	Presbytery of Sacramento	U-4, U-11	AT&T, PG&E & Presbytery of Sacramento	Sewer Leach Field to be relocated by others, PG&E & AT&T overhead lines and poles to be relocated by others
5	122-720-06	Ruminson-Grado	U-11	AT&T	AT&T overhead lines and poles to be installed by others
6	122-720-07	Hardy	U-11	AT&T	AT&T overhead lines and poles to be installed by others
9	121-280-01	E.D. Hills Investors LTD	U-3	PG&E	PG&E overhead lines and poles to be relocated by others
10	118-170-01	E.D. Hills Investors LTD	U-3	PG&E	PG&E overhead lines and poles to be relocated by others.
12	121-280-12-100	Huddinge Partners	U-8	PG&E	PG&E overhead lines and poles to be relocated by others.
19	118-170-02-100	Hardy	U-5, U-6	PG&E	PG&E overhead lines and poles to be relocated by others.
20	122-590-01	Serrano Associates, LLC	U-11	PG&E & AT&T	PG&E overhead lines and poles to be relocated by others. AT&T overhead lines and poles to be installed by others
--	--	El Dorado County Roadway Right of Way	U-3, U-4, U-6, U-7, U-8, U-10, U-11, U-12	PG&E & AT&T	PG&E overhead lines and poles and underground conduit and boxes to be relocated by others. AT&T overhead lines and poles and underground conduit and boxes to be relocated by others.

These improvements will be vacated and removed by September, 2013.

Do not take any action that will result in unnecessary inconvenience or disproportionate injury to or that is coercive in nature to the occupants of the improvements.

Replace section 5-1.20E with:

5-1.20E COORDINATION WITH PROPERTY OWNERS

You must make every effort to communicate with adjacent property owners and tenants to inform them of required access for construction operations, and must give forty-eight (48) hours notice to the property owners and tenants when work is to be performed on their property.

Access to adjacent businesses must be maintained so that the businesses will remain open during all normal business hours. Provide continuous access to residential structures.

You have the use of the temporary construction easements (TCE) for a period not to exceed the duration specified in the following table, beginning with the first entry on the property:

Parcel No.	Duration (Months)	Advance Notice to Resident Engineer (Days)
188-170-04	24	20
121-280-12	24	20
122-720-05	24	20
122-720-06	24	20
122-720-07	24	20

The use of the TCE must not extend beyond the completion of the work within the TCE or easement expiration, whichever is earlier.

Should the actual use of the TCE extend beyond the prescribed period of time, you must notify the Engineer in writing 20 working days before the expiration of the TCE. You must bear all costs incurred by the Department for extension of the TCE.

You must cooperate and coordinate with the property owners; providing notices to property owners and working within the temporary construction easements, including the repair of any damage to the property caused by your operations.

Replace the 3rd paragraph of section 5-1.23A with:

Each sheet of a submittal must include:

1. Contract number and CIP number
2. Project name
3. Caltrans District – County - Route – Post Mile or County Road name
4. Structure name and number, if any

Replace the 7th paragraph of section 5-1.23B(2) with:

Allow 20 days for review.

Replace the 2nd sentence of the 8th paragraph of section 5-1.23B(2) with:

Allow review time specified plus 10 days for each additional set.

Replace the 1st sentence of the 10th paragraph of section 5-1.23B(2) with:

For complete resubmitted drawings, allow 15 days for review.

Replace section 5-1.24 with:

5-1.24 COST PRINCIPLES

Comply with the Federal Acquisition Regulations in Title 48, CFR, Part 31 et seq. as applicable, regarding allowable elements of cost for the Work to be performed under this Contract.

- A. You and your subcontractors must comply with 2 CFR Part 225 (formerly OMBA-87), Cost Principles for State, Local And Indian Tribal Governments; with Federal administrative procedures

pursuant to 49 CFR, Part 18, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments; and with Contract Cost Principles, 48 CFR, Federal Acquisition Regulations System, Chapter 1, Parts 31 et seq., insofar as those regulations may apply. This provision applies to every sub-recipient receiving funds as a Contractor or subcontractor under this Contract.

- B. Any expenditures for costs for which you have received payment or credit that are determined by subsequent audit to be unallowable under 2 CFR Part 225, 48 CFR, Parts 31 et seq. or 49 CFR, Part 18 are subject to repayment to County.
- C. Travel and per diem reimbursements, if applicable, and third-party contract reimbursements to subcontractors will be allowable as project costs only after you incur and pay for those costs.
- D. Notwithstanding any other provision of the Contract Documents to the contrary, payments for mileage, travel or subsistence expenses, if applicable, for your staff or your subcontractors claimed for reimbursement must not exceed the lesser of (1) the rates to be paid to County employees under the current Board of Supervisors Travel Policy in effect at the time the expenses are incurred; or (2) the rates authorized to be paid to rank and file State employees under current State Department of Personnel Administration (DPA) rules. If the rates claimed are in excess of those authorized DPA rates, you are responsible for the cost difference, and you must reimburse County for any overpayments inadvertently within thirty (30) days of County's demand.
- E. You and your subcontractors must establish and maintain accounting systems and records that properly accumulate and segregate funds received under this Agreement by line item. Your and your subcontractor's accounting systems must conform to Generally Accepted Accounting Principles (GAAP), must enable the determination of incurred costs at interim points of completion, and must provide support for reimbursement of payment vouchers or invoices.

Replace item 2 of the 2nd paragraph of section 5-1.26 with:

- 2. On a *Request for Construction Staking* form.

Replace section 5-1.27B with:

County's Cooperative Agreement with the State requires records provisions remain in effect until terminated or modified by mutual written agreement. Retain project records, including cost records, until mutually agreed in writing otherwise.

Replace Section 5-1.27C with:

5-1.27C Record Inspection, Copying, and Auditing

Make your records available for inspection, copying, and auditing by FHWA, the United States Department of Transportation, the Comptroller General of the United States, the State, County or their duly authorized representatives for the same time frame specified under section 5-1.27 B. The records of subcontractors and suppliers must be made available for inspection, copying, and auditing by FHWA, the United States Department of Transportation, the Comptroller General of the United States, the State, County or their duly authorized representatives for the same period. Make records available for examination during normal business hours at your principal place of business in California, for audit during normal business hours at this place of business. Provide office space, photocopies and other assistance to enable audit or inspection representatives to conduct these audits or inspections.

Incorporate this provision in any subcontract entered into as a result of this Contract. Require subcontractors to agree to cooperate with the listed agencies by making all appropriate and relevant Project records available to those agencies for audit and copying.

Replace section 5-1.27E with:

5-1.27E Change Order Bills

Maintain separate records for change order work costs. Submit paper copy change order bills.

Replace the 3rd paragraph of section 5-1.32 with:

Defend, indemnify, and hold the County harmless to the same extent as under Article 5 "Indemnity" of the Agreement.

Add to the 3rd paragraph of section 5-1.36D.

Underground Service Alert Phone: 811

El Dorado Irrigation District
Main # 24 hr: (530) 622-4513
Attn: Mike Brink

2890 Mosquito Road
Placerville, CA 95667

Pacific Gas and Electric Company
24 Hr # 1-800-743-5000
Attn: Michael Prangle

4636 Missouri Flat Road
Placerville, CA 95667

AT&T
Attn: Steven Wilson
916-453-6545
281 Industrial Drive
Placerville CA 95667

Add to section 5-1.36D:

The utility owner will relocate a utility shown in the following table before the corresponding date shown:

Replace section 7-1.02C “Emission Reduction” with:

Section 7-1.02C Emission Reduction

Sign the Emissions Reduction Certification in the Article 13 “Emission Reduction” of the Agreement.

Add section 7-1.02D:

7-1.02D REPORTING (49 CFR 18.36 (i) (8) & 49 CFR 18.40)

In order to monitor the progress of projects funded in whole or in part by federal funds, federal agencies rely heavily on inspection data. Inspections by the County will be performed on a regular basis and data compiled in report form, as necessary. Supply reporting information to County when requested.

Incorporate this provision in any subcontract entered into as a result of this contract.

Add section 7-1.02E:

7-1.02E COPYRIGHTS (49 CFR 18.34)

The USDOT reserves a royalty-free, non-exclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for Federal Government proposes:

- a) The copyright in any work developed under a grant, sub-grant, or contract under a grant or subgrant; and
- b) Any rights of copyright to which a grantee, subgrantee or a contractor purchases ownership with grant support.

Incorporate this provision in any subcontract entered into as a result of this contract.

Add section 7-1.02H:

7-1.02H REHABILITATION ACT OF 1973 AND AMERICAN DISABILITIES ACT OF 1990

Comply with:

- (i) Section 504 of the Rehabilitation Act of 1973 (Rehabilitation Act) which prohibits discrimination on the basis of disability in federally assisted programs;
- (ii) (ii) the Americans with Disabilities Act (ADA) of 1990 which prohibits discrimination on the basis of disability irrespective of funding; and
- (iii) (iii) all applicable regulations and guidelines issued pursuant to both the Rehabilitation Act and the ADA.

Incorporate this provision in any subcontract entered into as a result of this contract.

Add to section 7-1.02I(2):

You must comply and must require your subcontractors to comply with the Fair Employment Practices Addendum attached as Exhibit B to the Draft Agreement of these Contract Documents.

Replace item 1 of the 2nd paragraph of section 7-1.02K(2) with:

1. At the County of El Dorado Department of Transportation's principal office, and are available upon request.

Add to section 7-1.02K(2):

Comply with Division 2, Part 7, Chapter 1 of the California Labor Code.

This project is subject to the requirements of Title 8, Chapter 8, Subchapter 4.5 of the California Code of Regulations including the obligation to furnish certified payroll records directly to the Compliance Monitoring Unit under the Labor Commissioner within the Department of Industrial Relations Division of Labor Standards Enforcement in accordance with Section 16461.

Prior to the start of any work, post and maintain the following notice in a conspicuous location on the jobsite:

"This public works project is subject to monitoring and investigative activities by the Compliance Monitoring Unit (CMU) of the Division of Labor Standards Enforcement, Department of Industrial Relations, State of California. This Notice is intended to provide information to all workers employed in the execution of the contract for public work and to all contractors and other persons having access to the job site to enable the CMU to ensure compliance with and enforcement of prevailing wage laws on public works projects.

The prevailing wage laws require that all workers be paid at least the minimum hourly wage as determined by the Director of Industrial Relations for the specific classification (or type of work) performed by workers on the project. These rates are listed on a separate job site posting of minimum prevailing rates required to be maintained by the public entity which awarded the public works contract. Complaints concerning nonpayment of the required minimum wage rates to workers on this project may be filed with the CMU at any office of the Division of Labor Standards Enforcement (DLSE).

Local Office Telephone Number: (916)-263-1811

Complaints should be filed in writing immediately upon discovery of any violations of the prevailing wage laws due to the short period of time following the completion of the project that the CMU may take legal action against those responsible.

Complaints should contain details about the violations alleged (for example, wrong rate paid, not all hours paid, overtime rate not paid for hours worked in excess of 8 per day or 40 per week, etc) as well as the name of the employer, the public entity which awarded the public works contract, and the location and name of the project.

For general information concerning the prevailing wage laws and how to file a complaint concerning any violation of these prevailing wage laws, you may contact any DLSE office. Complaint forms are also available at the Department of Industrial Relations website found at: www.dir.ca.gov/dlse/PublicWorks.html.

Delete paragraphs 5 through 9 of section 7-1.02K(3).

Add to section 7-1.02K(3):

Submit a copy of all payrolls weekly directly to the Compliance Monitoring Unit (CMU) within the Division of Labor Standards Enforcement of the Department of Industrial Relations, State of California. Submit copy of all payrolls within 10 days of any separate request by the CMU.

Add to section 7-1.02K(4):

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

Replace the 1st sentence of the 1st paragraph of section 7-1.02K(6)(b) with:

Comply with OSHA 29 CFR 1926 Subpart P.

Add to section 7-1.02K(6)(b):

7-1.02K(6)(b)(i) Payment

The Department pays for preparing and submitting protection system shop drawings and installing, maintaining, and removing sheeting, shoring and bracing, sloping the sides of excavations, or equivalent method for excavations 5 feet deep and greater. The Engineer has the discretion to reduce payment where the need for excavation protection is indicated on the Plans but not required in the field.

Add section 7-1.02K(6)(e):

7-1.02K(6)(e) Wildlife Safety

Visually check all sections of pipe I construction materials for the presence of wildlife sheltering within them before the pipe sections being placed in the trench and attached together, or shall have the ends capped while stored on site so as to prevent wildlife from entering. After attachment of the pipe sections to one another, whether in the trench or not, at the end of each day during construction, you must ensure that the end of the pipeline is secured so that wildlife are not able to enter the pipeline and/or become trapped within the pipeline.

At the end of each work day, all trenches must be covered to prevent animals from becoming entrapped. If it is not possible to cover the trench at the end of the work day, either 1) Install an exclusion fence surrounding and enclosing the open end(s) of the trench, or 2) shall place an escape ramp at each end of open trench. The ramp must be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees.

Replace section 7-1.02K(6)(j)(iii) with:

7-1.02K(6)(j)(iii) Earth Material Containing Lead

Section 7-1.02K(6)(j)(iii) includes specifications for handling, removing, and disposing of earth material containing lead.

Submit a lead compliance plan.

Lead is present in earth material on the job site. The average lead concentrations are below 1,000 mg/kg total lead and below 5 mg/L soluble lead. Earth material on the job site:

1. Is not a hazardous waste
2. Does not require disposal at a permitted landfill or solid waste disposal facility

Lead is typically found within the top 2 feet of material in unpaved areas of the highway. Reuse all excavated earth material on the right-of-way. Handle earth material containing lead under all applicable laws, rules, and regulations, including those of the following agencies:

1. Cal/OSHA
2. CA RWQCB, Central Valley Region
3. CA Department of Toxic Substances Control

Replace section 7-1.05 “Indemnification” with:

7-1.05 INDEMNIFICATION

Comply with Article 5 “Indemnity” of the Agreement.

Replace section 7-1.06 “Insurance” with:

7-1.06 INSURANCE

7-1.06A GENERAL INSURANCE REQUIREMENTS

County will not execute this contract and you are not entitled to any rights, unless certificates of insurances, or other sufficient proof satisfactory to County of El Dorado Risk Management Division that the following provisions have been complied with, and these certificate(s) are filed with the County.

Without limiting your indemnification required by Article 5 “Indemnity” of the Draft Agreement, you must procure and maintain and must require any of your subcontractors to procure and maintain for the duration of the contract, including the one-year guarantee period, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by you, your agents, representatives, employees or subcontractors. The following policies of insurance must be placed with insurers with a current A.M. Best’s rating of no less than A-:VII. Coverage must be at least as broad as:

Workers’ Compensation as required by law in the State of California, with Statutory Limits, and Employer’s Liability Insurance with a limit of no less than \$1,000,000 per accident for bodily injury or disease.

Commercial General Liability (CGL) Insurance and Umbrella or Excess Liability Insurance: Insurance Services Office (ISO) Form CG 00 01 covering CGL on an “occurrence” basis 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: Premises, operations, and mobile equipment; personal injury, products and completed operations; broad form property damage including completed operations; explosion, collapse, and underground hazards; contractual liability. The limits of liability must 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				
≤ \$10,000,000	\$1,000,000	\$2,000,000	\$2,000,000	\$10,000,000
> \$10,000,000				
≤ \$25,000,000	\$2,000,000	\$2,000,000	\$4,000,000	\$15,000,000
> \$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 applies separately to your work under this contract.
3. The umbrella or excess policy must contain a clause stating that it takes effect (drops down) if the primary limits are impaired or exhausted.

* See exclusion provisions for Small Business subcontractors in Section 7-1.06D(2).

1. Automobile Liability: ISO Form Number CA 00 01 covering any auto (Code 1), or if Contractor has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limit no less than \$1,000,000 per accident for bodily injury and property damage.

2. If you are a licensed professional and are 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).

7-1.06B PROOF OF INSURANCE REQUIREMENTS

Furnish proof of coverage satisfactory to the County of El Dorado Risk Management Division as evidence that the insurance required herein is being maintained. The insurance will be issued by an insurance company acceptable to the Risk Management Division, or be provided through partial or total self-insurance likewise acceptable to the Risk Management Division. Self-insurance programs and self-insured retentions in insurance policies are subject to separate annual review and approval by the County and the State of California.

If you use a self-insurance program or self-insured retention, you must provide the County and the State of California with the same protection from liability and defense of suits as would be afforded by first-dollar insurance. Execution of the contract is your acknowledgement that you will be bound by all laws as if you were an insurer as defined under Insurance Code Section 23 and that the self-insurance program or self-insured retention will operate as insurance as defined under Insurance Code Section 22.

The County of El Dorado, its officers, officials, employees, and volunteers and the State of California, its officers, directors, agents (excluding agents who are design professionals), employees, and State Contractors doing work within the right-of-way limits, must be named as additional insured under the general liability and excess liability policies with respect to liability arising out of or connected with work or operations performed by or on your behalf under this Contract. Coverage for such additional insured does not extend to liability:

- a) Arising from any defective or substandard condition of the roadway which existed at or before the time you started work, unless such condition has been changed by the work or scope of the work requires you to maintain existing roadway facilities and the claim arises from failure to maintain;
- b) For claims occurring after the work is completed and accepted unless these claims are directly related to alleged acts or omissions of you that occurred during the course of the work; or
- c) To the extent prohibited by Insurance Code Section 11580.04

Proof that the County and the State are named additional insureds must be made as follows: by providing to the County's Risk Management Division and separately to the State, with a certified copy, or other acceptable evidence, of an endorsement to your insurance policy naming the County and the State of California additional insureds. Additional insured coverage for the County and the State of California must 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 County or State of California. Deliver this form to the County with the executed contract, bonds, and associated documents, and separately to the State, before issuance of the State's Encroachment Permit to you.

If you cannot provide an occurrence policy, 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.

Any deductibles or self-insured retentions must be declared to and approved by the County. At the option of the County, either: the insurer must reduce or eliminate such deductibles or self-insured retentions as respects the County, its officers, officials, employees and volunteers; or you must procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

You must require each of your subcontractors to procure and maintain commercial general liability insurance, umbrella or excess liability insurance, workers' compensation insurance and automobile liability insurance of the types and in the amounts specified above, or you must insure the activities of your subcontractors in your policy in like amounts. For each subcontractor, the "Total Bid" in the Table above will be interpreted as the total amount of work subcontracted to the subcontractor. You must also require each of your subcontractors to name you and the County of El Dorado and any other additional insured listed above as additional insureds. You must 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" will be interpreted as the amount of subcontracted work to a certified Small Business.

7-1.06C INSURANCE NOTIFICATION REQUIREMENTS

You agree no cancellation or material change in any policy will become effective except upon prior written notice to Office Engineer.

You agree that the insurance required herein will 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, you must immediately provide a new certificate of insurance as evidence of the required insurance coverage. If you fail 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 Risk Management Division.

7-1.06D ADDITIONAL STANDARDS

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

You must maintain completed operations coverage with a carrier acceptable to the County and State of California through the expiration of the patent deficiency in construction statute of repose set forth in Code of Civil Procedure Section 337.1.

7-1.06E COMMENCEMENT OF PERFORMANCE

You must not commence performance of this contract unless and until compliance with every requirement of the insurance provisions is achieved.

7-1.06F MATERIAL BREACH

Failure to maintain the insurance required herein, or to comply with any of the requirements of the insurance provisions, constitutes a material breach of the entire contract.

7-1.06G REPORTING PROVISIONS

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

7-1.06H PRIMARY COVERAGE

Your insurance coverage must be primary insurance as respects the County, its officers, officials, employees and volunteers and the State of California. Any insurance or self-insurance maintained by the County, its officers, officials, employees, volunteers or State of California, must be in excess of the your insurance and will not contribute with it.

7-1.06I PREMIUM PAYMENTS

The insurance companies will have no recourse against the County of El Dorado its officers, agents, employees, or any of them for payment of any premiums or assessments under any policy issued by any insurance company.

7-1.06J CONTRACTOR'S OBLIGATIONS

Your indemnity and other obligations must not be limited by the insurance required herein and must survive the expiration of this contract.

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8 PROSECUTION AND PROGRESS

Replace item 2.1. of the list in the 3rd paragraph of section 8-1.02B(2) with:
Contract number and CIP number

Replace "as" in item 8 of section 8-1.02B(2) with "is".

Replace the 1st paragraph of section 8-1.02C with:
Section 8-1.02C does not apply. Comply with section 8-1.02D except the 1st paragraph.

Delete the revision to the 4th paragraph of section 8-1.02C(1) listed in the RSS 1-18-13.

Delete the revision to the 1st and last paragraphs of section 8-1.02C(3)(a) listed in the RSS 1-18-13.

Delete the revision to section 8-1.02C(3)(b) listed in the RSS 1-18-13.

Delete the revision to the 3rd paragraph of section 8-1.02C(5) listed in the RSS 1-18-13.

Replace section 8-1.02D with:

8-1.02D Level 3 Critical Path Method Schedule

8-1.02D(1) General

8-1.02D(1)(a) Summary

Section 8-1.02D applies to a contract with a total bid over \$5 million and 100 or more original working days. The term "schedule" in this section means critical path method schedule.

8-1.02D(1)(b) Definitions

activity: A task, event or other project element on a schedule that contributes to completing the project. Activities have a description, start date, finish date, duration and one or more logic ties.

baseline schedule: The initial schedule representing your work plan on the first working day of the project.

Contract completion date: The current extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer in conformance with section 8-1.05.

critical path: The longest continuous chain of activities for the project that has the least amount of total float of all chains. In general, a delay on the critical path will extend the scheduled completion date.

Critical Path Method (CMP): A network based planning technique using activity durations and the relationships between activities to mathematically calculate a schedule for the entire project.

cost loading: The inclusion of costs for the performance of an activity as scheduled. The sum of all activity costs must equal the total Contract Price.

data date: The day after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "planned."

early completion time: The difference in time between an early scheduled completion date and the Contract completion date.

float: The difference between the earliest and latest allowable start or finish times for an activity.

milestone: An event activity that has zero duration and is typically used to represent the beginning or end of a certain stage of the project.

narrative report: A document submitted with each schedule that discusses topics related to project progress and scheduling.

near critical path: A chain of activities with total float exceeding that of the critical path but having no more than 20 working days of total float.

scheduled completion date: The planned project finish date shown on the current accepted schedule.

Department owned float activity: The activity documenting time saved on the critical path by actions of the Department. It is the last activity before the scheduled completion date.

time impact analysis: A schedule and narrative report developed specifically to demonstrate what effect a proposed change or delay has on the current scheduled completion date.

total float: The amount of time that an activity or chain of activities can be delayed before extending the scheduled completion date.

update schedule: A current schedule developed from the baseline or subsequent schedule through regular monthly review to incorporate as-built progress.

8-1.02D(1)(c) Submittals

Submit baseline, monthly update, and final update schedules, each consistent with the time and order of work requirements of the Contract. The project work must be executed in the sequence indicated on the current accepted schedule.

Furnish network diagrams, narrative reports, tabular reports and schedule data as parts of each schedule submittal.

8-1.02D(2) Schedule Format

Schedules must show the order in which you propose to carry out the work with logical links between time-scaled work activities, and calculations made using the critical path method to determine the controlling operation or operations. You are responsible for assuring that all activity sequences are logical and that each schedule shows a coordinated plan for complete performance of the work. Assign costs for each of the activities reflected in the CPM schedule. The total cost for all activities must equal the total contract amount.

On each schedule, show:

1. Project characteristics, salient features, or interfaces, including those with outside entities, that could affect time of completion.
2. Project start date, scheduled completion date and other milestones.

3. Work performed by you, your subcontractors and suppliers.
4. Submittal development, delivery, review and approval, including those from you, your subcontractors and suppliers. Schedule updates must reflect all re-submittal activities.
5. Fabrication, procurement, delivery, installation and testing of materials, plants and equipment.
6. Testing, submission and approval of test reports, and settlement periods.
7. Utility notification and relocation.
8. Erection and removal of falsework and shoring.
9. Major traffic stage switches.
10. Finishing roadway and final cleanup.
11. Department-owned float as the predecessor activity to the scheduled completion date.
12. At least 50 but not more than 500 activities unless authorized. The number of activities must be sufficient to assure adequate planning of the project, to permit monitoring and evaluation of progress, and to do an analysis of time impacts. Provide the anticipated resources, substantiation and explanation for specific estimated activity durations.

Schedule activities must include:

1. A clear and legible description.
2. Identifiable start and finish dates.
3. A duration of not less than one working day, except for event activities, and not more than 20 working days, unless authorized.
4. At least one predecessor and one successor activity, except for project start and finish milestones.
5. Required constraints.
6. Codes for responsibility, stage, location (stationing) or area, structure, type of work, and contract pay item numbers.

You may show early completion time on any schedule if you comply with the Contract. Early completion time is a resource for your exclusive use. You may increase early completion time by improving production, reallocating resources to be more efficient, performing sequential activities concurrently, or by completing activities earlier than planned. You may also submit a Value Engineering Change Proposal (VECP) in conformance with section 4-1.07B to reduce construction time.

You may show a scheduled completion date that is later than the Contract completion date on an updated schedule after the baseline schedule is accepted. Provide an explanation for a late scheduled completion date in the narrative report included with the schedule.

Department-owned float must be considered a resource for the exclusive use of the Department. The Engineer may accrue Department-owned float by the early completion of review of any type of required submittal when it saves time on the critical path, or through other action of the Engineer and/or Department. To determine Department-owned float, the Engineer is entitled to the full submittal review times for various submittals and re-submittals. For example, if the Engineer is allowed 30 business days for a particular submittal review and the Engineer completes his review in 20 business days, then 10 days of Department-owned float will accrue. If this same submittal must be submitted again and the Engineer completes his review in 15 business days, then another 15 days of Department-owned float is accrued, for a total of 25 days of Department-owned float. Prepare a time impact analysis to determine the effect of the action in conformance with section 8-1.02D(9). Document Department-owned float by updating the Department -owned float activity on the next update schedule. Include a log of the action on the Department -owned float activity and include a discussion of the action in the narrative report. The Engineer may use Department -owned float to mitigate past, present or future Department delays by offsetting potential time extensions for Contract change orders.

The Engineer may adjust Contract working days for ordered changes that affect the scheduled completion date, in conformance with the section 4-1.05. Prepare a time impact analysis to determine the effect of the change in conformance with the section 8-1.02D(9), and include the impacts acceptable to the Engineer in the next update schedule. Changes that do not affect the controlling operation on the critical path are not considered as the basis for a time adjustment. Time extensions are granted if the total

float is absorbed and the scheduled completion date is delayed one or more working days because of the ordered change and mitigation of the delay is not feasible.

The Engineer's review and acceptance of schedules does not waive the Contract requirements and does not relieve you of obligation or responsibility for submitting complete and accurate information. Schedules that are rejected must be corrected and resubmitted within 5 working days of notification by the Engineer, at which time a new review period of one week will start.

Errors or omissions on schedules does not relieve you from finishing all work within the time limit specified for completion of the Contract. If, after a schedule has been accepted, either you or the Engineer discover that any aspect of the schedule has an error or omission, you must correct it on the next update schedule.

8-1.02D(3) Computer Software

8-1.02D(3)(a) General

Submit a description of proposed software before delivery. The software must be the current version of Primavera for Engineering and Construction, or equal, and must be compatible with the current version of the Microsoft Windows operating system.

Furnish schedule software and all original software instruction manuals to the Engineer with submittal of the baseline schedule. The furnished schedule software must become the property of the Department and will not be returned. The Department will compensate you in conformance with the section 4-1.05 for replacement of software which is damaged, lost or stolen after delivery to the Engineer.

8-1.02D(3)(b) Computer Software Training

You must instruct the Engineer in the use of the software and provide software support until the Contract is accepted. Within 20 working days of Contract approval, provide a commercial 8-hour training session for 3 Department employees in the use of the software at a location acceptable to the Engineer. The Department recommends that you send at least 2 employees to the same training session to facilitate development of similar knowledge and skills in the use of the software. If software other than Primavera P6 is furnished, then the training session must be a total of 16 hours for each Department employee.

8-1.02D(4) Network Diagrams, Reports, and Data

For each schedule, submit:

1. Two sets of originally plotted, time-scaled network diagrams.
2. Two copies of a narrative report.
3. Two copies of each of 3 sorts of the CPM software-generated tabular reports.
4. One data-storage device containing the schedule data.
5. Two copies of cash flow report showing monthly and cumulative expenditures over the contract duration and actual vs. planned cash-flow status.

The time-scaled network diagrams must:

1. Show a continuous flow of information from left to right.
2. Be based on early start and early finish dates of activities.
3. Clearly show the primary paths of criticality using graphical presentation.
4. Be prepared on E-size sheets, 860 by 1120 millimeters (34 by 44 inches).
5. Include a title block and a timeline on each page.

The narrative report must be organized in the following sequence with all applicable documents included:

1. Your transmittal letter.
2. Work completed during the period.

3. Identification of unusual conditions or restrictions regarding labor, equipment or material; including multiple shifts, 6-day work weeks, specified overtime or work at times other than regular days or hours.
4. Description of the longest, critical and near critical paths.
5. A listing and explanation of all changes to the critical path and scheduled completion date since the last schedule submittal.
6. A listing and explanation of all changes for work activities completed or in progress since the last schedule submittal.
7. Description of problem areas and any activity impacts during the update period.
8. All current and anticipated longest path, critical, and near-critical path delays, including:
 - 8.1. Cause of delay
 - 8.2. Party Responsible for the delay
 - 8.3. Impact of delay on other activities, milestones and completion dates
 - 8.4. Corrective action and schedule adjustments taken or proposed to correct the delay
9. Pending items and status thereof:
 - 9.1. Permits
 - 9.2. Change orders
 - 9.3. Time adjustments
 - 9.4. Non-compliance notices
10. Reasons for an early or late scheduled completion date in comparison to the Contract completion date.

Tabular reports must be software-generated and provide information for each activity included in the project schedule. Three different reports shall be sorted by (1) activity number, (2) early start and (3) total float. Tabular reports must be 8-1/2 by 11 inches in size and must include the following applicable information:

1. Data date
2. Activity number and description
3. Predecessor and successor activity numbers and descriptions
4. Activity codes
5. Original, actual, and remaining durations (work days) for each activity
6. Earliest start (calendar) date
7. Earliest finish (calendar) date
8. Actual start (calendar) date
9. Actual finish (calendar) date
10. Latest start (calendar) date
11. Latest finish (calendar) date
12. Free float (work days)
13. Total float (work days)
14. Percentage of activity complete and remaining duration for incomplete activities
15. Lags
16. Required constraints

Schedule submittals will only be considered complete when all documents and data have been provided as described above.

8-1.02D(5) Preconstruction Scheduling Conference

Hold a preconstruction scheduling conference with your project manager and the Engineer within 5 working days after Contract approval. The Engineer conducts the conference and reviews section 8-1.02D with you.

Submit a general time-scaled logic diagram displaying the major activities and sequence of planned operations and be prepared to discuss the proposed work plan and schedule methodology during the preconstruction scheduling conference.

If you propose deviations to the construction staging of the project, then the general time-scaled logic diagram must show the deviations and resulting time impacts. Be prepared to discuss the proposal.

At this conference, submit the alphanumeric coding structure and activity identification system for labeling work activities.

To easily identify relationships, each activity description must indicate its associated scope or location of work by including such terms as quantity of material, type of work, bridge number, station to station location, side of highway (such as left, right, northbound, or southbound), lane number, shoulder, ramp name, ramp line descriptor, or mainline.

The Engineer reviews the logic diagram, coding structure, and activity identification system and provides any required baseline schedule changes to you for implementation.

8-1.02D(6) Baseline Schedule

Starting the week following the preconstruction scheduling conference, meet with the Engineer weekly to discuss and resolve schedule issues until the baseline schedule is accepted.

Submit a baseline schedule and all support data within 10 working days of Contract approval. Allow 10 working days for the Engineer's review after the submittal.

The baseline schedule submittal is not complete until the computer software is delivered and installed for use.

The baseline schedule must include the entire scope of work and how you plan to complete all work contemplated.

The baseline schedule must show the activities that define the critical path. Multiple critical paths and near-critical paths must be kept to a minimum. A total of not more than 50 percent of the baseline schedule activities must be critical or near critical unless otherwise authorized.

The baseline schedule must be cost loaded. Each activity must reflect a budgeted cost. The total budgeted cost for all activities must equal the total Contract amount.

Show mobilization, field overhead and general conditions, bond and insurance costs in separate activities in compliance with Contract requirements. Other general requirements costs, home office overhead, profit, etc., must be prorated throughout all the activities.

Identify and provide a detailed explanation of included constraints that are not a specific requirement of the Contract. Substantiation must be provided.

Do not extend the baseline schedule beyond the number of working days specified. The baseline schedule must have a data date of the first working day of the Contract and not include any completed work to date. Do not attribute negative float or negative lag to the construction activity in the baseline schedule.

Supplement the baseline schedule with resource allocations and time-scaled resource histogram for every task activity when you submit an early completion baseline schedule that shows Contract completion in less than 90 percent of the working days. The resource allocations must be shown to a level of detail that facilitates report generation based on labor crafts and equipment classes. Use average composite crews to display the labor loading of on-site construction activities. Optimize and level labor to reflect a reasonable plan to complete work and assure that resources are not duplicated in concurrent activities. The time-scaled resource histograms must show labor crafts and equipment classes to be utilized on the Contract. The Engineer reviews the baseline schedule activity resource allocations using Means Productivity Standards or equivalent to determine if the schedule is practicable.

8-1.02D(7) Schedule Revisions

When making changes to the accepted schedule, notify Engineer and request permission, stating the reasons for the change and proposed revisions to activities, logic, and duration. Submit for acceptance an analysis showing the effect of the revisions on the entire project. The analysis must include:

1. An updated schedule not including the revisions. The schedule must have a data date just before implementing the proposed revisions and include a project completion date.
2. A revised schedule that includes the proposed revisions. The schedule must have the same data date as the updated schedule and include a project completion date.
3. A narrative explanation of the revisions and their impact to the schedule.
4. Computer files of the updated and revised schedules.

The Engineer provides a response within 10 work days. Do not revise the accepted baseline schedule without approval.

Submit a proposed revised schedule within 15 working days when:

1. There is a significant change in your operations that will affect the critical path,
2. The current updated schedule indicates that the Contract progress is 20 work days or more behind the planned schedule, or
3. The Engineer determines that an approved or anticipated change will impact the critical path, milestone or completion dates, Contract progress, or work by others.

Allow the Engineer 10 working days to review and accept or reject a schedule revision. Rejected revisions must be revised and resubmitted within 15 working days, at which time a new 15 working day review will start.

8-1.02D(8) Updated Schedule

Submit an updated schedule and meet with the Engineer to review work progress on or before the 1st day of each month, starting 1 month after the baseline schedule is accepted or 1 month after Notice to Proceed.

Allow 10 working days for review after the updated schedule and all support data are submitted. The review period does not start until the previous month's required schedule is accepted.

Updated schedules not accepted or rejected within the review period are accepted.

The updated schedule must:

1. Have a data date of the 21st day of the month or other date established by the Engineer
2. Show the status of work actually completed to date and the work yet to be performed as planned
3. Show actual activity relationships start dates, percent complete, and finish dates
4. Show durations for work that has been completed as the work actually occurred, including the Engineer's review and your resubmittal times

Any Changes to activities or logic after the data date are classified as revisions and are to be addressed

Engineer submittal and re-submittal review activities must reflect the allowable contract duration as the original activity duration. For activities in progress that are forecasted to complete longer than originally planned, the remaining durations must be revised, not the original durations. All out-of-sequence activities must be reviewed and their relationships verified or corrected to reflect actual as-built performance. Each activity must reflect the original budgeted cost, actual cost to date and cost to complete. Contract changes must be reflected as separate activities with budgeted costs equal to the signed change order amount updated to reflect actual cost to date and remaining cost to complete.

8-1.02D(9) Time Impact Analysis

Submit a Time Impact Analysis (TIA) with each request for adjustment of Contract time or whenever you or the Engineer considers that an authorized or anticipated change may impact the critical path or work progress.

The TIA must:

1. Illustrate the impacts of each change or delay on the current scheduled completion date or internal milestone or work sequence.
2. Use the accepted schedule that has a data date closest to and before the event. If the Engineer determines that the accepted schedule used does not appropriately represent the conditions before the event, the accepted schedule must be updated to the day before the event being analyzed.
3. Include an impact schedule developed from incorporating the event into the accepted schedule by adding or deleting activities or by changing durations or logic of existing activities. If the impact schedule shows that incorporating the event modifies the critical path and scheduled completion date of the accepted schedule, the difference between scheduled completion dates of the 2 schedules must be equal to the adjustment of Contract time.

The Engineer may construct and use an appropriate project schedule or other recognized method to determine adjustments in Contract time until you submit the TIA.

Submit 2 copies of TIA within 15 working days of experiencing a change or delay which impacts the critical path, interim milestone dates or project completion date.

Allow the Engineer 10 working days after receipt to review and approve or reject the submitted TIA. Authorized TIA schedule changes must be shown on the next updated schedule.

If a TIA you submit is rejected, meet with the Engineer to discuss and resolve issues related to the TIA. If agreement is not reached, you are allowed 15 days from the date you meet with the Engineer to submit an *Initial Potential Claim Record*.

Show only actual as-built work, not unauthorized changes related to the TIA, in subsequent updated schedules.

If agreement is reached at a later date, the authorized TIA schedule changes must be shown on the next updated schedule.

The Department withholds remaining payment on the progress schedule (critical path method) bid item if a TIA is requested and not submitted within 15 working days.

The Department returns the withhold in the next progress payment after the submittal of the requested TIA. No other Contract payment is withhold regarding TIA submittals.

8-1.02D(10) Final Updated Schedule

Submit a final updated as-built schedule with actual schedule logic, start and finish dates for the activities within 30 days after work completion.

Submit a written certificate with this submittal signed by your project manager or an officer of the company stating:

"To my knowledge and belief, the enclosed final updated schedule reflects the actual schedule logic relationships, actual start and finish dates of the actual activities for the project contained herein."

An officer of the company may delegate in writing the authority to sign the certificate to a responsible manager.

8-1.02D(11) Payment

The Department withholds an amount equal to 25 percent of the estimated value of the work performed during each estimate period in which you fail to submit the schedule. Withhold schedule is released for payment on the next monthly estimate for partial payment following the date that acceptable schedules are submitted. Upon completion of all contract work and submittal of the final update schedule and certification, the remaining withhold funds associated with this section will be released for payment. No interest is due to you on withholding amounts.

The Department pays you for progress schedule (critical path method) as follows:

1. A total of 25 percent of the item total is paid upon:
 - 1.1. Completion of 5 percent of all work
 - 1.2. Acceptance of schedules and authorization of TIAs required when 5 percent of all work is complete
 - 1.3. Submittal of schedule software
 - 1.4. Completion of required schedule-software training
2. A total of 50 percent of the item total is paid upon completion of 25 percent of all work and acceptance of schedules and authorization of TIAs required when 25 percent of all work is complete
3. A total of 75 percent of the item total is paid upon completion of 50 percent of all work and acceptance of schedules and authorization of TIAs required when 50 percent of all work is complete
4. A total of 100 percent of the item total is paid upon completion of all work, acceptance of schedules and authorization of TIAs required when all work is complete, and submittal of the certified final updated schedule

The Department does not adjust payment for any increased or decreased work ordered in submitting schedules.

Replace the 1st and last sentences of the 1st paragraph of section 8-1.03 with:

At the Construction Division Office, 2441 Headington Road, Placerville attend a pre-construction conference with key personnel, including all major superintendents for the work and major subcontractors. The pre-construction conference will be scheduled after the project is awarded and prior to the issuance of the Notice to Proceed. At this conference, submit in writing, signed by the officers of the corporation, if applicable, the names of two employees who will be the superintendents on the project. The second name serves as an alternate in the absence of the first designee. The superintendent must be on the site at all times that work is in progress.

Any work performed in advance of the date stated in the Notice to Proceed is at your risk and as a volunteer. Submit a completed Subcontracting Request form, Exhibit 16-B of the Caltrans Local Assistance Procedures Manual (LAPM), or equivalent and obtain approval before beginning work on a subcontract. Comply with applicable parts of section 5-1.13B(1).

Delete "Partnering" from the table in section 8-1.03.

Add to section 8-1.03.

You must attend weekly meetings to discuss construction issues and scheduling.

Replace section 8-1.04B with:

The contract working days begin on the date stated in the Notice to Proceed.

Do not start job site activities until the Department authorizes or accepts your submittal for:

1. CPM baseline schedule
2. ADMP
3. WPCP or SWPPP, whichever applies
4. Notification DRA or DRB nominee and disclosure statement

If the submittal for Contractor-supplied biologist is authorized, you may enter the job site only to measure controlling field dimensions and locating utilities.

You may enter the job site only to measure controlling field dimensions and locating utilities.

Do not start other job site activities until all the submittals from the above list are authorized or accepted and the following information is received by the Engineer:

1. *Notice of Materials To Be Used.*
2. Contingency plan for reopening closures to public traffic.

The Department grants a time extension if a delay is beyond your control and prevents you from starting work at the job site on the 1st working day.

Replace the 1st paragraph of section 8-1.05 with:

Contract time starts on the day specified in section 8-1.04B.

Contract working hours are between the hours of 7:00 a.m. to 7:00 p.m. unless otherwise approved or dictated by Section 14-8 "Noise and Vibration" or Section 12-4 "Maintaining Traffic".

Add to the end of section 8-1.06 as revised by the RSS:

The Engineer may suspend work do to environmental permit restrictions and/or inclement weather.

During the suspension, the Department pays for winterization costs or costs associated with water pollution control within the County's project area under section 13-2.04 or 13-3.04, as applicable. The Department pays for any other contract work required to be performed within the County's project area during the suspension under the applicable bid item.

Since you are being made aware of this suspension of work prior to bid submittal, the Department does not pay for change order work for direct and indirect costs (including time-related overhead, home office overhead, field office overhead, and mobilization or remobilization) related to this suspension of work.

Replace section 8-1.13 "Contractor's Control Termination" with:

Refer to Article 8 "Termination By County for Convenience" and Article 9 "Termination By County for Cause" of the Agreement.

Replace section 8-1.14 "Contract Termination" with:

Refer to Article 8 "Termination By County for Convenience" and Article 9 "Termination By County for Cause" of the Agreement.

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9 PAYMENT

Add to end of section 9-1.03:

The Department pays 6 percent annual interest for the period of the retention for penalty withholds later determined not owed.

Replace the last paragraph of section 9-1.03 with:

Pay your subcontractors within 10 days of receipt of each progress payment unless otherwise agreed to in writing (Bus & Prof Code § 7108.5). Violation of this section subjects you to the penalties, sanctions and other remedies of Bus and Prof § 7108.5. This section must not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to you in the event of a dispute involving late payment or nonpayment by you, deficient subcontract performance, or noncompliance by a subcontractor.

Delete section 9-1.11.

Add to section 9-1.16C:

The following items are eligible for progress payment even if they are not incorporated into the work:

1. Mechanically stabilized embankment
2. Prestressing steel for cast-in-place members, sealed packages only, and prestressing ducts and anchorages
3. Bar reinforcing steel
4. Headed bar reinforcement
5. Alternative pipe culverts
6. Reinforced concrete pipes
7. Corrugated steel pipes and downdrains
8. Plastic pipe underdrains and outlets
9. Anchor assembly
10. Welded steel pipes and casing
11. Rock slope protection fabric
12. Miscellaneous iron and steel
13. Bridge deck drainage system
14. Fences and Gates
15. Metal beam guard railing and transition railing
16. Railings
17. Pavement markers
18. Lighting Fixtures
19. Luminaires
20. Signal and Lighting Standards
21. Signal Heads and Mounting Brackets
22. Signal Cabinets
23. Twisted Pair Cable
24. Splice Vaults
25. Type B Joint Seals
26. Joint Seal (MR 2")

Replace the last sentence of the 3rd paragraph of section 9-1.16E(2) with:

These amounts are shown on the *Pay Estimate*.

Replace the last sentence of the 1st paragraph of section 9-1.16E(3) with:

The documents include QC plans, schedules, traffic control plans, water pollution control submittals, and dust control submittals.

Add to the 1st paragraph of section 9-1.16E(3):

If you fail to comply with water pollution control or dust control requirements, the Department withholds part of the progress payment.

Replace the 2nd paragraph of section 9-1.16E(4) with:

Stop notice information may be obtained from the Department's Construction Division.

Replace the section 9-1.16F with:

9-1.16F Retentions

9-1.16F(1) General

The Department will retain 5% of the value of each progress payment (excluding mobilization payments) from each progress payment. After the Engineer determines that the project is substantially complete, the Department may, at the Engineer's sole discretion, release half of all retention previously withheld and reduce any subsequent retentions withheld from subsequent progress payments to 2.5% of the value of any subsequent progress payments (excluding mobilization payments). The retained funds will be retained until thirty five (35) days after recordation of the Notice of Acceptance. (Pub Cont Code §9203)

You 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 (Pub Cont Code 22300). Securities eligible for deposit hereunder are limited to those listed in Section 16430 of the Government Code, or bank or savings and loan certificates of deposit.

Funds retained 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 do not include funds withheld or deducted from payment due to your failure to fulfill a contract requirement.

9-1.16F(2) Prompt Payment of Retained Funds to Subcontractors

Section 9-1.16F(1) describes retainage and release of retainage to you. You and/or your subcontractor must return all monies withheld in retention from subcontractors within 30 days after receiving payment of retainage. Violation of this section subjects you to the penalties, sanctions, and other remedies of Bus & Prof Code § 7108.5. This section must not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to you in the event of a dispute involving late payment or nonpayment by you, deficient subcontract performance, or noncompliance by a subcontractor.

Replace section 9-1.22 "Arbitration" with:

9-1.22 DISPUTES RESOLUTION

As permitted by Public Contract Code section 20104, the County has elected to resolve any claims between you and the County pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2 of the Public Contract Code. Sections 5-1.43 and 9-1.17 describe the contract claim procedure. The provisions of these sections constitute a non-judicial claim settlement procedure, and also step one of a two-step claim presentment procedure by agreement under Section 930.2 of the California Government Code. Specifically, step one is compliance with the contract claim procedure in accordance with the Contract Documents, including sections 5-1.43 and 9-1.17. Step two is the filing of a timely Government Code Section 910 et seq. claim in accordance with the California Government Code. Any such claim shall affirmatively indicate your prior compliance with the contract claim procedure and previous dispositions under sections 5-1.43 and 9-1.17. Any claim that fails to conform to the contract

DIVISION II GENERAL CONSTRUCTION

10 GENERAL

Add to section 10-1.02 of the RSS for section 10-1:

Do not place the uppermost layer of new pavement until all underlying conduits and loop detectors have been installed. The loop detectors must not be cut into uppermost layer of new pavement, and they must not be installed in or on the base layer. However, the preformed loop detectors must be cut into existing layer before the grinding, and may be installed in the base layer.

Before starting the traffic signal functional test at any location, all items of work related to signal control must be completed and all roadside signs, pavement delineation, and pavement markings must be in place at that location.

Construction of the new structural section adjacent to the existing traveled way must be performed in successive and once all operations are under way concurrent operations of excavating, preparing subgrade, placing base materials, and paving. Excavation within 8 feet of the existing traveled way must not precede the paving operation by more than 10 working days unless:

1. Authorized
2. Material is placed and compacted against the vertical cuts within 8 feet of the existing traveled way. During excavation operations, native material may be used for this purpose except once the placing of the structural section starts, structural material must be used. Place the material up to the top of the existing pavement and taper at a slope of 4:1 (horizontal:vertical) or flatter to the bottom of the excavation. Do not use treated base for the taper.

During construction maintain adequate drainage such that pre-construction drainage patterns are not compromised. The Engineer determines pre-construction drainage patterns.

You must notify the Engineer at least 14 days in advance before commencing the Clearing and Grubbing activities.

You must schedule fence removal operations with the installation of temporary or permanent fence to provide positive access control during non-working hours.

Roadway excavation for new pavement structural section within an existing roadway shoulder or the removal of any existing bridge concrete barrier, where any existing communication system, ramp metering system, changeable message sign system, or closed circuit television system is shown on the plans to be maintained, must not be performed until all temporary system elements have been completed, tested and fully operational. Splicing operations from the existing communication system to temporary or new communication system must not commence until the temporary or new communication system has been successfully tested and the start of splicing operations approved by the Engineer in writing.

You must thoroughly coordinate your Stage 1 and Stage 2 work operations with other Contractors working in the same general area as provided in Section 5-1.20, in connection with traffic shifts, temporary or permanent lane striping, opening of new lanes, closing of ramps, lanes or local roads, and during any other operation that may affect or be influenced by adjacent projects.

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

All erosion control measures must be initiated before all storm events (more than a 30% chance of rain). Revegetation, restoration and erosion control work is not confined to this work period. Monitor the National Oceanic and Atmospheric Administration (NOAA) 72-hr forecast for the project area. Weather forecasts must be documented upon request by the Department.

After any storm event, inspect all sites scheduled to begin or continue construction within the next 72 hours. Corrective action for erosion and sedimentation must be taken as needed. National Weather Service 72 hour weather forecasts must be reviewed before the start of any phase of the project that may result in sediment runoff to the stream, and construction plans adjusted to meet this requirement. The National Weather Service forecast can be found at: <http://www.nws.noaa.gov>

Schedule in-stream work to occur during periods of low flow and low precipitation (less than 1/4" per 24 hour period).

Notify Engineer 21 days prior to any ground disturbing activities within the Archaeological Monitoring Areas.

Before beginning work, the boundaries of the Environmentally Sensitive Areas (ESA) must be clearly delineated in the field. The boundaries must be delineated by the installation of temporary fence (Type ESA).

It is anticipated that PG&E and AT&T will relocate their facilities by April 30, 2013. Though the staging of work shown on the plans anticipates that there should be no conflicting work areas, you must accommodate any relocations still required if utility relocation is delayed and schedule your work as to not interfere with PG&E and AT&T relocation work.

You must notify the Engineer, a minimum of 96 hours before beginning any construction within a temporary construction easement.

The Department anticipates nesting or attempted nesting by migratory and nongame birds from February 1 to August 31. If project activities are scheduled to begin during this time period a survey is required in accordance with current CDFG guidelines. The survey must be conducted before project activities and no more than 30 days before the beginning of project activity. If a nest is discovered project activities are not allowed to take place within 0.25 mile of the nest until the young have fledged or authorization has been obtained from a Qualified Biologist with concurrence from CDFG.

Before initiation of construction or ground-disturbing activities associated with the project, for all project phases, all construction personnel must attend a training session so they are alerted to the possibility of buried cultural resources within the project site. The Contractor and its supervisory staff will be responsible for monitoring the construction project for disturbance of cultural resources. Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during any development activities, work must be suspended and the Department must be notified immediately. Work will be suspended only in the immediate vicinity of the find and not across the entire project. Therefore, work may continue in other parts of the project area while evaluation and any mitigation are conducted at the location of the find.

In accordance with the California Health and Safety Code, if human remains are uncovered during construction at the project site, work within 50 feet of the remains must be suspended immediately, and the Department and the County Coroner must be notified immediately. Construction work in the vicinity of the burials will not resume until written authorization from the Engineer is given.

All existing water, recycled water, and sewer facilities within the limits of work must remain in service and active during the contractor's work, except for scheduled tie-ins of the new facilities. All tie-in work must be coordinated with the Engineer and EID at least 2 weeks ahead of the desired tie-in date.

For the tie-in water line work on the Church property on Tong Road, you must notify the Engineer, EID, the Fire Department, and the property owner of the church at least 3 weeks before the desired shut down of water service for the tie-in. All tie-in work at the Church, including the relocation of the pressure reducing station, must be completed within 48 consecutive hours from the start of the outage. All tie-in

Replace section 12-2 with:

12-2 CONSTRUCTION PROJECT FUNDING SIGNS

12-2.01 GENERAL

Section 12-2 includes specifications for installing construction project funding signs.

Details for construction project funding signs are shown.

Keep construction project funding signs clean and in good repair at all times.

12-2.02 MATERIALS

Construction project funding signs must be wood post signs complying with section 56-4.

Sign panels for construction project funding signs must be framed, single sheet aluminum panels complying with section 56-2.

The background on construction project funding signs must be Type II retroreflective sheeting on the Authorized Material List for signing and delineation materials.

The legend must be retroreflective, except for nonreflective black letters and numerals. The colors blue and orange must comply with PR Color no. 3 and no. 6, respectively, as specified in the Federal Highway Administration's *Color Tolerance Chart*.

The legend for the type of project on construction project funding signs must read as follows:

HIGHWAY CONSTRUCTION

The legend for the types of funding on construction project funding signs must read as follows and in the following order:

STATE HIGHWAY FUNDS

EL DORADO COUNTY TRANSPORTATION FUNDS

The Engineer will provide the year of completion for the legend on construction project funding signs. Furnish and install a sign overlay for the year of completion within 10 working days of notification.

The size of the legend on construction project funding signs must be as described. Do not add any additional information unless authorized.

12-2.03 CONSTRUCTION

Install 2 Type 1 construction project funding signs at the locations designated by the Engineer before starting major work activities visible to highway users.

When authorized, remove and dispose of construction project funding signs upon completion of the project.

12-2.04 PAYMENT

Not Used

Replace Item 1.3 of the 1st paragraph of section 12-3.01A(3) with:

Contract number, CIP number, Caltrans district, county, route and post mile of project limits or County Road name.

Replace section 12-3.12A(2) with:

Section 12-3.12A(2) Definitions

Sign working day (SWD): unit of measure for payment for Portable Changeable Message Sign – per sign per each day used.

Replace section 12-3.12A(3) with:

12-3.12A(3) Submittals

Upon notification, submit a certificate of compliance for each portable changeable message sign.

Add section 12-3.12A(4):

12-3.12A(4) Quality Control and Assurance

Comply with the manufacturer's operating instructions for the portable changeable message sign.

Approaching drivers must be able to read the entire message at least 2 times before passing the portable changeable message sign at the posted speed limit. Use more than 1 portable changeable message sign to comply with this requirement if necessary.

Add to section 12-3.12C:

Place and operate portable changeable message signs (PCMS) at least one week before closures, but no sooner than 15 days before the closure. Notify the Engineer at least 2 business days before installing the PCMS. The Engineer determines the exact placement location for PCMS for ramp closures.

Place the portable changeable message sign in advance of the 1st warning sign for each:

1. Stationary lane closure
2. Ramp closure
3. Shoulder closure
4. Freeway closure

For 5 days, starting on the day of signal activation, place 1 portable changeable message sign in each direction of travel and display the following message: "SIGNAL AHEAD -- PREPARE TO STOP."

Replace section 12-3.12D with:

Portable changeable message sign is measured in sign working days (SWD). Portable changeable message signs at the project site but not in use will not be paid for.

Replace section 12-3.13 with:

12-3.13 IMPACT ATTENUATOR VEHICLE

12-3.13A General

12-3.13A(1) Summary

Section 12-3.13 includes specifications for protecting traffic and workers with an impact attenuator vehicle during moving lane closures and when placing and removing components of stationary lane closures, ramp closures, shoulder closures, or a combination.

Do not use an impact attenuator vehicle to place, remove, or place and remove components of a stationary traffic control system on US 50 and 2-lane, 2-way roadways where the useable shoulder width is less than 10 feet.

Impact attenuator vehicles must comply with the following test levels under National Cooperative Highway Research Program 350:

1. Test level 3 if the preconstruction posted speed limit is 50 mph or more
2. Test levels 2 or 3 if the preconstruction posted speed limit is 45 mph or less

Comply with the attenuator manufacturer's instructions for:

1. Support truck
2. Trailer-mounted operation
3. Truck-mounted operation

Flashing arrow signs must comply with section 12-3.03. You may use a portable changeable message sign instead of a flashing arrow sign. If a portable changeable message sign is used as a flashing arrow sign, it must comply with section 6F.56 "Arrow Panels" of the *California MUTCD*.

12-3.13A(2) Definitions

impact attenuator vehicle: A support truck that is towing a deployed attenuator mounted to a trailer or a support truck with a deployed attenuator that is mounted to the support truck.

12-3.13A(3) Submittals

Upon request, submit a certificate of compliance for each attenuator used on the project.

12-3.13A(4) Quality Control and Assurance

Do not start impact attenuator vehicle activities until authorized.

Before starting impact attenuator vehicle activities, conduct a preinstallation meeting with the Engineer, subcontractors, and other parties involved with traffic control to discuss the operation of the impact attenuator vehicle during moving lane closures and when placing and removing components of stationary traffic control systems.

Schedule the location, time, and date for the preinstallation meeting with all participants. Furnish the facility for the preinstallation meeting within 5 miles of the job site or at another location if authorized.

12-3.13B Materials

Attenuators must be a brand on the Authorized Material List for highway safety features.

The combined weight of the support truck and the attenuator must be at least 19,800 pounds, except the weight of the support truck must not be less than 16,100 or greater than 26,400 pounds.

For the Trinity MPS-350 truck-mounted attenuator, the support truck must not have a fuel tank mounted underneath within 10'-6" of the rear of the support truck.

Each impact attenuator vehicle must have:

1. Legal brake lights, taillights, sidelights, and turn signals
2. Inverted "V" chevron pattern placed across the entire rear of the attenuator composed of alternating 4-inch wide nonreflective black stripes and 4-inch wide yellow retroreflective stripes sloping at 45 degrees
3. Type II flashing arrow sign
4. Flashing or rotating amber light
5. Operable 2-way communication system for maintaining contact with workers

12-3.13C Construction

Except where prohibited, use an impact attenuator vehicle:

1. To follow behind equipment and workers who are placing and removing components of a stationary lane closure, ramp closure, shoulder closure, or any combination. Operate the flashing arrow sign in

the arrow or caution mode during this activity, whichever applies. Follow at a distance that prevents intrusion into the workspace from passing traffic.

2. As a shadow vehicle in a moving lane closure.

After placing components of a stationary traffic control system you may place the impact attenuator vehicle in advance of the work area or at another authorized location to protect traffic and workers.

Secure objects, including equipment, tools, and ballast on impact attenuator vehicles to prevent loosening upon impact by an errant vehicle.

Do not use a damaged attenuator in the work. Replace any attenuator damaged from an impact during work activities at your expense.

12-3.13D Payment

Not Used

Replace the last sentence of the 10th paragraph of section 12-4.02A with:

Falsework removal includes lowering the falsework, turning screws on screw jacks, and removing wedges.

Add to section 12-4.02A:

If work including installing, maintaining, and removing Type K temporary railing is to be performed within 6 feet of the adjacent traffic lane, close the adjacent traffic lane.

Except as listed above, closure of the adjacent traffic lane is not required for installing, maintaining, and removing traffic control devices.

For grinding and grooving operations, sawcutting concrete slabs, and installing loop detectors with an impact attenuator vehicle as a shadow vehicle, closure of the adjacent traffic lane is not required.

Designated holidays are as shown in the following table:

Designated Holidays

Holiday	Date observed
New Year's Day	January 1st
Washington's Birthday	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4th
Labor Day	1st Monday in September
Veterans Day	November 11th
Thanksgiving Day	4th Thursday in November
Christmas Day	December 25th

If a designated holiday falls on a Sunday, the following Monday is a designated holiday. If November 11th falls on a Saturday, the preceding Friday is a designated holiday.

Special days are:

- Niello Concours At Serrano, October 6, 2013 & October 5, 2014
- Clarksville Days, May 4, 2013 & May 3, 2014

On 2-lane, 2-way roadways, under a 1-way reversing traffic control operation, traffic may be stopped in 1 direction for periods not to exceed 10 minutes. After each stoppage, all accumulated traffic for that direction must pass through the work zone before another stoppage is made.

The maximum length of a single stationary lane closure is 0.5 mile.

Not more than 2 stationary lane closures will be allowed in each direction of travel at one time. Freeway closure charts are for the erection and removal of falsework, blasting operations, and other authorized work.

On US 50 during blasting operations, the highway may be closed and traffic stopped for periods not to exceed 2 hours. Should a misfire occur, additional time will be allowed for a licensed blaster to safely detect and clear any misfired charges.

You must notify the Engineer and CHP at least 15 working days prior to any traffic control operations required for blasting. You must present to the Engineer a traffic control plan in which you detail the sequence of blasting operations and the coordination with reopening of lanes to public traffic, as specified herein.

You must coordinate ramp closures and CHP controlled traffic breaks in order to minimize inconvenience to public traffic. During blasting operations, ramp closures and traffic-breaks must be performed simultaneously on both sides of Route 50.

During blasting operations, you must close on-ramps using one employee at each ramp with the ramp entrance blocked using a pickup truck. The pickup truck must be equipped with rotary warning lights, radio and a cellular phone. On-ramps that will require temporary closures during blasting operations are:

The EB on-ramp from Latrobe Road and the WB on-ramp from Bass Lake Road.

During blasting operations, US50 traffic must not be stopped for periods exceeding 2 hours.

After each blasting operation, you must clean up all debris deposited on the roadway, prior to opening lanes to public traffic.

You are allowed to attempt only one blast per week, on Sunday, during daylight hours, prior to 8:00 a.m.

Personal vehicles of your employees must not be parked on the traveled way or shoulders, including sections closed to traffic.

If work vehicles or equipment are parked within 6 feet of a traffic lane, close the shoulder area as shown.

On 2-lane, 2-way roadways, when work vehicles or equipment are parked within 6 feet of a traffic lane, close the shoulder area with fluorescent orange traffic cones or portable delineators. Place the cones or delineators on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at 25-foot intervals to a point not less than 25 feet past the last vehicle or piece of equipment. Use at least 9 cones or delineators for the taper. Use a W20-1, "Road Work Ahead," W21-5b, "Right/Left Shoulder Closed Ahead," or C24(CA), "Shoulder Work Ahead," sign mounted on a crashworthy, portable sign support with flags. The sign must be placed as ordered by the Engineer and at least 48 by 48 inches in size. If a cone or delineator is displaced or overturned, immediately restore the device to its original position or location.

On multilane roadways, a minimum of 1 paved traffic lane not less than 11 feet wide must be open for use by traffic in each direction of travel. When work requiring reversing control is in progress.

On 2-lane, 2-way roadways, a minimum of 1 paved traffic lane not less than 11 feet wide must be open for use by traffic. When work requiring reversing control is in progress.

At each location where falsework is constructed over a street or route listed, provide openings through the bridge falsework. The type, minimum width, height, and number of openings at each location, and the location and maximum spacing of the falsework lighting, if required for each opening, must comply with the requirements shown in the table. The width of vehicular openings is the clear width between temporary railings or other protective work. The spacing shown in the table for falsework pavement lighting is the maximum distance from center to center, in feet, between fixtures.

Silva Valley Parkway Overcrossing
Bridge No. 25-0127
Over Eastbound US Highway 50

	Number	Width (feet)	Height (feet)
Vehicle openings	<u>1</u>	<u>49</u>	<u>15</u>
	<u>Location</u>		<u>Spacing</u>
Falsework pavement lighting	<u>R and L</u>		<u>30</u>

NOTE:
R = Right side of traffic
L = Left side of traffic
C = Centered overhead

Silva Valley Parkway Overcrossing
Bridge No. 25-0127
Over Westbound US Highway 50

	Number	Width (feet)	Height (feet)
Vehicle openings	<u>1</u>	<u>49</u>	<u>15</u>
	<u>Location</u>		<u>Spacing</u>
Falsework pavement lighting	<u>R and L</u>		<u>30</u>

NOTE:
R = Right side of traffic
L = Left side of traffic
C = Centered overhead

Silva Valley Westbound On-Ramp Undercrossing
Bridge No. 25-0129K
Over Clarksville Road

	Number	Width (feet)	Height (feet)
Vehicle openings	<u>1</u>	<u>28</u>	<u>14.1</u>
	<u>Location</u>		<u>Spacing</u>
Falsework pavement lighting	<u>R and L</u>		<u>30 staggered</u> <u>½ space</u>

NOTE:
R = Right side of traffic
L = Left side of traffic
C = Centered overhead

Silva Valley Eastbound Off-Ramp Undercrossing
Bridge No. 25-0128S
Over Clarksville Road

	<u>Number</u>	<u>Width (feet)</u>	<u>Height (feet)</u>
<u>Vehicle openings</u>	<u>1</u>	<u>28</u>	<u>15</u>
	<u>Location</u>	<u>Spacing</u>	
<u>Falsework pavement lighting</u>	<u>R and L</u>	<u>30 staggered ½ space</u>	

NOTE:

R = Right side of traffic

L = Left side of traffic

C = Centered overhead

The exact location of openings will be determined by the Engineer.

Have the necessary materials and equipment on site to erect or remove the falsework in any 1 span or over any 1 opening before detouring or stopping traffic.

The full width of the traveled way must be open to traffic when construction activities are not actively in progress.

Equipment and materials must not remain in a lane unless the lane is closed to traffic and is used for Contract activities.

If a lane is closed for construction activities and opening the lane becomes necessary for use by traffic, immediately stop active Contract activities and start clearing the lane.

Your vehicles are subject to the provisions under chapter 13, "Vehicular Crossings," of the Vehicle Code.

Do not make lane closures if the atmospheric visibility is less than 1,000 feet.

Add between the 3rd and 4th paragraphs of the RSS for section 12-4.03:

For the following operations, submit the contingency plan and discuss with the Engineer at least 5 business days before starting that operation:

1. Blasting
2. Cold planning HMA for depths of 2 inches or greater
3. HMA paving
4. Bridge Work
5. Placement of bar reinforcing steel or structural members
6. Falsework erection or removal, including adjustments
7. Striping

Replace the 4th paragraph of the RSS for section 12-4.03 with:

Submit any revisions to the contingency plan for an operation at least 5 business days before starting that operation. Do not close any lanes until the contingency plan has been authorized.

Add to section 12-4.03:

For each 10-minute interval or fraction thereof past the time specified to reopen the closure, the Department deducts the amount for damages per interval shown below. Damages are limited to 5 percent of the total bid per occurrence. Damages are not assessed if the Engineer orders the closure to remain in place beyond the scheduled pickup time.

Type of facility	Route / Direction	Period	Damages/interval (\$)
Mainline	<u>50/WB</u>	1st half hour 2nd half hour 2nd hour and beyond	<u>\$1,000</u> / 10 minutes <u>\$1,000</u> / 10 minutes <u>\$1,200</u> / 10 minutes
Mainline	<u>50/EB</u>	1st half hour 2nd half hour 2nd hour and beyond	<u>\$1,000</u> / 10 minutes <u>\$1,000</u> / 10 minutes <u>\$1,200</u> / 10 minutes

Replace "Reserved" in section 12-4.04 with:

Lane Closure Restriction for Designated Holidays and Special Days										
Thu	Fri	Sat	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Sun
x	H xx	xx	xx							
	SD xx									
x	xx	H xx	xx							
		SD xx								
	x	xx	H xx	xx						
			SD xx							
	x	xx	xx	H xx	xxx					
	x	xx	xx	SD xx	xxx					
				x	H xx					
				x	SD xx					
					x	H xx				
						SD xx				
						x	H xx	xx	xx	xx
							SD xx			
Legend:										
	Refer to lane requirement charts									
x	The full width of the traveled way must be open for use by traffic after <u>0600 hours</u> .									
xx	The full width of the traveled way must be open for use by traffic.									
xxx	The full width of the traveled way must be open for use by traffic until <u>2100 hours</u> .									
H	Designated holiday									
SD	Special day									

Replace "Reserved" in section 12-4.05B with:

Chart no. <u>1</u> Freeway Lane Requirements																											
County: <u>ED</u>					Route/Direction: <u>50 / EB</u>										PM: <u>1.02/R2.40</u>												
Closure Limits: <u>PM 1.02/R2.40</u>																											
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>																		<u>1</u>	<u>1</u>	<u>1</u>
Fridays		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>																		<u>2</u>	<u>2</u>	<u>1</u>
Saturdays		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>															<u>2</u>	<u>1</u>	<u>1</u>
Sundays		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>															<u>2</u>	<u>1</u>	<u>1</u>

Legend:

<u>1</u>	Provide at least 1 through freeway lane, not less than 11 feet in width, open in direction of travel
<u>2</u>	Provide at least 2 adjacent through freeway lanes open in direction of travel
	Work allowed within the highway where shoulder or lane closure is not required

REMARKS:

Chart no. <u>2</u> Freeway Lane Requirements																												
County: <u>ED</u>					Route/Direction: <u>50 / WB</u>										PM: <u>1.02/R2.40</u>													
Closure Limits: <u>PM 1.02/R2.40</u>																												
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Mondays through Thursdays		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>																		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
Fridays		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>																		<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>
Saturdays		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>2</u>															<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>
Sundays		<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>															<u>2</u>	<u>2</u>	<u>1</u>	<u>1</u>

Legend:

<u>1</u>	Provide at least 1 through freeway lane, not less than 11 feet in width, open in direction of travel
<u>2</u>	Provide at least 2 adjacent through freeway lanes open in direction of travel
	Work allowed within the highway where shoulder or lane closure is not required

REMARKS:

Replace "Reserved" in section 12-4.05C with:

Chart no. 3 Freeway Lane Requirements																										
County: <u>ED</u>					Route/Direction: <u>50 EB/WB</u>										PM: <u>1.02/R2.40</u>											
Closure Limits: <u>Full closure on US 50 @ PM 1.02/R2.40</u>																										
From hour to hour		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays																										
Fridays																										
Saturdays																										
Sundays									<u>C</u>	<u>C</u>																
Legend:																										
<input type="checkbox"/> C		Freeway may be closed completely																								
<input type="checkbox"/>		No complete freeway closure is allowed																								
REMARKS: <u>See Detour Plans within contract documents.</u>																										
<ul style="list-style-type: none"> • <u>See Lane Closure Restriction for Designated Legal Holidays and Special Days table in section 12-4.04 of these special provisions for additional closure restrictions.</u> • <u>Detour must be in place.</u> • <u>This chart is for blasting operations only.</u> • <u>A contingency for detouring traffic is required when blasting operation exceeds the 2 hour closure, as directed by the Engineer.</u> • <u>California highway patrol (CHP) required during full closure for blasting.</u> 																										

Chart no. 4 Freeway Lane Requirements																									
County: <u>ED</u>					Route/Direction: <u>50 / WB</u>										PM: <u>1.02/R2.40</u>										
Closure Limits: <u>One directional closure on Westbound @ PM 1.02/R2.40</u>																									
From hour to hour																									
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>
Fridays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>
Saturdays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>
Sundays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>

Legend:

C Complete one directional closure allowed

No complete freeway closure is allowed

REMARKS: See Detour Plans within contract documents.

- See Lane Closure Restriction for Designated Legal Holidays and Special Days table in section 12-4.04 of these special provisions for additional closure restrictions.
- Detour must be in place.
- This chart is for falsework erection/removal operations only.

Chart no. 5 Freeway Lane Requirements																									
County: <u>ED</u>					Route/Direction: <u>50 / EB</u>										PM: <u>1.02/R2.40</u>										
Closure Limits: <u>One directional closure on Eastbound @ PM 1.02/R2.40</u>																									
From hour to hour																									
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>
Fridays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>
Saturdays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>
Sundays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>

Legend:

C Complete one directional closure allowed

No complete freeway closure is allowed

REMARKS: See Detour Plans within contract documents.

- See Lane Closure Restriction for Designated Legal Holidays and Special Days table in section 12-4.04 of these special provisions for additional closure restrictions.
- Detour must be in place.
- This chart is for falsework erection/removal operations only.

Replace "Reserved" in section 12-4.05E with:

Chart no. <u>6</u> Complete Ramp Closure Hours																										
County: <u>ED</u>					Route/Direction: <u>50 / EB</u>										PM: <u>1.02/R2.40</u>											
Closure Limits: <u>On-ramp to Eastbound US 50 from Latrobe Rd.</u>																										
From hour to hour																										
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																			<u>C</u>	<u>C</u>	<u>C</u>
Fridays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>	<u>C</u>
Saturdays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																	<u>C</u>	<u>C</u>	<u>C</u>
Sundays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																	<u>C</u>	<u>C</u>	<u>C</u>

Legend:
 C Ramp may be closed completely
 Work allowed within the highway where shoulder or lane closure is not required

REMARKS:

Chart no. <u>7</u> Complete Ramp Closure Hours																										
County: <u>ED</u>					Route/Direction: <u>50 / WB</u>										PM: <u>1.02/R2.40</u>											
Closure Limits: <u>Off-ramp to El Dorado Hills Blvd from Westbound US 50</u>																										
From hour to hour																										
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																			<u>C</u>	<u>C</u>	<u>C</u>
Fridays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																				<u>C</u>	<u>C</u>
Saturdays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																	<u>C</u>	<u>C</u>	<u>C</u>
Sundays	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>	<u>C</u>																	<u>C</u>	<u>C</u>	<u>C</u>

Legend:
 C Ramp may be closed completely
 Work allowed within the highway where shoulder or lane closure is not required

REMARKS:

Replace "Reserved" in section 12-4.05F with:

Chart no. 8 Conventional Highway Lane Requirements																										
County: <u>ED</u>	Route: <u>50</u>														PM: <u>1.02/R2.40</u>											
Closure limits: <u>Silva Valley Parkway</u>																										
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Fridays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Saturdays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sundays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Legend: <table border="1"> <tr> <td>R</td> <td>Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)</td> </tr> </table>																									R	Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)
R	Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)																									
REMARKS:																										

Chart no. 9 Conventional Highway Lane Requirements																										
County: <u>ED</u>	Route: <u>50</u>														PM: <u>1.02/R2.40</u>											
Closure limits: <u>White Rock Road</u>																										
From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Mondays through Thursdays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Fridays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Saturdays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Sundays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Legend: <table border="1"> <tr> <td>R</td> <td>Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)</td> </tr> </table>																									R	Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)
R	Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)																									
REMARKS:																										

Chart no. 10 Conventional Highway Lane Requirements																												
County: <u>ED</u>								Route: <u>50</u>								PM: <u>1.02/R2.40</u>												
Closure limits: <u>Tong Road</u>																												
From hour to hour 24 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24																												
Mondays through Thursdays								<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>		
Fridays								<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>		
Saturdays								<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	
Sundays								<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>
Legend: <table border="1"> <tr> <td style="width: 20px; text-align: center;">R</td> <td>Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)</td> </tr> </table>																									R	Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)		
R	Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)																											
REMARKS:																												

Chart no. 11 Conventional Highway Lane Requirements																														
County: <u>ED</u>								Route: <u>50</u>								PM: <u>1.02/R2.40</u>														
Closure limits: <u>Joerger Cutoff Road</u>																														
From hour to hour 24 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24																														
Mondays through Thursdays								<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>		
Fridays								<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>		
Saturdays								<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	
Sundays								<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>	<u>R</u>
Legend: <table border="1"> <tr> <td style="width: 20px; text-align: center;">R</td> <td>Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)</td> </tr> </table>																									R	Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)				
R	Provide at least 1 through traffic lane, not less than <u>11</u> feet in width, for use by both directions of travel (Reversing Control)																													
REMARKS:																														

**Replace section 12-5 with:
12-5 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE**

12-5.01 GENERAL

Section 12-5 includes specifications for closing traffic lanes with stationary and moving lane closures on 2-lane, 2-way highways. The traffic control system for a lane closure must comply with the details shown.

Traffic control system includes signs.

12-5.02 MATERIALS

Vehicles equipped with attenuators must comply with section 12-3.13 of the special provisions.

12-5.03 CONSTRUCTION

12-5.03A General

During traffic striping and pavement marker placement using bituminous adhesive, control traffic with a stationary or a moving lane closure. During other activities, control traffic with stationary lane closures.

Whenever components of the traffic control system are displaced or cease to operate or function as specified from any cause, immediately repair the components to the original condition or replace the components and restore the components to the original location.

12-5.03B Stationary Lane Closures

For a stationary lane closure made only for the work period, remove components of the traffic control system from the traveled way and shoulder, except for portable delineators placed along open trenches or excavation adjacent to the traveled way at the end of each work period. You may store the components at selected central locations designated by the Engineer within the limits of the highway.

For multilane highway lane closures, each vehicle used to place, maintain, and remove components of a traffic control system on a multilane highway must be equipped with a Type II flashing arrow sign that must be in operation whenever the vehicle is being used for placing, maintaining, or removing the components. Vehicles equipped with a Type II flashing arrow sign not involved in placing, maintaining or removing the components if operated within a stationary-type lane closure must only display the caution display mode. The sign must be controllable by the operator of the vehicle while the vehicle is in motion. If a flashing arrow sign is required for a lane closure, the flashing arrow sign must be operational before the lane closure is in place.

You may use a pilot car to control traffic. If a pilot car is used for traffic control, the cones shown along the centerline need not be placed. The pilot car must have radio contact with personnel in the work area. Operate the pilot car through the traffic control zone at a speed not greater than 25 miles per hour.

12-5.03C Moving Lane Closures

A changeable message sign used in a moving lane closure must comply with section 12-3.12 except the sign must be truck-mounted. The full operational height to the bottom of the sign may be less than 7 feet above the ground but must be as high as practicable.

A flashing arrow sign used in a moving lane closure must be truck-mounted. Operate the flashing arrow sign in the caution display mode whenever it is being used on a 2-lane, 2-way highway.

12-5.04 PAYMENT

Traffic control system for lane closure is paid for as traffic control system. Flagging costs are paid for as specified in section 12-1.03.

The requirements in section 4-1.05 for payment adjustment do not apply to traffic control system. Adjustments in compensation for traffic control system will be made for an increase or decrease in traffic control work if ordered and will be made on the basis of the cost of the necessary increased or decreased traffic control. The adjustment will be made on a force account basis for increased work and estimated on the same basis in the case of decreased work.

A traffic control system required by change order work is paid for as a part of the change order work.

Replace section 12-8 with:

12-8 TEMPORARY PAVEMENT DELINEATION

12-8.01 GENERAL

Section 12-8 includes specifications for placing, applying, maintaining, and removing temporary pavement delineation.

Temporary signing for no-passing zones must comply with section 12-3.06.

Temporary painted traffic stripes and painted pavement markings used for temporary delineation must comply with section 84-3.

12-8.02 MATERIALS

12-8.02A General

Not Used

12-8.02B Temporary Lane Line and Centerline Delineation

Temporary pavement markers must be the same color as the lane line or centerline markers being replaced. Temporary pavement markers must be temporary pavement markers on the Authorized Material List for short-term day/night use, 14 days or less, or long-term day/night use, 180 days or less. Place temporary pavement markers under the manufacturer's instructions.

12-8.02C Temporary Edge Line Delineation

On multilane roadways, freeways, and expressways open to traffic where edge lines are obliterated and temporary pavement delineation to replace those edge lines is not shown, provide temporary pavement delineation for:

1. Right edge lines consisting of (1) a solid 4-inch wide traffic stripe tape of the same color as the stripe being replaced, (2) traffic cones, or (3) portable delineators or channelizers placed longitudinally at intervals not exceeding 100 feet
2. Left edge lines consisting of (1) solid 4-inch wide traffic stripe tape of the same color as the stripe being replaced, (2) traffic cones, (3) portable delineators or channelizers placed longitudinally at intervals not exceeding 100 feet, or (4) temporary pavement markers placed longitudinally at intervals not exceeding 6 feet

12-8.02D Temporary Traffic Stripe Tape

Not Used

12-8.02E Temporary Traffic Stripe Paint

Not Used

12-8.02F Temporary Pavement Marking Tape

Not Used

12-8.02G Temporary Pavement Marking Paint

You may use one of the types of temporary removable pavement marking tape or permanent pavement marking tape on the Authorized Material List instead of temporary pavement marking paint.

12-8.02H Temporary Pavement Markers

Temporary pavement markers must be one of the temporary pavement markers on the Authorized Material List for long term day/night use, 180 days or less.

12-8.03 CONSTRUCTION

12-8.03A General

Wherever work activities obliterate pavement delineation, place temporary or permanent pavement delineation before opening the traveled way to traffic. Place lane line and centerline pavement delineation

for traveled ways open to traffic. On multilane roadways, freeways and expressways, place edge line delineation for traveled ways open to traffic.

Establish the alignment for the temporary pavement delineation including required lines or markers. Surfaces to receive an application of paint or removable traffic tape must be dry and free of dirt and loose material. Do not apply temporary pavement delineation over existing pavement delineation or other temporary pavement delineation. Maintain temporary pavement delineation until it is superseded or you replace it with a new pattern of temporary pavement delineation or permanent pavement delineation.

When the Engineer determines the temporary pavement delineation is no longer required for the direction of traffic, remove the temporary pavement markers, underlying adhesive, and removable traffic tape from the final layer of surfacing and from the existing pavement to remain in place. Remove temporary pavement delineation that conflicts with any subsequent or new traffic pattern for the area.

12-8.03B Temporary Lane line and Centerline Delineation

Whenever lane lines or centerlines are obliterated and temporary pavement delineation to replace the lines is not shown, the minimum lane line and centerline delineation must consist of temporary pavement markers placed longitudinally at intervals not exceeding 24 feet. For temporary pavement markers on the Authorized Material List for long-term day/night use, 180 days or less, cement the markers to the surfacing with the adhesive recommended by the manufacturer except do not use epoxy adhesive to place the pavement markers in areas where removal of the markers will be required.

For temporary lane line or centerline delineation consisting entirely of temporary pavement markers on the Authorized Material List for short-term day/night use, 14 days or less, place the markers longitudinally at intervals not exceeding 24 feet. Do not use the markers for more than 14 days on lanes opened to traffic. Place the permanent pavement delineation before the end of the 14 days. If the permanent pavement delineation is not placed within the 14 days, replace the temporary pavement markers with additional temporary pavement delineation equivalent to the pattern specified or shown for the permanent pavement delineation for the area. The Department does not pay for the additional temporary pavement delineation.

Where no-passing centerline pavement delineation is obliterated, install the following temporary no-passing zone signs before opening lanes to traffic. Install a W20-1, "Road Work Ahead," sign from 1,000 feet to 2,000 feet in advance of a no-passing zone. Install a R4-1, "Do Not Pass," sign at the beginning of a no-passing zone and at 2,000-foot intervals within the no-passing zone. For continuous zones longer than 2 miles, install a W7-3a or W71(CA), "Next ___ Miles," sign beneath the W20-1 sign. Install a R4-2, "Pass With Care," sign at the end of the no-passing zone. The Engineer determines the exact location of temporary no-passing zone signs. Maintain the temporary no-passing zone signs in place until you place the permanent no-passing centerline pavement delineation. Remove the temporary no-passing zone signs when the Engineer determines they are no longer required for the direction of traffic.

12-8.03C Temporary Edge Line Delineation

You may apply temporary painted traffic stripe where removal of a 4-inch wide traffic stripe is not required.

The Engineer determines the lateral offset for traffic cones, portable delineators, and channelizers used for temporary edge line delineation. If traffic cones or portable delineators are used for temporary pavement delineation for edge lines, maintain the cones or delineators during hours of the day when the cones or delineators are being used for temporary edge line delineation.

Channelizers used for temporary edge line delineation must be an orange surface-mounted type. Cement channelizer bases to the pavement under section 85 for cementing pavement markers to pavement except do not use epoxy adhesive to place channelizers on the top layer of the pavement. Channelizers must be one of the 36-inch, surface-mounted types on the Authorized Material List.

Remove the temporary edge line delineation when the Engineer determines it is no longer required for the direction of traffic.

Replace the definition of storm event in Section 13-1.01B with:

Storm event: Storm that produces or is forecasted to produce precipitation of a 5-year 24-hour storm event as defined on the Western Regional Climate Center Precipitation Maps for a 5-year 24-hour event. For the map for Northern California go to:

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

Add item 4. to the list in the 1st paragraph of section 13-1.03C

4. Inspect sanitary and septic waste storage and monitor disposal procedures weekly.

Add to the 4th paragraph of section 13-3.01A:

The Permit may be viewed at the Web site for the State Water Resources Control Board, Board Decisions. To comply with the Permit the Department has prepared a Storm Water Pollution Prevention Plan (SWPPP) for the project and submitted it to the RWQCB via the RWQCB's Storm Water Multi Application Reporting and Tracking System (SMARTS). Notwithstanding the Department's submission of a SWPPP to the RWQCB, under section 13 you must prepare a SWPPP that is specifically tailored to suit your operations and staging. If you choose to submit a SWPPP that is identical to the one the Department has entered into SMARTS or that incorporates elements thereof, submission of this SWPPP will be conclusive evidence that you have reviewed the incorporated elements of the Department's SWPPP thoroughly, determined that those elements satisfy section 13 and the Permit requirements as they relate to your operations and staging, adopted those elements as your own, and assumed full responsibility for any liability associated with SWPPP implementation.

Add to section 13-3.01A:

The project is risk level 2.

The Central Valley RWQCB has issued a 401 water quality certification for this project. A copy of this 401 water quality certification is included in Appendix B of the contract documents. Comply with all conditions of the 401.

Notify the Engineer in writing 14 days in advance of the start of any work within, above or within 50' adjacent to Bucks Ravine Creek and Carson Creek. The notification must include the name of the project and the WDID number.

Notify the Engineer immediately if the criteria for turbidity, settleable matter, temperature, pH, or dissolved oxygen that are listed in the 401 certification are exceeded.

Notify the Engineer immediately of any spill of petroleum products or other organic or earthen materials into a surface water within the project area.

Refueling of equipment within 300 feet of the waterway is prohibited. If some critical equipment must be refueled within 300 feet of the waterway, strict spill prevention and countermeasures must be implemented to avoid spills. Refueling areas must be provided with secondary containment including drip pans and/or placement of absorbent material. No hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, or other construction-related potentially hazardous substances should be stored within 300 feet of a water body.

If unanticipated discharges to surface waters occur, notify the Engineer in writing within 2 calendar days of occurrence. Unanticipated discharges may include, but are not limited to, any construction materials, hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, raw cement, concrete, asphalt, paint, coating material, drilling fluids, or other construction-related potentially hazardous substances.

Surplus material and grindings generated by the project are the property of the contractor. Asphalt concrete grindings shall be handled and disposed of in accordance with local, state and federal laws and regulations. No asphalt concrete grindings shall be allowed to enter or be placed where it may be washed by rainfall or runoff into waterways. This includes the use of shoulder backing, turnouts and wide areas of lateral support, parking areas, and suitable fill and stabilization.

Shoulder backing areas shall be stabilized by temporary Construction Site BMPs or, rolled and compacted in place, by the end of each day, and prior to the onset of any precipitation.

Replace item 1 in the 1st paragraph of section 13-3.01B(5) with:

1. Each qualifying rain event. Include:

Add to section 13-3.03A

If the Engineer determines that resources sufficient to bring you into compliance with section 13 have not been allocated, the Engineer may redirect any of your resources available at the project site toward this effort. If the Engineer redirects resources due to your non-compliance with the provisions of section 13, the County will not be responsible for any delays to your schedule resulting from the reallocation, and no compensation will be made for these delays.

Install water pollution control (WPC) practices when an area is inactive or before predicted precipitation, whichever occurs first, and:

1. By September 1 install WPC practices such that disturbed areas without WPC practices do not exceed the lesser of 50% of the total amount of area to be disturbed for the project or 10 acres.
2. By September 15 install WPC practices such that disturbed areas without WPC practices do not exceed the lesser of 25% of the total amount of area to be disturbed for the project or 5 acres.
3. By October 1 install WPC practices such that disturbed areas without WPC practices do not exceed the lesser of 10% of the total amount of area to be disturbed for the project or 2 acres.
4. By October 15 install WPC practices such that disturbed areas without WPC practices do not exceed the lesser of 5% of the total amount of area to be disturbed for the project or 1 acres.

During fall and winter do not exceed the specified amount of disturbance unless weather conditions permit and you request in writing and receive a waiver from the Engineer. Include in your request a contingency plan for installing WPC practices should weather conditions change.

Replace item 2 in the 1st paragraph of section 13-3.04 with:

2. A total of 100% percent of the item total in the Proposed Final Pay Estimate.

Replace item 2 in the 2nd paragraph of section 13-3.04 with:

3. A total of 100% percent of the item total in the Proposed Final Pay Estimate.

Add to section 13-3.04:

The Department does not pay for implementation of WPC practices in areas outside the highway right-of-way not specifically provided for in the plans or in the special provisions.

Unless the WPC practice is required under section 13-4, the Department pays for WPC practices under section 9-1.04, excluding travel and subsistence allowances paid to workers.

The Department does not pay for WPC practices that the Engineer determines are installed for the purposes of conveying runoff as part of maintaining adequate drainage described in Section 10-1.02.

If you find it necessary to use WPC practices not specified to achieve compliance with local, state, and federal water pollution control regulations, then implementation, maintenance, and removal of the unspecified WPC practices will be at your expense.

The work to complete the final storm water annual report is excluded from section 5-1.46.

Add to the 4th paragraph of Section 13-4.03C(1):

Vehicles may enter and exit the Work Area as necessary for project activities, but may not be parked overnight within ten (10) feet of the drip line of any trees (excluding existing paved areas within the project area); nor shall vehicles be parked where mechanical fluid leaks may potentially enter the waters of the state.

5. Parking of Vehicles

Add to the 3rd paragraph of Section 13-4.03F:

3. 8 hours of predicted rain

Delete the 1st sentence of section 13-5.04 and replace the 2nd paragraph of section 13-5.04 with:

The Department pays for temporary soil stabilization for stockpiles under job site management. The Department pays for temporary soil stabilization for other than stockpiles under section 9-1.04 excluding travel and subsistence allowances paid to workers.

Replace 1st paragraph of section 13-6.03C with:

Provide temporary drainage inlet protection around drainage inlets as changing conditions require. Drainage inlet protection must be Type 1, Type 5, or Type 6B, as appropriate for conditions around the drainage inlet.

Add to section 13-6.03H:

Temporary reinforced silt fence must be Type 2.

Replace section 13-6.04 with:

The Department pays for temporary sediment control under section 9-1.04 excluding travel and subsistence allowances paid to workers.

Replace section 13-7.04 with:

The Department pays for temporary tracking control under job site management.

Replace section 13-9.04 with:

The Department pays for temporary concrete washouts under job site management.

Before start of work, protect the ESA by installing Temporary Fence (Type ESA).

Add to section 14-2.03A:

AMAs within, near, or straddling the project limits are shown on the plans.

Add to section 14-6.01A(1):

Project building material and/or construction equipment must not be placed where materials could pass into the waters of the state or where they may cover aquatic or riparian vegetation.

Spoil sites must not be located where spoils may be washed back into Carson Creek or Bucks Ravine Creek or tributaries, or where it may cover aquatic or riparian vegetation.

Add section 14-6.01A(3):

14-6.01A(3) Submittals

If flowing water is present in Carson Creek, Bucks Ravine Creek or their tributaries, or is reasonably anticipated to be present at the time of construction impacts, submit for approval a detailed water diversion/dewatering plan to the Engineer no less than 30 days prior to the diversion/dewatering operation. Dewatering structures may include the use of sand bag, Port-adams, water bladder dams, K-rails or driven sheet metal coffer dams. The Engineer will review the proposed water diversion method. Do not commence the dewatering of the stream or the diversion of water without the explicit approval from the Engineer.

Replace section 14-6.01C with:

When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, allow sufficient water at all times to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code §5937.

Visually check all sections of pipe I construction materials for the presence of wildlife sheltering within them prior to the pipe sections being placed in the trench and attached together, or shall have the ends capped while stored on site so as to prevent wildlife from entering. After attachment of the pipe sections to one another, whether in the trench or not, at the end of each day during construction, you must ensure that the end of the pipeline is secured so that wildlife are not able to enter the pipeline and/or become trapped within the pipeline.

At the end of each work day, all trenches must be covered to prevent animals from becoming entrapped. If it is not possible to cover the trench at the end of the work day, either 1) Install an exclusion fence surrounding and enclosing the open end(s) of the trench, or 2) place an escape ramp at each end of open trench. The ramp must be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees.

Replace section 14-6.02 with:

14-6.02 SPECIES PROTECTION

14-6.02A General

Section 14-6.02 includes specifications for protecting regulated species or their habitat.

This project is within or near habitat for regulated species shown in the following table:

Species Name

<u>Western Burrowing Owl</u>
<u>Western Pond Turtle</u>
<u>California Red Legged Frog</u>
<u>Swainson's Hawk</u>
<u>Bats</u>
<u>Swallows</u>
<u>Common passerine birds (that is, perching birds such as American robins, scrub jays, and northern mockingbird)</u>

The Department anticipates nesting or attempted nesting by migratory and nongame birds from February 1 to August 31

14-6.02B Material

Not Used

14-6.02C Construction

14-6.02C(1) General

Not Used.

14-6.02C(2) Protective Radius

Upon discovery of a regulated species, stop construction activities within a 100-foot radius of the discovery or as defined in the table below. Immediately notify the Engineer. Do not resume activities until receiving notification from the Engineer.

Regulated species name	Protective radius
<u>Western Pond Turtle (upland nest site)</u>	<u>300-foot</u>
<u>Common passerine birds</u>	<u>50-foot</u>
<u>Western Burrowing Owl</u>	<u>250-foot</u>
<u>Swainson's Hawk (active nest)</u>	<u>0.25-mile</u>

14-6.02C(3) Protocols

Not Used

14-6.02C(4) Biological Resource Information

Not Used

14-6.02C(5) Protection Measures

Not Used

14-6.02C(6) Monitoring Schedule

Not Used

14-6.02D Payment

Not Used

Replace section 14-8.02A with:

The work is located in a Rural Region with Low Density Residential, Rural Residential, Agricultural Lands, Open Space, land use designation.

The following table specifies the maximum allowable noise exposure for work within the community types and land use designations listed above.

MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NONTRANSPORTATION NOISE SOURCES IN RURAL REGIONS–CONSTRUCTION NOISE			
Land Use Designation	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential (LDR)	7 pm–10 pm	45	55
	10 pm–7 am	40	50
Commercial, Recreation, and Public Facilities (C, TR, PF)	7 pm–7 am	60	70
Rural Land, Natural Resources, Open Space, and Agricultural Lands (RR, NR, OS, AL)	7 pm–7 am	60	70

The noise level requirements apply to the equipment on the job or related to the job measured at the affected building facade, including trucks, transit mixers or transient equipment that you may or may not own. Avoid the use of loud sound signals in favor of light warnings except those required by safety laws for the protection of personnel.

In the interest of the public safety and/or public convenience, the allowable noise levels may be waived.

All construction vehicles and equipment must be fitted with working mufflers.

Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.

Locate equipment staging areas to create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, shutting off idling equipment, rescheduling your activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources such that noise from construction does not exceed the limits specified above. If the existing background noise levels exceed the values above, then the limit for construction noise may be increased from the background noise level by the same percentage that the background noise level exceeds the values above.

Replace section 14-9.02 with:

Comply with applicable State and County Air Quality Management District (AQMD) rules and regulations regarding reduction of construction related impacts on air quality, including the implementation of the following measures:

- Use low-emission onsite mobile construction equipment.
- Maintain equipment in tune per manufacturer's specifications.
- Retard diesel engine injection timing by two to four degrees unless not recommended by manufacturer (due to lower emission output in-place).

- Use reformulated low-emission diesel fuel.
- Substitute electric and gasoline-powered equipment for diesel-powered equipment where feasible.
- Use catalytic converters on gasoline-powered equipment.
- Do not leave inactive construction equipment idling for prolonged periods (i.e., more than 5 minutes).
- Support and encourage ridesharing and transit for the construction workers.
- All construction vehicles and equipment must be fitted with working mufflers.
- Provide an approved plan demonstrating that heavy-duty (i.e., greater than 50 horsepower) off-road vehicles to be used in the construction project, and operated by either the Contractor or any subcontractor, will achieve, at a minimum, a fleet-averaged 15 percent NOx reduction compared to the most recent Air Resource Board (ARB) fleet average.
- Submit a comprehensive inventory to the El Dorado County AQMD of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours (total) during the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. The inventory list shall be updated and submitted monthly throughout the duration of the construction period.
- A geologist trained in the recognition of NOA should be intermittently present during grading operations.
- The geologist shall observe site conditions and implement special grading conditions when NOA is present.
- BMPs for fugitive dust control shall be practiced during all grading operations consistent with El Dorado County AQMD regulations.
- Comply with El Dorado County AQMD Rules 223, 223-1, and 223-2. Compliance shall include, but is not limited to, implementation of the following measures:
 - Application of water hygroscopic materials, or non-toxic chemical stabilizers or other specified covering on material stockpiles, wrecking activity, excavation, grading, sweeping, or clearing of land;
 - Installation and use of hoods, fans and filters to enclose, collect, and clean the emissions of dusty materials;
 - Covering or wetting at all times when in motion of open-bodied trucks, trailers or other vehicles transporting materials, which create a nuisance by generating particulate matter in areas where the general public has access;
 - Application of asphalt, oil, water or suitable chemicals on dirt roads;
 - Alternate means of control as approved by the Air Pollution Control Officer.

Replace section 14-9.03 with:

14-9.03 DUST CONTROL10-1

14-9.03A GENERAL

14-9.03A(1) Summary

Section 14-9.03 includes specifications relating to dust control.

Comply with Rules 223 and 223-2 (Dust Rules) of the Rules and Regulations of the El Dorado County Air Quality Management District (AQMD).

The Dust Rules can be obtained from the AQMD, 330 Fair Lane, Placerville, CA, 95667, (530) 621-6662, and are available at:

http://www.edcgov.us/Government/AirQualityManagement/Construction_Dust_Rules.aspx.

The materials within the project limits are known or suspected to contain naturally occurring asbestos and the project is located within designated Naturally Occurring Asbestos Review Areas on the current El Dorado County Naturally Occurring Asbestos Review Area Map.

14-9.03A(2) Submittals

Submit a site specific Asbestos Dust Mitigation Plan (ADMP) to the AQMD meeting the requirements of Rule 223-2 for approval by the El Dorado County AQMD, prior to the start of any work. For projects exceeding 1 acre, where natural occurring asbestos is found to be present, the ADMP must comply with the State Asbestos Air Toxics Control Measure (CCR Title 17, Section 93105) and the County Ordinance (Chapter 8.44). Provide the Engineer with four (4) copies of the AQMD approved ADMP prior to the start of any work that may generate dust.

Prepare an amendment to the ADMP when there is a change in construction activities or operations not included in the ADMP, or when your activities violate a condition of the AQMD, or when you are ordered by the Engineer. Amendments must identify additional dust control practices or revised activities, including those areas or activities not identified in the initially approved ADMP. Amendments to the ADMP must be prepared and submitted for review and approval within a time approved by the Engineer.

Keep one (1) copy of the approved ADMP and approved amendments at the project site. Make ADMP available upon request by a representative of the AQMD, California Air Resource Board, United States Environmental Protection Agency, or Caltrans. Requests by the public must be directed to the Engineer.

Provide all notices to the AQMD and create and maintain all records as required by Rule 223-2. Copies of all required records must be submitted to the Engineer within 30 calendar days of completion of all work subject to Rule 223-2.

Submit a dust control schedule that describes the timing of grading or other work activities that could promote dust to the Engineer prior to the start of any work. You must update the dust control schedule to reflect changes in your activities that would affect the implementation of necessary dust control practices.

14-9.03B Materials

Not used.

14-9.03C Construction

Implement the measures contained in the ADMP to control dust.

Control dust using measures that include the following:

1. Stabilize unpaved areas subject to vehicular traffic by keeping adequately wetted, or covered with material that contains less than 0.25 percent asbestos.
2. The speed of vehicles and equipment traveling across unpaved areas must not be more than 15 mph unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment going faster from causing dust that is visible from crossing job site limits.
3. Stockpiles and disturbed areas not subject to vehicular traffic must be located in the plan and stabilized by being kept adequately wetted, or covered with material that contains less than 0.25 percent asbestos.
4. Conduct activities so that no dirt or mud tracking is visible on any paved roadway open to the public.
5. Use rock track out pads and wheel wash stations at all points of egress from unpaved construction areas.

2. Equipped with automatic controls for the longitudinal grade and transverse slope of the cutter head and:
 - 2.1. If a ski device is used, it must be at least 30 feet long, rigid, and a 1-piece unit. The entire length must be used in activating the sensor.
 - 2.2. If referencing from existing pavement, the cold planing machine must be controlled by a self-contained grade reference system. The system must be used at or near the centerline of the roadway. On the adjacent pass with the cold planing machine, a joint-matching shoe may be used.
3. Equipped to effectively control dust generated by the planing operation
4. Operated so that no fumes or smoke is produced.

Replace broken, missing, or worn machine teeth.

15-2.02B(3)(c)(ii) Grade Control and Surface Smoothness

Furnish, install, and maintain grade and transverse slope references.

The depth, length, width, and shape of the cut must be as shown or as ordered. The final cut must result in a neat and uniform surface. Do not damage the remaining surface.

The completed surface of the planed asphalt concrete pavement must not vary more than 0.02 foot when measured with a 12-foot straightedge parallel with the centerline. With the straightedge at right angles to the centerline, the transverse slope of the planed surface must not vary more than 0.03 foot.

Where lanes are open to traffic, the drop-off of between adjacent lanes must not be more than 0.15 foot.

15-2.02B(3)(c)(iii) Temporary HMA Tapers

If a drop-off between the existing pavement and the planed area at transverse joints cannot be avoided before opening to traffic, construct a temporary HMA taper. The HMA temporary taper must be:

1. Placed to the level of the existing pavement and tapered on a slope of 30:1 (horizontal:vertical) or flatter to the level of the planed area
2. Compacted by any method that will produce a smooth riding surface

Completely remove temporary tapers before placing permanent surfacing.

15-2.02B(3)(c)(iv) Remove Planed Material

Remove cold planed material concurrent with planing activities so that removal does not lag more than 50 feet behind the planer.

15-2.02B(3)(d) Payment

Payment for removal of pavement markers, thermoplastic traffic stripe, painted traffic stripe, and pavement marking within the area of cold planing is included in the payment for cold plane asphalt concrete pavement of the types shown in the Bid Item List.

Add to section 19-2.03G:

15-2.02M Remove Water Line

Remove water line as shown.

Immediately after disconnecting an existing water line to be removed or abandoned from an existing facility to remain, the remaining facility must be capped or plugged or connected to a new or existing water line.

Replace section 15-2.05C with:

15-2.05C Abandon Culverts and Water Lines

15-2.05C(1) General

Abandon culverts or water lines by removing portions of the culverts or water lines, filling the inside, and backfilling the depressions and trenches to grade. As an alternative to abandoning a culvert or water line, you may remove the culvert or water line, dispose of it, and backfill.

Notify the Engineer before abandoning a culvert or water line.

15-2.05C(2) Materials

Openings into existing structures that are to remain in place must be plugged with minor concrete under section 90.

15-2.05C(3) Construction

Wherever culverts or water lines intersect side slopes, remove them to a depth of at least 3 feet. Measure the depth normal to the plane of the finished side slope. Abandon the remaining portion of the culvert or water line.

Culverts or water lines that are 12 inches or more in diameter must be completely filled by authorized methods. Backfill with sand that is clean, free draining, and free from roots and other deleterious substances. As an alternative to sand, you may backfill with one of the following:

1. Controlled low-strength material under section 19-3.02F
2. Slurry cement backfill under section 19-3.02D

Ends of culverts and water lines must be securely closed by a 6-inch-thick, tight-fitting plug or wall of commercial-quality concrete.

15-2.05C(4) Payment

If backfilling inside the culvert or water line is required, payment for backfilling inside the culverts or water lines is included in the payment for abandon culvert or abandon water line. Payment for backfilling outside the culvert or water line is included in the payment for abandon culvert or abandon water line.

Replace section 15-2.05F with:

15-2.05F Abandon Underdrains

15-2.05F(1) General

Abandon underdrains by securely capping the underdrain closed using a 6-inch-thick, tight-fitting plug or wall of commercial-quality concrete. As an alternative to abandoning an underdrain, you may remove the underdrain, dispose of it, and backfill.

Notify the Engineer before abandoning an underdrain.

15-2.05F(2) Materials

Openings into existing structures that are to remain in place must be plugged with minor concrete under section 90.

15-2.05F(3) Construction

Wherever underdrains intersect side slopes, remove them to a depth of at least 3 feet. Measure the depth normal to the plane of the finished side slope. Abandon the remaining portion of the underdrain.

Ends underdrains must be securely capped and closed using a 6-inch-thick, tight-fitting plug or wall of commercial-quality concrete.

Replace "Reserved" in section 19-3.02A with:

Class 1 permeable material must comply with section 68-2.02F.

Filter fabric must comply with section 88-1.02B.

Add to section 19-3.02B:

At the Silva Valley Eastbound Off-Ramp Undercrossing (Bridge No. 25-0128S) structure backfill placed and compacted in front of the abutments, below the abutment footings, and to at least 5 feet behind the heel of the abutment footings must comply with the following effective soil strength parameters:

1. Minimum friction angle (ϕ_f) of 33°
2. Minimum cohesion of at least 275 psf

Replace "Reserved" in section 19-3.03A with:

Where shown, remove material below the bottom of culvert. Replace with Class 1 permeable material. Place filter fabric around Class 1 permeable material as shown.

Add to section 19-3.03B(1):

For footings at locations with structure excavation (Type D), ground or surface water is expected to be encountered but seal course concrete is not described.

Add to section 19-3.04:

Structure excavation for footings at locations not shown as structure excavation (Type D) and where ground or surface water is encountered is paid for as structure excavation (bridge).

Replace section 19-4 with:

19-4 ROCK EXCAVATION (CONTROLLED BLASTING)

19-4.01 GENERAL

19-4.01A Summary

You are advised that hard non-rippable rock exists that will require alternative excavation techniques, including the use of hydraulic rock breaking equipment, blasting, coring (for drilling operations), and/or chemical splitting agents.

You may use hydraulic splitters, pneumatic hammers, or other authorized roadway excavation techniques to fracture rock and construct stable final rock cut faces. Blasting is allowed except at the following locations:

1. 100' of a structure foundation.
2. Slope excavation below bridge abutment or wall foundations.

Refer to the Geotechnical Reports provided as supplemental information to the Contract Documents. The conclusions and recommendations contained within the reports are based on limited study areas and may not be representative of the conditions you may encounter outside of the specific area of study. You are advised that in areas throughout the project site, hard, non-rippable rock exists that will require alternative excavation techniques, including the use of hydraulic rock breaking equipment, blasting, coring (for drilling operations), and/or chemical splitting agents.

Section 19-4 includes specifications for performing rock excavation with controlled blasting and presplitting rock to form rock excavation slopes.

Comply with section 12.

Comply with federal, state, and local blasting regulations. Regulations containing specific Cal-OSHA requirements for blasting activities include 8 CA Code of Regs, Ch 4, Subchapter 7, Group 18, "Explosive Materials." Regulations for explosives containing percholate materials include 22 CA Code of Regs, Division 4.5, Ch 33, "Best Management Practices for Percholate Materials."

You are liable for damages resulting from blasting activities.

You are allowed to attempt only one blast per week, on Sunday, during daylight hours, prior to 8:00 a.m.

19-4.01B Definitions

controlled blasting: Use of explosives and blasting accessories in predetermined spaced and aligned drill holes to limit blast vibrations, noise from airblast overpressure, and flyrock.

flyrock: Rock that becomes airborne due to blasting.

near field blasting: Blasting within 30 feet of a critical structure.

presplitting: Establishment of a free surface or shear plane in rock along the specified excavation slope by the controlled use of explosives and blasting accessories in appropriately aligned and spaced drill holes.

19-4.01C Submittals

19-4.01C(1) General

Submit 3 copies of the blasting safety plan and each controlled blasting plan. After each plan is authorized, submit 3 additional copies of each authorized plan.

19-4.01C(2) Blasting Safety Plan

Submit a blasting safety plan. The plan must include:

1. References to applicable federal, state, and local codes and regulations
2. Copies of permits required for blasting activities
3. Business name, contractor license number, address, and telephone number of the blasting subcontractor
4. Proof of current liability insurance and bonding
5. Name, address, telephone number, copies of applicable licenses, and resume of:
 - 5.1. Blaster-in-charge
 - 5.2. Personnel responsible for controlled blast design, loading, and conducting the blasting operation
 - 5.3. Safety officer for blasting subcontractor
 - 5.4. Blast monitoring consultant
 - 5.5. Blasting consultant
6. Name, address, and telephone number of the local fire station and law enforcement agencies
7. Detailed description of:
 - 7.1. Location where explosives will be stored
 - 7.2. Security measures to protect and limit access to the explosives
 - 7.3. Transportation means for explosives
 - 7.4. List of personnel permitted to handle the explosives
8. Exclusion zone and limited-entry zone for nonblast related operations and personnel surrounding loading and blasting operations
9. Details of warning signals used to alert employees on the job site of an impending blast and to indicate the blast is completed and the area is safe to enter
10. How blasting operations will be conducted
11. Measures to protect blasting operations and personnel from lightning
12. Emergency evacuation procedures for areas where explosives may be present
13. How misfires will be recognized, handled, and resolved including:
 - 13.1. Who will be notified

- 13.2. How blast zone will be secured until misfire is resolved
- 13.3. Identification of equipment that may be needed to resolve misfires
- 14. Details of signs to be used around blasting zones including:
 - 14.1. Timing of when signs will be posted relative to a specific blast
 - 14.2. Name and telephone number of person responsible for placing signs
 - 14.3. Roadway signs for compliance with Chapter 6, Typical Application 2, of the California MUTCD.
- 15. Traffic control details for:
 - 15.1. Loading and blasting operations
 - 15.2. Misfire event or other blast related phenomenon that causes a transportation corridor to remain closed to the public
- 16. Description of possible noxious gas generation and details of safeguards to be used to protect employees, work zones adjacent to the shot, private property, and the public
- 17. Procedure to report and resolve complaints for blast related accidents
- 18. Copies of each MSDS and manufacturer data sheets of explosives, caps, primers, initiators, and other compounds
- 19. Compliance with El Dorado County Air Quality Management District regulations

19-4.01C(3) Controlled Blasting Plan

Submit a controlled blasting plan for each blast. The plan must include details on how each blast will be controlled and the following:

- 1. Blast identification by numerical and chronological sequence
- 2. Location, referenced to stationing, offset distance, date, and time of blast
- 3. Drawings showing drill hole pattern, spacing, burden, and initiation sequence
- 4. Typical cross-sections through zone to be blasted
- 5. Groundwater level, if present, within the prism to be blasted
- 5. Initiation-sequence diagram showing the actual firing time of each delay
- 6. Type of material to be blasted
- 7. Number of drill holes
- 8. Diameter, depth, and spacing of holes
- 9. Height or length of stemming
- 10. Types and characteristics of explosives used, including explosive's density, relative strength, and date of manufacture
- 11. Type of caps and delay periods used and their date of manufacture
- 12. Total amount of explosives used
- 13. Total amount of explosives detonating within any 8 millisecond period
- 14. Powder factor (pounds of explosive per cubic yard of material blasted)
- 15. Method of firing
- 16. Direction and distance to nearest building or structure
- 17. Type and method of instrumentation
- 18. Location and placement of instruments
- 19. Measures to limit air noise and flyrock
- 20. Measures to limit overbreak
- 21. Name of blasting subcontractor
- 22. Name and signature of blaster-in-charge
- 23. Drawings showing spacing and proximity of shot guards to blast location
- 24. Compliance with El Dorado County Air Quality Management District regulations

Changes to the controlled blasting plan made to adjust for site conditions must be submitted for review before implementing.

19-4.01D Quality Control and Assurance

19-4.01D(1) General

Not Used

19-4.01D(2) Blaster-In-Charge

Assign a blaster-in-charge responsible for supervising all blasting activities. The blaster-in-charge must have 10 years of experience in performing or supervising similar blasting activities and must be a licensed blaster.

19-4.01D(3) Blast Monitoring Consultant

Assign a blast monitoring consultant to monitor blasting generated vibrations and noise near buildings and structures that may be subject to damage. The monitoring consultant must be responsible for collecting and interpreting vibration and noise data. The blast monitoring consultant must:

1. Not be employed by the blasting contractor or other subcontractor on the project
2. Have a minimum of a 2-year Associate's Degree in science or engineering
3. Have at least 5 years of documented experience in collecting and interpreting ground vibrations and noise data

19-4.01D(4) Blasting Consultant

Assign a blasting consultant to oversee near field blasting activities. The blasting consultant must:

1. Be an engineer or geologist who is licensed in the State
2. Have 10 years of experience providing specialized blasting services in near field blasting
3. Not be employed by the blasting contractor, explosive manufacturer, or explosive distributor
4. Submit a resume of credentials and a list of projects worked on

19-4.01D(5) Preblast Surveys

At least 15 days before starting blasting activities, prepare a preblast survey of all buildings and structures within 330 feet of blasting activities and submit it with the controlled blasting plan. The preblast survey must include a written report, sketches, and photos or a videotape with date and time displayed on the image. The preblast survey must include:

1. Name of the person making the inspection
2. Name of property owner and occupants
3. Property address
4. Date and time of the inspection
5. Description of the structure or other improvement including culverts and bridges
6. Detailed description of existing condition of walls, ceiling, and floor of each interior room including attic and basement
7. Detailed description of existing condition of foundations, exterior walls, roofs, doors, windows, and porches
8. Detailed description of existing condition of garages, outbuildings, sidewalks, driveways, and swimming pools
9. Detailed listing of highway sign posts, light fixtures, and overhead power lines
10. Survey of wells or other private water supplies including total depth and existing water surface levels
11. Identification of sites conducting procedures, processes, or operations that may be sensitive to blasting activities
12. Scaled map or aerial photo showing the location of structures and properties surveyed and location of all proposed blasting sites

If blasting activities are suspended for a period of 45 days or more, perform another preblast survey and submit it at least 15 days before resuming blasting activities.

After blasting activities are completed, prepare and submit a postblast survey of the same buildings and structures as in the preblast survey. The postblast survey must include all items included in the preblast survey.

19-4.01D(6) Vibration and Noise Monitoring

Vibration levels must be kept below peak particle velocity of 2 inches per second at the nearest building or structure.

Noise from airblast overpressure levels must be kept below 128 dB (C-network or Linear network) at the nearest building

Ground vibrations and noise created from blasting must be controlled by using properly designed delay sequencing and charge weights for shots.

Provide 3 seismographs to be available for deployment that are appropriate for controlled blasting activities and capable of:

1. Recording particle velocities for 3 mutually perpendicular components of vibration and instantaneous resultant peak vector sum in the range generally found with controlled blasting.
2. Continuously measuring, recording, and reporting vibrations along 3 primary axes.
3. Measuring and recording vibration frequencies ranging from 2 to 300 Hz.
4. Providing a printed record of each event showing a plot of peak particle velocity versus vibration frequencies.
5. Measuring and recording airblast noise levels. The noise transducer must be detachable from the main unit to allow placing at elevations with a clear line of sight between transducer and blast.

Record each blast shot using approved seismographs and prepare a vibration and noise monitoring report. The report must include:

1. Identification of instruments used
2. Name of blast monitoring consultant
3. Distance and direction of recording stations from blast area
4. Type of ground at recording station and material on which instrument sits
5. Maximum particle velocity in each component and resultant peak particle velocity of each shot
6. Copy of seismograph readings with date and signature of blast monitoring consultant
7. Noise levels recorded in dB (C-network or Linear network) units

19-4.01D(7) Video Recording of Blasts

Video-record each blast. The video-recording must be taken from a safe location with a clear view of the blast area, activities, and progression. Identify each video or section of video with an index to identify each blast. Submit a copy of each video in DVD-Video format.

19-4.01D(8) Blasting Complaints

Accurately document each complaint. Notify the Engineer immediately of a complaint received or at the start of the next day's work shift. Complaint documentation must include:

1. Name and address of complainant
2. Date, time, and nature of complaint
3. Dated photo or videotape of physical damage
4. Name of person receiving complaint
5. Record of complaint investigation conducted
6. Resolution of complaint

19-4.01D(9) Postblast Reports

Document each shot in a postblast report. The postblast report must include all data required in the controlled blasting plan for that shot and the following:

1. Description of site conditions, loading, and time of blast
2. Description of weather conditions at time of blast including wind direction and cloud cover
3. Drillers boring record
4. Copy of vibration and noise monitoring report

5. Copy of documented complaints arising from the blast

Submit the postblast report within 48 hours of the blast.

19-4.02 MATERIALS

Not Used

The maximum diameter of explosives used in presplit holes must not be greater than 50 percent of the diameter of the presplit hole.

Only standard cartridge explosives prepared and packaged by explosive manufacturing firms must be used in the presplit holes. These must consist of one of the following:

1. Fractional portions of standard cartridges to be affixed to the detonating cord in the field
2. Solid column explosives joined and affixed to the detonating cord in the field

Stemming materials must be dry, free-running material meeting the grading requirements in the following table when tested under California Test 202:

Sieve sizes	Percentage passing
3/8"	100
No. 8	90

19-4.03 CONSTRUCTION

At least 7 days before starting or resuming blasting activities, notify occupants of the local buildings within 330 feet of the blasting area in writing. Verbally notify occupants of pending blasting activities on the day of blasting.

Do not perform blasts within 1,200 feet of concrete placed within 72 hours.

Before firing any blast, confirm that groundwater conditions are consistent with shot design and explosive type to be used.

Before firing any blast in areas where flyrock may result in personal injury or damage to property or the work, cover the rock to be blasted with blasting mats, soil, or other equally serviceable material to prevent flyrock.

If blasting causes flyrock, suspend blasting activities. The blasting consultant must review the site to determine the cause of the flyrock problem and provide an amendment to the controlled blasting plan that prevents flyrock.

Do not use drill cuttings as stemming in controlled blasting operations.

Large blocks may pull-out from walls of foundation excavations. Fill any cavities formed by the blocks with structural concrete.

Before drilling the presplitting holes, remove overburden soil and weathered rock along the top of the excavation for a distance of at least 50 feet beyond the drilling limits or to the end of the excavation. Ensure removal of overburden soil and weathered rock and expose fresh rock to an elevation equal to the bottom of the adjacent lift of the presplitting holes being drilled.

Drill slope holes for presplitting along the line of the planned slope within the tolerances specified. The drill holes must be at least 2-1/2 inches, but not more than 3 inches in diameter. Control the drilling operations by using proper equipment and techniques. Ensure no hole deviates from the plane of the planned slope by more than 12 inches or from parallel to an adjacent hole by more than 67 percent of the planned horizontal spacing between holes.

The length of presplit holes for an individual lift must not exceed 30 feet, unless you can demonstrate to the Engineer that you can stay within the above tolerances and produce a uniform slope. The length of holes may then be increased to a maximum of 60 feet if authorized.

The spacing of presplit holes must not exceed 3 feet on centers and must be adjusted to produce a uniform shear face between holes.

The Engineer may order you to drill auxiliary holes along the presplit line. These holes must not be loaded or stemmed. Except for spacing, auxiliary drill holes must comply with the specifications for presplit holes. Drilling auxiliary drill holes along the presplit line is change order work.

Place the adjacent line of production holes inside the presplit lines in such a manner that avoids damage to the presplit face.

If necessary to reduce shatter and overbreak of the presplit surface, the 1st line of production holes must be drilled parallel to the slope line at the top of the cut and at each bench level thereafter.

Blasting techniques that result in damage to the presplit surface must be discontinued immediately.

No portion of the production holes must be drilled within 8 feet of a presplit plane unless authorized. The bottom of the production holes must not be lower than the bottom of the presplit holes.

A maximum offset of 24 inches will be permitted for a construction working bench at the bottom of each lift for use in drilling the next lower presplitting pattern.

Adjust the drilling operations to compensate for drift of previous levels and for the offset at the start of new levels to maintain the specified slope plane.

If the methods of drilling and blasting do not produce the desired result of a uniform slope and shear face without overbreak and within the tolerances specified, drill, blast, and excavate in short sections, up to 100 feet, until a technique produces desired results.

If a fractional portion of a standard explosive cartridge is used, the cartridge must be firmly affixed to a length of detonating cord equal to the depth of the drill hole so that the cartridge does not slip down the detonating cord nor cock across the hole and bridge the flow of stemming material. Spacing of cartridges along the length of the detonating cord must not exceed 30 inches center to center and must be adjusted to give the desired results.

If a solid column type explosive is used, the column must be assembled and affixed to the detonating cord to comply with the explosive manufacturer's instructions. Submit as an informational submittal a copy of the explosive manufacturer's instruction before using the column type explosive.

The bottom charge of a presplit hole may be larger than the line charges but must not cause overbreak. The top charge of the presplitting hole must be placed far enough below the collar to avoid overbreaking the surface.

Before placing the charge, the hole must be free of obstructions for the hole's entire depth. Ensure placing of the charge does not cause caving of material from the walls of the holes.

The Engineer may order the use of stemming materials as necessary to achieve a satisfactory presplit face. Stemmed presplit holes must be completely filled to the collar.

Detonate charges in each presplitting pattern simultaneously.

The tolerances in section 19-2.03G do not apply to presplit surfaces of excavation slopes where presplitting is required. The presplit face must not deviate more than 1 foot from the plane passing through adjacent drill holes, except where the character of the rock is such that irregularities are unavoidable. The average plane of the completed slopes must not deviate more than 1 foot from the plan slopes. These tolerances are measured perpendicular to the plane of the slope. No portion of the slope may encroach on the roadbed.

DIVISION V SURFACINGS AND PAVEMENTS
37 BITUMINOUS SEALS

Add to section 37-3.02A:

Aggregate for slurry seal must be Type 2.

AA

39 HOT MIX ASPHALT

Add to section 39-1.01:

Produce and place HMA Type A under the method construction process.

Produce and place RHMA-O under the method construction process.

Add to section 39-1.02C:

Asphalt binder used in HMA Type A must be PG 64-16

Asphalt binder mixed with asphalt modifier and CRM for asphalt rubber binder must be 64-16.

Add to section 39-1.02E:

Aggregate for RHMA-O Type A must comply with the 1/2-inch OGFC gradation.

Add to section 39-1.03B:

The Engineer determines the Optimum Bitumen Content (OBC) under California Test 368.

Replace the 2nd, 3rd, and 4th paragraphs of section 39-1.11B(1) of the RSS for section 39-1.11 with:

Place HMA on adjacent traveled way lanes so that at the end of each work shift the distance between the ends of HMA layers on adjacent lanes is from 5 to 10 feet. Place additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. You may place Kraft paper or another authorized bond breaker under the conform tapers to facilitate the taper removal when paving operations resume.

Delete section 39-1.11B(2) of the RSS for section 39-1.11.

Add to section 39-1.11D of the RSS for section 39-1.11:

Pave shoulders and median borders adjacent to the lane before opening a lane to traffic.

Place shoulder conform tapers concurrently with the adjacent lane's paving.

Place additional HMA along the pavement's edge to conform to road connections and driveways. Hand rake, if necessary, and compact the additional HMA to form a smooth conform taper.

Add to section 39-1.14:

Full compensation for any dike backfill or preparation of the area to receive HMA dike is included in the contract price paid per linear foot for Place Hot Mix Asphalt Dike and no additional compensation will be allowed therefor

Replace section 39-1.16 with:

39-1.16 RUMBLE STRIPS

39-1.16A General

Construct rumble strips in the top layer of HMA surfacing by ground-in or rolled-in methods.

39-1.16B Materials

Not Used

39-1.16C Construction

Select the method and equipment for constructing ground-in indentations.

Do not construct rumble strips on structures or approach slabs.

Construct rumble strips within 2 inches of the specified alignment. The grinding equipment must be equipped with a sighting device enabling the operator to maintain the rumble strip alignment.

Indentations must comply with the specified dimensions within 0.06 inch in depth and 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 from the roadbed.

Dispose of removed material.

On ground areas, apply fog seal coat under section 37-2.

39-1.16D Payment

Rumble strips are measured by the station along the length of the rumble strips without deductions for gaps between indentations.

Replace section 39-1.31 with:

39-1.31 WARM MIX ASPHALT TECHNOLOGY OPTION

39-1.31A GENERAL

39-1.31A(1) Summary

You may produce HMA Type A, Type B, or RHMA-G using an approved warm mix asphalt (WMA) technology. For Department-approved WMA technologies, go to:

http://www.dot.ca.gov/hq/esc/approved_products_list/

AASHTO T 324 (Modified) is AASHTO T 324, "Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA)," with the following parameters:

1. Target air void content is 7 ± 1 percent
2. 4 test specimens
3. 6-inch gyratory compacted test specimen

4. Test temperature is 122 ± 2 degrees F
5. Impression measurements at every 100 passes
6. Inflection point as the number of wheel passes at the intersection of the creep slope and the stripping slope
7. Testing shut off after 25,000 passes
8. For RHMA test specimens:
 - 8.1. Superpave Gyratory Compactor ram pressure may be increased to a maximum 825 kPa
 - 8.2. Specimens may be held at a constant height for a maximum 90 minutes

HMA samples must be prepared under California Test 304, except the samples must be cured in a forced air draft oven at 275 degrees F for 4 hours \pm 10 minutes.

39-1.31A(2) Definitions

WMA: HMA produced at temperatures no greater than 275 degrees F.

HMA with WMA technology: HMA produced using additives to aid with mixing and compaction of HMA produced at temperatures greater than 275 degrees F.

39-1.31A(3) Submittals

39-1.31A(3)(a) General

With the JMF submittal as specified in section 39-1.03C, submit:

1. For WMA water injection foam technology:
 - 1.1. Name of technology
 - 1.2. Laboratory Procedure LP-12 test result for foamed bitumen expansion ratio dated within 12 months of submittal
 - 1.3. Laboratory Procedure LP-12 test result for foamed bitumen half-life dated within 12 months of submittal
 - 1.4. Optimum foaming water content
 - 1.5. Proposed HMA production temperature range
2. For WMA additive technology:
 - 2.1. Name of technology
 - 2.2. Percent admixture by weight of binder and percent admixture by total weight of HMA as recommended by the manufacturer
 - 2.3. Methodology for inclusion of admixture in laboratory-produced HMA
 - 2.4. Proposed HMA production temperature range

The 4th and 5th paragraphs of section 39-1.03C do not apply. Instead submit:

1. California Test 371 test results for dry strength for untreated plant-produced HMA
2. California Test 371 test results for tensile strength ratio for untreated plant-produced HMA
3. California Test 204 test results for plasticity index if untreated plant-produced HMA test result determined under California Test 371 is below the specified HMA mix design requirements
4. California Test 371 test results for treated plant-produced HMA if untreated plant-produced HMA test result determined under California Test 371 is below the specified HMA mix design requirements
5. AASHTO T 324 (Modified) test results data showing number of passes with rut depth for plant-produced HMA
6. AASHTO T 324 (Modified) test results data showing number of passes at inflection point for plant-produced HMA

39-1.31A(3)(b) Preparing Conference

With the JMF submittal, submit a list of names participating in the preparing conference. Identify each participant's name, employer, title, and role in the production and placement of WMA or HMA with WMA technology.

39-1.31A(3)(c) Tests and Samples

The 6th paragraph of section 39-1.03C does not apply.

At production start-up and within $\pm 1,000$ tons of the halfway point of production of HMA produced using WMA technology, submit samples split from your HMA production sample for California Test 371 and AASHTO T 324 (Modified) test to the Engineer and METS, Attention: Moisture Test.

With the JMF submittal, at JMF verification, at production start-up, and for each 10,000 tons of HMA produced, submit California Test 371 test results and AASHTO T 324 (Modified) test results for mix design and production to the Engineer and electronically to:

Moisture_Tests@dot.ca.gov

With the JMF submittal, at JMF verification, at production start-up evaluation, and for each 10,000 tons of HMA produced, submit 1 tested sample set from the AASHTO T 324 (Modified) test to the Engineer.

39-1.31A(3)(d) Daily Production Log

Submit the log of production data, daily and upon request.

39-1.31A(4) Quality Control and Assurance

39-1.31A(4)(a) General

Not Used

39-1.31A(4)(b) Technical Representative

A technical representative from the WMA technology supplier must be present during the first 3 days of production and placement of WMA or HMA using WMA technology. The technical representative must advise you, the Engineer, and the HMA producer. The technical representative must direct the HMA mix operation as it relates to the WMA technology.

The technical representative must advise the HMA producer regarding HMA plant and HMA plant process-controller modifications necessary for integrating WMA technology with HMA plant. HMA plant modifications and WMA technology equipment, scales, and meters must comply with the Department's Materials Plant Quality Program (MPQP).

39-1.31A(4)(c) Prepaving Conference

Schedule a prepaving conference with the Engineer at a mutually agreed time and place. Make arrangements for the conference facility. Be prepared to discuss:

1. HMA production and placement
2. Method for incorporating WMA technology and any impacts on HMA production and placement including requirements for compaction and workmanship
3. Contingency plan

The following personnel must attend the prepaving conference:

1. Project Manager
2. Superintendent
3. Technical representative for WMA technology
4. Asphalt binder supplier
5. HMA plant manager
6. HMA plant operators
7. HMA paving foreman

39-1.31A(4)(d) Quality Control Testing

In addition to the requirements specified in section 39-2.02B for Standard construction process and section 39-4.02C for QC/QA construction process and for Method construction process, perform sampling and testing at the specified frequency and location for the following additional quality characteristics:

Minimum Quality Control

Quality characteristic	Test method	Minimum sampling and testing frequency	Requirement			Sampling location	Maximum reporting time allowance
			HMA Type				
			A	B	RHMA-G		
Moisture susceptibility (minimum dry strength, psi)	California Test 371	First production day and 1 per every 10,000 tons	120	120	120	Loose mix behind the paver. See California Test 125	15 days
Moisture susceptibility (tensile strength ratio, %)	California Test 371		Report Only	Report Only	Report Only		
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) PG-58 PG-64 PG-70 PG-76	AASHTO T 324 (Modified)	First production day and 1 per every 10,000 tons	10,000 15,000 20,000 25,000	10,000 15,000 20,000 25,000	15,000 20,000 25,000 --	Loose mix behind the paver. See California Test 125	7 days ^a
Hamburg wheel track (inflection point minimum number of passes) PG-58 PG-64 PG-70 PG-76	AASHTO T 324 (Modified)		10,000 10,000 12,500 15,000	10,000 10,000 12,500 15,000	10,000 12,500 15,000 --		

^a Submit test data and 1 tested sample set.

39-1.31A(4)(e) Engineer's Acceptance

In addition to the requirements specified in section 39-2.03A for Standard construction process, section 39-3.02A for Method construction process, and section 39-4.04A for QC/QA construction process, the Engineer samples HMA for acceptance testing and tests for the following additional quality characteristic:

HMA Acceptance

Quality characteristic	Test method	Requirement			Sampling location
		HMA Type			
		A	B	RHMA-G	
Moisture susceptibility (minimum dry strength, psi)	California Test 371	120	120	120	Loose mix behind the paver. See California Test 125
Moisture susceptibility (tensile strength ratio, %)	California Test 371	Report Only ^a	Report Only ^a	Report Only ^a	
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth) PG-58 PG-64 PG-70 PG-76	AASHTO T 324 (Modified)	10,000 15,000 20,000 25,000	10,000 15,000 20,000 25,000	15,000 20,000 25,000 --	Loose mix behind the paver. See California Test 125
Hamburg wheel track (inflection point minimum number of passes) PG-58 PG-64 PG-70 PG-76	AASHTO T 324 (Modified)	10,000 10,000 12,500 15,000	10,000 10,000 12,500 15,000	10,000 12,500 15,000 --	

^aThe Department does not use California Test 371 tensile strength ratio test results from production to determine specification compliance.

39-1.31B MATERIALS

39-1.31B(1) General

Not Used

39-1.31B(2) Foaming Bitumen

If water injection is used by the WMA technology, the foamed bitumen must have the following quality characteristics:

Quality Requirements for Foaming Bitumen

Quality characteristic	Test method	Requirement
Expansion ratio (minimum)	LP-12	4
Half-life (seconds minimum)	LP-12	4

For Laboratory Procedure LP-12, go to:

<http://www.dot.ca.gov/hq/esc/Translab/ofpm/fmplab.htm>

39-1.31B(3) Hot Mix Asphalt

39-1.31B(3)(a) General

Not Used

39-1.31B(3)(b) Mix Design

For WMA additive technology, produce HMA mix samples for your mix design using your methodology for inclusion of WMA admixture in laboratory produced HMA. For WMA water injection foam technology, the use of foamed asphalt for mix design is not required.

HMA mix design must comply with the following quality characteristics:

Hot Mix Asphalt Mix Design Requirements

Quality characteristic	Test method	HMA Type		
		A	B	RHMA
Moisture susceptibility (minimum dry strength, psi)	California Test 371	120	120	120
Moisture susceptibility (tensile strength ratio, %)	California Test 371	70	70	70
Hamburg wheel track (minimum number of passes at 0.5 inch average rut depth)	AASHTO T 324 (Modified)			
PG-58		10,000	10,000	15,000
PG 64		15,000	15,000	20,000
PG-70		20,000	20,000	25,000
PG-76		25,000	25,000	--
Hamburg wheel track (inflection point minimum number of passes)	AASHTO T 324 (Modified)			
PG-58		10,000	10,000	10,000
PG 64		10,000	10,000	12,500
PG-70		12,500	12,500	15,000
PG-76		15,000	15,000	--

If the determined test results under California Test 371 or AASHTO T 324 (Modified) for untreated plant produced HMA are less than the minimum requirement for the mix design, determine the plasticity index of the aggregate blend under California Test 204. Choose from the antistrip treatments based on plasticity index as shown in the following table:

Hot Mix Asphalt Antistrip Treatment Options

Quality characteristic	Test method	Treatment requirement
Plasticity index from 4 to 10 ^a	California Test 204	Dry hydrated lime with marination Lime slurry with marination
Plasticity index less than 4		Liquid antistrip Dry hydrated lime without marination Dry hydrated lime with marination Lime slurry with marination

^a If the plasticity index is greater than 10, do not use that aggregate blend.

Mix design for treated plant-produced HMA must comply with the mix design requirements, except if the tensile strength ratio test result for treated plant produced RHMA-G is less than the mix design

requirement for tensile strength ratio, the minimum tensile strength ratio requirement is waived, but you must use any of the following antistrip treatments:

1. HMA aggregate lime treatment – slurry method
2. HMA aggregate lime treatment – dry lime method
3. Liquid antistrip treatment using 0.5 percent liquid antistrip

39-1.31B(3)(c) Job Mix Formula Verification

HMA produced for JMF verification must be produced using the WMA technology shown in the JMF submittal.

Perform the AASHTO T 324 (Modified) test for compliance with the mix design requirements. Submit test data and one tested sample set from the AASHTO T 324 (Modified) test.

The Engineer may verify that the HMA complies with the mix design requirements for AASHTO T 324 (Modified) and California Test 371.

If you request, the Engineer verifies RHMA-G quality requirements within 5 business days of sampling. The 2nd sentence in the 8th paragraph of section 39-1.03E does not apply.

39-1.31B(4) Production

39-1.31B(4)(a) General

For the Standard and QC/QA construction processes, HMA produced using WMA technology must be produced at a temperature between 240 and 325 degrees F.

For the Method construction process, HMA produced using WMA technology must be produced at the temperatures specified in section 39-1.08.

HMA additives used for antistrip treatment and WMA technologies may be either in a liquid or dry state.

The HMA plant must have a sampling device in the feed line connecting the additive storage to the additive metering system. The sampling equipment must comply with California Test 125.

39-1.31B(4)(b) Proportioning Warm Mix Asphalt Technologies

HMA plants using WMA technology must comply with the Department's MPQP.

Proportion all ingredients by weight. The HMA plant process controller (PPC) must be the sole source of ingredient proportioning control and be fully interfaced with all scales and meters used in the production process. The addition of the HMA additive must be controlled by the PPC.

Weighing and metering devices used for the production of additive enhanced HMA must comply with the requirements of the MPQP. If a loss-in-weight meter is used for dry HMA additive, the meter must:

1. Comply with the requirements of the MPQP
2. Have an automatic and integral material delivery control system for the refill cycle

Calibrate the loss-in-weight meter by:

1. Including at least 1 complete system refill cycle during each calibration test run
2. Operating the device in a normal run mode for 10 minutes immediately before starting the calibration process
3. Isolating the scale system within the loss-in-weight feeder from surrounding vibration
4. Checking the scale system within the loss-in-weight feeder for accuracy before and after the calibration process and daily during mix production
5. Using a 15-minute or 250-pound-minimum test run size for a dry ingredient delivery rate of less than 1 ton/hr
6. Complying with the limits of Table B, "Conveyor Scale Testing Extremes," in the MPQP

Produce additive enhanced HMA by using either a continuous mixing or a batch type HMA plant.

Liquid ingredient additive, including a normally dry ingredient made liquid, must be proportioned with a mass flow meter at continuous mixing plants. Use a mass flow meter or a container scale to proportion liquid additives at batch mixing plants.

Continuous mixing plants using HMA additives must comply with the following:

1. Dry ingredient additives for continuous production must be proportioned with a conveyor scale or a loss-in-weight meter.
2. HMA PPC and ingredient measuring systems must be capable of varying all ingredient feed rates proportionate with the dry aggregate delivery at all production rates and rate changes.
3. Liquid HMA additive must enter the production stream with the binder. Dry HMA additive must enter the production stream at or before the mixing area.
4. If dry HMA additives are used at continuous mixing HMA plants, baghouse dust systems must return all captured material to the mix.
5. HMA additive must be proportioned to within ± 0.3 percent of the target additive rate.

Batch mixing plants using HMA additives must comply with the following:

1. Metered HMA additive must be placed in an intermediate holding vessel before being added to the stream of asphalt binder as it enters the pugmill.
2. If a container scale is used, weigh additive before combining with asphalt binder. Keep the container scale separate from other ingredient proportioning. The container scale capacity must be no more than twice the volume of the maximum additive batch size. The container scale's graduations must be smaller than the proportioning tolerance or 0.001 times the container scale capacity.
3. Dry HMA additive proportioning devices must be separate from metering devices for the aggregates and asphalt binder. Proportion dry HMA additive directly into the pugmill or place in an intermediate holding vessel to be added to the pugmill at the appropriate time in the batch cycle. Dry ingredients for batch production must be proportioned with a hopper scale.
4. Zero tolerance for the HMA additive batch scale is ± 0.5 percent of the target additive weight. The indicated HMA additive batch scale weight may vary from the preselected weight setting by up to ± 1.0 percent of the target additive weight.

39-1.31B(4)(c) Production Data Collection

The HMA PPC must produce an electronic log of production data consisting of a series of snapshots captured at a maximum of 1-minute intervals throughout daily production. Each snapshot of production data must be a register of production activity at that time and not a summation of the data over the preceding interval to the previous snapshot. The amount of material represented by each snapshot is the amount produced during the 0.5-minute interval before and the 0.5-minute interval after the capture time. Collect and hold data for the duration of the contract and submit the electronic media, daily and upon request. The snapshot of production data must include the following:

1. Date of production
2. Production location
3. Time of day the data is captured
4. HMA mix type being produced and target binder rate
5. HMA additive type, brand, and target rate
6. Temperature of the binder and HMA mixture
7. For a continuous mix operation, the rate of flow of the dry aggregate calculated from the wet aggregate flow rate as determined by the conveyor scale
8. For a continuous mix plant operation, the rate of flow of the asphalt meter
9. For a continuous mix plant operation, the rate of flow of HMA additive meter
10. For a batch plant operation, actual batch weights of all ingredients
11. Dry aggregate to binder ratio calculated from metered ingredient output
12. Dry aggregate to HMA additive ratio calculated from metered output

Electronic media must be presented in a comma-separated values (CSV) or tab-separated values (TSV) format. Captured data, for the ingredients represented by production snapshot, must have allowances for

DIVISION VI STRUCTURES

47 EARTH RETAINING SYSTEMS

Add to section 47-2.01A:

You may use an alternative earth retaining system for the mechanically stabilized embankment at Carson Creek. The alternative system must comply with section 47-6.

Add to section 47-2.02A:

Class 2 aggregate base must comply with section 26.

Add to section 47-2.03B:

Where shown, remove material below the bottom of leveling pad for a width equal to the length of soil reinforcement elements plus 1 foot or as shown. Replace with Class 2 aggregate base and place and compact as specified for structure backfill in section 19-3.03E. Relative compaction must be at least 95 percent.

Replace the 1st paragraph of section 47-2.04 with:

The vertical height of each section is the difference in elevation on the outer face from the bottom of the leveling pad to the top of wall profile.

Add to section 47-6.01A:

The alternative earth retaining system must be one of the systems shown in the following table:

AA

49 PILING

Add to section 49-1.03:

Expect difficult pile installation.

Replace "Reserved" in section 49-3.02A(4)(b) with:

Schedule and hold a preconstruction meeting for CIDH concrete pile construction (1) at least 5 business days after submitting the pile installation plan and (2) at least 10 days before the start of CIDH concrete pile construction. You must provide a facility for the meeting.

The meeting must include the Engineer, your representatives, and any subcontractors involved in CIDH concrete pile construction.

The purpose of this meeting is to:

1. Establish contacts and communication protocol between you and your representatives, any subcontractors, and the Engineer
2. Review the construction process, acceptance testing, and anomaly mitigation of CIDH concrete piles

The Engineer will conduct the meeting. Be prepared to discuss the following:

1. Pile placement plan, dry and wet
2. Acceptance testing, including gamma-gamma logging, cross-hole sonic logging, and coring
3. *Pile Design Data Form*
4. Mitigation process
5. Timeline and critical path activities
6. Structural, geotechnical, and corrosion design requirements
7. Future meetings, if necessary, for pile mitigation and pile mitigation plan review
8. Safety requirements, including Cal/OSHA and Tunnel Safety Orders

Add to section 49-3.02B(6)(c):

The synthetic slurry must be one of the materials shown in the following table:

Material	Manufacturer
SlurryPro CDP	KB INTERNATIONAL LLC 735 BOARD ST STE 209 CHATTANOOGA TN 37402 (423) 266-6964
Super Mud	PDS CO INC 105 W SHARP ST EL DORADO AR 71731 (870) 863-5707
Shore Pac GCV	CETCO CONSTRUCTION DRILLING PRODUCTS 2870 FORBS AVE HOFFMAN ESTATES IL 60192 (800) 527-9948
Terragel or Novagel Polymer	GEO-TECH SERVICES LLC 220 N. ZAPATA HWY STE 11A-449A LAREDO TX 78043 (210) 259-6386

Use synthetic slurries in compliance with the manufacturer's instructions. Synthetic slurries shown in the above table may not be appropriate for a given job site.

Synthetic slurries must comply with the Department's requirements for synthetic slurries to be included in the above table. The requirements are available from the Offices of Structure Design, P.O. Box 168041, MS# 9-4/11G, Sacramento, CA 95816-8041.

SlurryPro CDP synthetic slurry must comply with the requirements shown in the following table:

SLURRYPRO CDP

Property	Test	Value
Density During drilling	Mud Weight (density), API 13B-1, section 1	≤ 67.0 pcf ^a
Before final cleaning and immediately before placing concrete		≤ 64.0 pcf ^a
Viscosity During drilling	Marsh Funnel and Cup. API 13B-1, section 2.2	50–120 sec/qt
Before final cleaning and immediately before placing concrete		≤ 70 sec/qt
pH	Glass electrode pH meter or pH paper	6.0–11.5
Sand content, percent by volume Before final cleaning and immediately before placing concrete	Sand, API 13B-1, section 5	≤ 0.5 percent

^aIf authorized, you may use slurry in salt water. The allowable density of slurry in salt water may be increased by 2 pcf.

Slurry temperature must be at least 40 degrees F when tested.

Super Mud synthetic slurry must comply with the requirements shown in the following table:

SUPER MUD

Property	Test	Value
Density During drilling	Mud Weight (Density), API 13B-1, section 1	≤ 64.0 pcf ^a
Before final cleaning and immediately before placing concrete		≤ 64.0 pcf ^a
Viscosity During drilling	Marsh Funnel and Cup. API 13B-1, section 2.2	32–60 sec/qt
Before final cleaning and immediately before placing concrete		≤ 60 sec/qt
pH	Glass electrode pH meter or pH paper	8.0–10.0
Sand content, percent by volume Before final cleaning and immediately before placing concrete	Sand, API 13B-1, section 5	≤ 0.5 percent

^aIf authorized, you may use slurry in salt water. The allowable density of slurry in salt water may be increased by 2 pcf.

Slurry temperature must be at least 40 degrees F when tested.

Shore Pac GCV synthetic slurry must comply with the requirements shown in the following table:

SHORE PAC GCV

Property	Test	Value
Density During drilling	Mud Weight (Density), API 13B-1, section 1	≤ 64.0 pcf ^a
Before final cleaning and immediately before placing concrete		≤ 64.0 pcf ^a
Viscosity During drilling	Marsh Funnel and Cup. API 13B-1, section 2.2	33–74 sec/qt
Before final cleaning and immediately before placing concrete		≤ 57 sec/qt
pH	Glass electrode pH meter or pH paper	8.0–11.0
Sand content, percent by volume Before final cleaning and immediately before placing concrete	Sand, API 13B-1, section 5	≤ 0.5 percent

^aIf authorized, you may use slurry in salt water. The allowable density of slurry in salt water may be increased by 2 pcf.
Slurry temperature must be at least 40 degrees F when tested.

Terragel or Novagel Polymer synthetic slurry must comply with the requirements shown in the following table:

TERRAGEL OR NOVAGEL POLYMER

Property	Test	Value
Density During drilling	Mud Weight (Density), API 13B-1, section 1	≤ 67.0 pcf ^a
Before final cleaning and immediately before placing concrete		≤ 64.0 pcf ^a
Viscosity During drilling	Marsh Funnel and Cup. API 13B-1, section 2.2	45–104 sec/qt
Before final cleaning and immediately before placing concrete		≤ 104 sec/qt
pH	Glass electrode pH meter or pH paper	6.0–11.5
Sand content, percent by volume Before final cleaning and immediately before placing concrete	Sand, API 13B-1, section 5	≤ 0.5 percent

^aIf authorized, you may use slurry in salt water. The allowable density of slurry in salt water may be increased by 2 pcf.
Slurry temperature must be at least 40 degrees F when tested.

Delete the 5th paragraph of the RSS for section 51-1.04.

Add to section 51:

51-8 PRECAST BRIDGE SYSTEM

51-8.01 GENERAL

51-8.01A Summary

Work consists of installing the Precast Bridge System, mechanically stabilized earthwalls (MSEs), cast-in-place concrete footings, and perforated wingwall drains. Where manufacturer's specifications conflict, the most stringent requirements must apply.

Precast elements must be designed to comply with the "Standard Specifications for Highway Bridges," 17th Edition, adopted by the American Association of State Highway and Transportation Officials, 2002.

51-8.01B Definitions

Not Used

51-8.01C Submittals

Submit shop drawings, design calculations, precast qualifications, bridge installation and protection plan within ten (10) working days after the receipt of Notice of Award. Upon receipt of the Precast Bridge System submittal, Engineer must review and approve or request a revised submittal(s) within five (5) working days after the initial submittal(s). If corrections are required to the submittal, the Precast Bridge System manufacturer must remedy all corrections within five (5) working days and resubmit for Department approval.

You must submit shop drawings for all elements of the Precast Bridge System and cast-in-place foundations under these Special Provisions. The design drawings must be stamped by a licensed Professional Engineer registered in the State of California.

You must submit the design calculations for all elements of the Precast Bridge System and cast-in-place foundations under these Special Provisions. The calculations must be stamped by a licensed Professional Engineer registered in the State of California.

You must submit precaster qualifications in accordance with the Certification of Bidder's Precast Bridge Manufacturer's Qualifications attached to the Contractor's Bid Proposal, which demonstrate adherence to the standards set forth in the NPCA Quality Control Manual. The submittal must show that the precaster has met one or both of the following:

- Certified by the Precast/Prestressed Concrete Institute Plant Certification Program or the National Precast Concrete Association's Plant Certification Program before and during production of the elements of the bridge system.
- Has been in the business of producing precast concrete products similar to those specified for a minimum of 3 years. The precaster must maintain a permanent quality control department or retain an independent testing agency on a continuing basis. The agency must issue a report, certified by a licensed engineer, detailing the ability of the precaster to produce quality products consistent with industry standards.

You must submit a bridge installation and protection plan for Department review. The plan must comply with the manufacturer's specifications and include methods and sequence of all aspects of the bridge installation work including shoring, bracing, or laying back slopes, utility removal, excavation for bridge and wingwall footings, bridge installation, backfill, and proposed noticing of utility companies. These sequences must also be reflected in your schedule.

Precast element dimensions and reinforcement details must be shown on the plan and shop drawings prepared by the manufacturer and provided by you. The shop drawings must include design calculations as well as the minimum concrete compressive strength. The minimum steel yield strength must be 60,000

psi, unless otherwise noted on the shop drawings. The results of compression tests must be provided to the Department as results become available.

You must furnish the Engineer a Certificate of Compliance certifying the materials comply with the applicable specifications. A copy of all test results performed by the manufacturer necessary to assure contract compliance.

The manufacturer must submit for approval by the Engineer a water-reducing admixture for the purpose of increasing workability and reducing the water requirement for the concrete. The addition to the mix of calcium chloride or admixtures containing calcium chloride must not be allowed.

You must submit copies of all test results to the Engineer prior to delivery of the precast elements to the project site.

You must anticipate a five (5) day review time for all bridge plan submittals.

Submittal approval does not relieve you of the responsibility to perform the work in an acceptable manner and in accordance with the Plans, the Standard Specifications, and these Special Provisions. Department review 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. You are responsible for dimensions which must 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.

51-8.01D Quality Control and Assurance

Concrete compressive strength must be determined from compression tests made on cylinders or cores and must be tested in accordance to ASTM C 31, C 39, C 42 or C 497. The manufacturer furnishing precast elements must furnish all facilities and personnel necessary to carryout the tests required. For cylinder testing, a minimum of 3 cylinders must be taken for each lot of bridge elements. A lot must be defined as the precast elements made using the same concrete mix during a single day's production. For core testing, one core must be cut from each of 3 precast elements selected at random from each group of 15 or fewer elements made using a single concrete mix in the same day's production. Each lot must be considered separately for the purpose of testing and acceptance.

Cylinders must be made and tested as prescribed by the ASTM C 39 Specification. Cores must be obtained and tested for compressive strength in accordance with the provisions of the ASTM C 42 Specification.

Acceptability of Cylinder Tests - When the average compressive strength of all cylinders tested is equal to or greater than the design compressive strength, and not more than 10% of the cylinders tested have a compressive strength less than the design concrete strength, and no cylinder tested has a compressive strength less than 80% of the design compressive strength, then the lot must be accepted. When the compressive strength of the cylinders tested does not conform to this acceptance criteria, the acceptability of the lot may be determined as described in "Acceptability of Core Tests," below.

Acceptability of Core Tests - The compressive strength of the concrete in a lot is acceptable when the average core test strength is equal to or greater than the design concrete strength. When the compressive strength of the core tested is less than the design concrete strength, the precast element from which that core was taken may be re-cored. When the compressive strength of the re-core is equal to or greater than the design concrete strength, the compressive strength of the concrete in that lot is acceptable. When the compressive strength of any re-core is less than the design concrete strength, the precast element from which that core was taken must be rejected. Two precast elements from the remainder of the lot must be selected at random and one core must be taken from each. If the compressive strength of both cores is equal to or greater than the design concrete strength, the compressive strength of the remainder of that lot is acceptable. If the compressive strength of either of the two cores tested is less than the design concrete strength, the remainder of the lot must be rejected or, at the option of the manufacturer, each precast element of the remainder of the lot must be cored and

accepted individually, and any of these elements that have cores with less than the design concrete strength must be rejected.

The core holes must be plugged and sealed by the manufacturer in a manner such that the elements must meet all of the test requirements of this specification. Precast elements so sealed must be considered satisfactory for use.

51-8.02 MATERIALS

Concrete must comply with section 90 in addition to these specifications.

Reinforcement must comply with section 52 and the requirements of ASTM Designation A 615 Grade 60, in addition to these specifications.

The concrete for the precast elements must be air-entrained, composed of Portland cement, fine and coarse aggregates, admixtures, and water. Air-entrained concrete must contain 6 ± 2 percent air, and the air entraining admixture must conform to AASHTO M 154. Air content must be tested in accordance to ASTM C 231 or C 173.

The concrete facing units must be manufactured and tested in accordance with ASTM C 1372. Units must have a minimum 28 day compressive strength of 4,000 psi. The concrete must have a maximum moisture absorption of 5 percent. Units must be free of defects that indicate imperfect molding, concrete weakening or lessened durability. The units must be free of chips and cracks when viewed from a distance of 10 feet under diffused lighting. Dimensions variances must be in accordance with ASTM C 1372. Adjustments must be made for the specified patterns on the facing surface.

The units must be fully supported until the concrete reaches a minimum compressive strength of 1,000 psi. The units may be shipped after reaching a minimum compressive strength of 3,000 psi. All units must be handled, stored and shipped in such a manner as to eliminate the dangers of chipping, discoloration, cracks, fractures, and excessive bending stresses.

If any of the tests indicates non compliance, you must perform a second testing of the same lot. The results of the second test must determine the acceptability of the lot. Units must be rejected because of failure to meet any of the requirements specified above. Minor cracks and chips incidental to the usual method of manufacture and shipments are not grounds for rejection.

All reinforcing and attachment devices for MSE system must be carefully inspected to insure they are true to size and free of defects that may impair their strength and durability. Reinforcing strips must be shop fabricated of cold drawn steel wire conforming to the minimum requirements of ASTM A 82 and must be welded into the finished fabric strips in accordance with ASTM A 185. Galvanization must be applied after the mesh is fabricated and conform to the minimum requirements of ASTM A 123 (AASHTO M-111). Connector pins must be 9/16 inch in diameter and be fabricated from A 82 steel. Galvanization must conform to ASTM A 123 (AASHTO M-111). Alignment pins must be 1/2 inch in diameter and fabricated from pultruded fiberglass. Alignment pins may also be fabricated from ASTM A 36 or A 82 steel and galvanized in conformance with ASTM A 123 (AASHTO M-111) when specified.

The unit drainage fill material in and for a nominal distance of 1 foot directly behind the concrete facing units or as indicated on the construction drawings must consist of a crushed stone material complying to the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
<u>1 inch</u>	<u>100</u>
<u>3/4 inch</u>	<u>75-100</u>
<u>No. 4</u>	<u>0-10</u>
<u>No. 50</u>	<u>0-5</u>

In addition the unit drainage fill must comply with the electrochemical properties below.

Structure backfill for earth retaining structures with soil reinforcement must be free of organic material and substantially free of shale or other soft materials of poor durability. Structure backfill must not contain

slag aggregate or recycled materials such as glass, shredded tires, portland cement concrete rubble, asphaltic concrete material, or other unsuitable material. Structure backfill must conform to the following requirements:

<u>Gradation Requirements</u>		
<u>Sieve Size</u>	<u>Percent Passing</u>	<u>California Test</u>
<u>6 inch</u>	<u>100</u>	<u>202</u>
<u>3 inch</u>	<u>78-100</u>	<u>202</u>
<u>No. 4</u>	<u>---</u>	<u>202</u>
<u>No. 30</u>	<u>0-60</u>	<u>202</u>
<u>No. 200</u>	<u>0-15</u>	<u>202</u>

<u>Property Requirements</u>		
<u>Test</u>	<u>Requirement</u>	<u>California Test</u>
<u>Sand Equivalent</u>	<u>12 min</u>	<u>217</u>
<u>Plasticity Index</u>	<u>6 max</u>	<u>204</u>
<u>Minimum Resistivity</u>	<u>2000 ohm-cm</u>	<u>643</u>
<u>Chlorides</u>	<u>< 250 ppm</u>	<u>422</u>
<u>Sulfates</u>	<u>< 500 ppm</u>	<u>417</u>
<u>pH</u>	<u>5.5 to 10.0</u>	<u>643</u>

If 12 percent or less passes the No. 200 sieve and 50 percent or less passes the No. 4, the Sand Equivalent and Plasticity Index requirements will not apply

Drainage pipe must be perforated or slotted PVC pipe manufactured in accordance with ASTM D 3034 or corrugated HDPE pipe manufactured in accordance with AASHTO M 252, unless otherwise specified.

Geotextile filter fabric must be a 4.0 oz/sy, polypropylene, needlepunched nonwoven fabric, unless otherwise specified.

Concrete leveling pads for the MSE system must comply with section 90-2.

Portland Cement must conform to the requirements of ASTM Specifications C 150-Type II cement. Coarse Aggregate must consist of stone having a maximum size of 1 inch. Aggregate must meet requirements for ASTM C 33.

The aggregates, cement, and water must be proportioned and mixed in a batch mixer to produce a homogeneous concrete meeting the strength requirements of this specification. The proportion of Portland cement in the mixture must not be less than 564 pounds (6 sacks) per cubic yard of concrete.

51-8.03 CONSTRUCTION

Earthwork must comply with section 19.

If rock is encountered in the bottom of the excavation where bridge footings are to be placed, You must immediately notify Engineer so that an assessment of the impact on the design can be made. If the design can not be modified and the removal of the rock is necessary, the cost associated with the rock removal and disposal must be included with the unit price bid for "Precast Bridge System".

Structure backfill within 1 foot of the concrete surfaces of the precast concrete bridge units must be handcompacted. Vibrating roller compactors must not be started or stopped within the critical backfill zone limits (Zone B) as shown on Sheet DD-15 of the Plans. Construction or compaction equipment weighing less than 10 tons must not be operated within the critical backfill zone limits or over the bridge units until the crown of the bridge is covered with a minimum of 4 inches of compacted fill. After a minimum of 1 foot of compacted fill is placed over the crown of the bridge, construction equipment weighing less than 30 tons may cross the bridge. Equipment weighing 30 tons or greater may cross the bridge after a minimum of 2 feet of compacted fill is placed over the crown of the bridge units or the roadway structural section is in place. In no case must equipment operating in excess of the design load (HS20) be allowed over the bridge units. As a precaution against introducing unbalanced stresses in the

bridge, when placing backfill, at no time must the difference between the heights of fill on opposite sides of the bridge exceed 24 inches. Backfill in front of wingwalls must be to the daylight lines shown in the plans. During the backfilling operation, care must be taken to keep all joint wrap and filter fabric in its proper location over the joint.

Precast reinforced concrete bridge units manufactured under the plans and these specifications must be designated by span and rise. Keystone wingwalls and headwalls manufactured under the plans and these specifications must be designated by length, height, and deflection angle.

The quality of materials, the process of manufacture, and the finished precast elements must be subject to inspection by the Department. Precast elements may be repaired, if necessary, because of imperfections in manufacture or handling damage.

The precast elements must be subject to rejection due to any deviation from the specification requirements. Individual precast elements may be rejected because of any of the following:

1. Fractures or cracks passing through the wall, except for a single end crack that does not exceed one half the thickness of the wall.
2. Defects that indicate proportioning, mixing, and molding not in compliance.
3. Honeycombed or open texture.
4. Damaged ends, where such damage would prevent making a satisfactory joint.

Each bridge unit must be clearly marked by waterproof paint. The following must be shown on the inside of the vertical leg of the bridge section:

Bridge Span x Bridge Rise
Date of Manufacture
Name or trademark of the manufacturer

The precast bridge units must be installed on cast-in-place concrete footings. The footings must be monolithic. Expansion joints must not be used. The completed footing surface must be constructed in accordance with grades shown on the plans. When tested with a ten (10) foot straight edge, the surface must not vary more than 1/4 inch in ten (10) feet. A three (3) inch deep keyway must be formed in the top surface of the bridge footing 3 inches clear of the inside and outside faces of the bridge units, unless specified otherwise on the plans. The footings must be given a smooth float finish and must reach a compressive strength of 2,000 psi before placement of the precast bridge.

The precast concrete elements must be cured for a sufficient length of time so that the concrete will develop the specified compressive strength in 28 days or less. For the precast elements of the bridge system, any one of the following methods of curing or combinations thereof must be used:

1. Steam Curing - The precast elements may be low pressure, steam cured by a system that will maintain a moist atmosphere.
2. Water Curing - The precast elements may be water cured by any method that will keep the sections moist.
3. Membrane Curing - A sealing membrane conforming to the requirements of ASTM Specification C 309 may be applied and must be left intact until the required concrete compressive strength is attained. The concrete temperature at the time of application must be within ± 10 degrees F of the atmospheric temperature. All surfaces must be kept moist prior to the application of the compounds and must be damp when the compound is applied.

Forms used in manufacture must be sufficiently rigid and accurate to maintain the bridge unit dimensions within the following permissible variations:

Bridge Units

1. Internal Dimensions - The internal dimension must vary not more than 1 percent from the design dimensions nor more than 1-1/2 inches whichever is less.

2. Slab and Wall Thickness - The slab and wall thickness must not be less than that shown in the design by more than 1/4 inch. A thickness more than that required in the design will not be cause for rejection.
3. Length of Opposite Surfaces - Variations in laying lengths of two opposite surfaces of the bridge unit must not be more than 1/2 inch in any section, except where beveled ends for laying of curves are specified by the purchaser.
4. Length of Section - The underrun in length of a section must not be more than 1/2 inch in any bridge unit.
5. Position of Reinforcement - The maximum variation in position of the reinforcement must be +1/2 inch. In no case will the cover over the reinforcement be less than 1-1/2 inches for the outside circumferential steel or be less than 1 inch for the inside circumferential steel as measured to the external or internal surface of the bridge. These tolerances or cover requirements do not apply to mating surfaces of the joints.
6. Area of Reinforcement - The areas of steel reinforcement must be the design steel areas as shown in the manufacturer's shop drawings. Steel areas greater than those required will not be cause for rejection. The permissible variation in diameter of any reinforcement must conform to the tolerances prescribed in the ASTM Specification for that type of reinforcement.

The permissible variation in diameter of any reinforcing must conform to the tolerances prescribed in the ASTM Specification for that type of reinforcing. Steel area greater than that required will not be cause for rejection.

All casting surfaces must be of a smooth nonporous material.

Handling devices will be permitted in each precast element for the purpose of handling and installation. The precast elements must be stored in such a manner to prevent cracking or damage. The units will not be moved until the concrete compressive strength has reached a minimum of 2500 psi and they will not be stored in an upright position.

All reinforcing steel and hardware for the precast elements must be fabricated and placed in accordance with the detailed shop drawings submitted. Reinforcement must consist of welded wire fabric conforming to ASTM A 185 or ASTM A 497, or deformed billet steel bars conforming to ASTM A 615 Grade 60. Longitudinal distribution reinforcement may consist of welded wire fabric or deformed billet-steel bars.

Placement of Reinforcement in Precast Bridge Units

The cover of concrete over the outside circumferential reinforcement must be 2 inches minimum. The cover of concrete over the inside circumferential reinforcement must be 1-1/2 inches minimum, unless otherwise noted on the shop drawings. The clear distance of the end circumferential wires must not be less than one inch nor more than two inches from the ends of each section. Reinforcement must be assembled utilizing single or multiple layers of welded wire fabric, not to exceed 3 layers, supplemented with a single layer of deformed billet-steel bars, when necessary. Welded wire fabric must be composed of circumferential and longitudinal wires meeting the spacing requirements of this Section and must contain sufficient longitudinal wires extending through the bridge unit to maintain the shape and position of the reinforcement. Longitudinal distribution reinforcement may be welded wire fabric or deformed billet-steel bars and must meet the spacing requirements of this Section. The ends of the longitudinal distribution reinforcement must be not more than 3 inches and not less than 1-1/2 inches from the ends of the bridge unit. The outside and inside circumferential reinforcing steel for the corners of the bridge must be bent to such an angle that is approximately equal to the configuration of the bridge's outside corner.

Laps, Welds, and Spacing for Precast Bridge Unit

Tension splices in the circumferential reinforcement must be made by lapping. Laps may be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap must meet the requirements of AASHTO 8.30.2 and 8.32.6. For deformed welded wire fabric, the overlap must meet the requirements of AASHTO 8.30.1 and 8.32.5. The overlap of welded wire fabric must be measured between the outer

most longitudinal wires of each fabric sheet. For deformed billet-steel bars, the overlap must meet the requirements of AASHTO 8.25. For splices other than tension splices, the overlap must be a minimum of 12 inches for welded wire fabric or deformed billet-steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet must be not less than 2 inches nor more than 4 inches. The spacing center to center of the longitudinal wires must not be more than 8 inches. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab must be not more than 16 inches.

The bridge units must be produced with flat butt ends. The ends of the bridge units must be such that when the sections are laid together they will make a continuous line of with a smooth interior free of appreciable irregularities, all compatible with the permissible variations noted above. The joint width between adjacent precast units must not exceed 3/4 inches.

The bridge units must be substantially free of fractures. The ends of the bridge units must be normal to the walls and centerline of the bridge section, within the limits of the variations given above except where beveled ends are specified. The surface of the precast elements must be a smooth steel form or troweled surface. Trapped air pockets causing surface defects must be considered as part of a smooth, steel form finish.

The bridge units must be installed on cast-in-place concrete footings.

The bridge units, wingwalls, and headwalls must be placed as shown on the Plans. Special care must be taken in setting the elements to the true lines and grades. The bridge units must be set on 6 by 6 inches minimum masonite or steel shims. A minimum of 1/2 inch gap must be provided between the footing and the bottom of the bridge's vertical legs. The gap must be filled with grout.

The butt joint made by two adjoining bridge units must be covered with a 7/8 by 1-3/8 inches preformed bituminous joint sealant and a minimum of a 9 inch wide joint wrap. The surface must be free of dirt before applying the joint material. A primer compatible with the joint wrap to be used must be applied for a minimum width of 9 inches on each side of the joint. The external wrap must be EZ-WRAP RUBBER by Press-Seal Gasket Corporation, Seal Wrap by Mar Mac Manufacturing Co. Inc., or approved equal. The joint must be covered continuously from the bottom of one bridge section leg, across the top of the arch and to the opposite bridge section leg. Any laps that result in the joint wrap must be a minimum of 6 inches long with the overlap running downhill.

Unless otherwise indicated on the plans or elsewhere in the specifications, the concrete surface for the front face of the concrete facing units must have a tri-planer split rock face finish. Concrete facing units must be placed so that their final position is vertical or battered.

The foundation for the MSE system must be graded level for a width equal to the overall length of reinforcement elements plus 1.0 foot or as shown on the plans. Before wall construction, except where constructed on rock, the foundation must be compacted with a smooth wheel vibratory roller. Any foundation soils found to be unsuitable will be removed and replaced with structure backfill per section 19-3.

Concrete for leveling pads must be placed at least 24 hours before erecting face units. Concrete leveling pads must be cured a minimum of 12 hours before placement of wall units.

The first course of concrete wall units must be placed on the leveling pad and checked for elevation and alignment. They must also be checked for full contact with the leveling pad. Install the connecting pins at the reinforcement locations and the alignment pins at all other locations. Fill all voids with unit drainage fill and tamp. Place the unit drainage fill and structural backfill material behind this course and compact. Be sure that each course is completely filled, backfilled and compacted before placing the reinforcement or proceeding to the next course. Clean all excess material from the top of units and install the next course. Ensure that connecting and alignment pins protrude into the adjoining courses. Move each unit forward, toward the exposed wall face, until it is restrained by the pins in the previous course. Repeat this procedure to the extent of the wall height.

59 PAINTING

Replace section 59-7 with:
59-7 STAINING CONCRETE

59-7.01 GENERAL

Section 59-7 includes specifications for preparing and staining concrete surfaces using a water-based stain.

Submit stain manufacturer's product data and application instructions 7 days before starting staining activities.

Completed stained concrete surfaces must demonstrate individual color variations and shade character to closely match the stones of the architecturally finished adjacent Latrobe Road/El Dorado Hills Blvd Interchange. A minimum of four colors must be used to capture the color variation from the darkest to the lightest shade.

Complete a test panel under section 51-1.01D(3) before starting staining activities.

59-7.02 MATERIALS

The below stains systems have been approved for staining concrete:

<u>Approved stain systems</u>	<u>Contact information</u>
<u>Okon-Plus</u>	<u>Rust-oleum Corporation</u> <u>11 E hawthorn Pkwy,</u> <u>Vernon Hills, IL 60061</u> <u>(847)-367-7700</u> <u>www.okoninc.com</u>
<u>Newlook International</u>	<u>Newlook International Inc</u> <u>1525 South Gladiola Street, Suite 8,</u> <u>Salt Lake City, UT 84104</u> <u>(877) 763-9566</u> <u>www.getnewlook.com</u>
<u>Lithochrome Tintura</u>	<u>Scofield Systems,</u> <u>6533 Bandini Blvd,</u> <u>Los Angeles, CA 90040</u> <u>(323)-720-3000</u> <u>www.scofield.com</u>

If you choose to use a stain system not from the above list, than that concrete stain must:

1. Be a water-based solution of inorganic metallic salts
2. Not be an acid stain
3. Be a commercial quality product designed specifically for exterior applications
4. Produce abrasion resistance floor deposits
5. Be authorized before using

59-7.03 CONSTRUCITON

Seal joints between concrete surfaces to be stained and adjacent metal before applying stain

required for relocation of pressure reducing station are included in the payment for relocate pressure reducing station.

Add section 77-1.03 Relocate Hydrant

You will remove the existing hydrant and install a new hydrant in the location shown on plans. Lateral pipe for the hydrant must connect to the existing hydrant lateral. A new service tap in the water main is not allowed. All new materials shall be used for the relocation.

New thrust blocks, backfill, valves, and pipe required for connection of hydrant is included in the payment for relocate hydrant.

Add section 77-1.04 Relocate Gate Valve

You will remove the existing gate valve and install a new valve of like type at the location shown on plans. All new materials will be used for the relocation.

New valves, thrust blocks, concrete caps, valve cans, backfill, and pipe required for connection is included in the payment for relocate valve.

Add section 77-1.05 Relocate Air Release Valve

You will remove the existing air release valve and install a new valve of like type at the location shown on plans. Lateral pipe for valves must connect to existing valve laterals. A new service tap in the water main is not allowed. All new materials will be used for the relocation.

New valves, thrust blocks, concrete caps, valve cans, backfill, and pipe required for connection is included in the payment for relocate valve.

Add section 77-1.06 Relocate Blow Off Valve

You will remove the existing air release valve and install a new valve of like type at the location shown on plans. Lateral pipe for valves must connect to existing valve laterals. A new service tap in the water main is not allowed. All new materials will be used for the relocation.

New valves, thrust blocks, concrete caps, valve cans, backfill, and pipe required for connection is included in the payment for relocate valve.

Add section 77-1.07 Relocate Sampling Station

You will remove the existing sampling station and reinstall the existing sampling station in the location shown on plans. You may reuse above ground portions of the existing Sampling Station. All underground piping and valves will be new.

New trust blocks, valve cans, backfill and pipe required for connection of sampling station is included in the payment for relocate Sampling Station.

Add section 77-1.08 Adjust Valve To Grade

You will adjust valve boxes to the proposed grade. New valve boxes, extensions and risers will be used to adjust to the new grade. All work must comply with the latest version of the El Dorado Irrigation District

Water, Sewer and Recycled Water Design and Construction Standards and Standard Detail Drawings for Water, Sewer, and Recycled Water.

The latest copy of the El Dorado Irrigation District standards can be found at:
<http://www.eid.org/index.aspx?page=135>

Add section 77-1.09 Install Blind Flange

You will furnish and install a blind flange in the location shown on the project plans.

Add section 77-1.10 Remove Asbestos Cement Pipe

Asbestos containing materials (ACM), as defined in section 1529, "Asbestos," of the Construction Safety Orders, Title 8, of the California Code of Regulations are suspected to be present in the existing El Dorado Irrigation District water line identified on the plans as AC Water Line.

In compliance with Standard Specifications Section 14-9.01, you must notify the El Dorado County Air Quality Management District (AQMD) as required by the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 61, Subpart M, California Health and Safety Code section 39658(b)(1), and the California Air Resources Board regulations. Provide a copy of the notification form and attachments to the Engineer prior to submittal. Notification must take place a minimum of 10 days prior to starting demolition

Friable ACM is defined under the Asbestos Hazard Emergency Response Act (AHERA) as "any material containing more than 1 percent (%) asbestos by area that hand pressure can crumble, pulverize or reduce to powder when dry". The term non- friable implies that the asbestos fibers are tightly bound into the matrix of the material and should not become an airborne hazard as long as the material remains intact and undamaged, and is not sawed, sanded, drilled or otherwise abraded during removal.

Codes, which govern removal and disposal of materials containing asbestos include, but are not limited to, the following:

1. California Health and Safety Code, Division 20, Chapter 6.5, Hazardous Waste Control.
2. California Code of Regulations, Title 8, General Industry Safety Order 5208 Asbestos.
3. California Code of Regulations, Title 8, Sections 1529 and 341
4. California Code of Regulations, Title 22, Division 4.5
5. Occupational Safety and Health Administration, Part 26 (amended), of Title 29 of the Code of Federal Regulations.
6. Code of Federal Regulations (CFR), Title 40, Part 61, subpart M.

SUBMITTALS

Submit an Asbestos Compliance Plan (ACP). ACP must comply with section 7-1.01A, "Asbestos Compliance Plan," of the Standard Specifications.

ASBESTOS COMPLIANCE PLAN

Prepare an Asbestos Compliance Plan (ACP) to prevent or minimize exposure to asbestos. Attention is directed to Title 8, California Code of Regulations, Construction Safety Orders, section 5192 (b) and section 1529, "Asbestos", Occupational Safety and Health Guidance Manual published by the National Institute of Occupational Safety and Health (NIOSH) and the USEPA for elements of the ACP. The ACP must contain as a minimum but not be limited to: identification of key personnel for the project, job hazard analysis for work assignments, summary of risk assessment, personal protective equipment, delineation of work zones on-site, decontamination procedures, general safe work practices, security measures, emergency response plans and worker training. The ACP must be authorized in writing by an industrial hygienist certified in the practice of industrial hygiene by the American Board of Industrial Hygiene before submission to the Engineer for review and acceptance. Submit the ACP to the Engineer at least 15 days prior to beginning work in areas containing or suspected to contain asbestos.

TRAINING

Prior to performing work in areas containing or suspected to contain asbestos, personnel who have no prior training or are not current in their training status, including State personnel, must complete a safety training program provided by the Contractor, which meets the requirement of Title 8, California Code of Regulations, Section 1529. Provide a written certification of completion of safety training to the Engineer for trained personnel prior to performing work in areas containing or suspected to contain asbestos.

EQUIPMENT AND MEDICAL SURVEILLANCE

Provide personnel protective equipment, training, and medical surveillance required by the Contractor's Asbestos Compliance Plan to State personnel. The number of State personnel will be 5.

REMOVAL

Prepare a work plan for the removal, storage, transportation and disposal of AC Water Line. Removal and management of AC Water Line will be performed by a contractor registered pursuant to Section 6501.5 of the Labor Code and certified pursuant to Section 7058.6 of the Business and Professions Code. Asbestos removal must conform to Cal/OSHA requirements in Title 8 Sections 1529 and 341. Remove all friable material in a manner that conforms to OSHA work practice requirements. Remove and handle all non-friable ACM to prevent breakage. Non-friable ACM such as asbestos cement pipe must be disposed of to a landfill facility permitted to take ACM. The removal of ACM encased in concrete or other similar structural material is not required prior to demolition, but such material must be adequately wetted whenever exposed during demolition. No visible dust shall be generated by the handling, removing, transporting, and disposing of ACM.

Asbestos removal procedures include, but are not limited to:

1. Installing asbestos warning signs at perimeters of abatement work areas.
2. Wetting asbestos materials with sprayers.
3. Containing large volumes of asbestos materials in disposal bins for temporary storage until removed from the site.
4. Disposing of asbestos materials at a permitted disposal facility, which accepts such materials.
5. Working in accordance with Federal, State, and Local requirements for asbestos work.

Mark all vehicles used to transport ACM as specified below, or an equivalent warning:

**DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

Handling

Comply with CCR Title 22, Division 4.5, Chapter 12, Article 3 requirements for the packaging and labeling of removed ACM, and place such removed material in approved plastic containers (double ply plastic bags) with caution labels affixed to bags. Such caution labels must have conspicuous, legible lettering, which spells out the following, or equivalent warning:

**DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD**

At your option, the removed materials containing asbestos may be placed directly into a covered roll off or drop box, which must have the same caution label, affixed on all sides.

Transporting

Haulers of friable asbestos containing material will have a U.S. Environmental Protection Agency Identification Number (U.S. EPA I.D. Number). A valid registration issued by DTSC is required for all vehicles used to transport hazardous waste material.

Disposal

The Engineer will obtain the required EPA generator identification numbers. You must dispose of friable and non-friable waste containing asbestos at a disposal facility permitted to accept such material and that meets all the requirements specified by Federal, State, and Local regulations. Notify the proper authorities at the disposal site in advance of delivery of asbestos containing material to the disposal site. Conduct additional sampling deemed necessary by the owner of the disposal facility for acceptance of the material at your expense.

MEASUREMENT AND PAYMENT

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing the Asbestos Compliance Plan, the Removal Work Plan, including paying the Certified Industrial Hygienist, for providing personal protective equipment, training, medical surveillance, for removing, transporting and disposing of Asbestos Cement Pipe, including all fees associated with disposal, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer will be considered as included in the contract unit price paid for Install Water Line and no additional compensation will be allowed therefor.

Add section 77-1.11 Minor Concrete (Encasement)

You must install minor concrete (encasement) as indicated in the plans where waterline is installed under Bucks Ravine Creek per El Dorado Irrigation District Standard Drawing No. W28.

All materials shown on Standard Drawing No. W28 must comply with the latest version of the El Dorado Irrigation District *Water, Sewer and Recycled Water Design and Construction Standards* and *Standard Detail Drawings for Water, Sewer, and Recycled Water*.

Add section 77-2 Recycled Water Facilities

Recycled water facilities, including valves, valve cans, pipes, and appurtenances must comply with the latest version of the El Dorado Irrigation District *Water, Sewer and Recycled Water Design and Construction Standards* and *Standard Detail Drawings for Water, Sewer, and Recycled Water*.

The latest copy of the El Dorado Irrigation District standards can be found at:
<http://www.eid.org/index.aspx?page=135>

The tie-in work on recycled water line must be completed within 24 consecutive hours from the start of the outage. All tie-in work of the water lines (except on Church property), including the waterline on New Tong Road to the north of the church, must be completed within 4 consecutive hours from the start of the outage.

Add section 77-3 Sewer Facilities

Sewer facilities, including manholes, pipes, and appurtenances must comply with the latest version of the El Dorado Irrigation District *Water, Sewer and Recycled Water Design and Construction Standards* and *Standard Detail Drawings for Water, Sewer, and Recycled Water*.

Gradation Requirements

Sieve size	Percentage passing
1/2"	100
3/8"	90–100
1/4"	35–45
No. 4	5–15
No. 8	0–5
No. 16	0

Crumb rubber aggregate must not contain more than 0.01 percent of wire by mass of crumb rubber and must be free of oils and volatile organic compounds.

Comingling of crumb rubber from different sources is not allowed.

The crumb rubber aggregate must be 3.5 ± 0.5 percent by weight of the concrete.

83-1.02B(1)(b)(iv) Reinforcing Fibers

Reinforcing fibers for minor concrete must be:

1. Polypropylene fibers with an engineered sinusoidal contoured profile manufactured specifically for use as concrete reinforcement.
2. Blended ratio of 4 parts by weight of coarse monofilament fibers with maximum individual fiber lengths of $2 \pm 1/2$ inch and 1 part by weight of fine fibrillated polypropylene fibers of various lengths and thicknesses. If the coarse and fine reinforcing fibers are supplied by the same manufacturer, they may be premixed in a sealed 5-lb degradable bag.
3. From a commercial source.
4. Concrete ingredient as described in your mix design and as recommended by the manufacturer.

The reinforcing fiber content of minor concrete must be 5 lbs/cu yd.

83-1.02B(1)(b)(v) Coloring Agent

If a color for concrete is specified in section 83-1.02B(1)(b)(i), the coloring agent must be integral to the concrete mix and added at the concrete plant.

If the curing compound method is used, use curing compound no. 6.

83-1.02B(1)(b)(vi) Block-Out Material

Use a commercially available expanded polystyrene foam for the block-out material. The expanded polystyrene foam must have a compressive strength of 13 ± 5 psi at 10 percent deformation when tested under ASTM D1621.

You may substitute any appropriate material that meets the compressive strength requirements of the expanded polystyrene foam if authorized.

83-1.02B(1)(c) Construction

83-1.02B(1)(c)(i) General

Areas to receive vegetation control must be cleared of vegetation, trash, and debris. Dispose of removed material.

83-1.02B(1)(c)(ii) Earthwork

Excavate areas to receive vegetation control. Where vegetation control abuts the existing surfacing, the edge of the existing surfacing must be on a neat line or must be cut on a neat line to a minimum depth of 2 inches before removing the surfacing. The finished elevation of the excavated area to receive vegetation control must maintain planned flow lines, slope gradients, and contours of the job site.

Grade areas to receive vegetation control to a smooth, uniform surface and compact to a relative compaction of not less than 95 percent.

Dispose of surplus excavated material uniformly along the adjacent roadway, except as specified in section 14-11.

83-1.02B(1)(c)(iii) Block Out

Install block-out material as shown.

If block-out material is supplied in more than 1 piece, tape the pieces together to make a smooth surface on the top and sides.

Ensure block-out material does not move during concrete placement.

83-1.02B(1)(c)(iv) Placing Minor Concrete

Place minor concrete for vegetation control by hand.

Strike off and compact minor concrete with a mechanical or vibratory screed device. Apply a broom finish. Match the finished grade to the adjacent section of vegetation control, pavement, shoulder, or existing grade.

83-1.02B(1)(d) Payment

Vegetation control (minor concrete) is measured from the actual areas placed. The Department does not pay for vegetation control (minor concrete) placed outside the dimensions shown.

Replace section 83-1.02C(3) with:

83-1.02C(3) Alternative Flared Terminal System

Alternative flared terminal system must be furnished and installed as shown on the plans and under these special provisions.

The allowable alternatives for a flared terminal system must consist of one of the following or a Department-authorized equal.

1. TYPE FLEAT TERMINAL SYSTEM - Type FLEAT terminal system must be a Flared Energy Absorbing Terminal 350 manufactured by Road Systems, Inc., located in Big Spring, Texas, and must include items detailed for Type FLEAT terminal system shown on the plans. The Flared Energy Absorbing Terminal 350 can be obtained from the distributor, Universal Industrial Sales, P.O. Box 699, Pleasant Grove, UT 84062, telephone (801) 785-0505 or from the distributor, Gregory Industries, Inc., 4100 13th Street, S.W., Canton, OH 44708, telephone (330) 477-4800.
2. TYPE SRT TERMINAL SYSTEM - Type SRT terminal system must be an SRT-350 Slotted Rail Terminal (8-post system) as manufactured by Trinity Highway Products, LLC, and must include items detailed for Type SRT terminal system shown on the plans. The SRT-350 Slotted Rail Terminal (8-post system) can be obtained from the manufacturer, Trinity Highway Products, LLC, P.O. Box 99, Centerville, UT 84012, telephone (800) 772-7976.

Submit a certificate of compliance for terminal systems.

Terminal systems must be installed under the manufacturer's installation instructions and these specifications. Each terminal system installed must be identified by painting the type of terminal system in neat black letters and figures 2 inches high on the backside of the rail element between system posts numbers 4 and 5.

For Type SRT terminal system, the steel foundation tubes with soil plates attached must be, at the Contractor's option, either driven, with or without pilot holes, or placed in drilled holes. Space around the steel foundation tubes must be backfilled with selected earth, free of rock, placed in layers approximately 4 inches thick and each layer must be moistened and thoroughly compacted. The wood terminal posts must be inserted into the steel foundation tubes by hand and must not be driven. Before the wood terminal posts are inserted, the inside surfaces of the steel foundation tubes to receive the wood posts

84 TRAFFIC STRIPES AND PAVEMENT MARKINGS

Replace "Reserved" in section 84-6 with:

84-6.01 GENERAL

84-6.01A Summary

Section 84-6 includes specifications for applying thermoplastic traffic stripes and pavement markings with enhanced wet night visibility.

Thermoplastic must comply with section 84-2.

84-6.01B Submittals

Submit a certificate of compliance for glass beads.

84-6.01C Quality Control and Assurance

Within 14 days of applying a thermoplastic traffic stripe or pavement marking with enhanced wet night visibility, the retroreflectivity must be a minimum of 700 millicandelas per square meter per lux for white stripes and markings and 500 millicandelas per square meter per lux for yellow stripes and markings. Test the retroreflectivity under ASTM E 1710. Have a reflectometer as described in ASTM E 1710 at the job site for making these measurements.

84-6.02 MATERIALS

Thermoplastic traffic stripes and pavement markings with enhanced wet night visibility must consist of a single uniform layer of thermoplastic and 2 layers of glass beads as follows:

1. The 1st layer of glass beads must be on the Authorized Material List under high-performance retroreflective glass beads for use in thermoplastic traffic stripes and pavement markings. The color of the glass beads must match the color of the stripe or marking to which they are being applied.
2. The 2nd layer of glass beads must comply with AASHTO M 247, Type 2.

Both types of glass beads must be surface treated for use with thermoplastic under the bead manufacturer's instructions.

84-6.03 CONSTRUCTION

Use a ribbon extrusion or screed type applicator to apply a thermoplastic traffic stripe.

Operate the striping machine at a speed of 8 mph or slower during the application of thermoplastic traffic stripe and glass beads.

Apply a thermoplastic traffic stripe at a rate of at least 0.38 pounds per foot of 4-inch wide solid stripe. The applied thermoplastic traffic stripe must be at least 0.090 inch thick.

Apply a thermoplastic pavement marking at a rate of at least 1.06 pounds per square foot. The applied thermoplastic pavement marking must be at least 0.100 inch thick.

Apply a thermoplastic traffic stripe and both types of glass beads in a single pass. Apply the thermoplastic 1st, followed immediately by consecutive applications of high-performance glass beads and then AASHTO M 247, Type 2 glass beads. Use 2 separate applicator guns for the glass beads, 1 applicator gun for each type of glass bead.

You may apply glass beads by hand methods on pavement markings.

Distribute all glass beads uniformly on traffic stripes and pavement markings. Apply high-performance glass beads at a rate of at least 6 pounds per 100 square feet of stripe or marking. Apply AASHTO M 247, Type 2 glass beads at a rate of at least 8 pounds per 100 square feet of stripe or marking. The combined weight of the 2 types of glass beads must be greater than 14 pounds per 100 square feet of stripe or marking.

location and status, and provide a copy of the certified list of the existing TMS elements within the project limits to the Contractor. The status list will include the operational, defined as having full functionality, and the nonoperational components.

The Contractor must obtain authorization at least 72 hours before interrupting existing TMS elements' communication with the TMC that will result in the elements being nonoperational or off line. The Contractor must notify the Engineer at least 72 hours before starting excavation activities.

Traffic monitoring stations and their associated communication systems, which were verified to be operational during the pre-construction operational status check, must remain operational on freeway/highway mainline at all times, except:

1. For a duration of up to 60 days on any continuous segment of the freeway/highway shorter than 3 miles

If the construction activities require existing detection systems to be nonoperational or off line for a longer time period or the spacing between traffic monitoring stations is more than the specified criteria above, and temporary or portable detection operations are not shown, the Contractor must provide provisions for temporary or portable detection operations. The Contractor must receive authorization on the type of detection and installation before installing the temporary or portable detection.

If existing TMS elements shown or identified during the pre-construction operational status check, except traffic monitoring stations, are damaged or fail due to the Contractor's activity, where the elements are not fully functional, the Engineer must be notified immediately. If the Contractor is notified by the Engineer that existing TMS elements have been damaged, have failed or are not fully functional due to the Contractor's activity, the damaged or failed TMS elements, excluding structure-related elements, must be repaired or replaced, at the Contractor's expense, within 24 hours. For a structure-related elements, the Contractor must install temporary or portable TMS elements within 24 hours. For nonstructure-related TMS elements, the Engineer may authorize temporary or portable TMS elements for use during the construction activities.

The Contractor must demonstrate that repaired or replaced elements operate in a manner equal to or better than the replaced equipment. If the Contractor fails to perform required repairs or replacement work, the Department may perform the repair or replacement work and the cost will be deducted from monies due to the Contractor.

A TMS element must be considered nonoperational or off line for the duration of time that active communications with the TMC is disrupted, resulting in messages and commands not transmitted from or to the TMS element.

The Contractor must provide provisions for replacing existing TMS elements within the project limits, including detection systems, that were not identified on the plans or during the pre-construction operational status check that became damaged due to the Contractor's activities.

If the pre-construction operational status check identified existing TMS elements, then the Contractor, the Engineer, and the Department's Traffic Operations Electrical representatives must jointly conduct a post construction operational status check of all existing TMS elements and each element's communication status with the TMC. The Department's Traffic Operations Electrical representatives will certify the TMS elements' status and provide a copy of the certified list of the existing TMS elements within the project limits to the Contractor. The status list will include the operational, defined as having full functionality, and the nonoperational components. TMS elements that cease to be functional between pre and post construction status checks must be repaired at the Contractor's expense.

The Engineer will authorize the schedule for final replacement, the replacement methods and the replacement elements, including element types and installation methods before repair or replacement work is performed. The final TMS elements must be new and of equal or better quality than the existing TMS elements.

If no electrical work exists on the project and no TMS elements are identified within the project limits, the pre-construction operational status check is change order work.

Furnishing and installing temporary or portable TMS elements that are not shown, but are required when an existing TMS element becomes nonoperational or off line due to construction activities, is change order work.

Furnishing and installing temporary or portable TMS elements and replacing TMS elements that are not shown nor identified during the pre-construction operational status check and were damaged by construction activities is change order work.

If the Contractor is required to submit provisions for the replacement of TMS elements that were not identified, submitting the provisions is change order work.

Add to section 86-1.07:

El Dorado County Standard

Some of the following procedures may be performed prior to the final turn-on as long as ALL tests are observed and/or accepted by the Engineer. All testing is your responsibility.

Unless otherwise noted, any changes to or modification of this standard turn-on procedure must be approved by the Engineer.

1. Check all signal lighting circuits. (Responsibility of the Contractor. Engineer may request to be present at his discretion.)
 - a. Remove all load switches (model 200) and the flasher units (model 204). This must be done to assure their protection and to prevent feedback through the switch causing a possible misleading indication at the signals. The controller unit should be "off" during this test procedure.
 - b. Check each individual signal field circuit by applying 120 volts AC to the field terminal of each indication. This procedure is often called "flashing" the signal heads.
 - c. During "flashing" procedure, verify that all indications that should be "on" are "on" and that all indications that should be "off" remain "off". This verification may be accomplished through the use of small holes cut in the signal face coverings. Signals must remain covered during this operation unless the Contractor provides manual traffic control (flagging) and that control has been approved by the Inspector.
2. Check luminaires (street lighting). (Responsibility of the Contractor. Engineer may request to be present at his discretion.)
 - a. Check power pedestal to assure that switch for luminaires is set to "AUTO".
 - b. Cover the photoelectric cell and verify that all luminaires come on. (This test will take a few minutes.)
 - c. Remove cover from photoelectric cell verifying that luminaires go dark.
 - d. Set switch in power pedestal to the "TEST" position and verify that all luminaires come on. (This test will take a few minutes.)
 - e. Set switch back to "AUTO". Signals may not be turned on unless all luminaires are functioning properly.
 - f. When all tests are complete, set switch to "TEST". This condition must remain for at least two weeks to allow "burn in" of luminaires. This period may occur after the signals have been turned on.
3. Check all detector circuits. Although these tests are the responsibility of the Contractor, some do require the cooperation and participation of the Engineer and appropriate coordination must be arranged.

- a. All detector loops are to be tested for continuity and resistance to ground. Resistance to ground shall exceed 100 meg ohms. Engineer, at his discretion, should be present during these tests and observe results.
 - b. The functionality of all vehicle detection must be demonstrated by use of a Contractor-provided test vehicle while cabinet indications and responses are observed by the Engineer.
4. Signs and pavement markings.
- a. There must be a minimum of three (3) days of dry pavement prior to the application of any pavement markings.
 - b. Application of pavement markings must be coordinated so that the work is completed on Monday through Wednesday and at least five (5) business days prior to any County observed holiday.
 - c. All pavement markings and traffic control signs must be in place the day prior to signal turn-on to accommodate coordination. Cover any signs associated with the signals until final turn-on.
 - d. Between the time the striping is complete and the signals are placed into operation, the Engineer may require you to install interim signing and/or safety measures to meet the safety needs of the community.
 - e. Engineer will check ALL pavement markings to assure that they are in place and comply with the plans prior to notifying involved or interested parties and/or agencies of planned turn-on schedule. (Example of parties to be notified, as needed: Caltrans, DOT Traffic Unit, CHP, Sheriff, prime contractor, electrical contractor, engineer, etc.)
 - f. On the day of the turn-on, the Engineer shall have the responsibility of determining the exact time of the turn-on based on safety and operational considerations.
5. Final turn-on procedure. (Responsibility of the Contractor except as noted.)

The signals MAY NOT be turned on unless all signs and markings are in place.

Add to section 86-2.03B:

Use sleeve nuts on Type 1-A and 1-B standards for Location 1 (El Dorado County). The bottom of the base plate must be flush with finished grade.

Add to section 86-2.04A:

Where the side tenon detail at the end of the signal mast arm is shown, you may substitute the applicable tip tenon detail.

The sign mounting hardware must be installed at the locations shown.

Install non-illuminated street name signs on signal mast arms using a minimum 3/4 by 0.020-inch round edge stainless steel strap and saddle bracket. Wrap the strap at least twice around the mast arm, tighten, and secure with a 3/4-inch stainless strap seal. Level the sign panel and tighten the hardware securely.

Add to section 86-2.05A:

Conduit installed underground must be Type 3.

Add to section 86-2.05B:

The conduit in a foundation and between a foundation and the nearest pull box must be Type 3.

Add to section 86-2.05C:

After conductors have been installed, the ends of the conduits terminating in pull boxes, service equipment enclosures, and controller cabinets must be sealed with an authorized type of sealing compound.

At those locations where conduit is required to be installed under pavement and underground facilities designated as high priority subsurface installation under Govt Code § 4216 et seq. exist, conduit must be placed by the trenching in pavement method under section 86-2.05C.

At other locations where conduit is required to be installed under pavement and if a delay to vehicles will not exceed 5 minutes, conduit may be installed by the trenching in pavement method.

The final 2 feet of conduit entering a pull box in a reinforced concrete structure may be Type 4.

El Dorado County Standard

Any trenching work performed after October 15 may only be performed 100 linear feet at a time to ensure you can quickly open the road to traffic safely in inclement weather.

Electrical service conduit between the service point and the service pedestal must be laid to a depth of not less than 30" below finished grade and must conform to Pacific Gas and Electric (PG&E) "Greenbook" standards for commercial electrical services (current edition). Electrical Service Conduit must not be placed by "Trenching in Pavement Method".

Replace "Reserved" in section 86-2.06B of the RSS for section 86-2.06 with:

86-2.06B(1) General

86-2.06B(1)(a) Summary

This work includes installing non-traffic-rated pull boxes.

86-2.06B(1)(b) Submittals

Before shipping pull boxes to the jobsite, submit a list of materials, Contract number, pull box manufacturer, manufacturer's instructions for pull box installation, and your contact information to METS.

Submit reports for pull box from an NRTL-accredited lab.

86-2.06B(1)(c) Quality Control and Assurance

86-2.06B(1)(c)(i) General

Pull boxes may be tested by the Department. Deliver pull boxes and covers to METS and allow 30 days for testing. When testing is complete, you will be notified. You must pick up the boxes and covers from the test site and deliver it to the job site.

Any failure of the pull box or the cover that renders the unit noncompliant with these specifications will be a cause for rejection. If the unit is rejected, you must allow 30 days for retesting. Retesting period starts when the replacement pull box is delivered to the test site. You must pay for all retesting costs. Delays resulting from the submittal of noncompliant materials does not relieve you from executing the Contract within the allotted time.

If the pull box submitted for testing does not comply with the specifications, remove the unit from the test site within 5 business days after notification that it is rejected. If the unit is not removed within that period, it may be shipped to you at your expense.

You must pay for all shipping, handling, and transportation costs related to the testing and retesting.

86-2.06B(1)(c)(ii) Functional Testing

The pull box and cover must be tested under ANSI/SCTE 77, "Specifications for Underground Enclosure Integrity."

86-2.06B(1)(c)(iii) Warranty

Provide a 2-year manufacturer replacement warranty for pull box and cover from the date of installation of the pull box and cover. All warranty documentation must be submitted before installation.

Replacement parts must be provided within 5 business days after receipt of failed pull box, cover, or both at no cost to the Department and must be delivered to the Department's Maintenance Electrical Shop at 11325 Sanders Drive, Rancho Cordova, 95742.

86-2.06B(2) Materials

The pull box and cover must comply with ANSI/SCTE 77, "Specifications for Underground Enclosure Integrity," for Tier 22 load rating and must be gray or brown in color.

Each pull box cover must have an electronic marker cast inside.

Extension for the pull box must be of the same material as the pull box and attached to the pull box to maintain the minimum combined depths as shown.

Include recesses for a hanger if a transformer or other device must be placed in a pull box.

The bolts, nuts, and washers must be a captive bolt design.

The captive bolt design must be capable of withstanding a torque range of 55 to 60 ft-lb and a minimum pull out strength of 750 lb. Perform the test with the cover in place and the bolts torqued. The pull box and cover must not be damaged while performing the test to the minimum pull out strength.

Stainless steel hardware must have an 18 percent chromium content and an 8 percent nickel content.

Galvanize ferrous metal parts under section 75-1-.05.

Manufacturer's instructions must provide guidance on:

1. Quantity and size of entries that can be made without degrading the strength of the pull box below Tier 22 load rating
2. Where side entries cannot be made
3. Acceptable method to be used to create the entry

Tier 22 load rating must be labeled or stenciled by the manufacturer on the inside and outside of the pull box and on the underside of the cover.

86-2.06B(3) Construction

Do not install pull box in curb ramps or driveways.

A pull box for a post or a pole standard must be located within 5 feet of the standard. Place a pull box adjacent to the back of the curb or edge of the shoulder. If this is impractical, place the pull box in a suitable, protected, and accessible location.

If only the cover is to be replaced, anchor the cover to the pull box.

El Dorado County Standard

All pull boxes must be bedded in 6" of crushed rock.

Add to section 86-2.08A:

Wrap conductors around the projecting end of conduit in pull boxes as shown. Secure conductors and cables to the projecting end of the conduit in pull boxes.

Direct buried cable (DBC) must be Type MC (metal-clad) cable that is UL listed for direct burial and concrete encasement. It must consist of 90 °C rated copper conductors with a minimum No. 8 AWG equipment-grounding conductor enclosed in a galvanized steel or aluminum interlocking metal tape sheath that has a polyvinyl chloride jacket. Three spare conductors, to be sized as the largest conductors, must be provided in addition to the conductors shown on the plans. Install the DBC between pull boxes and enclosures without a splice unless otherwise noted on the plans. Perform test for each conductor in the DBC in the presence of the Engineer after the installation and equipment grounding conductor connected to ground, but before the splicing complying with Section 86-2.14B, "Field Testing." Each conductor must be tested with reference to the following connection points: DBC equipment grounding conductor and the DBC metallic sheath. Backfill the trench to not less than 2 inches around the DBC with slurry cement conforming to the provisions in Section 19-3.03F, "Slurry Cement Backfill," of the Standard Specifications. The remaining trench must be backfilled to finished grade with native material.

Replace the 1st sentence of the 1st paragraph of section 86-2.08E with:

Signal interconnect cable must be the 6-pair type with stranded tinned copper no. 20 conductors.

Replace 1st, 6th, and 7th paragraphs of section 86-2.09E with:

Splices must be insulated by "Method B."

Add to section 86-2.11A:

Circuit breakers must be the cable-in/cable-out type mounted on non-energized clips. All circuit breakers must be mounted vertically with the up position of the handle being the "ON" position.

Each service must be provided with up to 2 main circuit breakers that will disconnect ungrounded service entrance conductors. Where the "Main" circuit breaker consists of 2 circuit breakers as described, each of the circuit breakers must have a minimum interrupting capacity of 10,000 A, rms.

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You must install #6 pull box at service point and conduit with service cable to service cabinet. You must notify PG&E (530- 621-7268) 48 hours prior to inspect conduit and substructure work. Once PG&E has completed inspection, and County has passed controller cabinet meter pedestal, You must provide PG&E 3 weeks notice for PG&E crews to make service connection. PG&E must make connection at service point pull box. You must allow PG&E 2 days to access project site to make service connection.

Replace "Reserved" in section 86-2.11B with:

Electric service (irrigation) must be from the service points to the irrigation controllers (IC) and to the spaces provided in the irrigation controller enclosure cabinets (CEC) for irrigation controllers as shown.

Irrigation Controller (IC) (All): Electric service (irrigation) must be a metered 120/240 V(ac), single-phase service in a Type III service equipment enclosure.

Service disconnects in service equipment enclosures must be single-pole, 15-A circuit breaker.

Nameplate inscriptions must be as follows:

Item	Inscription
Metering equipment enclosure	IC _____
Service disconnect	IC _____

The inscription on the other nameplates must be the letter designation used on the plans and in the special provisions.

Conductors, conduit, and pull boxes to the pull box adjacent to irrigation controller enclosure cabinets and irrigation controllers are included in the payment for electric service (irrigation).

Replace 1st paragraph of section 86-2.18 with:

Place numbers on the equipment as ordered.

Delete 2nd sentence of 3rd paragraph of section 86-2.18.

Add to section 86-3.02A(3):

Batteries must have a written warranty against defects in materials and workmanship from the manufacturer prorated for a period of 60 months after installation. You must provide the Engineer with all warranty documentation before installation. Replacement batteries must be available within 5 business days after receipt of failed batteries. The Department pays to ship the failed batteries. Replacement batteries must be delivered to Caltrans Maintenance Electrical Shop at 11325 Sanders Drive, Rancho Cordova, 95742.

El Dorado County Standard

SERVICE/UNINTERRUPTIBLE POWER SUPPLY (UPS) EQUIPMENT

Description:

A Service/Uninterruptible Power Supply (UPS) battery backup system must be furnished and installed by you under the Plans and these specifications.

The UPS system must protect the 120 volt circuits supporting the traffic signal controller, controller cabinet, and traffic signal faces. The UPS system is not intended to support any safety lighting or sign lighting unless otherwise specified on the Plans.

Materials:

The Service/UPS system must be combined in a single cabinet containing the meter pedestal components and UPS system components.

The UPS system must consist of a UL-listed UPS controller unit, manufacturer recommended batteries of sufficient amp-hour ratings to support the specified load and operating duration, manual bypass switch, and manufacturer specified surge protection devices.

UPS system in combined UPS/meter pedestal cabinet must be TESCO Model 27-22 BBS Combination.

TESCO Controls Inc. 3409 52nd Avenue
P.O. Box 239012
Sacramento, Ca. 95823-9012
(916) 395-8800
www.tescocontrols.com

You must verify that the specific proposed UPS equipment models are approved by the Department. Products or models not specifically pre-approved by the Department or other than those listed above must be approved by the Department before using.

Cabinet:

The cabinet must be steel and of tamperproof construction with piano-hinged doors and provisions for padlocks. The housing must be of a NEMA 3R weather resistant construction. There must be no exposed nuts, bolts, screws, rivets or other fasteners on the exterior of the enclosure.

The cabinet must be treated on the inside and outside with one coat of primer paint and painted two coats of aluminum paint.

Combination UPS/meter pedestal cabinets must be furnished with cast-in-place concrete foundations of a size and dimensions as specified by the manufacturer.

A maintenance pad of the same width as the cabinet foundation, four inches in thickness and extending a minimum of 36 inches out from the face of the cabinet must be provided.

Conduits in the foundation must be as specified on the Plans.

Exact location and orientation of the cabinet must be field determined by the Engineer. The Service/UPS system cabinet must not be attached to the traffic signal controller cabinet, and must be located a minimum of five feet from any other cabinet, wall, fence or other physical obstruction.

UPS Controller Unit:

The UPS controller unit must provide sufficient output power to support the quantity and wattage of traffic signal shown on the project plans, but in no case less than 700 watts.

The UPS controller unit must have an operating temperature of –40 degrees C to +74 degrees C.

The UPS system must have a manual bypass switch for maintenance or servicing purposes without affecting continuous power output to the traffic signal controller, or tripping the conflict monitor/malfunction management unit.

Batteries:

Batteries must be of sufficient amp-hour ratings to support the quantity and wattage of traffic signal shown on the project plans, but in no case less than 700 watts in an operating mode that supports full cycling and operation of the traffic signals for a minimum of four hours, followed by operation in a flashing mode of an additional minimum of four hours. You must furnish calculations or other supporting documentation bearing evidence that the proposed batteries will meet or exceed this provision.

The batteries must be completely sealed and maintenance-free. Batteries must be Absorbed Glass Mat/Valve Regulated Lead Acid (AGM/VRLA) or Gel type.

Batteries must have terminal covers to protect from accidental contact with metallic terminal components.

Add to section 86-3.02B:

External cabinet must be capable of housing:

1. 4 batteries
2. Inverter/charger unit
3. Power transfer relay
4. Manually-operated bypass switch
5. Required control panels
6. Wiring and harnesses

Replace "Reserved" in section 86-3.02D with:

Payment for assembling and installing battery backup system is included in the payment for Signal and Lighting at the various locations involved.

Add to section 86-3.04:

Cabinet must be Model 334L and consist of a housing (B), a mounting cage 1, and the following listed equipment. The equipment must comply with chapter 6 of TEES.

1. Service panel no. 1
2. Power distribution assembly no. 3
3. Input file (I file)
4. C1 harness
5. Controller and equipment shelves
6. Dual fan assembly with thermostatic control
7. Mechanical armature-type relays
8. Input panel

Before shipping to the job site, submit each Model 334L cabinet to METS for acceptance testing.

Notify the Engineer when each Model 334L cabinet is ready for functional testing. Functional testing will be conducted by the Department.

Each power distribution assembly must include the following equipment:

1. Two duplex NEMA 5-15R controller receptacle (rear mount)
2. One 30 A, 1-pole, 120 V(ac) main circuit breaker
3. Three 15 A, 1-pole, 120 V(ac) circuit breaker
4. One duplex GFCI NEMA 15 A, receptacle (front mount)

Furnish 3 shelves as shown. Each shelf must be attached to the tops of 2 supporting angles with 4 screws. Supporting angles must extend from the front to the back rails. The front of the shelf must abut the front member of the mounting cage. Arrange shelves as shown. The angles must be designed to support a minimum of 50 pounds each. The horizontal side of each angle must be a minimum of 3 inches. The angles must be vertically adjustable.

Furnish 3 terminal blocks as shown. Terminal blocks must comply with Chapter 6 of TEES, except the screw size must be 8-32.

Furnish a maintenance manual or a combined maintenance and operation manual for all controller units, auxiliary equipment, vehicle detector sensor units, control units, and amplifiers. Submit manual when the controllers are delivered for testing or, if ordered by the Engineer, before purchasing. The manual must include the following:

1. Specifications
2. Design characteristics
3. General operation theory
4. Function of all controls
5. Troubleshooting procedure (diagnostic routine)
6. Block circuit diagram
7. Geographical layout of components
8. Schematic diagrams
9. List of replaceable component parts with stock numbers

Add section 86-3.05:

86-3.05 8-PORT ETHERNET SWITCH

The ethernet switch shall be a hardened, ruggedized and outdoor rated network switch. The ethernet switch shall have a minimum capacity of eight (8) network connections. The ethernet switch shall be installed on a DIN rail.

The ethernet switch shall meet FCC Part 15 emissions for Class A devices and be UL listed.

The Contractor shall configure the ethernet switch. The ethernet switch shall meet or exceed the following requirements:

Description	Specifications
Ethernet Interface	10/100BaseT, IEEE 802.3 Ethernet compliant, Auto-sense, Auto-negotiate, auto cross MDI-MDIX
Ports	(8) RJ-45, STP and UTP
Switching	Non-Blocking
Memory	128K packet buffer
Input Voltage	24 V(dc)
Operating Temp	-40°F to +167°F
Warranty	One year <u>minimum</u>

Add section 86-3.06:

86-3.06 ETHERNET GPRS MODEM

FUNTIONAL REQUIREMENTS

The High Speed Ethernet GPRS modem capable of connecting to a General Packet Radio Service (GPRS) wireless data network shall be furnished and installed as shown on the plans. The modem shall be capable of providing high-speed connectivity as well as backup network connectivity including physical Serial and Ethernet connectivity for transmitting and receiving data from field controllers to the Transportation Management Center in Rancho Cordova via a frame relay connection.

The Contractor shall provide SMA-M / TNC-F adaptor for SMA-F modem and TNC-M antenna connection.

The contractor shall provide necessary power supplies, mounting hardware and wiring. The High Speed Ethernet GPRS modem shall meet or exceed the following requirements:

Description	Specifications
Network	Quad band 1900/850 and 1800/900 MHz GSM HSDPA/UMTS
Transmit Frequency	1850-1910 MHz and 824-849 MHz
Transmit Power Range At Antenna Port	1.0W for 1900 MHz and 0.8W for 850MHz
Throughput	Up to 240 Kbps, 100 to 130 Kbps typical
Receiver Frequency	1930-1990 MHz and 869-894 MHz
Receiver Sensitivity	Typical -107dBm
Network Protocols	UDP/TCP, DHCP
Features	NAT, Port forwarding, VPN pass-through, DES, 3DES and up to 256-bit AES Encryption, IPsec with IKE/ISAKMP, Multiple tunnel support, SCEP for X.509 certificates, IP filtering, HTTP, Web management
Security	SSL, SSH v2, FIPS 197
Ethernet Interface	IEEE 802.3, 10/100Base-T, 4 EIA RJ45 switch ports, 10/100 Mbps (auto-sensing), Full or half duplex (auto-sensing)
Serial Interface	2 EIA RS232 DB-9M ports, Up to 230 Kbps, Hardware and software flow control, Full signal support for TX, RX, RTS, CTS, DTR, DSR and DCD, Hardware and software flow control
RF Antenna Connector	50 Ω SMA-F
Regulatory Approvals / Certifications	UL 60950, CE, CSA 22.2 No. 60950, EN60950, FCC Part 15, Class A, AS/NZS CISPR 22, EN55024, EN55022, Class A, PTCRB, NAPRD.03, GCF-CC, R&TTE, EN 301 511, GSM GPRS/EDGE, HSDPA/UMTS
LED Indicators	Ethernet, Power On, RSSI, Link/Activity
Input Voltage	9 Vdc to 30 Vdc
Input Current	40mA to 200 mA
Operating Temperature	-22° F to +140° F
Max Weight	1.5lb
Max Size	4.11" W x 1.30" H x 7.75" L

ACTIVATION

Contractor shall send all necessary activation information from the manufacturer to the Engineer in an electronic text format. With the information provided, the State will activate the modems after installation.

WARRANTY

The Ethernet Modem shall have a 2-year warranty by the manufacturer. The warranty shall include hardware parts and labor needed for repair. The Contractor shall provide the Engineer with warranty documentation and the appropriate manufacturer contact information. The warranty period shall begin upon Contract Acceptance.

Add section 86-3.07:

86-3.07 GPRS ANTENNA

The Contractor shall furnish and install a GPRS Antenna at each location where a GPRS Modem will be used. The GPRS antenna shall have the following features or better:

Description	Specifications
Bandwidth	824 – 896 MHz and 1850 – 1990 MHz (Dual Band)
Polarization	Vertical
Nominal Impedance	50 ohms
Gain	3dB
Radiation pattern	Omni-Directional
VSWR at resonant point	1.5:1 or Less
Maximum Power Input	125 Watts
Connector	TNC Male crimp type
Cable	50 ohms – 7 feet in length
Environmental	-40° C to +70° C

The antenna shall be securely installed to prevent entry of water into cabinet penetration.

Replace section 86-4.01D(1)(c)(ii) with:

86-4.01D(1)(c)(ii) Warranty

The manufacturer must provide a written warranty against defects in materials and workmanship for LED signal modules for a minimum period of 48 months after installation of LED signal modules. Replacement LED signal modules must be provided within 15 days after receipt of failed LED modules at your expense. The Department pays for shipping the failed modules to you. All warranty documentation must be submitted to the Engineer before installation. Replacement LED signal modules must be delivered to State Maintenance Electrical Shop at 11325 Sanders Drive, Rancho Cordova, 95742.

Add to section 86-4.01D(2)(a):

LED signal module must be manufactured for 12-inch circular and arrow sections.

Replace section 86-4.03I(1)(c)(ii) with:

86-4.03I(1)(c)(ii) Warranty

The manufacturer must provide a written warranty against defects in materials and workmanship for LED PSF modules for a minimum period of 48 months after installation of LED PSF modules. Replacement LED PSF modules must be provided within 15 days after receipt of failed LED PSF modules at your expense. The Department pays for shipping the failed modules to you. All warranty documentation must be submitted to the Engineer before installation. Replacement LED PSF modules must be delivered to State Maintenance Electrical Shop at 11325 Sanders Drive, Rancho Cordova, 95742.

Add to section 86-4.03I(2):

Installation of the LED PSF module into the pedestrian signal face only requires the removal of lenses, reflectors, lamps, and existing LED modules.

Add to section 86-4.03J:

The "Meter On" sign must be a Type A pedestrian signal modified so the reflector is a single chamber with 2 incandescent lamps.

Add to section 86-5.01A(1):

Loop wire must be Type 2.

Loop detector lead-in cable must be Type B.

Slots must be filled with elastomeric sealant or hot-melt rubberized asphalt sealant.

You may use a Type E loop where a Type A loop is shown. For Type E detector loops, sides of the slot must be vertical and the minimum radius of the slot entering and leaving the circular part of the loop must be 1-1/2 inches. Slot width must be a maximum of 5/8 inch. Loop wire for circular loops must be Type 2. Slots of circular loops must be filled with elastomeric sealant or hot-melt rubberized asphalt sealant.

The depth of the loop sealant above the top of the uppermost loop wire in the sawed slots must be 2 inches, minimum.

Replace "Reserved" in section 86-5.01D with:

86-5.01D(1) General

Each traffic signal must have an emergency vehicle detector system that must comply with the details shown and the special provisions.

Each emergency vehicle detector system must consist of an optical emitter assembly or assemblies located on the appropriate vehicle and an optical detector/discriminator assembly or assemblies located at the traffic signal.

Emitter assemblies are not required for this project except units for testing purposes to demonstrate that the systems perform as specified. Tests must be conducted in the presence of the Engineer as described below under "System Operation" during the signal test period. The Engineer must be provided a minimum of 2 working days notice prior to performing the tests.

Each system must allow detection of 2 classes of authorized vehicles. Class I (mass transit) vehicles must be detected at ranges of up to 1,000 feet from the optical detector. Class II (emergency) vehicles must be detected at ranges up to 1,800 feet from the optical detector.

Class I signals (those emitted by Class I vehicles) must be distinguished from Class II signals (those emitted by Class II vehicles) on the basis of the modulation frequency of the light from the respective emitter. The modulation frequency for Class I signal emitters must be 9.639 Hz \pm 0.110 Hz. The modulation frequency for Class II signal emitters must be 14.035 Hz \pm 0.250 Hz.

A system must establish a priority of Class II vehicle signals over Class I vehicle signals and must comply with the requirements in section 25352 of the California Vehicle Code.

86-5.01D(2) Emitter Assembly

Each emitter assembly, provided for testing purposes, must consist of an emitter unit, an emitter control unit, and connecting cables.

86-5.01D(2)(a) General

Each emitter assembly, including lamp, must operate over an ambient temperature range of -34 to +60 degrees C at both modulation frequencies and operate continuously at the higher frequency for a minimum of 3,000 hours at 25degrees C ambient before failure of the lamp or other components.

Each emitter unit must be controlled by a single, maintained-contact switch on the respective emitter control unit. The switch must be located to be readily accessible to the vehicle driver. The control unit must contain a pilot light to indicate that the emitter power circuit is energized and must generate only 1 modulating code, either that for Class I vehicles or that for Class II vehicles.

86-5.01D(2)(b) Functional

Each emitter unit must transmit optical energy in 1 direction only.

The signal from each Class I signal emitter unit must be detectable at a distance of 1,000 feet when used with a standard optical detection/discriminator assembly and filter to eliminate visible light. Visible light must be considered eliminated when the output of the emitter unit with the filter is less than an average of 0.0003 candela per energy pulse in the wavelength range of 380 nm to 750 nm when measured at a distance of 10 feet. Submit a certificate of compliance for each Class I emitter unit.

The signal from each Class II signal emitter unit must be detectable at a distance of 1,800 feet when used with a standard optical detection/discriminator assembly.

The standard optical detection/discriminator assembly to be used in making the range tests must be available from the manufacturer of the system. A certified performance report must be furnished with each assembly.

86-5.01D(2)(c) Electrical

Each emitter assembly must provide full light output with input voltages of between 12.5 V (dc) and 17.5 V (dc). An emitter assembly must not be damaged by input voltages up to 7.5 V (dc) above supply voltage. The emitter assembly must not generate voltage transients, on the input supply, that exceed the supply voltage by more than 4 volts.

Each emitter assembly must consume not more than 100 W at 17.5 V (dc) and must have a power input circuit breaker rated at 10 A to 12 A, 12 V (dc).

The design and circuitry of each emitter must allow its use on vehicles with either negative or positive ground without disassembling or rewiring of the unit.

86-5.01D(2)(d) Mechanical

Each emitter unit must be housed in a weatherproof corrosion-resistant housing. The housing must be provided with facilities to allow mounting on various types of vehicles and must have provision for aligning the emitter unit properly and for locking the emitter unit into this alignment.

Each emitter control unit must be provided with hardware to allow the unit to be mounted in or on an emergency vehicle or mass transit vehicle. Where required for certain emergency vehicles, the emitter control unit and exposed controls must be weatherproof.

86-5.01D(3) Optical Detection/Discriminator Assembly

86-5.01D(3)(a) General

Each optical detection/discriminator assembly must consist of 1 or more optical detectors, connecting cable and a discriminator module.

Each assembly, when used with standard emitters, must have a range of at least 1,000 feet for Class I signals and 1,800 feet for Class II signals. Standard emitters for both classes of signals must be available from the manufacturer of the system. Range measurements must be taken with all range adjustments on the discriminator module set to "maximum".

86-5.01D(3)(b) Optical Detector

Each optical detector must be a waterproof unit capable of receiving optical energy from 2 separately aimable directions. The horizontal angle between the 2 directions must be variable from 180 degrees to 5 degrees.

The reception angle for each photocell assembly must be a maximum of 8 degrees in all directions about the aiming axis of the assembly. Measurements of reception angle will be taken at a range of 1,000 feet for a Type I emitter and at a range of 1,800 feet for a Type II emitter.

Internal circuitry must be solid state and electrical power must be provided by the associated discriminator module.

Each optical detector must be contained in a housing, which must include 2 rotatable photocell assemblies, an electronic assembly and a base. The base must have an opening to allow mounting on a mast arm or a vertical pipe nipple, or suspension from a span wire. The mounting opening must have

female threads for 3/4 inch conduit. A cable entrance must be provided which must have male threads and gasketing to allow a waterproof cable connection. Each detector must have weight of less than 2.5 pounds and must present a maximum wind load area of 36 square inches. The housing must be provided with weep holes to allow drainage of condensed moisture.

Each optical detector must be installed, wired and aimed as specified by the manufacturer.

86-5.01D(3)(c) Cable

Optical detector cable (EV-C) must comply with the requirements of IPCEA-S-61-402/NEMA WC 5, section 7.4, 600-V (ac) control cable, 75 degrees C, Type B, and the following:

1. The cable must contain 3 conductors, each of which must be No. 20 (7 x 28) stranded, tinned copper with low-density polyethylene insulation. Minimum average insulation thickness must be 25 mils. Insulation of individual conductors must be color coded: 1-yellow, 1-blue, 1-orange.
2. The shield must be either tinned copper braid or aluminized polyester film with a nominal 20 percent overlap. Where film is used, a No. 20 (7 x 28) stranded, tinned, bare drain wire must be placed between the insulated conductors and the shield and in contact with the conductive surface of the shield.
3. The jacket must be black polyvinyl chloride with minimum ratings of 600 V (ac) and 80 degrees C and a minimum average thickness of 43 mils. The jacket must be marked as required by IPCEA/NEMA.
4. The finished outside diameter of the cable must not exceed 0.35-inch.
5. The capacitance, as measured between any conductor and the other conductors and the shield, must not exceed 48 pf per foot at 1000 Hz.
6. The cable run between each detector and the controller cabinet must be continuous without splices or must be spliced only as directed by the detector manufacturer.

86-5.01D(3)(d) Discriminator Module

Each discriminator module must be designed to be compatible and usable with a Model 170E controller unit and to be mounted in the input file of a Model 332L or Model 336L controller cabinet, and must comply with the requirements of chapter I of the State of California, Department of Transportation, "Traffic Signal Control Equipment Specifications."

Each discriminator module must be capable of operating 2 channels, each of which must provide an independent output for each separate input.

Each discriminator module, when used with its associated detectors, must perform the following:

1. Receive Class I signals at a range of up to 1,000 feet and Class II signals at a range of up to 1,800 feet.
2. Decode the signals, on the basis of frequency, at $9.639 \text{ Hz} \pm 0.119 \text{ Hz}$ for Class I signals and $14.035 \text{ Hz} \pm 0.255 \text{ Hz}$ for Class II signals.
3. Establish the validity of received signals on the basis of frequency and length of time received. A signal must be considered valid only when received for more than 0.50-second. No combination of Class I signals must be recognized as a Class II signal regardless of the number of signals being received, up to a maximum of 10 signals. Once a valid signal has been recognized, the effect must be held by the module in the event of temporary loss of the signal for a period adjustable from 4.5 seconds to 11 seconds in at least 2 steps at 5 seconds \pm 0.5 second and 10 seconds \pm 0.5 second.
4. Provide an output for each channel that will result in a "low" or grounded condition of the appropriate input of a Model 170E controller unit. For Class I signals the output must be a $6.25 \text{ Hz} \pm 0.1$ percent, rectangular waveform with a 50 percent duty cycle. For Class II signals the output must be steady.

Each discriminator module must receive electric power from the controller cabinet at either 24 V (dc) or 120 V (ac).

Each channel together with the channel's associated detectors must draw not more than 100 mA at 24 V (dc) or more than 100 mA at 120 V (ac). Electric power, 1 detector input for each channel and 1 output for each channel must terminate at the printed circuit board edge connector pins shown in the following table:

Board Edge Connector Pin Assignment

A	DC ground		
B	+24 V (dc)	P	(NC)
C	(NC)		
D	Detector input, Channel A	R	(NC)
E	+24V (dc) to detectors	S	(NC)
F	Channel A output (C)	T	(NC)
		U	(NC)
H	Channel A output (E)	V	(NC)
J	Detector input, Channel B	W	Channel B output (C)
K	DC ground to detectors	X	Channel B output (E)
L	Chassis ground	Y	(NC)
M	AC-	Z	(NC)
N	AC+		

(C) Collector, slotted for keying
(E) Emitter, slotted for keying
(NC) Not connected, cannot be used by manufacturer for any purpose.

Two auxiliary inputs for each channel must enter each module through the front panel connector. Pin assignment for the connector must be as follows:

1. Auxiliary detector 1 input, Channel A
2. Auxiliary detector 2 input, Channel A
3. Auxiliary detector 1 input, Channel B
4. Auxiliary detector 2 input, Channel B

Each channel output must be an optically isolated NPN open collector transistor capable of sinking 50 mA at 30 V (ac) and must be compatible with the Model 170E controller unit inputs.

Each discriminator module must be provided with means of preventing transients received by the detector from affecting the Model 170E controller assembly.

Each discriminator module must have a single connector board and must occupy 1 slot width of the input file. The front panel of each module must have a handle to facilitate withdrawal and the following controls and indicators for each channel:

1. Three separate range adjustments each for both Class I and Class II signals.
2. A 3-position, center-off, momentary contact switch, 1 position (down) labeled for test operation of Class I signals, and 1 position (up) labeled for test operation of Class II signals.
3. A "signal" indication and a "call" indication each for Class I and for Class II signals. The "signal" indication denotes that a signal above the threshold level has been received. A "call" indication denotes that a steady, validly coded signal has been received. These 2 indications may be accomplished with a single indication lamp; "signal" being denoted by a flashing indication and "call" with a steady indication.

In addition, the front panel must be provided with a single circular, bayonet-captured, multi-pin connector for 2 auxiliary detector inputs for each channel. Connector must be a mechanical configuration complying with the requirements in Military Specification MIL-C-26482 with 10-4 insert arrangement, such as Burndy Trim Trio Bantamate Series, consisting of the following:

1. Wall mounting receptacle, G0B10-4PNE with SM20M-1S6 gold plated pins.
2. Plug, G6L10-4SNE with SC20M-1S6 gold plated sockets, cable clamp and strain relief that must provide for a right angle turn within 2-1/2 inches maximum from the front panel surface of the discriminator module.

86-5.01D(3)(e) Cabinet Wiring

The Model 332L cabinet has provisions for connections between the optical detectors, the discriminator module and the Model 170E controller unit.

Wiring for a Model 332L cabinet must comply with the following:

1. Slots 12 and 13 of input file "J" have each been wired to accept a 2-channel module.
2. Field wiring for the primary detectors, except 24-V (dc) power, must terminate on either terminal board TB-9 in the controller cabinet or on the rear of input file "J," depending on cabinet configuration. Where TB-9 is used, position assignments must be as shown in the following table:

Position	Assignment
4	Channel A detector input, 1st module (Slot J-12)
5	Channel B detector input, 1st module (Slot J-12)
7	Channel A detector input, 2nd module (Slot J-13)
8	Channel B detector input, 2nd module (Slot J-13)

The 24-V (dc) cabinet power will be available at Position 1 of terminal board TB-1 in the controller cabinet.

Field wiring for the auxiliary detectors must terminate on terminal board TB-O in the controller cabinet. Position assignments are as shown in the following table:

For module 1 (J-12)		For module 2 (J-13)	
Position	Assignment	Position	Assignment
1	+24V (dc) from (J-12E)	7	+24V (dc) from (J-13E)
2	Detector ground From (J-12K)	8	Detector ground from (J-13K)
3	Channel A auxiliary detector input 1	9	Channel A auxiliary detector input 1
4	Channel A auxiliary detector input 2	10	Channel A auxiliary detector input 2
5	Channel B auxiliary detector input 1	11	Channel B auxiliary detector input 1
6	Channel B auxiliary detector input 2	12	Channel B auxiliary detector input 2

86-5.01D(4) System Operation

The Contractor must demonstrate that the components of each system are compatible and will perform satisfactorily as a system. Satisfactory performance must be determined using the following test procedure during the functional test period:

1. Each system to be used for testing must consist of an optical emitter assembly, an optical detector, an optical detector cable and a discriminator module.
2. The discriminator modules must be installed in the proper input file slot of the Model 170E controller assembly.
3. Two tests must be conducted; 1 using a Class I signal emitter and a distance of 1,000 feet between the emitter and the detector, the other using a Class II signal emitter and a distance of 1,800 feet between the emitter and the detector. Range adjustments on the module must be set to "Maximum" for each test.
4. Each test must be conducted for a period of 1 hour, during which the emitter must be operated for 30 cycles, each consisting of a 1 minute "on" interval and a 1 minute "off" interval. During the total test period the emitter signal must cause the proper response from the Model 170E controller unit during each "on" interval and there must be no improper operation of either the Model 170E controller unit or the monitor during each "off" interval.

Add to section 86-5.01:

86-5.01E WIRELESS VEHICLE DETECTOR SYSTEM

86-5.01E(A) General

86-5.01E(A)(1) Summary

This work includes installing the wireless vehicle detector system (WVDS). Comply with Section 86, "Electrical Systems," of the Standard Specifications, Department Standard Plans and these Special Provisions, Transportation Electrical Equipment Specifications (TEES), and California Manual on Uniform Traffic Control Devices (CAMUTCD).

The wireless vehicle detector system (WVDS) must consist of one or more vehicle sensor node(s) (VSN) installed in the roadway, wireless repeater(s) (RP) mounted on standards along the roadway shoulder, and one or more access point(s) (AP) mounted on a standard along the roadway shoulder.

Each WVDS component must be manufactured by Sensys Networks, Inc., 2560 Ninth Street, Suite 219, Berkeley, CA 94709, telephone (510) 548-4620.

Each WVDS component must be new and conform to the manufacturer's recommendations. The date of manufacture, as shown by date codes or serial numbers of electronic circuit assemblies, must not be more than 6 months from the scheduled start date of this installation.

Warranty

The Contractor must provide the manufacturer's written warranty against defects in material and workmanship for the WVDS(s), for a period of 24 months after installation. After final acceptance of the WVDS, all replacement assemblies covered under warranty must be provided within 10 days after receipt of failed units at no cost to the State, except the cost of shipping. All warranty documentation must be given to the Engineer prior to installation.

Standard updates to the software must be available from the supplier without charge to the State during the warranty period.

MATERIAL

Configuration

The WVDS system must provide the following measurements per lane:

- A. Vehicle count in a data collection interval, in units of vehicles
- B. Percent occupancy in a data collection interval, in units of 0.05 percent
- C. Vehicle speeds, when more than one VSN is installed in a lane:
 - 1. Per vehicle, in units of miles per hour (mph)
 - 2. Median speed in a data collection interval, in units of mph
 - 3. Mean speed in a data collection interval, in units of mph
 - 4. Distribution of speeds; in bins of ≤ 35 mph, 36-40 mph, 41-45 mph, ..., 81-85 mph, and > 85 mph; in units of vehicles
- D. Vehicle Length, when more than one VSN is installed in a lane:
 - 1. Per vehicle, in units of 0.1 feet
 - 2. Distribution of lengths; in bins of < 20.0 feet, 20.0-39.9 feet, 40.0-59.9 feet, and ≥ 60.0 feet; in units of vehicles.

The time interval for data collection must be user-selectable at a minimum of 30-second intervals. The time interval for reporting must be user selectable from a list containing at minimum, 30 seconds, 1 minute, 5 minutes, 15 minutes, 1 hour and 24 hours.

Each VSN must have the following programmable event reporting parameters:

- 1. Transmit interval from a minimum value of 6 seconds

2. Reporting latency from a minimum range of 6 to 30 seconds
3. Presence and Pulse modes
4. RF watchdog timer
5. Synchronize event reporting to AP clock or to detection events
6. Speed Trap: measurement/time interval between 2 consecutive VSN

The WVDS must have the capability of outputting the state of each detector (1 or 0) in real time in sync with each vehicle passage event for the traffic. This data will be available electronically via the EIA-232 or EIA-485 or Ethernet communication port in a well documented file format.

Software

The WVDS must include the software and documentation necessary to configure the VSN, the RP, the AP, and store and retrieve detection data.

Communication

The WVDS system communications must be:

- A. Wireless between the VSN and the AP.
- B. Wireless between RP and AP.
- C. Wireless or hardwired between AP and FEPT (Field Element Protocol Translator).

The communications link between the AP, RP, and VSN must conform to the following:

- A. The wireless communications link must be FCC-approved.
- B. The AP, RP and VSN must be reconfigurable by a user over the wireless interface. Reconfiguration must avoid interference from other users of the communications band. A minimum of 16 channels must be provided for this purpose per location.
- C. The link budget must be 93 dB or greater.
- D. The RP to AP RF 'Line of Sight' communication distance must be at least 750 feet when both units are installed 18 feet above the roadway.

After an AP is powered on, the associated VSN(s) must respond within 100 seconds.

Vehicle Sensor Nodes

Each VSN must consist of a magnetometer sensor, a microprocessor with firmware in non-volatile memory, a wireless transceiver and a battery within a single housing; and 2-piece molded plastic shell.

The magnetometer sensor must detect the presence of a vehicle by a change in the vertical component of the earth's magnetic field within the detection zone corresponding to a 6-foot by 6-foot Type A inductive loop, with the VSN at the center. Each VSN must continuously report the presence of the vehicle until the vehicle leaves the detection zone, whereupon the VSN must report the absence of presence within 5 ± 1 millisecond.

The VSN must automatically recalibrate in the event of a detector lock within 5 minutes.

Each VSN must be individually addressable with a unique identifier, and capable of transmitting its data to the AP. Each VSN must also be capable of receiving detector parameters, microprocessor firmware and other commands from the AP without loss of data.

Each VSN must have the following programmable detection parameters:

1. Onset sensitivity and delay
2. Off sensitivity
3. Holdover time
4. Adaptable orientation
5. Auto-recalibration timeout

The housing must be fully encapsulated to provide a minimum of 8 years of operation, over a temperature range of -35 to 165 degrees F. The housing must be capable of being installed in a cylindrical hole that is no larger than 4 inches in diameter and 2-1/4 inches high.

Sealant

The sealant for the installation of the wireless detector sensor units in concrete must be a two component, 100 percent solids, polyurea based joint sealant and approved by the manufacturer of the wireless detector sensor. It must be a self-leveling joint sealant and will be applied at a minimum temperature of 32 degrees F. The surface to be bonded must be free of debris, moisture and anything else that will interfere with the sealant bond.

Typical Physical Properties:

Test

Properties	Test method	Value
Tensile Strength (PSI)	ASTM D412	2950
Elongation (%)	ASTM D412	350
Hardness (Shore A)	ASTM D2240	95A
Flexibility 1/8" Mandrel	ASTM D1737	Pass
Taber Abrasion (mg loss) CS18 Wheel 1 kg per 1000 cycles	ASTM D4060	25

Wait time

Time Properties	Value
Gel Time	2 Minutes
Tack Free Time	5 Minutes
Open to Traffic	15 Minutes

Excess sealant must be removed from the roadway and disposed of outside the State highway right of way as provided in Section 7-1.13 of the Standard Specifications.

Repeater Point

Each RP and its battery must be housed in a NEMA 4 enclosure. The enclosure with RP and battery must be 12 inches tall by 12 inches wide by 6 inches deep, with a maximum weight of 5 pounds.

The RP must operate continuously over a temperature range of -35 to 165 degrees F. The battery must have a minimum life of 2 years and must be field-replaceable with the use of common hand tools only.

Each RP must be capable of communicating with and retransmitting data from a minimum of 16 VSN.

CONSTRUCTION

Pre-construction Site Analysis

- A. The Contractor must ensure that the installed WVDS components will not cause harmful interference to radio communication in the vicinity as required by FCC Part 15 requirements.

- B. The Contractor must ensure that each WVDS component will be installed such that each operates independently and does not interfere with WVDS components at another site or other equipment in the vicinity.
- C. The Contractor must ensure that each VSN will be installed within range of its corresponding AP, using RP as needed. All VSN assigned to either a RP or AP must be located with a ± 60 -degree horizontal cone, measured from perpendicular. The maximum distances between a VSN and the AP are as follows:

AP mounting height	Maximum distance from VSN to AP
12 feet	75 feet
18 feet	105 feet
24 feet	150 feet

Installation and Calibration

- A. The Contractor must not proceed with the installation of any WVDS component without the written approval from the Engineer of the Pre-construction Site Analysis.
- B. The Contractor must provide personnel skilled in the installation and calibration of WVDS components.
- C. The Contractor must configure and demonstrate successful communication between each VSN, the RP (if necessary) and the AP to the Engineer prior to the installation of any component. Because the WVDS uses the same frequencies as WiFi, any WiFi may introduce interference in the WVDS only during periods of heavy WiFi usage. Therefore it is recommended that contractor record the WiFi usage and frequency channels for a week at each potential site to ascertain the probability that WiFi will disable the WVDS, and choose WVDS channels accordingly.
- D. The Contractor must install each VSN in the roadway per manufacturer's recommendations and as shown on the plans. Holes cored in the pavement must be cleaned and thoroughly dried before installing VSN. Residue resulting from core drilling must not be permitted to flow across shoulders or lanes occupied by public traffic and must be removed from the pavement surface by vacuuming or other approved method before any residue flows off of the pavement surface. Residue from core drilling must be disposed of as provided in Section 7-1.13, "Disposal of Material outside the Highway Right of Way," of the Standard Specifications. The cored pavement must be back-filled per manufacturer's recommendations. The Contractor must remove any excess epoxy from the roadway without the use of solvents and disposed of as provided in Section 7-1.13, "Disposal of Material outside the Highway Right of Way," of the Standard Specifications.
- E. The Contractor must install each mounting standard as provided in Section 86-2.04, "Standards, Steel Pedestals and Posts," of the Standard Specifications.
- F. The Contractor must install each AP and, if necessary, each RP, per manufacturer's recommendations and as shown on the plans.
- G. After installation of all components, the Contractor must re-configure and demonstrate successful communication between each VSN, the RP (if necessary) and the AP to the Engineer.
- H. The Contractor is responsible for and must perform the following:
 - 1. Installation and materials must conform to the requirements of the manufacturer and these special provisions. All equipment, cables and hardware must be part of an engineered system that is specifically designed by the manufacturer to fully inter-operate with all other system components. Mounting assemblies must be corrosive-resistant. Connectors installed outside the cabinets and enclosures must be corrosive-resistant, weather-proof and watertight. Exposed cables must be sunlight- and weather-resistant. Cables must be labeled with permanent cable labels at each end.

2. Verify the performance of each site and submit recorded medium and other materials to the Engineer at the conclusion of the performance test. The accuracy of each site must be determined and documented so that each site may be approved or rejected separately by the Engineer. Failure to submit the materials at the conclusion of testing invalidates the test. The recorded medium serves as acceptance evidence and must not be used for calibration. The calibration must have been completed prior to testing and verification.
3. All software needed for the analysis must be provided by the Contractor.

Acceptance Testing

The Contractor must notify the Engineer 15 working days before the location is ready for acceptance testing. Acceptance testing must be scheduled to be accomplished before the end of the normal work shift (M-F 0800 to 1600). The Contractor must demonstrate the operation of all WVDS units satisfying the functional requirements of these special provisions. The Engineer has the right to reject the WVDS if the demonstration fails.

The Contractor must also provide:

1. All equipment, documentation, materials and special tools required for acceptance testing, maintenance and operation of the system.
2. All software required to program, reconfigure and support the WVDS system and any components, installed in the appropriate equipment at the time of acceptance testing, and used for the acceptance test.

Accuracy of the WVDS system must be verified by comparing the WVDS vehicle counts to recorded video image counts for the same period. Accuracy testing must be done at 5 percent or one (whichever is greater) of the WVDS locations as selected by the Engineer. Clearly-visible, recorded video images for at least one peak period must be provided for all lanes that the WVDS was installed in. The recorded video images must show the viewed detection scene, detector(s) operation, the vehicle traffic count and time-stamp to 1/100 of a second must be made available so that the data can be overlaid on the recorded video. The 6-hour analysis periods and associated time synced data must be transferred to a USB portable mass storage device, 16 GB minimum, for viewing on a PC. The video camera must be located and oriented so that traffic is visible in all lanes. Video images must be time-stamped and analysis periods recorded to a USB portable mass storage device, 16 GB minimum, for viewing on a computer. The video field of view must totally encompass the area in which vehicles are detected. The Contractor must provide a means for synchronizing the test start and test ending times or provide software that displays time stamped WVDS data along with the video images of the moving vehicles. The Contractor must provide the Engineer with the original recording medium and documentation that supports the accuracy analysis and make a copy of these materials for their own use.

1. The accuracy test must start at a date and time specified by the Engineer. The following video recording and analysis options that depend on the available traffic conditions are acceptable; however the heaviest expected traffic conditions should be used, if possible. The minimum analysis period must be 30 minutes when the recording includes congested traffic (vehicles traveling at less than 20 mph for five or more minutes in any lane). The minimum analysis period must be 45 minutes when the traffic flow exceeds 1500 vehicles per hour in any lane during the test period. The minimum analysis period must be 60 minutes when the flow is less than 1500 vehicles per hour in every lane. The analysis must be based on a minimum of 500 detected vehicles in every lane and cover the same time period for all lanes. The time periods within the selected video will be selected by the Engineer. The total vehicle count for every lane must be used and include the first and last partial vehicles for each lane. Errors in the start and finish of the WVDS and manual counts are included in the performance criterion specified in these special provisions. Each real vehicle in the video should be identified as either detected correctly (DC), missed, (M), or over counted (OC).

2. WVDS unit count must be compared to vehicle counts under traffic conditions of the prior paragraph. The data accuracy must be determined by the formula:

$$\text{Absolute value}(100 * \{1 - [(TC-WC)/TC]\})$$

Where TC= Traffic Count derived from the media recording and WC = WVDS reported count over the same period of time.

3. Average overall accuracy must be greater than 95 percent across all lanes. Minimum accuracy for each time period must be greater than 90 percent per lane.

The Engineer will review the results from the acceptance testing and accept or reject the results within 7 days. Determination of any vehicle anomalies or unusual occurrences will be decided by the Engineer. Data or counts that are not agreed upon by the Engineer must be considered errors and count against the unit's calibration. If the Engineer determines that the WVDS does not meet the performance requirements, the Contractor will have seven days to re-calibrate and re-test the unit and re-submit new test data. Following three failed attempts, the Contractor must replace the WVDS system with a new unit.

Repair, replacement, and retesting of WVDS components due to failure or rejection must be at the Contractor's expense.

PAYMENT

The contract lump sum price paid for wireless vehicle detector system (WVDS) must include full compensation for furnishing all labor, materials, tools, equipment, warranty and incidentals, and for doing all the work involved in relocating WVDS, and installing VSNs, complete in place, including site analysis, set-up and configuration of the system, calibration of the device performance, verification of detector accuracy, testing, and re-testing of failed units, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

For progress pay purposes, a WVDS will not be included for payment until the Engineer accepts the acceptance testing and accuracy results as needed for that location.

Replace section 86-6.01 with:

86-6.01 LED LUMINAIRES

86-6.01A General

86-6.01A(1) Summary

Section 86-6.01 includes specifications for installing LED luminaires.

86-6.01A(2) Definitions

CALiPER: Commercially Available LED Product Evaluation and Reporting. A U.S. DOE program that individually tests and provides unbiased information on the performance of commercially available LED luminaires and lights.

correlated color temperature: Absolute temperature in kelvin of a blackbody whose chromaticity most nearly resembles that of the light source.

house side lumens: Lumens from a luminaire directed to light up areas between the fixture and the pole (e.g., sidewalks at intersection or areas off of the shoulders on freeways).

International Electrotechnical Commission (IEC): Organization that prepares and publishes international standards for all electrical, electronic and related technologies.

junction temperature: Temperature of the electronic junction of the LED device. The junction temperature is critical in determining photometric performance, estimating operational life, and preventing catastrophic failure of the LED.

L70: Extrapolated life in hours of the luminaire when the luminous output depreciates 30 percent from initial values.

LM-79: Test method from the Illumination Engineering Society of North America (IESNA) specifying test conditions, measurements, and report format for testing solid state lighting devices, including LED luminaires.

LM-80: Test method from the IESNA specifying test conditions, measurements, and report format for testing and estimating the long term performance of LEDs for general lighting purposes.

National Voluntary Laboratory Accreditation Program (NVLAP): U.S. DOE program that accredits independent testing laboratories to qualify.

power factor: Ratio of the real power component to the complex power component.

street side lumens: Lumens from a luminaire directed to light up areas between the fixture and the roadway (e.g., traveled ways, freeway lanes).

surge protection device (SPD): Subsystem or component that can protect the unit against short duration voltage and current surges.

total harmonic distortion: Ratio of the rms value of the sum of the squared individual harmonic amplitudes to the rms value of the fundamental frequency of a complex waveform.

86-6.01A(3) Submittals

Submit a sample luminaire to METS for testing after the manufacturer's testing is completed. Include the manufacturer's testing data.

Product submittals must include:

1. LED luminaire checklist.
2. Product specification sheets, including:
 - 2.1. Maximum power in watts.
 - 2.2. Maximum designed junction temperature.
 - 2.3. Heat sink area in square inches.
 - 2.4. Designed junction to ambient thermal resistance calculation with thermal resistance components clearly defined.
 - 2.5. L70 in hours when extrapolated for the average nighttime operating temperature.
3. IES LM-79 and IES LM-80 compliant test reports from a CALIPER-qualified or NVLAP-approved testing laboratory for the specific model submitted.
4. Photometric file based on LM-79 test report.
5. Initial and depreciated isofootcandle diagrams showing the specified minimum illuminance for the particular application. The diagrams must be calibrated to feet and show a 40 by 40 foot grid. The diagrams must be calibrated to the mounting height specified for that particular application. The depreciated isofootcandle diagrams must be calculated at the minimum operational life.
6. Test report showing SPD performance as tested under ANSI/IEEE C62.41.2 and ANSI/IEEE C62.45.
7. Test report showing mechanical vibration test results as tested under California Test 611 or equal.
8. Data sheets from the LED manufacturer that include information on life expectancy based on junction temperature.
9. Data sheets from the power supply manufacturer that include life expectancy information.

Submit documentation of a production QA performed by the luminaire manufacturer that ensures the minimum performance levels of the modules comply with the section 86-6.01 specifications and includes a documented process for resolving problems. Submit documentation as an informational submittal.

Submit warranty documentation as an informational submittal before installing LED luminaires.

86-6.01A(4) Quality Control and Assurance

86-6.01A(4)(a) General

The Department may perform random sample testing on the shipments. The Department completes testing within 30 days after delivery to METS. Luminaires are tested under California Test 678. All parameters specified in section 86-6.01 specifications may be tested on the shipment sample. When testing is complete, the Department notifies you. Pick up the equipment from the test site and deliver to the job site.

One sample luminaire must be fitted with a thermistor or thermo-couple temperature sensor. A temperature sensor must be mounted on the LED solder pad as close to the LED as possible. A temperature sensor must be mounted on the power supply case. Light bar or modular systems must have 1 sensor for each module mounted as close to the center of the module as possible. Other configurations must have at least 5 sensors per luminaire. Contact METS for advice on sensor location. Thermocouples must be either Type K or C. Thermistors must be a negative temperature coefficient type with a nominal resistance of 20 kΩ. The appropriate thermocouple wire must be used. The leads must be a minimum of 6 feet. Documentation must accompany the test unit that details the type of sensor used.

The sample luminaires must be energized for a minimum of 24 hours, at 100 percent on-time duty cycle, at a temperature of +70 degrees F before performing any testing.

The luminaire lighting performance must be depreciated for the minimum operating life by using the LED manufacturer's data or the data from the LM-80 test report, whichever results in a higher lumen depreciation.

Failure of the luminaire that renders the unit noncompliant with section 86-6.01 specifications is cause for rejection. If a unit is rejected, allow 30 days for retesting. The retesting period starts when the replacement luminaire is delivered to the test site.

If a luminaire submitted for testing does not comply with section 86-6.01, remove the unit from METS within 5 business days after notification the unit is rejected. If the unit is not removed within that period, the Department may ship the unit to you and deduct the cost.

86-6.01A(4)(b) Warranty

Furnish a 7-year replacement warranty from the manufacturer of the luminaires against any defects or failures. The effective date of the warranty is the date of installation. Furnish replacement luminaires within 10 days after receipt of the failed luminaire. The Department does not pay for the replacement. Deliver replacement luminaires to the following department maintenance electrical shop:

11325 Sanders Drive, Rancho Cordova, CA 95742

86-6.01B Materials

86-6.01B(1) General

The luminaire must include an assembly that uses LEDs as the light source. The assembly must include a housing, an LED array, and an electronic driver. The luminaire must:

1. Be UL listed under UL 1598 for luminaires in wet locations or an equivalent standard from a recognized testing laboratory
2. Have a minimum operational life of 63,000 hours
3. Operate at an average operating time of 11.5 hours per night
4. Be designed to operate at an average nighttime operating temperature of 70 degrees F
5. Have an operating temperature range from -40 to +130 degrees F
6. Be defined by the following application:

Application	Replaces
Roadway 1	200 Watt HPS mounted at 34 ft
Roadway 2	310 Watt HPS mounted at 40 ft
Roadway 3	310 Watt HPS mounted at 40 ft with back side control
Roadway 4	400 Watt HPS mounted at 40 ft

The individual LEDs must be connected such that a catastrophic loss or a failure of 1 LED does not result in the loss of more than 20 percent of the luminous output of the luminaire.

86-6.01B(2) Luminaire Identification

Each luminaire must have the following identification permanently marked inside the unit and outside of its packaging box:

1. Manufacturer's name
2. Trademark
3. Model no.
4. Serial no.
5. Date of manufacture (month-year)
6. Lot number
7. Contract number
8. Rated voltage
9. Rated wattage
10. Rated power in VA

86-6.01B(3) Electrical Requirements

The luminaire must operate from a 60 ± 3 Hz AC power source. The fluctuations of line voltage must have no visible effect on the luminous output. The operating voltage may range from 120 to 480 V(ac). The luminaire must operate over the entire voltage range or the voltage range must be selected from either of the following options:

1. Luminaire must operate over a voltage range of 95 to 277 V(ac). The operating voltages for this option are 120 V(ac) and 240 V(ac).
2. Luminaire must operate over a voltage range of 347 to 480 V(ac). The operating voltage for this option is 480 V(ac).

The power factor of the luminaire must be 0.90 or greater. The total harmonic distortion, current and voltage, induced into an AC power line by a luminaire must not exceed 20 percent. The maximum power consumption allowed for the luminaire must be as shown in the following table:

Application	Maximum consumption (Watts)
Roadway 1	165
Roadway 2	235
Roadway 3	235
Roadway 4	300

86-6.01B(4) Surge Suppression and Electromagnetic Interference

The luminaire on-board circuitry must include an SPD to withstand high repetition noise transients caused by utility line switching, nearby lightning strikes, and other interferences. The SPD must protect the luminaire from damage and failure due to transient voltages and currents as defined in Tables 1 and 4 of ANSI/IEEE C64.41.2 for location category C-High. The SPD must comply with UL 1449. The SPD performance must be tested under ANSI/IEEE C62.45 based on ANSI/IEEE C62.41.2 definitions for standard and optional waveforms for location category C-High.

The luminaires and associated on-board circuitry must comply with the Class A emission limits provided in 47 CFR 15, subpart B concerning the emission of electronic noise.

86-6.01B(5) Compatibility

The luminaire must be operationally compatible with currently used lighting control systems and photoelectric controls.

86-6.01B(6) Photometric Requirements

The luminaire must maintain a minimum illuminance level throughout the minimum operating life. The L70 of the luminaire must be the minimum operating life or greater. The measurements must be calibrated to standard photopic calibrations. The minimum maintained illuminance values measured at a point must be as shown in the following table:

Application	Mounting height (ft)	Minimum maintained illuminance (fc)	Light pattern figure (isofootcandle curve)
Roadway 1	34	0.15	<p>Pattern defined by an ellipse with the equation:</p> $\frac{x^2}{(82)^2} + \frac{(y - 20)^2}{(52)^2} = 1$ <p>where: x = direction longitudinal to the roadway y = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 20 feet to the house side of the pattern.</p>
Roadway 2	40	0.2	<p>Pattern defined by an ellipse with the equation:</p> $\frac{x^2}{(82)^2} + \frac{(y - 20)^2}{(52)^2} = 1$ <p>where: x = direction longitudinal to the roadway y = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 20 feet to the house side of the pattern.</p>
Roadway 3	40	0.2	<p>Pattern defined by an ellipse with the equation:</p> $\frac{x^2}{(92)^2} + \frac{(y - 23)^2}{(55)^2} = 1$ <p>for $y \geq 0$ (street side)</p> <p>where: x = direction longitudinal to the roadway y = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 23 feet to the house side of the pattern.</p>

Roadway 4	40	0.2	<p>Pattern defined by an ellipse with the equation:</p> $\frac{x^2}{(92)^2} + \frac{(y - 23)^2}{(55)^2} = 1$ <p>where: x = direction longitudinal to the roadway y = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 23 feet to the house side of the pattern.</p>
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The luminaire must have a correlated color temperature range from 3,500 to 6,500 K. The color rendering index must be 65 or greater.

The luminaire must not allow more than:

1. 10 percent of the rated lumens to project above 80 degrees from vertical
2. 2.5 percent of the rated lumens to project above 90 degrees from vertical

86-6.01B(7) Thermal Management

The passive thermal management of the heat generated by the LEDs must have enough capacity to ensure proper operation of the luminaire over the minimum operation life. The LED maximum junction temperature for the minimum operation life must not exceed 221 degrees F.

The junction-to-ambient thermal resistance must be 95 degrees F per watt or less. The use of fans or other mechanical devices is not allowed. The heat sink material must be aluminum or other material of equal or lower thermal resistance.

The luminaire must contain circuitry that automatically reduces the power to the LEDs to a level that ensures the maximum junction temperature is not exceeded when the ambient outside air temperature is 100 degrees F or greater.

86-6.01B(8) Physical and Mechanical Requirements

The luminaire must be a single, self-contained device, not requiring job site assembly for installation. The power supply for the luminaire is integral to the unit. The weight of the luminaire must not exceed 35 lb. The maximum effective projected area when viewed from either side or either end must be 1.4 sq ft. The housing color must match a color no. from 26152 to 26440 or from 36231 to 36375, or color no. 36440 of FED-STD-595.

The housing must be fabricated from materials designed to withstand a 3,000-hour salt spray test under ASTM B 117. All aluminum used in housings and brackets must be of a marine grade alloy with less than 0.2 percent copper. All exposed aluminum must be anodized.

Each refractor or lens must be made from UV-inhibited high impact plastic such as acrylic or polycarbonate or heat- and impact-resistant glass and be resistant to scratching. Polymeric materials except lenses of enclosures containing either the power supply or electronic components of the luminaire must be made of UL94VO flame retardant materials. Paint or powder coating of the housing must comply with section 86-2.16. A chromate conversion undercoating must be used underneath a thermoplastic polyester powder coat.

Each housing must be provided with a slip fitter capable of mounting on a 2-inch pipe tenon. This slip fitter must fit on mast arms with outside diameters from 1-5/8 to 2-3/8 inches. The slip fitter must be capable of being adjusted a minimum of ±5 degrees from the axis of the tenon in a minimum of five steps: +5, +2.5, 0, -2.5, -5. The clamping brackets of the slip fitter must not bottom out on the housing bosses when adjusted within the designed angular range. No part of the slip fitter mounting brackets on the luminaires must develop a permanent set in excess of 1/32 inch when the two or four 3/8-inch diameter

cap screws used for mounting are tightened to 10 ft-lb. Two sets of cap screws may be furnished to allow the slip fitter to be mounted on the pipe tenon in the acceptable range without the cap screws bottoming out in the threaded holes. The cap screws and the clamping brackets must be made of corrosion resistant materials or treated to prevent galvanic reactions and be compatible with the luminaire housing and the mast arm.

The assembly and manufacturing process for the LED luminaire must be designed to ensure internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources. When tested under California Test 611, the luminaire to be mounted horizontally on the mast arm must be capable of withstanding the following cyclic loading for a minimum of 2 million cycles without failure of any luminaire part:

Cyclic Loading

Plane	Power supply	Minimum peak acceleration level
Vertical	Installed	3.0 g peak-to-peak sinusoidal loading (same as 1.5 g peak)
Horizontal ^a	Installed	1.5 g peak-to-peak sinusoidal loading (same as 0.75 g peak)

^aPerpendicular to the direction of the mast arm

The housing must be designed to prevent the buildup of water on top of the housing. Exposed heat sink fins must be oriented to allow water to freely run off of the luminaire and carry dust and other accumulated debris away from the unit. The optical assembly of the luminaire must be protected against dust and moisture intrusion to at least an ANSI/IEC rating of IP66. The power supply enclosure must be protected to at least an ANSI/IEC rating of IP43.

Each mounted luminaire must be furnished with an ANSI C136.10-compliant, locking type photocontrol receptacle and a rain tight shorting cap. The receptacle must comply with section 86-6.11A.

When available, an ANSI C136.41-compliant, locking type photocontrol receptacle with dimming connections shall be furnished in place of the ANSI C136.10 compliant receptacle. The receptacle must comply with section 86-6.11A.

When the components are mounted on a down-opening door, the door must be hinged and secured to the luminaire housing separately from the refractor or flat lens frame. The door must be secured to the housing such that accidental opening is prevented. A safety cable must mechanically connect the door to the housing.

Field wires connected to the luminaire must terminate on a barrier type terminal block secured to the housing. The terminal screws must be captive and equipped with wire grips for conductors up to no. 6. Each terminal position must be clearly identified.

The power supply must be rated for outdoor operation and have at least an ANSI/IEC rating of IP65.

The power supply must be rated for a minimum operational life equal to the minimum operational life of the luminaire or greater.

The power supply case temperature must have a self rise of 77 degrees F or less above ambient temperature in free air with no additional heat sinks.

The power supply must have 2 leads to accept standard 0-10 V(dc). The dimming control must be compatible with IEC 60929. If the control leads are open or the analog control signal is lost, the circuit must default to 100-percent power.

Conductors and terminals must be identified.

Replace “Reserved” in section 86-6.02 with:

County Lighting

El Dorado County lighting must comply with County standards.

All fuse holders for luminaires must be located inside the pole hand hole.

All luminaires must be furnished with multi-volt type ballasts capable of 120/208/240 or 277 volt operation, must be furnished without a photo electric receptacle, and must be furnished with a plug-in ignitor.

Add to section 86-6.05:

Install a no. 7 pull box adjacent to soffit luminaires only at the locations shown.

Add to section 86-7.01:

Removal of Existing Vehicle Sensor Nodes (VSN)

VSNs must be removed per procedure as recommended by manufacturer.

Removal of VSNs from pavement must be done by trained personnel. Care must be taken to insure that the VSN casing is not punctured or crushed. Any VSN that appear to be damaged from the removal process must be returned to the manufacturer for disposal.

VSNs use Lithium Thionyl Chloride (LTC) Batteries. LTC batteries contribute to potential hazards if they are not handled properly. Improper handling of the batteries may result in leakage or release of battery contents, explosion or fire.

Each VSN has one LTC battery. VSNs to be removed must be returned to the manufacturer, Sensys Networks, Inc. at 2560 Ninth Street, Berkeley, CA 94710 for disposal.

The following are recommendations of the battery manufacturer for proper use and handling of batteries in the vehicle sensor nodes mentioned above:

1. Batteries must not be crushed or punctured.
2. Batteries must not be short-circuited.
3. Batteries must not be exposed to excessive heating.
4. Batteries must not be exposed to water.
5. Batteries and devices containing batteries must be disposed in accordance with local regulations.

VSN with plastic sensor cap removal procedure:

1. Prepare a hammer drill equipped with 4 inches flat blade bit and 36 inches steel pry bar.
2. Locate and mark the sensor unit to be removed from the road.
3. Make four shallow drill cuts around the sensor. Make sure to drill straight down. Do not exceed 1 inch in depth.
4. Insert the pry bar into one of the cuts and pry upward with moderate force. Alternate prying between the different drill cuts.
5. After loosening the shell top, pry it away from the sensor and carefully remove the top. Do not use excessive force.
6. Grasp the sensor and pull it away from the base of the shell.
7. Remove loose dirt or debris. Leave shell base in the road.
8. Fill the holes resulting from removing sensors with material equivalent to the surrounding material.

VSN without plastic sensor cap removal procedure:

1. Prepare a core drill equipped with 5 inches hollow coring bit and 36 inches steel pry bar.
2. Locate and mark the sensor to be removed from the road.
3. Core a 5 inches diameter hole into the road around the sensor to a depth of approximately 2 1/2 inches.
4. Use the pry bar as needed to work the sensor/epoxy plug free from the bottom of the hole.
5. Pull the sensor/epoxy plug free from the hole. Remove loose dirt or debris.
6. Fill the holes resulting from removing sensors with material equivalent to the surrounding material.

Sensys wireless vehicle detector system vehicle sensor nodes (VSN) and wireless repeaters (RP) contain Lithium Thionyl Chloride (LTC) batteries. LTC are designed as an extremely hazardous wastes under Title 22, Division 4.5, Chapter 11, Article 5, Appendix 10 of the California Code of Regulations.

Each VSN has one built-in LTC battery, and each RP has one removable LTC battery pack. You must return the removed vehicle sensor nodes and RP batteries to the manufacturer, Sensys Networks, Inc. at 2560 Ninth Street, Berkeley, CA 94710 for disposal.

Shipment of batteries returned to the manufacturer must comply with the requirement of 49 CFR 173.185 "Lithium Batteries and Cells." All batteries must be packaged in such a manner that prevents short circuits under conditions normally encountered during transportation. Battery ends must to be covered to prevent them from touching one another. This can be accomplished by using duct tape on individual batteries. Batteries must be placed in sealed plastic bags, and package with vermiculite to prevent accidental contact. The outer packaging must be in compliance with 49 CFR 173.24 and 173.24a.

The contractor is the generator of and responsible for cleanup, management, disposal and associated costs of hazardous waste generated as a result of mishandling of Lithium Thionyl Chloride batteries.

The contractor must notify the manufacturer at (510) 548-4260 48 hours prior of delivery.

Payment for hauling, stockpiling, and disposing of Lithium Thionyl Chloride batteries is included in payment for all bid items.

Add to section 86-8.01:

Payment for highway lighting at intersections in connection with signals is included in the payment for signal and lighting.

Payment for other roadway lighting on the project is included in the payment for lighting and sign illumination.

For each item shown in the following table, the Department deducts the corresponding amount shown:

Source Inspection Expense Deductions

Item	Distance ^a	Deduction
Service equipment enclosures	> 300	\$2,000

^aDistance is air-line miles from both Sacramento and Los Angeles to the inspection source.

U.S. 50 / Silva Valley Parkway Interchange – Phase 1
Contract No. PW No. 12-30647 / CIP No. 71328
June 11, 2013

County of El Dorado, DOT
Special Provisions
SP-160

REVISED STANDARD SPECIFICATIONS DATED 01-18-13

Revised standard specifications are under headings that correspond with the main-section headings of the *Standard Specifications*. A main-section heading is a heading shown in the table of contents of the *Standard Specifications*. A date under a main-section heading is the date of the latest revision to the section.

Each revision to the *Standard Specifications* begins with a revision clause that describes a revision to the *Standard Specifications* or introduces a revision to the *Standard Specifications*. For a revision clause that describes a revision, the date on the right above the clause is the publication date of the revision. For a revision clause that introduces a revision, the date on the right above a revised term, phrase, clause, paragraph, or section is the publication date of the revised term, phrase, clause, paragraph, or section. For a multiple-paragraph or multiple-section revision, the date on the right above a paragraph or section is the publication date of the paragraphs or sections that follow.

Any paragraph added or deleted by a revision clause does not change the paragraph numbering of the *Standard Specifications* for any other reference to a paragraph of the *Standard Specifications*.

DIVISION I GENERAL PROVISIONS

1 GENERAL

10-19-12

Replace "current" in the 2nd paragraph of section 1-1.05 with:

most recent

04-20-12

Add to the 4th paragraph of section 1-1.05:

04-20-12

Any reference directly to a revised standard specification section is for convenience only. Lack of a direct reference to a revised standard specification section does not indicate a revised standard specification for the section does not exist.

Add to the 1st table in section 1-1.06:

10-19-12

TRO	time-related overhead
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06-20-12

Delete the abbreviation and its meaning for *UDBE* in the 1st table of section 1-1.06.

10-19-12

Delete "Contract completion date" and its definition in section 1-1.07B.

Delete "critical delay" and its definition in section 1-1.07B.

Replace "day" and its definition in section 1-1.07B with:

10-19-12

day: 24 consecutive hours running from midnight to midnight; calendar day.

1. **business day:** Day on the calendar except a Saturday and a holiday.
2. **working day:** Time measure unit for work progress. A working day is any 24-consecutive-hour period except:
 - 2.1. Saturday and holiday.
 - 2.2. Day during which you cannot perform work on the controlling activity for at least 50 percent of the scheduled work shift with at least 50 percent of the scheduled labor and equipment due to any of the following:
 - 2.2.1. Adverse weather-related conditions.
 - 2.2.2. Maintaining traffic under the Contract.
 - 2.2.3. Suspension of a controlling activity that you and the Engineer agree benefits both parties.
 - 2.2.4. Unanticipated event not caused by either party such as:
 - 2.2.4.1. Act of God.
 - 2.2.4.2. Act of a public enemy.
 - 2.2.4.3. Epidemic.
 - 2.2.4.4. Fire.
 - 2.2.4.5. Flood.
 - 2.2.4.6. Governor-declared state of emergency.
 - 2.2.4.7. Landslide.
 - 2.2.4.8. Quarantine restriction.
 - 2.2.5. Issue involving a third party, including:
 - 2.2.5.1. Industry or area-wide labor strike.
 - 2.2.5.2. Material shortage.
 - 2.2.5.3. Freight embargo.
 - 2.2.5.4. Jurisdictional requirement of a law enforcement agency.
 - 2.2.5.5. Workforce labor dispute of a utility or nonhighway facility owner resulting in a nonhighway facility rearrangement not described and not solely for the Contractor's convenience. Rearrangement of a nonhighway facility includes installation, relocation, alteration, or removal of the facility.
 - 2.3. Day during a concurrent delay.
3. **original working days:**
 - 3.1. Working days to complete the work shown on the *Notice to Bidders* for a non-cost plus time based bid.
 - 3.2. Working days bid to complete the work for a cost plus time based bid.

Where working days is specified without the modifier "original" in the context of the number of working days to complete the work, interpret the number as the number of original working days as adjusted by any time adjustment.

Replace "Contract" in the definition of "early completion time" in section 1-1.07B with:

10-19-12

work

Replace "excusable delay" and its definition in section 1-1.07B with:

10-19-12

delay: Event that extends the completion of an activity.

2. For an informal-bid contract, you may obtain them at the Bidders' Exchange street address

Add a paragraph break between the 1st and 2nd sentences of the 5th paragraph of section 2-1.06B. 01-20-12

Add between "and" and "are" in item 2 in the list in the 7th paragraph of section 2-1.06B:
they 04-20-12

Delete "Underutilized" in "Underutilized Disadvantaged Business Enterprises" in the heading of section 2-1.12B. 06-20-12

Delete *U* in *UDBE* at each occurrence in section 2-1.12B. 06-20-12

Replace the 2nd paragraph of section 2-1.12B(1) with:
To ensure equal participation of DBEs provided in 49 CFR 26.5, the Department shows a goal for DBEs. 06-20-12

Delete the 3rd paragraph of section 2-1.12B(1): 06-20-12

Replace the 7th paragraph of section 2-1.12B(1) with:
All DBE participation will count toward the Department's federally-mandated statewide overall DBE goal. 06-20-12

Replace "offered" at the end of the 2nd sentence of item 7 in the list of 2nd paragraph of section 2-1.12B(3) with:
provided 06-20-12

Delete the 2nd paragraph of section 2-1.33A. 01-20-12

Replace the 3rd paragraph of section 2-1.33A with:
Except for each subcontracted bid item number and corresponding percentage and proof of each required SSPC QP certification, do not fax submittals. 01-20-12

5 CONTROL OF WORK

10-19-12

Add between "million" and ", professionally" in the 3rd paragraph of section 5-1.09A:

and 100 or more working days

10-19-12

Add to the list in the 4th paragraph of section 5-1.09A:

9. Considering discussing with and involving all stakeholders in evaluating potential VECPs

10-19-12

Add to the end of item 1.1 in the list in the 7th paragraph of section 5-1.09A:

, including VECPs

10-19-12

Replace the 1st paragraph of section 5-1.09C with:

For a contract with a total bid over \$10 million and 100 or more working days, training in partnering skills development is required.

10-19-12

Delete the 2nd paragraph of section 5-1.09C.

10-19-12

Replace "at least 2 representatives" in the 5th paragraph of section 5-1.09C with:

field supervisory personnel

10-19-12

Replace the 1st and 2nd sentences in the 7th paragraph of section 5-1.13B(1) with:

If a DBE is decertified before completing its work, the DBE must notify you in writing of the decertification date. If a business becomes a certified DBE before completing its work, the business must notify you in writing of the certification date.

06-20-12

Replace "90" in the last sentence of the 7th paragraph of section 5-1.13B(1) with:

30

06-20-12

Replace "Underutilized" in "Underutilized Disadvantaged Business Enterprises" in the heading of section 5-1.13B(2) with:

Performance of

06-20-12

Delete *U* in *UDBE* at each occurrence in section 5-1.13B(2).

06-20-12

Replace the 3rd paragraph of section 5-1.13B(2) with:

06-20-12

Do not terminate or substitute a listed DBE for convenience and perform the work with your own forces or obtain materials from other sources without authorization from the Department.

Replace item 6 in the list in the 4th paragraph of section 5-1.13B(2) with:

06-20-12

6. Listed DBE is ineligible to work on the project because of suspension or debarment.

Add to the list in the 4th paragraph of section 5-1.13B(2):

06-20-12

8. Listed DBE voluntarily withdraws with written notice from the Contract.
9. Listed DBE is ineligible to receive credit for the type of work required.
10. Listed DBE owner dies or becomes disabled resulting in the inability to perform the work on the Contract.
11. Department determines other documented good cause.

Add between the 4th and 5th paragraphs of section 5-1.13B(2):

07-20-12

Notify the original DBE of your intent to use other forces or material sources and provide the reasons. Provide the DBE with 5 days to respond to your notice and advise you and the Department of the reasons why the use of other forces or sources of materials should not occur. Your request to use other forces or material sources must include:

1. 1 or more of the reasons listed in the preceding paragraph
2. Notices from you to the DBE regarding the request
3. Notices from the DBE to you regarding the request

Add between "terminated" and ", you" in the 5th paragraph of section 5-1.13B(2):

07-20-12

or substituted

Replace "Contract" in item 1 in the list in the 5th paragraph of section 5-1.13C with:

10-19-12

work

Replace "Reserved" in section 5-1.20C with:

10-19-12

If the Contract includes an agreement with a railroad company, the Department makes the provisions of the agreement available in the *Information Handout* in the document titled "Railroad Relations and Insurance Requirements." Comply with the requirements in the document.

Add between the 2nd and 3rd paragraphs of section 5-1.23A:

10-19-12

Submit action and informational submittals to the Engineer.

Replace the 2nd paragraph of section 7-1.11A with:

07-27-12

A copy of form FHWA-1273 is included in section 7-1.11B. The training and promotion section of section II refers to training provisions as if they were included in the special provisions. The Department specifies the provisions in section 7-1.11D of the *Standard Specifications*. If a number of trainees or apprentices is required, the Department shows the number on the *Notice to Bidders*. Interpret each FHWA-1273 clause shown in the following table as having the same meaning as the corresponding Department clause:

FHWA-1273 Nondiscrimination Clauses

FHWA-1273 section	FHWA-1273 clause	Department clause
Training and Promotion	In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.	If section 7-1.11D applies, section 7-1.11D supersedes this subparagraph.
Records and Reports	If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.	If the Contract requires on-the-job training, collect and report training data.

Replace the form in section 7-1.11B with:

07-20-12

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers to any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

AA

8 PROSECUTION AND PROGRESS

10-19-12

Replace "working days" in the 1st paragraph of section 8-1.02B(1) with:

original working days

10-19-12

Replace "working days" at each occurrence in the 1st paragraph of section 8-1.02C(1) with:

original working days

10-19-12

Delete the 4th paragraph of section 8-1.02C(1).

04-20-12

Replace "Contract" in the 9th paragraph of section 8-1.02C(1) with:

work

10-19-12

Replace the 1st paragraph of section 8-1.02C(3)(a) with:

Submit a description of your proposed schedule software for authorization.

04-20-12

Delete the last paragraph of section 8-1.02C(3)(a).

04-20-12

Replace section 8-1.02C(3)(b) with:

8-1.02C(3)(b) Reserved

10-19-12

Delete the 3rd paragraph of section 8-1.02C(5).

04-20-12

Replace "Contract" in the last paragraph of section 8-1.02C(5) with:

original

10-19-12

Replace "working days" in the 1st paragraph of section 8-1.02D(1) with:

original working days

10-19-12

Replace "8-1.02D(1)" in the 2nd paragraph of section 8-1.02D(1) with:

8-1.02C(1)

01-20-12

Replace "Contract" in the 3rd paragraph of section 8-1.02D(2) with:

work

10-19-12

Replace "Contract" in item 9 in the list in the 4th paragraph of section 8-1.02D(4) with:

work

10-19-12

Replace "Contract completion" in the 4th paragraph of section 8-1.02D(6) with:

work completion

10-19-12

Replace "Contract working days" in the 4th paragraph of section 8-1.02D(6) with:

original working days

10-19-12

Delete items 1.3 and 1.4 in the list in the 1st paragraph of section 8-1.02D(10).

04-20-12

Replace the last paragraph of section 8-1.04B with:

The Department does not adjust time for starting before receiving notice of Contract approval.

10-19-12

Replace the 1st paragraph of section 8-1.05 with:

Contract time starts on the last day specified to start job site activities in section 8-1.04 or on the day you start job site activities, whichever occurs first.

10-19-12

Replace the 2nd paragraph of section 8-1.05 with:

Complete the work within the Contract time.

10-19-12

Delete "unless the Contract is suspended for reasons unrelated to your performance" in the 4th paragraph of section 8-1.05.

10-19-12

Replace the headings and paragraphs in section 8-1.06 with:

The Engineer may suspend work wholly or in part due to conditions unsuitable for work progress. Provide for public safety and a smooth and unobstructed passageway through the work zone during the

10-19-12

Add to the end of section 9-1.04A:

10-19-12

For nonsubcontracted work paid by force account for a contract with a TRO bid item, the markups are those shown in the following table instead of those specified in sections 9-1.04B–D:

Cost	Percent markup
Labor	30
Materials	10
Equipment rental	10

Delete ", Huntington Beach," in the 3rd paragraph of section 9-1.07A.

04-20-12

Replace the formula in section 9-1.07B(2) with:

04-20-12

$$Qh = HMATT \times Xa$$

Replace "weight of dry aggregate" in the definition of the variable Xa in section 9-1.07B(2) with:

04-20-12

total weight of HMA

Replace the formula in section 9-1.07B(3) with:

04-20-12

$$Qrh = RHMATT \times 0.80 \times Xarb$$

Replace "weight of dry aggregate" in the definition of the variable $Xarb$ in section 9-1.07B(3) with:

04-20-12

total weight of rubberized HMA

Replace the heading of section 9-1.07B(4) with:

04-20-12

Hot Mix Asphalt with Modified Asphalt Binder

Add between "in" and "modified" in the introductory clause of section 9-1.07B(4):

04-20-12

HMA with

Replace the formula in section 9-1.07B(4) with:

04-20-12

$$Qmh = MHMATT \times [(100 - Xam) / 100] \times Xmab$$

Replace "weight of dry aggregate" in the definition of the variable *X_{mab}* in section 9-1.07B(4) with:

04-20-12

total weight of HMA

Replace the formula in section 9-1.07B(5) with:

04-20-12

$Q_{rap} = HMATT \times X_{aa}$

Replace "weight of dry aggregate" in the definitions of the variables *X_{aa}* and *X_{ta}* in section 9-1.07B(5) with:

04-20-12

total weight of HMA

Add after the variable definitions in section 9-1.07B(9):

04-20-12

The quantity of extender oil is included in the quantity of asphalt.

Replace the headings and paragraphs in section 9-1.11 with:

10-19-12

9-1.11A General

Section 9-1.11 applies if a bid item for time-related overhead is included in the Contract. If a bid item for time-related overhead is included, you must exclude the time-related overhead from every other bid item price.

9-1.11B Payment Quantity

The TRO quantity does not include the number of working days to complete plant establishment work.

For a contract with a TRO lump sum quantity on the Bid Item List, the Department pays you based on the following conversions:

1. LS unit of measure is replaced with WDAY
2. Lump sum quantity is replaced with the number of working days bid
3. Lump sum unit price is replaced with the item total divided by the number of working days bid

9-1.11C Payment Inclusions

Payment for the TRO bid item includes payment for time-related field- and home-office overhead for the time required to complete the work.

The field office overhead includes time-related expenses associated with the normal and recurring construction activities not directly attributed to the work, including:

1. Salaries, benefits, and equipment costs of:
 - 1.1. Project managers
 - 1.2. General superintendents
 - 1.3. Field office managers
 - 1.4. Field office staff assigned to the project
2. Rent
3. Utilities
4. Maintenance
5. Security
6. Supplies

7. Office equipment costs for the project's field office

The home-office overhead includes the fixed general and administrative expenses for operating your business, including:

1. General administration
2. Insurance
3. Personnel and subcontract administration
4. Purchasing
5. Accounting
6. Project engineering and estimating

Payment for the TRO bid item does not include payment for:

1. The home-office overhead expenses specifically related to:
 - 1.1. Your other contracts or other businesses
 - 1.2. Equipment coordination
 - 1.3. Material deliveries
 - 1.4. Consultant and legal fees
2. Non-time-related costs and expenses such as mobilization, licenses, permits, and other charges incurred once during the Contract
3. Additional overhead involved in incentive/disincentive provisions to satisfy an internal milestone or multiple calendar requirements
4. Additional overhead involved in performing additional work that is not a controlling activity
5. Overhead costs incurred by your subcontractors of any tier or suppliers

9-1.11D Payment Schedule

For progress payments, the total work completed for the TRO bid item is the number of working days shown for the pay period on the *Weekly Statement of Working Days*.

For progress payments, the Department pays a unit price equal to the lesser of the following amounts:

1. Price per working day as bid or as converted under section 9-1.11B.
2. 20 percent of the total bid divided by the number of original working days

For a contract without plant establishment work, the Department pays you the balance due of the TRO item total as specified in section 9-1.17B.

For a contract with plant establishment work, the Department pays you the balance due of the TRO item total in the 1st progress payment after all non-plant establishment work is completed.

9-1.11E Payment Adjustments

The 3rd paragraph of section 9-1.17C does not apply.

The Department does not adjust the unit price for an increase or decrease in the TRO quantity except as specified in section 9-1.11E.

Section 9-1.17D(2)(b) does not apply except as specified for the audit report below.

If the TRO bid item quantity exceeds 149 percent of the quantity shown on the Bid Item List or as converted under section 9-1.11B, the Engineer may adjust or you may request an adjustment of the unit price for the excess quantity. For the adjustment, submit an audit report within 60 days of the Engineer's request. The report must be prepared as specified for an audit report for an overhead claim in section 9-1.17D(2)(b).

Within 20 days of the Engineer's request, make your financial records available for an audit by the State for the purpose of verifying the actual rate of TRO described in your audit. The actual rate of TRO described is subject to the Engineer's authorization.

Replace the 2nd and 3rd paragraphs of section 15-5.01C(2) with:

10-19-12

Perform the following activities in the order listed:

1. Abrasive blast the deck surface with steel shot. Perform abrasive blasting after the removal of any unsound concrete and placement of any rapid setting concrete patches.
2. Sweep the deck surface.
3. Blow the deck surface clean using high-pressure air.

Replace the 2nd paragraph of section 15-5.01C(4) with:

10-19-12

Before removing asphalt concrete surfacing, verify the depth of the surfacing at the supports and midspans of each structure (1) in each shoulder, (2) in the traveled way, and (3) at the roadway crown, if a crown is present.

Replace the 2nd paragraph of section 15-5.03A(2) with:

10-19-12

For a contract with less than 60 original working days, submit certificates of compliance for the filler material and bonding agents.

Replace the 4th paragraph of section 15-5.03B with:

10-19-12

For a contract with less than 60 original working days, alternative materials must be authorized before use.

Add between the 5th and 6th paragraphs of section 15-5.03C:

10-19-12

The final surface finish of the patched concrete surface must comply with section 51-1.03F.

Delete the 4th paragraph of section 15-5.05C.

10-19-12

Replace "51-1.03F(5)" in the 3rd paragraph of section 15-5.06C(1) with:

10-19-12

51-1.01D(4)

Replace "51-1.03E(5)" in the 5th paragraph of section 15-5.06C(1) with:

10-19-12

51-1.03F(5)

Delete the 9th paragraph of section 15-5.06C(1).

10-19-12

Replace the 2nd paragraph of section 19-3.03F with:

01-20-12

Do not backfill over or place material over slurry cement backfill until 4 hours after placement. When concrete sand is used as aggregate and the in-place material is free draining, you may start backfilling as soon as the surface water is gone.

Add between the 2nd and 3rd paragraphs of section 19-3.03K:

01-20-12

Before you excavate for the installation of ground anchors in a wall zone:

1. Complete stability testing
2. Obtain authorization of test data

Replace the 2nd sentence of the 7th paragraph of section 19-3.03K:

01-20-12

Stop construction in unstable areas until remedial measures have been taken. Remedial measures must be submitted and authorized.

Add between the 8th and 9th paragraphs of section 19-3.03K:

01-20-12

When your excavation and installation methods result in a discontinuous wall along any soil nail row, the ends of the structurally completed wall section must extend beyond the ends of the next lower excavation lift by a distance equal to twice the lift height. Maintain temporary slopes at the ends of each wall section to ensure slope stability.

Replace the 9th paragraph of section 19-3.03K:

01-20-12

Do not excavate to the next underlying excavation lift until the following conditions have been attained for the portion of the soil nail or ground anchor wall in the current excavation lift:

1. Soil nails or ground anchors are installed and grouted.
2. Reinforced shotcrete facing is constructed.
3. Grout and shotcrete have cured for at least 72 hours.
4. Specified tests are complete for that portion of wall and the results are authorized.
5. Soil nail facing anchorages are attached or ground anchors are locked off.

01-18-13

01-20-12

Replace the 2nd sentence in the 7th paragraph of section 19-3.04 with:

01-18-13

Structure excavation more than 0.5 foot from the depth shown is paid for as a work-character change if you request an adjustment or the Engineer orders an adjustment.

Replace "Contract completion time" in the 8th paragraph of section 19-6.03D with:

10-19-12

work completion date

Replace section 21-1.02F(2) with:

04-20-12

21-1.02F(2) Reserved

Replace section 21-1.02J with:

04-20-12

21-1.02J Reserved

Replace the row for organic matter content in the table in the 4th paragraph of section 21-1.02M with:

01-18-13

Organic matter content	TMECC 05.07-A Loss-on-ignition organic matter method (LOI) % dry weight basis	30–100
------------------------	---	--------

Replace the paragraph in section 21-1.02P with:

10-19-12

Fiber roll must be a premanufactured roll filled with rice or wheat straw, wood excelsior, or coconut fiber. Fiber roll must be covered with biodegradable jute, sisal, or coir fiber netting secured tightly at each end and must be one of the following:

1. 8 to 10 inches in diameter and at least 1.1 lb/ft
2. 10 to 12 inches in diameter and at least 3 lb/ft

Fiber roll must have a minimum functional longevity of 1 year.

Add between the 1st and 2nd paragraphs of section 21-1.03A:

01-18-13

Remove and dispose of trash, debris, and weeds in areas to receive erosion control materials.

Remove and dispose of loose rocks larger than 2-1/2 inches in maximum dimension unless otherwise authorized.

Protect the traveled way, sidewalks, lined drainage channels, and existing vegetation from overspray of hydraulically-applied material.

Replace section 21-1.03B with:

01-18-13

21-1.03B Reserved

Replace section 21-1.03I with:

04-20-12

21-1.03I Reserved

Add between the 4th and 5th paragraphs of section 21-1.03P:

10-19-12

If soil conditions do not permit driving the stakes into the soil, drill pilot holes to facilitate driving of the stakes.

37-1.01D Quality Control and Assurance

37-1.01D(1) General

Reserved

37-1.01D(2) Prepaving Conference

For seal coats and micro-surfacing, schedule a prepaving conference at a mutually agreed upon time and place to meet with the Engineer.

Prepaving conference attendees must sign an attendance sheet provided by the Engineer. The prepaving conference must be attended by your:

1. Project superintendent
2. Paving construction foreman
3. Traffic control foreman

Be prepared to discuss:

1. Quality control
2. Acceptance testing
3. Placement
4. Training on placement methods
5. Checklist of items for proper placement
6. Unique issues specific to the project, including:
 - 6.1. Weather
 - 6.2. Alignment and geometrics
 - 6.3. Traffic control issues
 - 6.4. Haul distances
 - 6.5. Presence and absence of shaded areas
 - 6.6. Any other local issues

37-1.02 MATERIALS

Not Used

37-1.03 CONSTRUCTION

Not Used

37-1.04 PAYMENT

Not Used

Replace "Reserved" in section 37-2.01D(1) with:

01-18-13

Aggregate suppliers, chip spreader operators, emulsion distributor, and for coated chips, the coated chips producer must attend the prepaving conference.

Add to section 37-2.03A:

04-20-12

If you fail to place the permanent traffic stripes and pavement markings within the specified time, the Department withholds 50 percent of the estimated value of the seal coat work completed that has not received permanent traffic stripes and pavement markings.

Add to section 37-3.01D(1):

01-18-13

Micro-surfacing spreader operators must attend the prepaving conference.

AA

39 HOT MIX ASPHALT

01-18-13

Add to the end of the paragraph in section 39-1.02A:

10-19-12

as shown

Replace "less than 10 percent" in note "b" in the table in the 5th paragraph of section 39-1.02E with:

01-20-12

10 percent or less

Replace the 1st paragraph of section 39-1.03B with:

04-20-12

Perform a mix design that produces HMA with the values for the quality characteristics shown in the following table:

HMA Mix Design Requirements

Quality characteristic	Test method	HMA type		
		A	B	RHMA-G
Air void content (%)	California Test 367	4.0	4.0	Section 39-1.03B
Voids in mineral aggregate (% min.)	California Test 367			
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 ^a
3/4" grading		13.0	13.0	18.0–23.0 ^a
Voids filled with asphalt (%)	California Test 367			Note c
No. 4 grading		65.0–75.0	65.0–75.0	
3/8" grading		65.0–75.0	65.0–75.0	
1/2" grading		65.0–75.0	65.0–75.0	
3/4" grading		65.0–75.0	65.0–75.0	
Dust proportion	California Test 367			Note c
No. 4 and 3/8" gradings		0.6–1.2	0.6–1.2	
1/2" and 3/4" gradings		0.6–1.2	0.6–1.2	
Stabilometer value (min.) ^b	California Test 366			
No. 4 and 3/8" gradings		30	30	--
1/2" and 3/4" gradings		37	35	23

^a Voids in mineral aggregate for RHMA-G must be within this range.

^b California Test 304, Part 2C.12.

^c Report this value in the JMF submittal.

Replace item 4 in the list in the 1st paragraph of section 39-1.03C with:

01-20-12

4. JMF renewal on a *Caltrans Job Mix Formula Renewal* form, if applicable

Replace the 2nd paragraph of section 39-1.03E with:

04-20-12

Use the OBC specified on your *Contractor Hot Mix Asphalt Design Data* form. No adjustments to asphalt binder content are allowed. Based on your testing and production experience, you may submit an adjusted aggregate gradation TV on a *Contractor Job Mix Formula Proposal* form before verification testing. Aggregate gradation TV must be within the TV limits specified in the aggregate gradation tables.

Add between the 3rd and 4th paragraphs of section 39-1.03E:

04-20-12

Asphalt binder set point for HMA must be the OBC specified on your *Contractor Hot Mix Asphalt Design Data* form. When RAP is used, asphalt binder set point for HMA must be:

$$\text{Asphalt Binder Set Point} = \frac{\frac{BC_{OBC}}{\left(1 - \frac{BC_{OBC}}{100}\right)} - R_{RAP} \left[\frac{BC_{RAP}}{\left(1 - \frac{BC_{RAP}}{100}\right)} \right]}{100 + \frac{BC_{OBC}}{\left(1 - \frac{BC_{OBC}}{100}\right)}}$$

Where:

BC_{OBC} = optimum asphalt binder content, percent based on total weight of mix

R_{RAP} = RAP ratio by weight of aggregate

BC_{RAP} = asphalt binder content of RAP, percent based on total weight of RAP mix

Replace item 4 in the list in the 8th paragraph of section 39-1.03E with:

04-20-12

4. HMA quality specified in the table titled "HMA Mix Design Requirements" except:
 - 4.1. Air void content, design value ± 2.0 percent
 - 4.2. Voids filled with asphalt, report only
 - 4.3. Dust proportion, report only

Replace the 12th paragraph of section 39-1.03E with:

04-20-12

If tests on plant-produced samples do not verify the JMF, the Engineer notifies you and you must submit a new JMF or submit an adjusted JMF based on your testing. JMF adjustments may include a change in aggregate gradation TV within the TV limits specified in the aggregate gradation tables.

Replace the 14th paragraph of section 39-1.03E with:

01-20-12

A verified JMF is valid for 12 months.

Replace the last sentence in the 15th paragraph of section 39-1.03E with:

01-20-12

This deduction does not apply to verifications initiated by the Engineer or JMF renewal.

Add between the 1st and 2nd paragraphs of section 39-1.03F:

04-20-12

Target asphalt binder content on your Contractor *Job Mix Formula Proposal* form and the OBC specified on your *Contractor Hot Mix Asphalt Design Data* form must be the same.

Delete the 4th paragraph of section 39-1.03F.

01-20-12

Replace items 3 and 5 in the list in the 6th paragraph of section 39-1.03F with:

01-20-12

3. Engineer verifies each proposed JMF renewal within 20 days of receiving verification samples.
5. For each HMA type and aggregate gradation specified, the Engineer verifies at the Department's expense 1 proposed JMF renewal within a 12-month period.

Add between the 6th and 7th paragraphs of section 39-1.03F:

01-20-12

The most recent aggregate quality test results within the past 12 months may be used for verification of JMF renewal or the Engineer may perform aggregate quality tests for verification of JMF renewal.

Replace section 39-1.03G with:

04-20-12

39-1.03G Job Mix Formula Modification

For an accepted JMF, you may change asphalt binder source one time during production.

Submit your modified JMF request a minimum of 3 business days before production. Each modified JMF submittal must consist of:

1. Proposed modified JMF on *Contractor Job Mix Formula Proposal* form
2. Mix design records on *Contractor Hot Mix Asphalt Design Data* form for the accepted JMF to be modified
3. JMF verification on *Hot Mix Asphalt Verification* form for the accepted JMF to be modified
4. Quality characteristics test results for the modified JMF as specified in section 39-1.03B. Perform tests at the mix design OBC as shown on the *Contractor Asphalt Mix Design Data* form
5. If required, California Test 371 test results for the modified JMF.

With an accepted modified JMF submittal, the Engineer verifies each modified JMF within 5 business days of receiving all verification samples. If California Test 371 is required, the Engineer tests for California Test 371 within 10 days of receiving verification samples.

The Engineer verifies the modified JMF after the modified JMF HMA is placed on the project and verification samples are taken within the first 750 tons following sampling requirements in section 39-1.03E, "Job Mix Formula Verification." The Engineer tests verification samples for compliance with:

1. Stability as shown in the table titled "HMA Mix Design Requirements"
2. Air void content at design value ± 2.0 percent
3. Voids in mineral aggregate as shown in the table titled "HMA Mix Design Requirements"

4. Voids filled with asphalt, report only
5. Dust proportion, report only

If the modified JMF is verified, the Engineer revises your *Hot Mix Asphalt Verification* form to include the new asphalt binder source. Your revised form will have the same expiration date as the original form.

If a modified JMF is not verified, stop production and any HMA placed using the modified JMF is rejected.

The Engineer deducts \$2,000 from payments for each modified JMF verification. The Engineer deducts an additional \$2,000 for each modified JMF verification that requires California Test 371.

Add to section 39-1.03:

01-20-12

39-1.03H 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.

Replace "3 days" in the 1st paragraph of section 39-1.04A with:

01-20-12

3 business days

Replace the 2nd sentence in the 2nd paragraph of section 39-1.04A with:

01-20-12

During production, take samples under California Test 125. You may sample HMA from:

Replace "5 days" in the 1st paragraph of section 39-1.06 with:

01-20-12

5 business days

Replace the 3rd paragraph of section 39-1.08A with:

04-20-12

During production, you may adjust hot or cold feed proportion controls for virgin aggregate and RAP.

Add to section 39-1.08A:

04-20-12

During production, asphalt binder set point for HMA Type A, HMA Type B, HMA Type C, and RHMA-G must be the OBC shown in *Contractor Hot Mix Asphalt Design Data* form. For OGFC, asphalt binder set point must be the OBC shown on *Caltrans Hot Mix Asphalt Verification* form. If RAP is used, asphalt binder set point for HMA must be calculated as specified in section 39-1.03E.

You must request adjustments to the plant asphalt binder set point based on new RAP stockpiles average asphalt binder content. Do not adjust the HMA plant asphalt binder set point until authorized.

Replace the 3rd paragraph of section 39-1.08B with:

09-16-11

Asphalt rubber binder must be from 375 to 425 degrees F when mixed with aggregate.

Replace section 39-1.11 with:

01-18-13

39-1.11 CONSTRUCTION

39-1.11A General

Do not place HMA on wet pavement or a 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, pickup, loading, and paving are continuous
4. HMA temperature in the windrow does not fall below 260 degrees F

You may place 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 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

39-1.11B Longitudinal Joints

39-1.11B(1) General

Longitudinal joints in the top layer must match specified lane edges. Alternate the longitudinal joint offsets in the lower layers at least 0.5 foot from each side of the specified lane edges. You may request other longitudinal joint placement patterns.

A vertical longitudinal joint of more than 0.15 ft is not allowed at any time between adjacent lanes open to traffic.

For HMA thickness of 0.15 ft or less, the distance between the ends of the adjacent surfaced lanes at the end of each day's work must not be greater than can be completed in the following day of normal paving.

For HMA thickness greater than 0.15 ft, you must place HMA on adjacent traveled way lanes so that at the end of each work shift the distance between the ends of HMA layers on adjacent lanes is from 5 to 10 feet. Place additional HMA along the transverse edge at each lane's end and along the exposed longitudinal edges between adjacent lanes. Hand rake and compact the additional HMA to form temporary conforms. You may place Kraft paper or another authorized bond breaker under the conform tapers to facilitate the taper removal when paving operations resume.

39-1.11B(2) Tapered Notched Wedge

For divided highways with an HMA lift thickness greater than 0.15 foot, you may construct a 1-foot wide tapered notched wedge joint as a longitudinal joint between adjacent lanes open to traffic. A vertical notch of 0.75 inch maximum must be placed at the top and bottom of the tapered wedge.

The tapered notched wedge must retain its shape while exposed to traffic. Pave the adjacent lane within 1 day.

Construct the tapered portion of the tapered notched wedge with an authorized strike-off device. The strike-off device must provide a uniform slope and must not restrict the main screed of the paver.

You may use a device attached to the screed to construct longitudinal joints that will form a tapered notched wedge in a single pass. The tapered notched wedge must be compacted to a minimum of 91 percent compaction.

Perform QC testing on the completed tapered notch wedge joint as follows:

1. Perform field compaction tests at the rate of 1 test for each 750-foot section along the joint. Select random locations for testing within each 750-foot section.
2. Perform field compaction tests at the centerline of the joint, 6 inches from the upper vertical notch, after the adjacent lane is placed and before opening the pavement to traffic.
3. Determine maximum density test results.
4. Determine percent compaction of the longitudinal joint as the ratio of the average of the field compaction values and the maximum density test results.

For HMA under QC/QA construction process, the additional quality control compaction results associated with the tapered notch wedge will not be included in the computation of any quality factor and process control.

For acceptance of the completed tapered notch wedge joint, take two 4- or 6-inch diameter cores 6 inches from the upper vertical notch of the completed longitudinal joint for every 3,000 feet at locations designated by the Engineer. Take cores after the adjacent lane is placed and before opening the pavement to traffic. Cores must be taken in the presence of the Engineer and must be marked to identify the test sites. Submit the cores. One core will be used for determination of the field density and 1 core will be used for dispute resolution. The Engineer determines:

1. Field compaction by measuring the bulk specific gravity of the cores under California Test 308, Method A
2. Percent compaction as the ratio of the average of the bulk specific gravity of the core for each day's production to the maximum density test value

For HMA under QC/QA construction process, the additional quality assurance testing by the Engineer to determine field compaction associated with the tapered notch wedge will not be included in the Engineer's verification testing and in the computation of any quality factor and process control.

Determine percent compaction values each day the joint is completed and submit values within 24 hours of testing. If the percent compaction of 1 day's production is less than 91 percent, that day's notched wedge joint is rejected. Discontinue placement of the tapered notched wedge and notify the Engineer of changes you will make to your construction process in order to meet the specifications.

For HMA under QC/QA construction process, quantities of HMA placed in the completed longitudinal joint will have a quality factor QF_{QC5} of 1.0.

39-1.11C Widening Existing Pavement

If widening existing pavement, construct new pavement structure to match the elevation of the existing pavement's edge before placing HMA over the existing pavement.

39-1.11D Shoulders, Medians, and Other Road Connections

Until the adjoining through lane's top layer has been paved, do not pave the top layer of:

1. Shoulders
2. Tapers
3. Transitions
4. Road connections
5. Driveways
6. Curve widenings
7. Chain control lanes
8. Turnouts
9. Turn pockets

If the number of lanes changes, pave each through lane's top layer before paving a tapering lane's top layer. Simultaneous to paving a through lane's top layer, you may pave an adjoining area's top layer, including shoulders. Do not operate spreading equipment on any area's top layer until completing final compaction.

39-1.11E Leveling

If leveling with HMA is specified, fill and level irregularities and ruts with HMA before spreading HMA over the base, existing surfaces, or bridge decks. You may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture. HMA used to change an existing surface's cross slope or profile is not paid for as 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.

39-1.11F Compaction

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 degrees F for HMA with unmodified binder
2. Below 140 degrees F for HMA with modified binder
3. Below 200 degrees 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 construction processes, if 3/4-inch aggregate grading is specified, you may use a 1/2-inch aggregate grading if the specified total paved thickness is at least 0.15 foot and less than 0.20 foot thick.

Spread and compact HMA under sections 39-3.03 and 39-3.04 if any of the following applies:

1. Specified paved thickness is less than 0.15 foot.
2. Specified paved thickness is less than 0.20 foot and 3/4-inch aggregate grading is specified and used.
3. You spread and compact at:
 - 3.1. Asphalt concrete surfacing replacement areas
 - 3.2. Leveling courses
 - 3.3. Areas for which the Engineer determines conventional compaction and compaction measurement methods are impeded

Do not open new HMA pavement to public traffic until its mid-depth temperature is below 160 degrees F.

If you request and if authorized, you may cool HMA Type A and Type B with water when rolling activities are complete. Apply water under section 17-3.

Spread sand at a rate from 1 to 2 lb/sq yd 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 90-1.02C(4)(c). Keep traffic off the pavement until spreading sand is complete.

Replace the 5th and 6th paragraphs of section 39-1.12C with:

07-20-12

On tangents and horizontal curves with a centerline radius of curvature 2,000 feet or more, the PI_0 must be at most 2.5 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 5 inches per 0.1-mile section.

Add to section 39-1.12:

01-20-12

39-1.12E Reserved

Add to section 39-1.14:

01-20-12

Prepare the area to receive HMA for miscellaneous areas and dikes, including any excavation and backfill as needed.

Replace "6.8" in item 3 in the list in the 4th paragraph of section 39-1.14 with:

04-20-12

6.4

Replace "6.0" in item 3 in the list in the 4th paragraph of section 39-1.14 with:

04-20-12

5.7

Replace "6.8" in the 1st paragraph of section 39-1.15B with:

04-20-12

6.4

Replace "6.0" in the 1st paragraph of section 39-1.15B with:

04-20-12

5.7

Replace the 1st paragraph of section 39-2.02B with:

04-20-12

Perform sampling and testing at the specified frequency for the quality characteristics shown in the following table:

Minimum Quality Control—Standard Construction Process

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA type			
			A	B	RHMA-G	OGFC
Aggregate gradation ^a	California Test 202	1 per 750 tons and any remaining part at the end of the project	JMF ± Tolerance ^b			
Sand equivalent (min) ^c	California Test 217		47	42	47	--
Asphalt binder content (%)	California Test 379 or 382		JMF±0.40	JMF±0.40	JMF ± 0.40	JMF ± 0.40
HMA moisture content (% max)	California Test 226 or 370	1 per 2,500 tons but not less than 1 per paving day	1.0	1.0	1.0	1.0
Field compaction (% max. theoretical density) ^{d,e}	QC 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	California Test 366	One per 4,000 tons or 2 per 5 business days, whichever is greater	30	30	--	--
			37	35	23	--
Air void content (%) ^{c,g}	California Test 367		4 ± 2	4 ± 2	TV ± 2	--
Aggregate moisture content at continuous mixing plants and RAP moisture content at continuous mixing plants and batch mixing plants ^h	California Test 226 or 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	California Test 205	As designated in the QC plan. At least once per project	90	25	--	90
			75	--	90	75
			70	20	70	90
Los Angeles	California					

Rattler (% max) Loss at 100 rev. Loss at 500 rev.	Test 211		12 45	-- 50	12 40	12 40
Flat and elongated particles (% max by weight @ 5:1)	California Test 235		Report only	Report only	Report only	Report only
Fine aggregate angularity (% min) ⁱ	California Test 234		45	45	45	--
Voids filled with asphalt (%) ^j No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367		65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	Report only	--
Voids in mineral aggregate (% min) ^j No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367		17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 ^k 18.0–23.0 ^k	--
Dust proportion ^l No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 367		0.6-1.2 0.6–1.2	0.6-1.2 0.6–1.2	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	12-foot straight-edge, must grind, and PI ₀
Asphalt rubber binder viscosity @ 375 °F, centipoises	Section 39-1.02D	Section 39-1.04C	--	--	1,500–4,000	1,500–4,000
Asphalt modifier	Section 39-1.02D	Section 39-1.04C	--	--	Section 39-1.02D	Section 39-1.02D
CRM	Section 39-1.02D	Section 39-1.04C	--	--	Section 39-1.02D	Section 39-1.02D

^a Determine combined aggregate gradation containing RAP under California Test 367.

^b The tolerances must comply with the allowable tolerances in section 39-1.02E.

^c Report the average of 3 tests from a single split sample.

^d Determine field compaction for any of the following conditions:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.

^e To determine field compaction use:

1. In-place density measurements using the method specified in your QC plan.
2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.

^f California Test 304, Part 2C.12.

^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 The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

^j Report only.

^k Voids in mineral aggregate for RHMA-G must be within this range.

Replace the 1st paragraph of section 39-2.03A with:

04-20-12

The Department samples for acceptance testing and tests for the quality characteristics shown in the following table:

HMA Acceptance—Standard Construction Process

Quality characteristic	Test method	HMA type						
		A	B	RHMA-G	OGFC			
Aggregate gradation ^a		California Test 202	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	California Test 217	47	42	47	--			
Asphalt binder content (%)	California Test 379 or 382	JMF±0.40	JMF±0.40	JMF ± 0.40	JMF ± 0.40			
HMA moisture content (% max)	California Test 226 or 370	1.0	1.0	1.0	1.0			
Field compaction (% max. theoretical density) ^{e, f}	California Test 375	91–97	91–97	91–97	--			
Stabilometer value (min) ^g No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 366	30	30	--	--			
		37	35	23	--			
Air void content (%) ^{d, h}	California Test 367	4 ± 2	4 ± 2	TV ± 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	California Test 205	90	25	--	90			
		75	--	90	75			
		70	20	70	90			
Los Angeles Rattler (% max) Loss at 100 rev. Loss at 500 rev.	California Test 211	12	--	12	12			
		45	50	40	40			
Fine aggregate angularity (% min) ⁱ	California Test 234	45	45	45	--			
Flat and elongated particles	California	Report only	Report only	Report only	Report only			

(%, max by weight @ 5:1)	Test 235				
Voids filled with asphalt (%) ^j	California Test 367	65.0–75.0	65.0–75.0	Report only	--
No. 4 grading		65.0–75.0	65.0–75.0		
3/8" grading		65.0–75.0	65.0–75.0		
1/2" grading		65.0–75.0	65.0–75.0		
3/4" grading		65.0–75.0	65.0–75.0		
Voids in mineral aggregate (% min) ^j	California Test 367				
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 ^k	
3/4" grading		13.0	13.0	18.0–23.0 ^k	
Dust proportion ^j	California Test 367			Report only	--
No. 4 and 3/8" gradings		0.6-1.2	0.6-1.2		
1/2" and 3/4" gradings		0.6–1.2	0.6–1.2		
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	12-foot straight-edge and must grind
Asphalt binder	Various	Section 92	Section 92	Section 92	Section 92
Asphalt rubber binder	Various	--	--	Section 92-1.01D(2) and section 39-1.02D	Section 92-1.01D(2) and section 39-1.02D
Asphalt modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D
CRM	Various	--	--	Section 39-1.02D	Section 39-1.02D

^a The Engineer determines combined aggregate gradations containing RAP under California Test 367.

^b "X" denotes the sieves the Engineer tests for the specified aggregate gradation.

^c The tolerances must comply with the allowable tolerances in section 39-1.02E.

^d The Engineer reports the average of 3 tests from a single split sample.

^e The Engineer determines field compaction for any of the following conditions:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.

^f To determine field compaction, the Engineer uses:

1. California Test 308, Method A, to determine in-place density of each density core.
2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.

^g California Test 304, Part 2C.12.

^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 The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

^j Report only.

^k Voids in mineral aggregate for RHMA-G must be within this range.

Replace the 5th paragraph of section 39-2.03A with:

01-20-12

The Engineer determines the percent of maximum theoretical density from density cores taken from the final layer measured the full depth of the total paved HMA thickness if any of the following applies:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and any layer is less than 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.2 foot and any layer is less than 0.20 foot.

Replace the 1st paragraph of section 39-3.02A with:

04-20-12

The Department samples for acceptance testing and tests for the quality characteristics shown in the following table:

HMA Acceptance—Method Construction Process

Quality characteristic	Test method	HMA type			
		A	B	RHMA-G	OGFC
Aggregate gradation ^a	California Test 202	JMF ± tolerance ^b			
Sand equivalent (min) ^c	California Test 217	47	42	47	--
Asphalt binder content (%)	California Test 379 or 382	JMF±0.40	JMF±0.40	JMF ± 0.40	JMF ± 0.40
HMA moisture content (% max)	California Test 226 or 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	California Test 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	California Test 205	90	25	--	90
		75	--	90	75
		70	20	70	90
Los Angeles Rattler (% max) Loss at 100 rev. Loss at 500 rev.	California Test 211	12	--	12	12
		45	50	40	40
Air void content (%) ^{c, e}	California Test 367	4 ± 2	4 ± 2	TV ± 2	--
Fine aggregate angularity (% min) ^f	California Test 234	45	45	45	--
Flat and elongated particles (% max by weight @ 5:1)	California Test 235	Report only	Report only	Report only	Report only
Voids filled with asphalt (%) ^g No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367	65.0–75.0	65.0–75.0	Report only	--
		65.0–75.0	65.0–75.0		
		65.0–75.0	65.0–75.0		
		65.0–75.0	65.0–75.0		
		65.0–75.0	65.0–75.0		
Voids in mineral aggregate (% min) ^g No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367	17.0	17.0	--	--
		15.0	15.0	--	
		14.0	14.0	18.0–23.0 ^h	
		13.0	13.0	18.0–23.0 ^h	
		13.0	13.0	18.0–23.0 ^h	
Dust proportion ^g No. 4 and 3/8" gradings 1/2" and 3/4" gradings	California Test 367	0.6-1.2	0.6-1.2	Report only	--
		0.6–1.2	0.6–1.2		
Smoothness	Section	12-foot	12-foot	12-foot	12-foot

	39-1.12	straight-edge and must-grind	straight-edge and must-grind	straight-edge and must-grind	straight-edge and must-grind
Asphalt binder	Various	Section 92	Section 92	Section 92	Section 92
Asphalt rubber binder	Various	--	--	Section 92-1.01D(2) and section 39-1.02D	Section 92-1.01D(2) and section 39-1.02D
Asphalt modifier	Various	--	--	Section 39-1.02D	Section 39-1.02D
CRM	Various	--	--	Section 39-1.02D	Section 39-1.02D

^a The Engineer determines combined aggregate gradations containing RAP under California Test 367.

^b The tolerances must comply with the allowable tolerances in section 39-1.02E.

^c The Engineer reports the average of 3 tests from a single split sample.

^d California Test 304, Part 2C.12.

^e The Engineer determines the bulk specific gravity of each lab-compacted briquette under California Test 308, Method A, and theoretical maximum specific gravity under California Test 309.

^f The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

^g Report only.

^h Voids in mineral aggregate for RHMA-G must be within this range.

Replace "280 degrees F" in item 2 in the list in the 6th paragraph of section 39-3.04 with:

01-20-12

285 degrees F

Replace the 8th paragraph of section 39-4.02C with:

04-20-12

Comply with the values for the HMA quality characteristics and minimum random sampling and testing for quality control shown in the following table:

Minimum Quality Control—QC/QA Construction Process

Quality characteristic	Test method	Minimum sampling and testing frequency	HMA Type			Location of sampling	Maximum reporting time allowance
			A	B	RHMA-G		
Aggregate gradation ^a	California Test 202	1 per 750 tons	JMF ± tolerance ^b	JMF ± tolerance ^b	JMF ± tolerance ^b	California Test 125	24 hours
Asphalt binder content (%)	California Test 379 or 382		JMF±0.40	JMF±0.40	JMF ±0.40	Loose mix behind paver See California Test 125	
Field compaction (% max. 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	California Test 226 or 370	2 per day during production	--	--	--	Stock-piles or cold feed belts	--
Sand equivalent (min) ^f	California Test 217	1 per 750 tons	47	42	47	California Test 125	24 hours
HMA moisture content (% ,max)	California Test 226 or 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 California Test 125	24 hours
Stabilometer value (min) ^{f,g}	California Test 366	1 per 4,000 tons or 2 per 5 business days, whichever is greater	30	30	--		48 hours
No. 4 and 3/8" gradings 1/2" and 3/4" gradings			37	35	23		
Air void content (%) ^{f,h}	California Test 367		4 ± 2	4 ± 2	TV ± 2		

Percent of crushed particles coarse aggregate (% min.): One fractured face Two fractured faces	California Test 205		90	25	--	California Test 125	48 hours
Fine aggregate (% min) (Passing no. 4 sieve and retained on no. 8 sieve.): One fractured face			75	--	90		
Los Angeles Rattler (% max): Loss at 100 rev. Loss at 500 rev.	California Test 211	As designated in QC plan.	12	--	12	California Test 125	
Fine aggregate angularity (% min) ⁱ	California Test 234		45	50	40		
Flat and elongated particle (% max by weight @ 5:1)	California Test 235	At least once per project.	45	45	45	California Test 125	
Voids filled with asphalt (%) ⁱ : No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367		Report only	Report only	Report only	California Test 125	
Voids in mineral aggregate (% min.) ^j : No. 4 grading 3/8" grading 1/2" grading 3/4" grading	California Test 367		65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	Report only		
			17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	-- -- 18.0–23.0 ^k 18.0–23.0 ^k		

Dust proportion ^j :	California Test 367						
No. 4 and 3/8" gradings			0.6-1.2	0.6-1.2	Report only		
1/2" and 3/4" gradings			0.6-1.2	0.6-1.2			
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 @ 375 °F, centipoises	Section 39-1.02D	--	--	--	1,500-4,000	Section 39-1.02D	24 hours
CRM	Section 39-1.02D	--	--	--	Section 39-1.02D	Section 39-1.02D	48 hours

^a Determine combined aggregate gradation containing RAP under California Test 367.

^b The tolerances must comply with the allowable tolerances in section 39-1.02E.

^c Determines field compaction for any of the following conditions:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.

^d To determine field compaction use:

1. In-place density measurements using the method specified in your QC plan.
2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.

^e For adjusting the plant controller at the HMA plant.

^f Report the average of 3 tests from a single split sample.

^g California Test 304, Part 2C, 12.

^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 The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

^j Report only.

^k Voids in mineral aggregate for RHMA-G must be within this range.

Replace the 1st sentence in the 1st paragraph of section 39-4.03B(2) with:

01-20-12

For aggregate gradation and asphalt binder content, the minimum ratio of verification testing frequency to quality control testing frequency is 1:5.

Replace the 2nd "and" in the 7th paragraph of section 39-4.03B(2) with:

01-20-12

or

Replace the 1st paragraph of section 39-4.04A with:

04-20-12

The Engineer samples for acceptance testing and tests for the following quality characteristics:

HMA Acceptance—QC/QA Construction Process

Index (i)	Quality characteristic				Weighting factor (w)	Test method	HMA type		
							A	B	RHMA-G
		Aggregate gradation ^a				California Test 202	JMF ± Tolerance ^c		
	Sieve	3/4"	1/2"	3/8"					
1	1/2"	X ^d	--	--	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	California Test 379 or 382	JMF±0.40	JMF±0.40	JMF ± 0.40
5	Field compaction (% max. theoretical density) ^{d,e}				0.40	California Test 375	92–96	92–96	91–96
	Sand equivalent (min) ^f					California Test 217	47	42	47
	Stabilometer value (min) ^{f,g} No. 4 and 3/8" gradings 1/2" and 3/4" gradings					California Test 366	30 37	30 35	-- 23
	Air void content (%) ^{f,h}					California Test 367	4 ± 2	4 ± 2	TV ± 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					California Test 205	90 75	25 --	-- 90
	HMA moisture content (% max)					California Test 226 or 370	1.0	1.0	1.0
	Los Angeles Rattler (% max) Loss at 100 rev. Loss at 500 rev.					California Test 211	12 45	-- 50	12 40
	Fine aggregate angularity (% min) ⁱ					California Test 234	45	45	45
	Flat and elongated particle (% max by weight @ 5:1)					California Test 235	Report only	Report only	Report only

	Voids in mineral aggregate (% min) ^j No. 4 grading 3/8" grading 1/2" grading 3/4" grading		California Test 367	17.0 15.0 14.0 13.0	17.0 15.0 14.0 13.0	(Note k) -- -- 18.0–23.0 18.0–23.0
	Voids filled with asphalt (%) ^j No. 4 grading 3/8" grading 1/2" grading 3/4" grading		California Test 367	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	65.0–75.0 65.0–75.0 65.0–75.0 65.0–75.0	Report only
	Dust proportion ^j No. 4 and 3/8" gradings 1/2" and 3/4" gradings		California Test 367	0.6–1.2 0.6–1.2	0.6–1.2 0.6–1.2	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 92-1.01D(2) and section 39-1.02D
	Asphalt modifier		Various	--	--	Section 39-1.02D
	CRM		Various	--	--	Section 39-1.02D

^a The Engineer determines combined aggregate gradations containing RAP under California Test 367.

^b "X" denotes the sieves the Engineer tests for the specified aggregate gradation.

^c The tolerances must comply with the allowable tolerances in section 39-1.02E.

^d The Engineer determines field compaction for any of the following conditions:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate grading is used and the specified total paved thickness is at least 0.15 foot and less than 0.20 foot.
2. 3/4-inch aggregate grading is used and the specified total paved thickness is at least 0.20 foot.

^e To determine field compaction, the Engineer uses:

1. California Test 308, Method A, to determine in-place density of each density core.
2. California Test 309 to determine the maximum theoretical density at the frequency specified in California Test 375, Part 5C.

^f The Engineer reports the average of 3 tests from a single split sample.

^g California Test 304, Part 2C.12.

^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 The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

^j Report only.

^k Voids in mineral aggregate for RHMA-G must be within this range.

Replace the 1st sentence of the 3rd paragraph of section 40-1.01D(9) with:

01-20-12

Use a California profilograph to determine the concrete pavement profile.

Replace the title of the table in section 40-1.01D(13)(a) with:

01-20-12

Concrete Pavement Acceptance Testing

Replace the 2nd and 3rd paragraphs in section 40-1.01D(13)(a) with:

01-20-12

Pavement smoothness may be accepted based on the Department's testing. A single test represents no more than 0.1 mile.

Acceptance of modulus of rupture, thickness, dowel bar and tie bar placement, coefficient of friction, smoothness, and air content, does not constitute final concrete pavement acceptance.

Delete item 4 in the list in the 2nd paragraph in section 40-1.01D(13)(c)(2).

01-20-12

Replace items 1 and 2 in the list in the 2nd paragraph in 40-1.01D(13)(d) with:

01-20-12

1. For tangents and horizontal curves having a centerline radius of curvature 2,000 feet or more, the PI_0 must be at most 2-1/2 inches per 0.1-mile section.
2. For horizontal curves having a centerline radius of curvature from 1,000 to 2,000 feet including concrete pavement within the superelevation transitions of those curves, the PI_0 must be at most 5 inches per 0.1-mile section.

Replace the 1st and 2nd variables in the equation in section 40-1.01D(13)(f) with:

01-20-12

n_c = Number of your quality control tests (minimum of 6 required)
 n_v = Number of verification tests (minimum of 2 required)

Replace "Your approved third party independent testing laboratory" in the 4th paragraph of section 40-1.01D(13)(f) with:

01-20-12

The authorized laboratory

Replace item 2 in the list in the 2nd paragraph of section 40-1.01D(13)(g):

01-20-12

2. One test for every 4,000 square yards of concrete pavement with tie bars or remaining fraction of that area. Each tie bar test consists of 2 cores with 1 on each tie-bar-end to expose both ends and allow measurement.

Replace section 40-1.01D(13)(h) with:

01-20-12

40-1.01D(13)(h) Bar Reinforcement

Bar reinforcement is accepted based on inspection before concrete placement.

Replace the paragraph in section 40-1.02B(2) with:

01-20-12

PCC for concrete pavement must comply with section 90-1 except as otherwise specified.

Replace the paragraphs in section 40-1.02D with:

01-20-12

Bar reinforcement must be deformed bars.

If the project is not shown to be in high desert or any mountain climate region, bar reinforcement must comply with section 52.

If the project is shown to be in high desert or any mountain climate regions, bar reinforcement must be one of the following:

1. Epoxy-coated bar reinforcement under section 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60. Bars must be handled under ASTM D 3963/D 3963M and section 52-2.02C.
2. Low carbon, chromium steel bar complying with ASTM A 1035/A 1035M

Replace the paragraphs in section 40-1.02E with:

01-20-12

Tie bars must be deformed bars.

If the project is not shown to be in high desert or any mountain climate region, tie bars must be one of the following:

1. Epoxy-coated bar reinforcement. Bars must comply with either section 52-2.02B or 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.
3. Low carbon, chromium-steel bars under ASTM A 1035/A 1035M.

If the project is shown to be in high desert or any mountain climate region, tie bars must be one of the following:

1. Epoxy-coated bar reinforcement. Bars must comply with section 52-2.03B except bars must comply with either ASTM A 706/A 706M; ASTM A 996/A 996M; or ASTM A 615/A 615M, Grade 40 or 60.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.

Fabricate, sample, and handle epoxy-coated tie bars under ASTM D 3963/D 3963M, section 52-2.02C, or section 52-2.03C.

Do not bend tie bars.

Replace the 1st, 2nd, and 3rd paragraphs in section 40-1.02F with:

01-20-12

Dowel bars must be plain bars. Fabricate, sample, and handle epoxy-coated dowel bars under ASTM D 3963/D 3963M and section 52-2.03C except each sample must be 18 inches long.

If the project is not shown to be in high desert or any mountain climate region, dowel bars must be one of the following:

1. Epoxy-coated bars. Bars must comply with ASTM A 615/A 615M, Grade 40 or 60. Epoxy coating must comply with either section 52-2.02B or 52-2.03B.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.
3. Low carbon, chromium-steel bars under ASTM A 1035/A 1035M.

If the project is shown to be in high desert or any mountain climate region, dowel bars must be one of the following:

1. Epoxy-coated bars. Bars must comply with ASTM A 615/A 615M, Grade 40 or 60. Epoxy coating must comply with section 52-2.03B.
2. Stainless-steel bars. Bars must be descaled, pickled, polished, and solid stainless-steel bars under ASTM A 955/A 955M, Grade 60, UNS Designation S31603 or S31803.

Replace the paragraphs in section 40-1.02G with:

01-20-12

For dowel and tie bar baskets, wire must comply with ASTM A 82/A 82M and be welded under ASTM A 185/A 185M, Section 7.4. The minimum wire-size no. is W10. Use either U-frame or A-frame shaped assemblies.

If the project is not shown to be in high desert or any mountain climate region. Baskets may be epoxy-coated, and the epoxy coating must comply with either section 52-2.02B or 52-2.03B.

If the project is shown to be in high desert or any mountain climate region, wire for dowel bar and tie bar baskets must be one of the following:

1. Epoxy-coated wire complying with section 52-2.03B
2. Stainless-steel wire. Wire must be descaled, pickled, and polished solid stainless-steel. Wire must comply with (1) the chemical requirements in ASTM A 276/A 276M, UNS Designation S31603 or S31803 and (2) the tension requirements in ASTM A 1022/ A 1022M.

Handle epoxy-coated tie bar and dowel bar baskets under ASTM D 3963/D 3963M and either section 52-2.02B or 52-2.03B.

Fasteners must be driven fasteners under ASTM F 1667. Fasteners on lean concrete base or HMA must have a minimum shank diameter of 3/16 inch and a minimum shank length of 2-1/2 inches. For asphalt treated permeable base or cement treated permeable base, the shank diameter must be at least 3/16 inch and the shank length must be at least 5 inches.

Fasteners, clips, and washers must have a minimum 0.2-mil thick zinc coating applied by either electroplating or galvanizing.

Replace the 1st paragraph in section 40-1.02H with:

01-20-12

Chemical adhesive for drilling and bonding dowels and tie bars must be on the Authorized Material List. The Authorized Material List indicates the appropriate chemical adhesive system for the concrete temperature and installation conditions.

Replace section 40-1.02I(2) with:

01-20-12

40-1.02I(2) Silicone Joint Sealant

Silicone joint sealant must be on the Authorized Material List.

Replace the last sentence in section 40-1.02I(4) with:

01-20-12

Show evidence that the seals are compressed from 30 to 50 percent for the joint width at time of installation.

Replace the paragraph in section 40-1.02L with:

01-20-12

Water for core drilling may be obtained from a potable water source, or submit proof that it does not contain:

1. More than 1,000 parts per million of chlorides as Cl
2. More than 1,300 parts per million of sulfates as SO₄
3. Impurities that cause pavement discoloration or surface etching

Replace the paragraph in section 40-1.03B with:

01-20-12

Before placing concrete pavement, develop enough water supply for the work under section 17.

Replace the last paragraph in section 40-1.03D(1) with:

01-20-12

Removal of grinding residue must comply with section 42-1.03B.

Replace the 1st and 2nd paragraphs in section 40-1.03E(6)(c) with:

01-20-12

Install preformed compressions seals in isolation joints if specified in the special provisions.

Install longitudinal seals before transverse seals. Longitudinal seals must be continuous except splicing is allowed at intersections with transverse seals. Transverse seals must be continuous for the entire transverse length of concrete pavement except splices are allowed for widenings and staged construction. With a sharp instrument, cut across the longitudinal seal at the intersection with transverse construction joints. If the longitudinal seal does not relax enough to properly install the transverse seal, trim the longitudinal seal to form a tight seal between the 2 joints.

If splicing is authorized, splicing must comply with the manufacturer's written instructions.

Replace the last 2 paragraphs in section 40-1.03G with:

01-20-12

Construct additional test strips if you:

1. Propose different paving equipment including:
 - 1.1. Paver
 - 1.2. Dowel bar inserter

- 1.3. Tie bar inserter
- 1.4. Tining
- 1.5. Curing equipment
- 2. Change concrete mix proportions

You may request authorization to eliminate the test strip if you use paving equipment and personnel from a Department project (1) for the same type of pavement and (2) completed within the past 12 months. Submit supporting documents and previous project information with your request.

Replace the 1st paragraph in section 40-1.03I with:

01-20-12

Place tie bars in compliance with the tolerances shown in the following table:

Tie Bar Tolerance	
Dimension	Tolerance
Horizontal and vertical skew	10 degrees maximum
Longitudinal translation	± 2 inch maximum
Horizontal offset (embedment)	± 2 inch maximum
Vertical depth	1. Not less than 1/2 inch below the saw cut depth of joints 2. When measured at any point along the bar, not less than 2 inches clear of the pavement's surface and bottom

Replace item 4 in the list in the 2nd paragraph in section 40-1.03I with:

01-20-12

- 4. Use tie bar baskets. Anchor baskets at least 200 feet in advance of pavement placement activity. If you request a waiver, describe the construction limitations or restricted access preventing the advanced anchoring. After the baskets are anchored and before paving, demonstrate the tie bars do not move from their specified depth and alignment during paving. Use fasteners to anchor tie bar baskets.

Replace "The maximum distance below the depth shown must be 0.05 foot." in the table in section 40-1.03J with:

01-20-12

The maximum distance below the depth shown must be 5/8 inch.

Replace sections 40-1.03L and 40-1.03M with:

01-20-12

40-1.03L Finishing

40-1.03L(1) General

Reserved

40-1.03L(2) Preliminary Finishing

40-1.03L(2)(a) General

Preliminary finishing must produce a smooth and true-to-grade finish. After preliminary finishing, mark each day's paving with a stamp. The stamp must be authorized before paving starts. The stamp must be approximately 1 by 2 feet in size. The stamp must form a uniform mark from 1/8 to 1/4 inch deep. Locate

the mark 20 ± 5 feet from the transverse construction joint formed at each day's start of paving and 1 ± 0.25 foot from the pavement's outside edge. The stamp mark must show the month, day, and year of placement and the station of the transverse construction joint. Orient the stamp mark so it can be read from the pavement's outside edge.

Do not apply more water to the pavement surface than can evaporate before float finishing and texturing are completed.

40-1.03L(2)(b) Stationary Side Form Finishing

If stationary side form construction is used, give the pavement a preliminary finish by the machine float method or the hand method.

If using the machine float method:

1. Use self-propelled machine floats.
2. Determine the number of machine floats required to perform the work at a rate equal to the pavement delivery rate. If the time from paving to machine float finishing exceeds 30 minutes, stop pavement delivery. When machine floats are in proper position, you may resume pavement delivery and paving.
3. Run machine floats on side forms or adjacent pavement lanes. If running on adjacent pavement, protect the adjacent pavement surface under section 40-1.03P. Floats must be hardwood, steel, or steel-shod wood. Floats must be equipped with devices that adjust the underside to a true flat surface.

If using the hand method, finish pavement smooth and true to grade with manually operated floats or powered finishing machines.

40-1.03L(2)(c) Slip-Form Finishing

If slip-form construction is used, the slip-form paver must give the pavement a preliminary finish. You may supplement the slip-form paver with machine floats.

Before the pavement hardens, correct pavement edge slump in excess of 0.02 foot exclusive of edge rounding.

40-1.03L(3) Final Finishing

After completing preliminary finishing, round the edges of the initial paving widths to a 0.04-foot radius. Round transverse and longitudinal construction joints to a 0.02-foot radius.

Before curing, texture the pavement. Perform initial texturing with a burlap drag or broom device that produces striations parallel to the centerline. Perform final texturing with a steel-tined device that produces grooves parallel with the centerline.

Construct longitudinal grooves with a self-propelled machine designed specifically for grooving and texturing pavement. The machine must have tracks to maintain constant speed, provide traction, and maintain accurate tracking along the pavement surface. The machine must have a single row of rectangular spring steel tines. The tines must be from 3/32 to 1/8 inch wide, on 3/4-inch centers, and must have enough length, thickness, and resilience to form grooves approximately 3/16 inch deep. The machine must have horizontal and vertical controls. The machine must apply constant down pressure on the pavement surface during texturing. The machines must not cause ravels.

Construct grooves over the entire pavement width in a single pass except do not construct grooves 3 inches from the pavement edges and longitudinal joints. Final texture must be uniform and smooth. Use a guide to properly align the grooves. Grooves must be parallel and aligned to the pavement edge across the pavement width. Grooves must be from 1/8 to 3/16 inch deep after the pavement has hardened.

For irregular areas and areas inaccessible to the grooving machine, you may hand-construct grooves under section 40-1.03L(2) using the hand method. Hand-constructed grooves must comply with the specifications for machine-constructed grooves.

Initial and final texturing must produce a coefficient of friction of at least 0.30 when tested under California Test 342. Notify the Engineer when the pavement is scheduled to be opened to traffic to allow at least 25 days for the Department to schedule testing for coefficient of friction. Notify the Engineer when the pavement is ready for testing which is the latter of:

1. Seven days after paving
2. When the pavement has attained a modulus of rupture of 550 psi

The Department tests for coefficient of friction within 7 days of receiving notification that the pavement is ready for testing.

Do not open the pavement to traffic unless the coefficient of friction is at least 0.30.

40-1.03M Reserved

Replace the 4th paragraph of 40-1.03P with:

01-20-12

Construct crossings for traffic convenience. If authorized, you may use RSC for crossings. Do not open crossings until the Department determines that the pavement's modulus of rupture is at least 550 psi under California Test 523 or California Test 524.

Replace the 1st paragraph of section 40-6.01A with:

01-20-12

Section 40-6 includes specifications for applying a high molecular weight methacrylate resin system to pavement surface cracks that do not extend the full slab depth.

Replace the 4th paragraph of section 40-6.01C(2) with:

01-20-12

If the project is in an urban area adjacent to a school or residence, the public safety plan must also include an airborne emissions monitoring plan prepared by a CIH certified in comprehensive practice by the American Board of Industrial Hygiene. Submit a copy of the CIH's certification. The CIH must monitor the emissions at a minimum of 4 points including the mixing point, the application point, and the point of nearest public contact. At work completion, submit a report by the industrial hygienist with results of the airborne emissions monitoring plan.

Delete the 1st sentence of the 2nd paragraph in section 40-6.02B.

01-20-12

Replace item 4 in the list in the last paragraph in section 40-6.03A with:

01-20-12

4. Coefficient of friction is at least 0.30 under California Test 342

Replace the paragraph in section 40-6.04 with:

01-20-12

Not Used

Add to section 49-1.03:

04-20-12

Dispose of drill cuttings under section 19-2.03B.

Replace the 2nd paragraph of section 49-2.01D with:

01-20-12

Furnish piling is measured along the longest side of the pile from the specified tip elevation shown to the plane of pile cutoff.

Replace the 3rd and 4th paragraphs of section 49-2.04B(2) with:

10-19-12

Piles in a corrosive environment must be steam or water cured under section 90-4.03.

If piles in a corrosive environment are steam cured, either:

1. Keep the piles continuously wet for at least 3 days. The 3 days includes the holding and steam curing periods.
2. Apply curing compound under section 90-1.03B(3) after steam curing.

Add to section 49-3.01A:

01-20-12

Concrete must comply with section 51.

Replace the 1st paragraph of section 49-3.01C with:

01-20-12

Except for CIDH concrete piles constructed under slurry, construct CIP concrete piles such that the excavation methods and the concrete placement procedures provide for placing the concrete against undisturbed material in a dry or dewatered hole.

Replace "Reserved" in section 49-3.02A(2) with:

01-20-12

dry hole:

1. Except for CIDH concrete piles specified as end bearing, a drilled hole that:
 - 1.1. Accumulates no more than 12 inches of water in the bottom of the drilled hole during a period of 1 hour without any pumping from the hole during the hour.
 - 1.2. Has no more than 3 inches of water in the bottom of the drilled hole immediately before placing concrete.
2. For CIDH concrete piles specified as end bearing, a drilled hole free of water without the use of pumps.

Replace "Reserved" in section 49-3.02A(3)(a) with:

01-20-12

If plastic spacers are proposed for use, submit the manufacturer's data and a sample of the plastic spacer. Allow 10 days for review.

Replace item 5 in the list in the 1st paragraph of section 49-3.02A(3)(b) with:

10-19-12

5. Methods and equipment for determining:
 - 5.1. Depth of concrete
 - 5.2. Theoretical volume of concrete to be placed, including the effects on volume if casings are withdrawn
 - 5.3. Actual volume of concrete placed

Add to the list in the 1st paragraph of section 49-3.02A(3)(b):

01-18-13

8. Drilling sequence and concrete placement plan.

Replace item 2 in the list in the 1st paragraph of section 49-3.02A(3)(g) with:

01-20-12

2. Be sealed and signed by an engineer who is registered as a civil engineer in the State. This requirement is waived for either of the following conditions:
 - 2.1. The proposed mitigation will be performed under the current Department-published version of *ADSC Standard Mitigation Plan 'A' - Basic Repair* without exception or modification.
 - 2.2. The Engineer determines that the rejected pile does not require mitigation due to structural, geotechnical, or corrosion concerns, and you elect to repair the pile using the current Department-published version of *ADSC Standard Mitigation Plan 'B' - Grouting Repair* without exception or modification.

Replace item 1 in the list in the 1st paragraph of section 49-3.02A(4)(d)(ii) with:

01-20-12

1. Inspection pipes must be schedule 40 PVC pipe complying with ASTM D 1785 with a nominal pipe size of 2 inches. Watertight PVC couplers complying with ASTM D 2466 are allowed to facilitate pipe lengths in excess of those commercially available. Log the location of the inspection pipe couplers with respect to the plane of pile cutoff.

Add to section 49-3.02A(4)(d)(iv):

01-20-12

If the Engineer determines it is not feasible to use one of ADSC's standard mitigation plans to mitigate the pile, schedule a meeting and meet with the Engineer before submitting a nonstandard mitigation plan.

The meeting attendees must include your representatives and the Engineer's representatives involved in the pile mitigation. The purpose of the meeting is to discuss the type of pile mitigation acceptable to the Department.

Provide the meeting facility. The Engineer conducts the meeting.

Replace the 1st paragraph of section 49-3.02B(5) with:

01-20-12

Grout used to backfill casings must comply with section 50-1.02C, except:

1. Grout must consist of cementitious material and water, and may contain an admixture if authorized. Cementitious material must comply with section 90-1.02B, except SCMs are not required. The minimum cementitious material content of the grout must not be less than 845 lb/cu yd of grout.
2. Aggregate must be used to extend the grout as follows:

- 2.2. Verify that the jack and supporting systems are complete, with proper components, and are in good operating condition
- 2.3. Mechanically calibrate the gages with a dead weight tester or other authorized means before calibration of the jacking equipment by METS
- 2.4. Provide enough labor, equipment, and material to (1) install and support the jacking and calibration equipment and (2) remove the equipment after the calibration is complete
- 2.5. Plot the calibration results
3. Each jack used to tension prestressing steel permanently anchored at less than 25 percent of its specified minimum ultimate tensile strength must be calibrated by an authorized laboratory within 6 months of use and after each repair.

Replace "diameter" in item 9 in the list in the 1st paragraph of section 50-1.02D with:

cross-sectional area

04-20-12

Add to section 50-1.02:

09-16-11

50-1.02G Sheathing

Sheathing for debonding prestressing strand must:

1. Be split or un-split flexible polymer plastic tubing
2. Have a minimum wall thickness of 0.025 inch
3. Have an inside diameter exceeding the maximum outside diameter of the strand by 0.025 to 0.14 inch

Split sheathing must overlap at least 3/8 inch.

Waterproofing tape used to seal the ends of the sheathing must be flexible adhesive tape.

The sheathing and waterproof tape must not react with the concrete, coating, or steel.

Add to section 50-1.03B(1):

01-20-12

After seating, the maximum tensile stress in the prestressing steel must not exceed 75 percent of the minimum ultimate tensile strength shown.

Add to section 50-1.03B(2):

09-16-11

50-1.03B(2)(e) Debonding Prestressing Strands

Where shown, debond prestressing strands by encasing the strands in plastic sheathing along the entire length shown and sealing the ends of the sheathing with waterproof tape.

Distribute the debonded strands symmetrically about the vertical centerline of the girder. The debonded lengths of pairs of strands must be equal.

Do not terminate debonding at any one cross section of the member for more than 40 percent of the debonded strands or 4 strands, whichever is greater.

Thoroughly seal the ends with waterproof tape to prevent the intrusion of water or cement paste before placing the concrete.

AA

51 CONCRETE STRUCTURES

10-19-12

Replace the paragraphs of section 51-1.01A with:

10-19-12

Section 51-1 includes general specifications for constructing concrete structures.

Earthwork for the following concrete structures must comply with section 19-3:

1. Sound wall footings
2. Sound wall pile caps
3. Culverts
4. Barrier slabs
5. Junction structures
6. Minor structures
7. Pipe culvert headwalls, endwalls, and wingwalls for a pipe with a diameter of 5 feet or greater

Falsework must comply with section 48-2.

Joints must comply with section 51-2.

Elastomeric bearing pads must comply with section 51-3.

Reinforcement for the following concrete structures must comply with section 52:

1. Sound wall footings
2. Sound wall pile caps
3. Barrier slabs
4. Junction structures
5. Minor structures
6. PC concrete members

You may use RSC for a concrete structure only where the specifications allow the use of RSC.

Add to section 51-1.03C(2)(c)(i):

04-20-12

Permanent steel deck forms are only allowed where shown or if specified as an option in the special provisions.

Replace the 3rd paragraph of section 51-1.03C(2)(c)(ii) with:

04-20-12

Compute the physical design properties under AISI's *North American Specification for the Design of Cold-Formed Steel Structural Members*.

Replace the 8th paragraph of section 51-1.03D(1) with:

10-19-12

Except for concrete placed as pipe culvert headwalls and endwalls, slope paving and aprons, and concrete placed under water, consolidate concrete using high-frequency internal vibrators within 15 minutes of placing concrete in the forms. Do not attach vibrators to or hold them against forms or reinforcing steel. Do not displace reinforcement, ducts, or prestressing steel during vibrating.

Add to section 51-1.03E(5):

08-05-11

Drill the holes without damaging the adjacent concrete. If reinforcement is encountered during drilling before the specified depth is attained, notify the Engineer. Unless coring through the reinforcement is authorized, drill a new hole adjacent to the rejected hole to the depth shown.

Replace "Reserved" in section 51-1.03F(5)(b) with:

04-20-12

51-1.03F(5)(b)(i) General

Except for bridge widenings, texture the bridge deck surfaces longitudinally by grinding and grooving or by longitudinal tining.

10-19-12

For bridge widenings, texture the deck surface longitudinally by longitudinal tining.

04-20-12

In freeze-thaw areas, do not texture PCC surfaces of bridge decks.

51-1.03F(5)(b)(ii) Grinding and Grooving

When texturing the deck surface by grinding and grooving, place a 1/4 inch of sacrificial concrete cover on the bridge deck above the finished grade shown. Place items to be embedded in the concrete based on the final profile grade elevations shown. Construct joint seals after completing the grinding and grooving.

Before grinding and grooving, deck surfaces must comply with the smoothness and deck crack treatment requirements.

Grind and groove the deck surface as follows:

1. Grind the surface to within 18 inches of the toe of the barrier under section 42-3. Grinding must not reduce the concrete cover on reinforcing steel to less than 1-3/4 inches.
2. Groove the ground surfaces longitudinally under section 42-2. The grooves must be parallel to the centerline.

51-1.03F(5)(b)(iii) Longitudinal Tining

When texturing the deck surface by longitudinal tining, perform initial texturing with a burlap drag or broom device that produces striations parallel to the centerline. Perform final texturing with spring steel tines that produce grooves parallel with the centerline.

The tines must:

1. Be rectangular in cross section
2. Be from 3/32 to 1/8 inch wide on 3/4-inch centers
3. Have enough length, thickness, and resilience to form grooves approximately 3/16 inch deep

Construct grooves to within 6 inches of the layout line of the concrete barrier toe. Grooves must be from 1/8 to 3/16 inch deep and 3/16 inch wide after concrete has hardened.

For irregular areas and areas inaccessible to the grooving machine, you may hand construct grooves. Hand-constructed grooves must comply with the specifications for machine-constructed grooves.

Tining must not cause tearing of the deck surface or visible separation of coarse aggregate at the surface.

Replace the paragraphs of section 51-1.04 with:

10-19-12

If concrete involved in bridge work is not designated by type and is not otherwise paid for under a separate bid item, the concrete is paid for as structural concrete, bridge.

The payment quantity for structural concrete includes the volume in the concrete occupied by bar reinforcing steel, structural steel, prestressing steel materials, and piling.

The payment quantity for seal course concrete is the actual volume of seal course concrete placed except the payment quantity must not exceed the volume of concrete contained between vertical planes 1 foot outside the neat lines of the seal course shown. The Department does not adjust the unit price for an increase or decrease in the seal course concrete quantity.

Structural concrete for pier columns is measured as follows:

1. Horizontal limits are vertical planes at the neat lines of the pier column shown.
2. Bottom limit is the bottom of the foundation excavation in the completed work.
3. Upper limit is the top of the pier column concrete shown.

The payment quantity for drill and bond dowel is determined from the number and depths of the holes shown.

Replace "SSPC-QP 3" in the 1st paragraph of section 51-2.02A(2) with:

10-19-12

AISC-420-10/SSPC-QP 3

Replace the 2nd and 3rd paragraphs of section 51-2.02B(3)(b) with:

04-20-12

Concrete saws for cutting grooves in the concrete must have diamond blades with a minimum thickness of 3/16 inch. Cut both sides of the groove simultaneously for a minimum 1st pass depth of 2 inches. The completed groove must have:

1. Top width within 1/8 inch of the width shown or ordered
2. Bottom width not varying from the top width by more than 1/16 inch for each 2 inches of depth
3. Uniform width and depth

Cutting grooves in existing decks includes cutting any conflicting reinforcing steel.

Replace the 2nd paragraph of section 51-2.02E(1)(e) with:

08-05-11

Except for components in contact with the tires, the design loading must be the AASHTO LRFD Bridge Design Specifications Design Truck with 100 percent dynamic load allowance. Each component in contact with the tires must support a minimum of 80 percent of the AASHTO LRFD Bridge Design Specifications Design Truck with 100 percent dynamic load allowance. The tire contact area must be 10 inches measured normal to the longitudinal assembly axis by 20 inches wide. The assembly must provide a smooth-riding joint without slapping of components or tire rumble.

Add between the 1st and 2nd paragraphs of section 51-4.01A:

10-19-12

Prestressing concrete members must comply with section 50.

04-20-12

Delete the 2nd paragraph of section 51-4.01A.

Replace the 3rd paragraph of section 51-4.01C(2) with:

04-20-12

For segmental or spliced-girder construction, shop drawings must include the following additional information:

1. Details showing construction joints or closure joints
2. Arrangement of bar reinforcing steel, prestressing tendons, and pressure-grouting pipe
3. Materials and methods for making closures
4. Construction joint keys and surface treatment
5. Other requested information

For segmental girder construction, shop drawings must include concrete form and casting details.

10-19-12

Delete the 1st and 2nd paragraphs of section 51-4.02A.

Replace the 3rd paragraph of section 51-4.02B(2) with:

04-20-12

For segmental or spliced-girder construction, materials for construction joints or closure joints at exterior girders must match the color and texture of the adjoining concrete.

Add to section 51-4.02B(2):

04-20-12

At spliced-girder closure joints:

1. If shear keys are not shown, the vertical surfaces of the girder segment ends must be given a coarse texture as specified for the top surface of PC members.
2. Post-tensioning ducts must extend out of the vertical surface of the girder segment closure end sufficiently to facilitate splicing of the duct.

For spliced girders, pretension strand extending from the closure end of the girder segment to be embedded in the closure joint must be free of mortar, oil, dirt, excessive mill scale and scabby rust, and other coatings that would destroy or reduce the bond.

Add to section 51-4.03B:

04-20-12

The specifications for prestressing force distribution and sequencing of stressing in the post-tensioning activity in 50-1.03B(2)(a) do not apply if post-tensioning of spliced girders before starting deck construction is described. The composite deck-girder structure must be post-tensioned in a subsequent stage.

Temporary spliced-girder supports must comply with the specifications for falsework in section 48-2.

Before post-tensioning of spliced girders, remove the forms at CIP concrete closures and intermediate diaphragms to allow inspection for concrete consolidation.

Replace "SSPC-CS 23.00" at each occurrence in section 59 with:

10-19-12

SSPC-CS 23.00/AWS C 2.23M/NACE no. 12

Replace "SSPC-QP 3 or AISC SPE, Certification P-1 Enclosed" in item 3 in the list in the 1st paragraph of section 59-2.01D(1) with:

10-19-12

AISC-420-10/SSPC-QP 3 (Enclosed Shop)

Replace the paragraphs in section 59-2.03A with:

10-19-12

Clean and paint all exposed structural steel and other metal surfaces.

You must provide enclosures for cleaning and painting structural steel. Cleaning and painting of new structural steel must be performed in an Enclosed Shop as defined in AISC-420-10/SSPC-QP 3. Maintain atmospheric conditions inside enclosures within specified limits.

Except for blast cleaning within closed buildings, perform blast cleaning and painting during daylight hours.

Add to section 59-2.03C:

10-19-12

59-2.03C(3) Moisture-Cured Polyurethane Coating

Reserved

Replace item 1 in the list in the 2nd paragraph of section 59-2.03C(1) with:

10-19-12

1. Apply a stripe coat of undercoat paint on all edges, corners, seams, crevices, interior angles, junctions of joining members, weld lines, and similar surface irregularities. The stripe coat must completely hide the surface being covered. If spot blast cleaning portions of the bridge, apply the stripe coat of undercoat paint before each undercoat and follow with the undercoat as soon as practical. If removing all existing paint from the bridge, apply the undercoat first as soon as practical and follow with the stripe coat of undercoat paint for each undercoat.

Add to section 59-2.03C(2)(a):

10-19-12

Coatings for new structural steel must comply with the requirements shown in the following table:

Zinc Coating System for New Structural Steel

Description	Coating	Dry film thickness (mils)
All surfaces:		
Undercoat	Inorganic zinc primer, AASHTO M 300 Type I or II	4-8
Finish coat ^a	Exterior grade latex, 2 coats	2 minimum each coat, 4-8 total
Total thickness, all coats		8-14

^aIf no finish coats are described, a final coat of inorganic zinc primer is required

1. Use cast iron strip at least 1/4 inch thick with letters raised a minimum of 1/16 inch. Fasten strip to cover with 1/4-inch flathead stainless steel machine bolts and nuts. Peen bolts after tightening.
2. Use sheet steel strip at least 0.027 inch thick with letters raised a minimum of 1/16 inch. Fasten strip to cover by spot welding, tack welding, or brazing, with 1/4-inch stainless steel rivets or 1/4-inch roundhead stainless steel machine bolts and nuts. Peen bolts after tightening.
3. Bead weld the letters on cover such that the letters are raised a minimum of 3/32 inch.

86-2.06A(2) Installation and Use

Space pull boxes no more than 200 feet apart. You may install additional pull boxes to facilitate the work.

You may use a larger standard size pull box than that shown on the plans or specified.

A pull box in ground or sidewalk area must be installed as follows:

1. Embed bottom of the pull box in crushed rock.
2. Place a layer of roofing paper on the crushed rock.
3. Place grout over the layer of roofing paper. Grout must be 0.50 to 1 inch thick and sloped toward the drain hole.
4. Make a 1-inch drain hole in the center of the pull box through the grout and roofing paper.
5. Place grout between the pull box and the pull box extension, and around conduits.

The top of the pull box must be flush with the surrounding grade or the top of an adjacent curb, except in unpaved areas where the pull box is not immediately adjacent to and protected by a concrete foundation, pole, or other protective construction. Place the pull box 1-1/4 inches above the surrounding grade.

Where practical, place a pull box shown in the vicinity of curbs or adjacent to a standard on the side of the foundation facing away from traffic. If a pull box is installed in a sidewalk area, adjust the depth of the pull box so that the top of the pull box is flush with the sidewalk.

Reconstruct the sump of an existing pull box if disturbed by your activities. Remove old grout and replace with new if the sump was grouted.

86-2.06B Non-Traffic-Rated Pull Boxes

Reserved

86-2.06C Traffic Pull Boxes

Traffic pull box and cover must comply with ASTM C857, "Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures," for HS20-44 loading. You must be able to place the load anywhere on the box and cover for 1 minute without causing cracks or permanent deformations.

Frame must be anchored to the box with 1/4 by 2-1/4 inch concrete anchors. Four concrete anchors must be included for No. 3-1/2(T) pull box; one placed in each corner. Six concrete anchors must be included for No. 5(T) and No. 6(T) pull boxes; one placed in each corner and one near the middle of each of the longer sides.

Nuts must be zinc-plated carbon steel, vibration resistant, and have a wedge ramp at the root of the thread.

After installation of traffic pull box, install the steel cover and keep it bolted down when your activities are not in progress at the pull box. When the steel cover is placed for the final time, the cover and Z bar frame must be cleaned of debris and tightened securely.

Steel cover must be countersunk approximately 1/4 inch to accommodate the bolt head. When tightened, the bolt head must not exceed more than 1/8 inch above the top of the cover.

Concrete placed around and under traffic pull boxes must be minor concrete.

Replace "project" in the 3rd paragraph of section 86-2.11A with:

10-19-12

work

Replace "Contract" in item 2 in the list in the 11th paragraph of section 86-2.11A with:

10-19-12

work

AA

88 GEOSYNTHETICS

01-18-13

Replace the row for hydraulic bursting strength in the table in the 2nd paragraph of section 88-1.02B with:

10-19-12

Puncture strength, lb min	ASTM D 6241	310
Trapezoid tearing strength, lb min	ASTM D 4533	56

Replace the 3rd paragraph in section 88-1.02C with:

10-19-12

Geocomposite wall drain must be from 0.25 to 2 inches thick.

Replace the value for permittivity of woven fabric in the table in the 1st paragraph of section 88-1.02E with:

01-20-12

0.05

Replace the value for apparent size opening of nonwoven fabric in the table in the 1st paragraph of section 88-1.02E with:

01-20-12

0.012

Replace the table in the 1st paragraph of section 88-1.02G with:

01-20-12

Sediment Filter Bag

Property	Test	Values	
		Woven	Nonwoven
Grab breaking load, lb, 1-inch grip min, in each direction	ASTM D 4632	200	250
Apparent elongation, percent min, in each direction	ASTM D 4632	10	50
Water flow rate, gal per minute/sq ft min and max average roll value	ASTM D 4491	100-200	75-200
Permittivity, sec ⁻¹ min	ASTM D 4491	1.0	1.0
Apparent opening size, inches max average roll value	ASTM D 4751	0.023	0.012
Ultraviolet resistance, % min retained grab breaking load, 500 hr.	ASTM D 4355	70	70

Replace the table in the 1st paragraph of section 88-1.02H with:

01-20-12

Temporary Cover

Property	Test	Values	
		Woven	Nonwoven
Grab breaking load, lb, 1-inch grip min, in each direction	ASTM D 4632	200	200
Apparent elongation, percent min, in each direction	ASTM D 4632	15	50
Water flow rate, gal per minute/sq ft min and max average roll value	ASTM D 4491	4-10	80-120
Permittivity, sec ⁻¹ min	ASTM D 4491	0.05	1.0
Apparent opening size, inches max average roll value	ASTM D 4751	0.023	0.012
Ultraviolet resistance, % min retained grab breaking load, 500 hr.	ASTM D 4355	70	70

Replace section 88-1.02P with:

01-18-13

88-1.02P Biaxial Geogrid

Geosynthetics used for biaxial geogrid must be a punched and drawn polypropylene material formed into an integrally formed biaxial grid. When tested under the referenced test methods, properties of biaxial geogrid must have the values shown in the following table:

Biaxial Geogrid

Property	Test	Value
Aperture size, inch ^a min and max	Calipered	0.8-1.3 x 1.0-1.6
Rib thickness, inch min	Calipered	0.04
Junction thickness, inch min	Calipered	0.150
Tensile strength, 2% strain, lb/ft ^a min	ASTM D 6637	410 x 620
Tensile strength at ultimate, lb/ft ^a min	ASTM D 6637	1,310 x 1,970
Ultraviolet resistance, percent min retained tensile strength, 500 hours	ASTM D 4355	100
Junction strength, lb/ft ^a min	ASTM D 7737	1,220 x 1,830
Overall flexural rigidity, mg-cm min	ASTM D 7748	750,000
Torsional rigidity at 20 cm-kg, mm-kg/deg ^b min	GRI:GG9	0.65

^aMachine direction x cross direction

^bGeosynthetic Research Institute, Test Method GG9, *Torsional Behavior of Bidirectional Geogrids When Subjected to In-Plane Rotation*

DIVISION X MATERIALS

90 CONCRETE

08-05-11

Replace the 3rd paragraph of section 90-1.01C(7) with:

08-05-11

Submit weighmaster certificates in printed form or, if authorized, in electronic media. Present electronic media in a tab-delimited format on a CD or DVD. Captured data for the ingredients represented by each batch must be line feed carriage return and one line separate record with sufficient fields for the specified data.

Replace the 3rd paragraph of section 90-3.01C(5) with:

08-05-11

Production data must be input by hand into a pre-printed form or captured and printed by the proportioning device. Present electronic media containing recorded production data in a tab-delimited format on a CD or DVD. Each capture of production data must be followed by a line feed carriage return with sufficient fields for the specified data.

County of El Dorado, State of California
Department of Transportation

Contract No. PW 12-30647 / CIP No. 73128

**U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1
PROJECT**

THIS AGREEMENT ("Agreement") approved by the Board of Supervisors this ____st day of _____, in the year of 20__, 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], 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 this Contract is an improvement over which the County shall exercise general supervision. The County, therefore, shall have the right to assume full and direct control over this Contract whenever the County, at its sole discretion, shall determine that its responsibility is so required.

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

**U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1
PROJECT**

The project is located near El Dorado Hills in El Dorado County. The Work to be done is shown on the Plans, and generally consists of, but is not limited to:

A new connection to U.S. 50 with new signalized diagonal on- and off-ramps and a loop on-ramp. Each on-ramp will have California Highway Patrol Enforcement Areas and Ramp Metering. The mainline will have an Overcrossing for Silva Valley Parkway and will be improved to include east and west auxiliary lanes between Latrobe Road/El Dorado Hills Boulevard Interchange and the new interchange. Approximately 1,300 feet of auxiliary lane will be constructed for the westbound off-ramp between Bass Lake Road interchange and the new interchange.

Silva Valley Parkway will connect to the existing 4 lane Silva Valley Parkway to the north and will connect to the existing 2 lane White Rock Road to the south. A new signalized intersection will be installed where new Silva Valley Parkway intersects old White Rock Road on the south. New roads will connect the new intersection to the existing roads. Sidewalk will be installed along old Silva Valley Parkway.

A new Tong Road cul-de-sac will be constructed and Old Tong Road will be abandoned.

Safety lighting and signs will be installed.

Utility Work:

- Abandonment of approximately 1,000 feet of recycled water line
- Abandonment of approximately 3,100 feet of potable water line
- Installation of approximately 1,000 feet of recycled water line
- Installation of approximately 800 feet of potable water line
- Relocation of water appurtenances including Pressure Reducing Station and valve boxes,
- Adjusting to grade sanitary sewer manholes and reconstruction of sanitary sewer manholes

Below is a general description of the structures required for the project:

- Silva Valley Parkway Overcrossing (Br. No. 25-0127): This will be a two span, cast-in-place, prestressed concrete box girder bridge approximately 280 feet long by 105 feet wide. The erection and removal of falsework will require directional closures of US 50. Bridge mounted sign structures will be installed on both sides of this structure. The north abutment of the structure is located within an AMA area.
- Silva Valley WB Off-Ramp Bridge (Br. No. 25-0130K): This will be a three span, cast-in-place reinforced concrete box girder bridge approximately 260 feet long by 51 feet wide. The structure will require superelevation transitions along its entirety. It will cross Carson Creek and require Temporary Fence (Type ESA) around several trees within its proximity.
- Silva Valley EB Off-Ramp Undercrossing (Br. No. 25-0128S): This will be a single span, cast-in-place, prestressed concrete box girder approximately 130 feet long by 40 feet wide. The structure will cross over existing Silva Valley Parkway. PG&E will require a utility access road be constructed next to the embankment from the east abutment.
- Silva Valley WB On-Ramp Undercrossing (Br. No. 25-0129K): This will be a three span, cast-in-place, prestressed concrete voided slab approximately 115 feet long by 40 feet wide. The structure will cross over existing Silva Valley Parkway. El Dorado Irrigation District (EID) has facilities in conflict with the structure which you will relocate.
- Bucks Ravine Creek Reinforced Concrete Box Culvert (Extension): This existing double 6'x7' box culvert will be reconstructed and extended approximately 100 feet. The box culvert extension will require a temporary creek diversion and work within Bucks Ravine Creek must be done in accordance with all environmental permits.
- Carson Creek MSE (Br. No. 25E0007): This wall will be an MSE structure approximately 230 feet long by 12 to 15 feet tall. Design H ranges from 8' thru 20'. The wall will require Temporary Fence (Type ESA) around several trees within its proximity.
- Carson Creek Culvert: This will be a prefabricated bottomless arch culvert approximately 144 feet long by 36 feet wide. The culvert requires you to submit construction drawings for approval by the

Engineer prior to construction. The bottomless arch culvert will require a temporary creek diversion and work within Carson Creek must be done in accordance with all environmental permits.

Other items or details not mentioned above, that are required by the plans, Standard Plans, Standard Specifications, or these 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 and Total Bid, Subcontractor List, Section 10285.1 Statement, Section 10162 Questionnaire, Section 10232 Statement, Noncollusion Affidavit, Debarment, Suspension, Ineligibility, and Voluntary Exclusion Certification, Certification of Bidder's Prefabricated Bridge Manufacturer's Qualifications, Opt Out of Payment Adjustments for Price Index Fluctuation form, if elected, the Contract which includes this Agreement with all Exhibits thereto, including the Fair Employment Practices Addendum, the Performance Bond, and Payment Bond, the drawings listed and identified as the Project Plans; the Special Provisions which incorporate by reference the State of California Department of Transportation (Caltrans) Standard Plans 2010, and Standard Specifications 2010, Revised Standard Specifications, and standard drawings from the Design and Improvement Standards Manual of the County of El Dorado, revised March 8, 1994 including Resolution 199-91 and Resolution 58-94 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 Caltrans to be in effect on the date the Work is accomplished; all the obligations of County and of Contractor which are fully set forth and described therein; and all Contract Documents which are hereby specifically referred to and by such reference made a part hereof. 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 said 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 Price Schedule, a copy of which is attached hereto as Exhibit A.

Article 4. COMMENCEMENT AND COMPLETION

The Work to be performed under this Contract shall commence on the date specified in the Notice to Proceed issued by County, and the Work shall be fully completed within the time specified in the Notice to Proceed pursuant to Section 8 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 the Notice to Bidders annexed hereto, plus any extensions thereof allowed in accordance with Section 8 of the Standard Specifications and 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 **Ten Thousand Five Hundred dollars (\$10,500.00) per 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.

Article 5. INDEMNITY

To the fullest extent allowed by law, Contractor shall defend, indemnify, and hold County, its (their) officers, directors, and employees, and the State of California (State), its officers, directors, agents (excluding agents who are design professionals), State Contractors doing work within the project limits, and any property owners from whom the County obtained easements associated with this Contract harmless against and from any and all claims, suits, losses, damages, and liability 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 employees, or any property owners from whom the County obtained easements, 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, the State of California, or any property owners from whom the County has obtained easements, the Contractor, subcontractors or employees of any of these, except for the active, or sole negligence of the County or the State of California their officers and employees, or any property owners from whom the County has obtained easements, or where expressly prescribed by statute.

The duty to indemnify and hold harmless the County, the State, and any property owners from whom the County obtained easements associated with this Contract 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.

This indemnification will remain in effect until terminated or modified in writing by mutual agreement.

Article 6. VENUE

Any litigation arising out of this Contract shall be brought in El Dorado County and governed by California law.

Article 7. NOTIFICATION OF SURETY COMPANY

The surety company shall familiarize itself with all of the conditions and provisions of this Contract, and shall waive the right of special notification of any change or modifications of this Contract or extension of time, or of decreased or increased work, or of the cancellation of the Contract, or of any other act or acts by County or its authorized agents, under the terms of this Contract; and failure to so notify the aforesaid surety company of changes shall in no way relieve the surety company of its obligation under this Contract.

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, the 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 4550-4554, 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 4550-4554 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.

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 the County's representative, or the Engineer, if one is appointed, or violates any of the Contract assurances, nondiscrimination provisions or any other federal or state requirements as identified in Section 7-1.02 of the Special Provisions, 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.

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. SUCCESSORS AND ASSIGNS

This Agreement shall bind and inure to the heirs, devisees, assignees, and successors in interest of Contractor and to the successors in interest of County in the same manner as if such parties had been expressly named herein.

Article 12. REPORTING ACCIDENTS

Contractor shall prepare and submit (within 24 hours of such incidents) reports of accidents at the site and anywhere else the work is in progress in which bodily injury is sustained or property loss in excess of Five Hundred Dollars (\$500.00) occurs.

Article 13. EMISSIONS REDUCTION

Contractor shall comply with emission reduction regulations mandated by the California Air Resources Board, and sign a certification of knowledge thereof:

CERTIFICATE OF KNOWLEDGE – EMISSIONS REDUCTION REGULATIONS

I am aware of the emissions reduction regulations being mandated by the California Air Resources Board. I will comply with such regulations before commencing the performance of the Work and maintain compliance throughout the duration of this Contract.

Signed: _____ Date _____

Article 14. 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 15. WARRANTY

Contractor warrants to County that materials and equipment furnished for the Work will be of 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 herein. Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective.

Article 16. RETAINAGE

The retainage from payment is set forth in Section 9-1.16F(1) 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 savings and loan certificates of deposit.

Article 17. DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM

The Contractor shall carry out applicable requirements of 49 CFR Part 18 in the award and administration of this UNITED STATES DEPARTMENT OF TRANSPORTATION (USDOT)-assisted Contract. The applicable requirements of 49 CFR Part 18 are as follows:

(b) *Contracting with small and minority firms, women's business enterprise and labor surplus area firms.*

- (1) Contractor will take all necessary affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible.
- (2) Affirmative steps shall include:
 - (i) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
 - (ii) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
 - (iii) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;
 - (iv) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises;
 - (v) Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce; and
 - (vi) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (a)(2) (i) through (v) of this section.

Bidder will take all necessary affirmative steps to assure that minority firms, women's business enterprises and labor surplus area firms are used when possible.

Article 18. PREVAILING WAGE REQUIREMENTS

Contractor's attention is directed to the requirements of Division 2 Part 7, Chapter 1 of the California Labor Code, 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.

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, and in case of projects involving federal funds, federal wage requirements as predetermined by the United States Secretary of Labor have been included in the Contract Documents. Addenda to modify the Federal minimum wage rates, if necessary, will be issued as described in the Project Administration section of this Notice to Bidders.

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

This project is subject to the requirements of Title 8, Chapter 8, Subchapter 4.5 of the California Code of Regulations including the obligation to furnish certified payroll records directly to the Compliance Monitoring Unit under the Labor Commissioner within the Department of Industrial Relations Division of Labor Standards Enforcement in accordance with Section 16461.

Article 19. NONDISCRIMINATION

- A. In connection with its performance under this Contract, Contractor shall comply with all applicable nondiscrimination statutes and regulations during the performance of this Contract including, but not limited to the following: Contractor, its employees, subcontractors and representatives shall not unlawfully discriminate against any employee or applicant for employment because of race, color, sex, sexual orientation, religion, ancestry or national origin, physical disability, medical condition, marital status, political affiliation, family and medical care leave, pregnancy leave or disability leave. Contractor will take affirmative action to ensure that employees are treated during employment, without regard to their race, color, sex, sexual orientation, religion, ancestry or national origin, physical disability, medical condition, marital status, political affiliation, family and medical care leave, pregnancy leave or disability leave. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor shall post in conspicuous places, available to employees for employment, notices to be provided by State setting forth the provisions of this Fair Employment section. Contractor shall, unless exempt, comply with the applicable provisions of the Fair Employment and Housing Act (Government Code, Sections 12900 et seq.) and applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Sections 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 incorporated into this Agreement by reference and made a part hereof as if set forth in full; and Title VI of the Civil Rights Act of 1964, as amended. Contractor, its employees, subcontractors and representatives shall give written notice of their obligations under this clause as required by law.
- B. Where applicable, Contractor shall include these nondiscrimination and compliance provisions in any of its subcontracts that affect or are related to the Work performed herein.
- C. The Congress of the United States, the Legislature of the State of California and the Governor of the State of California, each within their respective jurisdictions, have prescribed certain nondiscrimination requirements with respect to contract and other work financed with public funds. Contractor agrees to comply with the requirements of Exhibit B, marked "Fair Employment Practices Addendum" is incorporated herein and made by reference a part hereof. Contractor further agrees that any agreement entered into by Contractor with a third party for the performance

of project-related work shall incorporate Exhibit B (with third party's name replacing Contractor) as essential parts of such agreement to be enforced by that third party as verified by Contractor.

- D. Contractor's signature executing this Contract shall provide any certifications necessary under the federal laws and the laws of the State of California, including but not limited to Government Code Section 12990 and Title 2, California Code of Regulations, Section 8103.

Article 20. CONTRACTOR ASSURANCES

By executing this Contract, Contractor certifies that it:

- a. Will abide by all administrative, contractual or legal remedies in instances where Contractor violates or breaches contract terms, and will comply with sanctions and penalties as the Contract Administrator deems appropriate.
- b. Will comply with the termination for cause and termination for convenience provisions of the Contract including the manner by which such termination may be effected and the basis for settlement afforded by those provisions.
- c. Will comply with County, State of California and FHWA requirements and regulations pertaining to reporting;
- d. Will comply with: (i) Section 504 of the Rehabilitation Act of 1973 (Rehabilitation Act) which prohibits discrimination on the basis of disability in federally assisted programs; (ii) the Americans with Disabilities Act (ADA) of 1990 which prohibits discrimination on the basis of disability irrespective of funding; and (iii) all applicable regulations and guidelines issued pursuant to both the Rehabilitation Act and the ADA.

Any subcontract entered into as a result of this Contract shall contain all of the provisions of this Article.

Article 21. 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 under County Ordinance Code Section 5.08.070. Contractor warrants and represents that it shall the unincorporated territory of El Dorado County without possessing a County business license unless exempt 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 22. CONTRACT ADMINISTRATOR

The County Officer or employee with responsibility for administering this Agreement is John Kahling, Deputy Director Engineering, Construction Division, Department of Transportation, or successor.

Article 23. 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.

Article 24. PARTIAL INVALIDITY

If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will continue in full force and effect without being impaired or invalidated in any way.

Article 25. ENTIRE AGREEMENT

This document and the documents referred to herein or exhibits hereto are the entire Agreement between the parties and they incorporate or supersede all prior written or oral agreements or understandings.

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 County's Board of Supervisors, on its behalf, and the said Contractor has signed this Agreement the day and year written below.

COUNTY OF EL DORADO

Dated: _____

Board of Supervisors

Board Date: _____

Attest:

James S. Mitrison

Clerk of the Board of Supervisors

Dated: _____

Deputy Clerk

Board Date: _____

CONTRACTOR

Dated: _____

License No.

Federal Employee Identification Number

By: _____

President

By: _____

Corporate Secretary

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 on 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: _____

Email Address: _____

Phone: _____

Fax: _____

EXHIBIT A

**CONTRACTOR'S BID AND BID PRICE SCHEDULE
U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1 PROJECT
CONTRACT NO. PW 12-30647/ CIP NO. 71328**

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
1	072007		EXCAVATION SAFETY	LS	1		
2	070030		LEAD COMPLIANCE PLAN	LS	1		
3	080050		PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	1		
4	120090		CONSTRUCTION AREA SIGNS	LS	1		
5	120100		TRAFFIC CONTROL SYSTEM	LS	1		
6	120120		TYPE III BARRICADE	EA	60		
7	120140A		STREET BARRICADE	EA	2		
8	120149		TEMPORARY PAVEMENT MARKING (PAINT)	SF	100		
9	120159		TEMPORARY TRAFFIC STRIPE (PAINT)	LF	5,490		
10	120165		CHANNELIZER (SURFACE MOUNTED)	EA	110		
11	120199		TRAFFIC PLASTIC DRUM	EA	200		
12	120300		TEMPORARY PAVEMENT MARKER	EA	200		
13	128650		PORTABLE CHANGEABLE MESSAGE SIGN	SWD	400		
14	129000		TEMPORARY RAILING (TYPE K)	LF	16,100		
15	129110A		TEMPORARY CRASH CUSHION (TYPE ARRAY TS14)	EA	10		
16	129110B		TEMPORARY CRASH CUSHION (TYPE ABSORB 350)	EA	4		
17	130100		JOB SITE MANAGEMENT	LS	1		
18	130300		PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	1		
19	130310		RAIN EVENT ACTION PLAN	EA	53		
20	130320		STORM WATER SAMPLING AND ANALYSIS DAY	EA	52		
21	130330		STORM WATER ANNUAL REPORT	EA	2		
22	141000		TEMPORARY FENCE (TYPE ESA)	LF	5,800		
23	149001A		ASBESTOS DUST MITIGATION PLAN	LS	1		
24	150204A		ABANDON UNDER DRAIN	LF	3,280		
25	150605		REMOVE FENCE	LF	12,700		
26	150662		REMOVE METAL BEAM GUARD RAILING	LF	570		
27	150668		REMOVE FLARED END SECTION	EA	5		
28	150714		REMOVE THERMOPLASTIC TRAFFIC STRIPE	LF	3,030		
29	150715		REMOVE THERMOPLASTIC PAVEMENT MARKING	SF	300		
30	150722		REMOVE PAVEMENT MARKER	EA	44		
31	150742		REMOVE ROADSIDE SIGN	EA	21		
32	150771		REMOVE HOT MIX ASPHALT DIKE	LF	1,300		
33	150809		REMOVE CULVERT	LF	470		

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
34	150814		REMOVE DOWNDRAIN	LF	130		
35	150819		REMOVE REINFORCED CONCRETE BOX CULVERT	LS	1		
36	150820		REMOVE INLET	EA	3		
37	150860		REMOVE BASE AND SURFACING	CY	2,100		
38	152390		RELOCATE ROADSIDE SIGN	EA	10		
39	152394		RELOCATE SIGN STRUCTURE	EA	1		
40	153103		COLD PLANE ASPHALT CONCRETE PAVEMENT	SY	13,800		
41	153130		REMOVE CONCRETE CURB	LF	120		
42	153221		REMOVE CONCRETE BARRIER	LF	540		
43	160102		CLEARING AND GRUBBING	LS	1		
44	160120		REMOVE TREE	EA	140		
45	170101		DEVELOP WATER SUPPLY	LS	1		
46	190101		ROADWAY EXCAVATION	CY	231,000		
47	192003	F	STRUCTURE EXCAVATION (BRIDGE)	CY	4,134		
48	192020	F	STRUCTURE EXCAVATION (TYPE D)	CY	199		
49	192037	F	STRUCTURE EXCAVATION (RETAINING WALL)	CY	900		
50	193003	F	STRUCTURE BACKFILL (BRIDGE)	CY	2,876		
51	193013	F	STRUCTURE BACKFILL (RETAINING WALL)	CY	1,400		
52	194001A		BIOSWALE	SY	1,750		
53	198010		IMPORTED BORROW (CY)	CY	122,000		
54	200117		DECOMPOSED GRANITE (MISCELLANEOUS AREA)	SF	290		
55	208738	F	8" CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONDUIT	LF	1,263		
56	210010		MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	4		
57	210280		ROLLED EROSION CONTROL PRODUCT (BLANKET) TYPE B	SY	1,540		
58	210350		FIBER ROLLS	LF	95,800		
59	210430		HYDROSEED	SY	231,000		
60	210600A		COMPOST (INCORPORATE)	SY	1,140		
61	260203		CLASS 2 AGGREGATE BASE	CY	43,300		
62	377501		SLURRY SEAL	TON	38		
63	390132		HOT MIX ASPHALT (TYPE A)	TON	35,000		
64	390138		RUBBERIZED HOT MIX ASPHALT (OPEN GRADED)	TON	2,770		
65	394050		RUMBLE STRIP	STA	140		
66	394074		PLACE HOT MIX ASPHALT DIKE (TYPE C)	LF	960		
67	394076		PLACE HOT MIX ASPHALT DIKE (TYPE E)	LF	7,400		
68	394077		PLACE HOT MIX ASPHALT DIKE (TYPE F)	LF	5,300		
69	394090		PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	SY	1,810		
70	477020	P-F	MECHANICALLY STABILIZED EMBANKMENT	SF	2,880		
71	498052		60" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	LF	290		

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
72	500001	P	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	1		
73	510051	F	STRUCTURAL CONCRETE, BRIDGE FOOTING	CY	709		
74	510053	F	STRUCTURAL CONCRETE, BRIDGE	CY	4,541		
75	510060	F	STRUCTURAL CONCRETE, RETAINING WALL	CY	440		
76	510072	F	STRUCTURAL CONCRETE, BARRIER SLAB	CY	112		
77	510086	F	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	CY	520		
78	510090	F	STRUCTURAL CONCRETE, BOX CULVERT	CY	632		
79	510501A	F	MINOR CONCRETE (MEDIAN)	CY	49		
80	510502	F	MINOR CONCRETE (MINOR STRUCTURE)	CY	70		
81	510526	F	MINOR CONCRETE (BACKFILL)	CY	47		
82	511035A	F	ARCHITECTURAL TREATMENT (DRY STACK ROCK TEXTURE)	SF	6,166		
83	519088A	P	JOINT SEAL (TYPE B - MR 1")	LF	180		
84	519100	P	JOINT SEAL (MR 2")	LF	298		
85	519200		PRECAST BRIDGE SYSTEM	LS	1		
86	520102	P-F	BAR REINFORCING STEEL (BRIDGE)	LB	1,274,872		
87	520103	P-F	BAR REINFORCING STEEL (RETAINING WALL)	LB	52,000		
88	520107	P-F	BAR REINFORCING STEEL (BOX CULVERT)	LB	122,687		
89	520120	P-F	HEADED BAR REINFORCEMENT	EA	300		
90	560203	F	FURNISH SIGN STRUCTURE (BRIDGE MOUNTED WITH WALKWAY)	LB	6,247		
91	560204	F	INSTALL SIGN STRUCTURE (BRIDGE MOUNTED WITH WALKWAY)	LB	6,247		
92	560218	F	FURNISH SIGN STRUCTURE (TRUSS)	LB	206,000		
93	560219	F	INSTALL SIGN STRUCTURE (TRUSS)	LB	206,000		
94	560244		FURNISH LAMINATED PANEL SIGN (1"-TYPE A)	SF	3,160		
95	560245		FURNISH LAMINATED PANEL SIGN (1"-TYPE B)	SF	110		
96	560248		FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-UNFRAMED)	SF	650		
97	560249		FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-UNFRAMED)	SF	440		
98	560251		FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-FRAMED)	SF	94		
99	560252		FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-FRAMED)	SF	100		
100	566011		ROADSIDE SIGN - ONE POST	EA	84		
101	566012		ROADSIDE SIGN - TWO POST	EA	9		
102	568001		INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	20		
103	568001A		INSTALL SIGN (BARRICADE MOUNTED)	EA	2		
104	568016		INSTALL SIGN PANEL ON EXISTING FRAME	SF	480		

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
105	620100	P	18" ALTERNATIVE PIPE CULVERT	LF	1,520		
106	620140	P	24" ALTERNATIVE PIPE CULVERT	LF	630		
107	620220	P	36" ALTERNATIVE PIPE CULVERT	LF	120		
108	650010	P	12" REINFORCED CONCRETE PIPE	LF	500		
109	650014	P	18" REINFORCED CONCRETE PIPE	LF	640		
110	650026	P	36" REINFORCED CONCRETE PIPE	LF	66		
111	665025	P	24" CORRUGATED STEEL PIPE (.138" THICK)	LF	57		
112	665033	P	30" CORRUGATED STEEL PIPE (.138" THICK)	LF	6		
113	665038	P	36" CORRUGATED STEEL PIPE (.138" THICK)	LF	10		
114	665048	P	48" CORRUGATED STEEL PIPE (.138" THICK)	LF	150		
115	680905	P	8" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	3,330		
116	680905A	P	8" PLASTIC PIPE UNDERDRAIN OUTLET	LF	150		
117	681107A	P	3" PVC PIPE	LF	280		
118	681132		GEOCOMPOSITE DRAIN	SY	165		
119	690118	P	18" CORRUGATED STEEL PIPE DOWNDRAIN (.109" THICK)	LF	480		
120	690125	P	24" CORRUGATED STEEL PIPE DOWNDRAIN (.138" THICK)	LF	73		
121	692001	P	ENTRANCE TAPER	EA	7		
122	692307	P	18" ANCHOR ASSEMBLY	EA	29		
123	702600A		TEE ENERGY DISSIPATOR	EA	2		
124	703460	P	24" WELDED STEEL PIPE CASING (BRIDGE)	LF	154		
125	703515	P	8" WELDED STEEL PIPE (.134" THICK)	LF	90		
126	705011		18" STEEL FLARED END SECTION	EA	10		
127	705015		24" STEEL FLARED END SECTION	EA	4		
128	705019		30" STEEL FLARED END SECTION	EA	1		
129	705031		48" STEEL FLARED END SECTION	EA	2		
130	705311		18" ALTERNATIVE FLARED END SECTION	EA	15		
131	705315		24" ALTERNATIVE FLARED END SECTION	EA	5		
132	705321		36" ALTERNATIVE FLARED END SECTION	EA	2		
133	707200		MANHOLE (SDMH)	EA	2		
134	721015	F	ROCK SLOPE PROTECTION (LIGHT, METHOD B)	CY	267		
135	721026	F	ROCK SLOPE PROTECTION (BACKING NO. 1, METHOD B)	CY	302		
136	721028	F	ROCK SLOPE PROTECTION (BACKING NO. 2, METHOD B)	CY	1,319		
137	721810		SLOPE PAVING (CONCRETE)	CY	37		
138	729011	P	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	SY	9,250		
139	730010		MINOR CONCRETE (CURB)	LF	6,310		
140	730040		MINOR CONCRETE (GUTTER)	LF	140		
141	731504		MINOR CONCRETE (CURB AND GUTTER)	LF	3,400		

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
142	731521		MINOR CONCRETE (SIDEWALK)	CY	240		
143	731530		MINOR CONCRETE (TEXTURED PAVING)	CY	230		
144	731623		MINOR CONCRETE (CURB RAMP)	CY	4		
145	750001	P-F	MISCELLANEOUS IRON AND STEEL	LB	15,332		
146	750505	P-F	BRIDGE DECK DRAINAGE SYSTEM	LB	6,698		
147	800001	P	FENCE (TYPE BW, METAL POST)	LF	1,100		
148	800360	P	CHAIN LINK FENCE (TYPE CL-6)	LF	7,050		
149	801230	P	16' WIRE MESH GATE	EA	2		
150	801300	P	DUAL PIPE GATE	EA	1		
151	802620	P	16' CHAIN LINK GATE (TYPE CL-6)	EA	1		
152	810116		SURVEY MONUMENT (TYPE D)	EA	14		
153	820107		DELINEATOR (CLASS 1)	EA	167		
154	820110		HIGHWAY POST MARKER	EA	3		
155	820130		OBJECT MARKER	EA	30		
156	832003	P	METAL BEAM GUARD RAILING (WOOD POST)	LF	6,900		
157	832070		VEGETATION CONTROL (MINOR CONCRETE)	SY	3,810		
158	833077		PEDESTRIAN BARRICADE (TYPE I)	EA	2		
159	833090A	P-F	TUBULAR BICYCLE RAILING	LF	647		
160	839521	P-F	CABLE RAILING	LF	176		
161	839541	P	TRANSITION RAILING (TYPE WB)	EA	10		
162	839581		END ANCHOR ASSEMBLY (TYPE SFT)	EA	17		
163	839585		ALTERNATIVE FLARED TERMINAL SYSTEM	EA	24		
164	839700		CONCRETE BARRIER (TYPE 60F)	LF	150		
165	839701		CONCRETE BARRIER (TYPE 60)	LF	570		
166	839701A		CONCRETE BARRIER (TYPE 60 MOD)	LF	64		
167	839704A		CONCRETE BARRIER (TYPE 60D MOD)	LF	10		
168	839720	F	CONCRETE BARRIER (TYPE 732)	LF	225		
169	839727	F	CONCRETE BARRIER (TYPE 736 MOD)	LF	1,566		
170	839735A	F	CONCRETE BARRIER (TYPE 742 MOD)	LF	323		
171	840502		THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY)	LF	73,500		
172	840516		THERMOPLASTIC PAVEMENT MARKING (ENHANCED WET NIGHT VISIBILITY)	SF	4,980		
173	840656		PAINT TRAFFIC STRIPE (2-COAT)	LF	790		
174	850111	P	PAVEMENT MARKER (RETROREFLECTIVE)	EA	1,960		
175	860090		MAINTAINING EXISTING TMS ELEMENTS DURING CONSTRUCTION	LS	1		
176	860251	P	SIGNAL AND LIGHTING (LOCATION 1)	LS	1		
177	860252	P	SIGNAL AND LIGHTING (LOCATION 2)	LS	1		
178	860253	P	SIGNAL AND LIGHTING (LOCATION 3)	LS	1		
179	860460	P	LIGHTING AND SIGN ILLUMINATION	LS	1		
180	860799		BATTERY BACKUP SYSTEM	LS	1		
181	861100A		RAMP METERING SYSTEM AND TMS ELEMENTS	LS	1		

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
182	869001A		EMERGENCY VEHICLE PREEMPTION SYSTEM (LOCATIONS 1 THRU 3)	LS	1		
183	869050		GUARD POST	EA	4		
184	869050A		GUARD POST (REMOVABLE)	EA	1		
185	999990		MOBILIZATION	LS	1		
EID UTILITY RELOCATION WORK ITEMS							
186	150204B		ABANDON 12" AC WATER LINE	LF	1,030		
187	150204C		ABANDON 8" WATER LINE	LF	200		
188	152375A		RELOCATE PRESSURE REDUCING STATION	EA	1		
189	152375B		RELOCATE BLOW OFF VALVE	EA	1		
190	152375C		RELOCATE AIR RELEASE VALVE	EA	1		
191	208591A		BLOWOFF VALVE	EA	1		
192	510502A		MINOR CONCRETE (ENCASEMENT)	CY	11		
193	700001A		8" WATER LINE (CL-150)	LF	160		
194	700001B		12" WATER LINE (CL-150)	LF	1,030		
EID UTILITY RELOCATION WORK ITEMS (REIMBURSABLE)							
195	150204D		ABANDON 12" AC WATER LINE (EID)	LF	2,940		
196	150776A		REMOVE VALVE (EID)	EA	3		
197	150809A		REMOVE WATER LINE (EID)	LF	70		
198	151508A		RECONSTRUCT MANHOLE (EID)	EA	6		
199	152351		RELOCATE HYDRANT (EID)	EA	2		
200	152375D		RELOCATE AIR RELEASE VALVE (EID)	EA	1		
201	152375E		RELOCATE GATE VALVE (EID)	EA	1		
202	152375F		RELOCATE SAMPLING STATION (EID)	EA	1		
203	152451A		ADJUST WATER VALVE TO GRADE (EID)	EA	11		
204	152475A		ADJUST SSMH TO GRADE (EID)	EA	2		
205	208591B		BLOWOFF VALVE (EID)	EA	1		
206	208591C		INSTALL BLIND FLANGE (EID)	EA	1		
207	700001C		12" WATER LINE (DR-14) (EID)	LF	590		

**GRAND
TOTAL =**

F - Final Pay Quantity
P - Eligible for Partial Payment
LS - Lump Sum

EXHIBIT B

FAIR EMPLOYMENT PRACTICES ADDENDUM

1. In the performance of this Agreement, Contractor will not discriminate against any employee for employment because of race, color, sex, sexual orientation, religion, ancestry or national origin, physical disability, medical condition, marital status, political affiliation, family and medical care leave, pregnancy leave or disability leave. Contractor will take affirmative action to ensure that employees are treated during employment, without regard to their race, color, sex, sexual orientation, religion, ancestry or national origin, physical disability, medical condition, marital status, political affiliation, family and medical care leave, pregnancy leave or disability leave. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor shall post in conspicuous places, available to employees for employment, notices to be provided by State setting forth the provisions of this Fair Employment section.

2. Contractor and all subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code Section 1290-0 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 12900(a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Each of Contractor's contractors and all subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreements, as appropriate.

3. Contractor shall include the nondiscrimination and compliance provisions of this clause in all contracts and subcontracts to perform work under this Agreement.

4. Contractor will permit access to the records of employment, employment advertisements, application forms and other pertinent data and records by County, State, the State Fair Employment and Housing Commission or any other agency of the State of California designated by State, for the purposes of investigation to ascertain compliance with the Fair Employment section of this Agreement.

5. Remedies for Willful Violation:

(a) County may determine a willful violation of the Fair Employment provision to have occurred upon receipt of a final judgment to that effect from a court in an action to which Contractor was a party, or upon receipt of a written notice from the Fair Employment and Housing Commission that it has investigated and determined that Contractor has violated the Fair Employment Practices Act and had issued an order under Labor Code Section 1426 which has become final or has obtained an injunction under Labor Code Section 1429.

(b) For willful violation of this Fair Employment provision, County shall have the right to terminate this Agreement either in whole or in part, and any loss or damage sustained by County in securing the goods or services thereunder shall be borne and paid for by Contractor and by the surety under the performance bond, if any, and County may deduct from any moneys due or thereafter may become due to Contractor, the difference between the price named in the Agreement and the actual cost thereof to County to cure Contractor's breach of this Agreement.

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:

**U.S.50 / SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1 PROJECT
CONTRACT No. PW 12-30647 / CIP No. 73128**

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: _____

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 ACKNOWLEDGMENTS 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. PW 12-30647 / CIP No. 71328 for the U.S 50 / SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1 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 the Surety must be properly acknowledged, and a Power of Attorney attached for the Surety.

NOTARY ACKNOWLEDGMENTS 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)

COMPLETING BID IN PENCIL, ERASURES, OVERWRITES, AND USE OF CORRECTION FLUID OR TAPE ARE NOT ACCEPTABLE. BID PROPOSALS WITH PENCIL, ERASURES, OVERWRITES, OR USE OF CORRECTION FLUID OR TAPE WILL BE REJECTED. ALL CHANGES MUST BE LINED OUT AND CORRECTIONS INSERTED ADJACENT TO AND INITIALED BY THE BIDDER'S AUTHORIZED REPRESENTATIVE.

PROPOSAL

(to be attached to and submitted with this bound Contract Document bid package)

TO: THE DEPARTMENT OF TRANSPORTATION,

COUNTY OF EL DORADO,

STATE OF CALIFORNIA

for the construction of

the

U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE- PHASE 1 PROJECT

CONTRACT No. PW 12-30647 / CIP No. 71328

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 () _____

EMAIL ADDRESS _____

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 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 2010, the Standard Specifications 2010, Revised 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 58-94 to adopt changes to the Design and Improvement Standards Manual; EID Design and Construction Standards, U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1 County of El Dorado, DOT

Contract No. PW 12-30647 / CIP No. 71328

June 11, 2013

Proposal

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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:

U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1 PROJECT

CONTRACT No. PW 12-30647 / CIP No. 71328

Bids are to be submitted for the entire work. The amount of the bid for comparison purposes will be the total of all the 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 as 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 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 satisfaction to the County of El Dorado and submit escrow bid documents in accordance with the Special Provisions within ten (10) days, not including Saturdays, Sundays, and legal holidays, of the date of the letter 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.

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 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 Draft 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
U.S. 50 /SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1 PROJECT
CONTRACT NO. PW 12-30647/ CIP NO. 71328

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
1	072007		EXCAVATION SAFETY	LS	1		
2	070030		LEAD COMPLIANCE PLAN	LS	1		
3	080050		PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	1		
4	120090		CONSTRUCTION AREA SIGNS	LS	1		
5	120100		TRAFFIC CONTROL SYSTEM	LS	1		
6	120120		TYPE III BARRICADE	EA	60		
7	120140A		STREET BARRICADE	EA	2		
8	120149		TEMPORARY PAVEMENT MARKING (PAINT)	SF	100		
9	120159		TEMPORARY TRAFFIC STRIPE (PAINT)	LF	5,490		
10	120165		CHANNELIZER (SURFACE MOUNTED)	EA	110		
11	120199		TRAFFIC PLASTIC DRUM	EA	200		
12	120300		TEMPORARY PAVEMENT MARKER	EA	200		
13	128650		PORTABLE CHANGEABLE MESSAGE SIGN	SWD	400		
14	129000		TEMPORARY RAILING (TYPE K)	LF	16,100		
15	129110A		TEMPORARY CRASH CUSHION (TYPE ARRAY TS14)	EA	10		
16	129110B		TEMPORARY CRASH CUSHION (TYPE ABSORB 350)	EA	4		
17	130100		JOB SITE MANAGEMENT	LS	1		
18	130300		PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	1		
19	130310		RAIN EVENT ACTION PLAN	EA	53		
20	130320		STORM WATER SAMPLING AND ANALYSIS DAY	EA	52		
21	130330		STORM WATER ANNUAL REPORT	EA	2		
22	141000		TEMPORARY FENCE (TYPE ESA)	LF	5,800		
23	149001A		ASBESTOS DUST MITIGATION PLAN	LS	1		
24	150204A		ABANDON UNDER DRAIN	LF	3,280		
25	150605		REMOVE FENCE	LF	12,700		
26	150662		REMOVE METAL BEAM GUARD RAILING	LF	570		
27	150668		REMOVE FLARED END SECTION	EA	5		
28	150714		REMOVE THERMOPLASTIC TRAFFIC STRIPE	LF	3,030		
29	150715		REMOVE THERMOPLASTIC PAVEMENT MARKING	SF	300		
30	150722		REMOVE PAVEMENT MARKER	EA	44		
31	150742		REMOVE ROADSIDE SIGN	EA	21		
32	150771		REMOVE HOT MIX ASPHALT DIKE	LF	1,300		
33	150809		REMOVE CULVERT	LF	470		
34	150814		REMOVE DOWNDRAIN	LF	130		
35	150819		REMOVE REINFORCED CONCRETE BOX CULVERT	LS	1		

U.S. 50 / SILVA VALLEY PARKWAY INTERCHANGE – PHASE 1
Contract No. PW 12-30647 / CIP No. 71328
June 11, 2013

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ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
36	150820		REMOVE INLET	EA	3		
37	150860		REMOVE BASE AND SURFACING	CY	2,100		
38	152390		RELOCATE ROADSIDE SIGN	EA	10		
39	152394		RELOCATE SIGN STRUCTURE	EA	1		
40	153103		COLD PLANE ASPHALT CONCRETE PAVEMENT	SY	13,800		
41	153130		REMOVE CONCRETE CURB	LF	120		
42	153221		REMOVE CONCRETE BARRIER	LF	540		
43	160102		CLEARING AND GRUBBING	LS	1		
44	160120		REMOVE TREE	EA	140		
45	170101		DEVELOP WATER SUPPLY	LS	1		
46	190101		ROADWAY EXCAVATION	CY	231,000		
47	192003	F	STRUCTURE EXCAVATION (BRIDGE)	CY	4,134		
48	192020	F	STRUCTURE EXCAVATION (TYPE D)	CY	199		
49	192037	F	STRUCTURE EXCAVATION (RETAINING WALL)	CY	900		
50	193003	F	STRUCTURE BACKFILL (BRIDGE)	CY	2,876		
51	193013	F	STRUCTURE BACKFILL (RETAINING WALL)	CY	1,400		
52	194001A		BIOSWALE	SY	1,750		
53	198010		IMPORTED BORROW (CY)	CY	122,000		
54	200117		DECOMPOSED GRANITE (MISCELLANEOUS AREA)	SF	290		
55	208738	F	8" CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONDUIT	LF	1,263		
56	210010		MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	4		
57	210280		ROLLED EROSION CONTROL PRODUCT (BLANKET) TYPE B	SY	1,540		
58	210350		FIBER ROLLS	LF	95,800		
59	210430		HYDROSEED	SY	231,000		
60	210600A		COMPOST (INCORPORATE)	SY	1,140		
61	260203		CLASS 2 AGGREGATE BASE	CY	43,300		
62	377501		SLURRY SEAL	TON	38		
63	390132		HOT MIX ASPHALT (TYPE A)	TON	35,000		
64	390138		RUBBERIZED HOT MIX ASPHALT (OPEN GRADED)	TON	2,770		
65	394050		RUMBLE STRIP	STA	140		
66	394074		PLACE HOT MIX ASPHALT DIKE (TYPE C)	LF	960		
67	394076		PLACE HOT MIX ASPHALT DIKE (TYPE E)	LF	7,400		
68	394077		PLACE HOT MIX ASPHALT DIKE (TYPE F)	LF	5,300		
69	394090		PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	SY	1,810		
70	477020	P-F	MECHANICALLY STABILIZED EMBANKMENT	SF	2,880		
71	498052		60" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	LF	290		
72	500001	P	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	1		
73	510051	F	STRUCTURAL CONCRETE, BRIDGE FOOTING	CY	709		

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
			FOOTING				
74	510053	F	STRUCTURAL CONCRETE, BRIDGE	CY	4,541		
75	510060	F	STRUCTURAL CONCRETE, RETAINING WALL	CY	440		
76	510072	F	STRUCTURAL CONCRETE, BARRIER SLAB	CY	112		
77	510086	F	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	CY	520		
78	510090	F	STRUCTURAL CONCRETE, BOX CULVERT	CY	632		
79	510501A	F	MINOR CONCRETE (MEDIAN)	CY	49		
80	510502	F	MINOR CONCRETE (MINOR STRUCTURE)	CY	70		
81	510526	F	MINOR CONCRETE (BACKFILL)	CY	47		
82	511035A	F	ARCHITECTURAL TREATMENT (DRY STACK ROCK TEXTURE)	SF	6,166		
83	519088A	P	JOINT SEAL (TYPE B - MR 1")	LF	180		
84	519100	P	JOINT SEAL (MR 2")	LF	298		
85	519200		PRECAST BRIDGE SYSTEM	LS	1		
86	520102	P-F	BAR REINFORCING STEEL (BRIDGE)	LB	1,274,872		
87	520103	P-F	BAR REINFORCING STEEL (RETAINING WALL)	LB	52,000		
88	520107	P-F	BAR REINFORCING STEEL (BOX CULVERT)	LB	122,687		
89	520120	P-F	HEADED BAR REINFORCEMENT	EA	300		
90	560203	F	FURNISH SIGN STRUCTURE (BRIDGE MOUNTED WITH WALKWAY)	LB	6,247		
91	560204	F	INSTALL SIGN STRUCTURE (BRIDGE MOUNTED WITH WALKWAY)	LB	6,247		
92	560218	F	FURNISH SIGN STRUCTURE (TRUSS)	LB	206,000		
93	560219	F	INSTALL SIGN STRUCTURE (TRUSS)	LB	206,000		
94	560244		FURNISH LAMINATED PANEL SIGN (1"-TYPE A)	SF	3,160		
95	560245		FURNISH LAMINATED PANEL SIGN (1"-TYPE B)	SF	110		
96	560248		FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-UNFRAMED)	SF	650		
97	560249		FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-UNFRAMED)	SF	440		
98	560251		FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-FRAMED)	SF	94		
99	560252		FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-FRAMED)	SF	100		
100	566011		ROADSIDE SIGN - ONE POST	EA	84		
101	566012		ROADSIDE SIGN - TWO POST	EA	9		
102	568001		INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	20		
103	568001A		INSTALL SIGN (BARRICADE MOUNTED)	EA	2		
104	568016		INSTALL SIGN PANEL ON EXISTING FRAME	SF	480		
105	620100	P	18" ALTERNATIVE PIPE CULVERT	LF	1,520		
106	620140	P	24" ALTERNATIVE PIPE CULVERT	LF	630		
107	620220	P	36" ALTERNATIVE PIPE CULVERT	LF	120		
108	650010	P	12" REINFORCED CONCRETE PIPE	LF	500		

ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
109	650014	P	18" REINFORCED CONCRETE PIPE	LF	640		
110	650026	P	36" REINFORCED CONCRETE PIPE	LF	66		
111	665025	P	24" CORRUGATED STEEL PIPE (.138" THICK)	LF	57		
112	665033	P	30" CORRUGATED STEEL PIPE (.138" THICK)	LF	6		
113	665038	P	36" CORRUGATED STEEL PIPE (.138" THICK)	LF	10		
114	665048	P	48" CORRUGATED STEEL PIPE (.138" THICK)	LF	150		
115	680905	P	8" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	3,330		
116	680905A	P	8" PLASTIC PIPE UNDERDRAIN OUTLET	LF	150		
117	681107A	P	3" PVC PIPE	LF	280		
118	681132		GEOCOMPOSITE DRAIN	SY	165		
119	690118	P	18" CORRUGATED STEEL PIPE DOWNDRAIN (.109" THICK)	LF	480		
120	690125	P	24" CORRUGATED STEEL PIPE DOWNDRAIN (.138" THICK)	LF	73		
121	692001	P	ENTRANCE TAPER	EA	7		
122	692307	P	18" ANCHOR ASSEMBLY	EA	29		
123	702600A		TEE ENERGY DISSIPATOR	EA	2		
124	703460	P	24" WELDED STEEL PIPE CASING (BRIDGE)	LF	154		
125	703515	P	8" WELDED STEEL PIPE (.134" THICK)	LF	90		
126	705011		18" STEEL FLARED END SECTION	EA	10		
127	705015		24" STEEL FLARED END SECTION	EA	4		
128	705019		30" STEEL FLARED END SECTION	EA	1		
129	705031		48" STEEL FLARED END SECTION	EA	2		
130	705311		18" ALTERNATIVE FLARED END SECTION	EA	15		
131	705315		24" ALTERNATIVE FLARED END SECTION	EA	5		
132	705321		36" ALTERNATIVE FLARED END SECTION	EA	2		
133	707200		MANHOLE (SDMH)	EA	2		
134	721015	F	ROCK SLOPE PROTECTION (LIGHT, METHOD B)	CY	267		
135	721026	F	ROCK SLOPE PROTECTION (BACKING NO. 1, METHOD B)	CY	302		
136	721028	F	ROCK SLOPE PROTECTION (BACKING NO. 2, METHOD B)	CY	1,319		
137	721810		SLOPE PAVING (CONCRETE)	CY	37		
138	729011	P	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	SY	9,250		
139	730010		MINOR CONCRETE (CURB)	LF	6,310		
140	730040		MINOR CONCRETE (GUTTER)	LF	140		
141	731504		MINOR CONCRETE (CURB AND GUTTER)	LF	3,400		
142	731521		MINOR CONCRETE (SIDEWALK)	CY	240		
143	731530		MINOR CONCRETE (TEXTURED PAVING)	CY	230		
144	731623		MINOR CONCRETE (CURB RAMP)	CY	4		
145	750001	P-F	MISCELLANEOUS IRON AND STEEL	LB	15,332		
146	750505	P-F	BRIDGE DECK DRAINAGE SYSTEM	LB	6,698		
147	800001	P	FENCE (TYPE BW, METAL POST)	LF	1,100		

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ITEM NO.	ITEM	P-F	DESCRIPTION	UNIT	ESTIMATED QUANTITY	ITEM PRICE	TOTAL
148	800360	P	CHAIN LINK FENCE (TYPE CL-6)	LF	7,050		
149	801230	P	16' WIRE MESH GATE	EA	2		
150	801300	P	DUAL PIPE GATE	EA	1		
151	802620	P	16' CHAIN LINK GATE (TYPE CL-6)	EA	1		
152	810116		SURVEY MONUMENT (TYPE D)	EA	14		
153	820107		DELINEATOR (CLASS 1)	EA	167		
154	820110		HIGHWAY POST MARKER	EA	3		
155	820130		OBJECT MARKER	EA	30		
156	832003	P	METAL BEAM GUARD RAILING (WOOD POST)	LF	6,900		
157	832070		VEGETATION CONTROL (MINOR CONCRETE)	SY	3,810		
158	833077		PEDESTRIAN BARRICADE (TYPE I)	EA	2		
159	833090A	P-F	TUBULAR BICYCLE RAILING	LF	647		
160	839521	P-F	CABLE RAILING	LF	176		
161	839541	P	TRANSITION RAILING (TYPE WB)	EA	10		
162	839581		END ANCHOR ASSEMBLY (TYPE SFT)	EA	17		
163	839585		ALTERNATIVE FLARED TERMINAL SYSTEM	EA	24		
164	839700		CONCRETE BARRIER (TYPE 60F)	LF	150		
165	839701		CONCRETE BARRIER (TYPE 60)	LF	570		
166	839701A		CONCRETE BARRIER (TYPE 60 MOD)	LF	64		
167	839704A		CONCRETE BARRIER (TYPE 60D MOD)	LF	10		
168	839720	F	CONCRETE BARRIER (TYPE 732)	LF	225		
169	839727	F	CONCRETE BARRIER (TYPE 736 MOD)	LF	1,566		
170	839735A	F	CONCRETE BARRIER (TYPE 742 MOD)	LF	323		
171	840502		THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY)	LF	73,500		
172	840516		THERMOPLASTIC PAVEMENT MARKING (ENHANCED WET NIGHT VISIBILITY)	SF	4,980		
173	840656		PAINT TRAFFIC STRIPE (2-COAT)	LF	790		
174	850111	P	PAVEMENT MARKER (RETROREFLECTIVE)	EA	1,960		
175	860090		MAINTAINING EXISTING TMS ELEMENTS DURING CONSTRUCTION	LS	1		
176	860251	P	SIGNAL AND LIGHTING (LOCATION 1)	LS	1		
177	860252	P	SIGNAL AND LIGHTING (LOCATION 2)	LS	1		
178	860253	P	SIGNAL AND LIGHTING (LOCATION 3)	LS	1		
179	860460	P	LIGHTING AND SIGN ILLUMINATION	LS	1		
180	860799		BATTERY BACKUP SYSTEM	LS	1		
181	861100A		RAMP METERING SYSTEM AND TMS ELEMENTS	LS	1		
182	869001A		EMERGENCY VEHICLE PREEMPTION SYSTEM (LOCATIONS 1 THRU 3)	LS	1		
183	869050		GUARD POST	EA	4		
184	869050A		GUARD POST (REMOVABLE)	EA	1		
185	999990		MOBILIZATION	LS	1		
EID UTILITY RELOCATION WORK ITEMS							
186	150204B		ABANDON 12" AC WATER LINE	LF	1,030		
187	150204C		ABANDON 8" WATER LINE	LF	200		
188	152375A		RELOCATE PRESSURE REDUCING	EA	1		

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		STATION				
189	152375B	RELOCATE BLOW OFF VALVE	EA	1		
190	152375C	RELOCATE AIR RELEASE VALVE	EA	1		
191	208591A	BLOWOFF VALVE	EA	1		
192	510502A	MINOR CONCRETE (ENCASEMENT)	CY	11		
193	700001A	8" WATER LINE (CL-150)	LF	160		
194	700001B	12" WATER LINE (CL-150)	LF	1,030		
EID UTILITY RELOCATION WORK ITEMS (REIMBURSABLE)						
195	150204D	ABANDON 12" AC WATER LINE (EID)	LF	2,940		
196	150776A	REMOVE VALVE (EID)	EA	3		
197	150809A	REMOVE WATER LINE (EID)	LF	70		
198	151508A	RECONSTRUCT MANHOLE (EID)	EA	6		
199	152351	RELOCATE HYDRANT (EID)	EA	2		
200	152375D	RELOCATE AIR RELEASE VALVE (EID)	EA	1		
201	152375E	RELOCATE GATE VALVE (EID)	EA	1		
202	152375F	RELOCATE SAMPLING STATION (EID)	EA	1		
203	152451A	ADJUST WATER VALVE TO GRADE (EID)	EA	11		
204	152475A	ADJUST SSMH TO GRADE (EID)	EA	2		
205	208591B	BLOWOFF VALVE (EID)	EA	1		
206	208591C	INSTALL BLIND FLANGE (EID)	EA	1		
207	700001C	12" WATER LINE (DR-14) (EID)	LF	590		

GRAND TOTAL =

- (F) Final Pay Quantity
- (P) Eligible for Partial Payment
- (LS) Lump Sum

(NOTICE: Bidders 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.)

SUBCONTRACTOR LIST

The Bidder must list the name, address, and license number, of each subcontractor to whom the Bidder proposes to subcontract portions of the work, as required by the provisions in section 2-1.33C. The Bidder must also list the work portion to be performed by each subcontractor by listing the bid item number, bid item description, and portion of the work to be performed by the subcontractor in the form of a percentage calculated by dividing the work to be performed by the subcontractor by the respective bid item amount(s) (not by the total bid price).

Name	Location of Business	License No.	Bid Item Number and Bid Item Description	Percentage of Each Bid Item Subcontracted

Public Contract Code Section 10285.1 Statement

In conformance 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.**

Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, 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 conformance 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 immediately 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 conformance with Title 23 United States Code Section 112 and Public Contract Code 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 or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

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.

**DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION CERTIFICATION, UNITED STATES
DEPARTMENT OF TRANSPORTATION(USDOT) 2 CODE OF FEDERAL REGULATIONS (CFR) 1200 FEDERAL
AGENCY REGULATIONS FOR GRANTS AND AGREEMENTS AND EXECUTIVE ORDER 12549**

The Bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, or manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining Bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Bidder further agrees by submitting this Proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where any lower tier participant is unable to certify to this statement, it shall attach an explanation to its proposal to the prime contractor.

Notes: Providing false information may result in criminal prosecution or administrative sanctions.

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

CERTIFICATION OF BIDDER'S PRECAST BRIDGE MANUFACTURER'S QUALIFICATIONS

Bidder certifies that _____

(insert name of precast bridge manufacturer selected by Bidder)

meets the following requirements:

Check one or both of the following boxes as applicable:

Prior to and during production of the elements of the proposed bridge system the selected manufacturer is/will be certified by:

The Precast/Prestressed Concrete Institute Plant Certification Program

The National Precast Concrete Association's Plant Certification Program

AND

Has been in the business of producing precast concrete products similar to those specified for a minimum of 3 years. The selected manufacturer maintains a permanent quality control department or retains an independent testing agency on a continuing basis. The independent testing agency will issue a report, certified by a licensed engineer, detailing the ability of the manufacturer to produce quality products consistent with industry standards.

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

Bidders are cautioned that making a false certification may result in the Bidder's bid being deemed non-responsive.

OPT OUT OF PAYMENT ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS

You may opt out of the payment adjustments for price index fluctuations as specified in "Payment Adjustments for Price Index Fluctuations" of the special provisions. If you elect to opt out of the provisions of this specification, complete this form and submit it with your bid.

Bidder Name: _____

Contract No. PW 12-30647

I opt out of the payment adjustments for price index fluctuations.

Date: _____

Signature: _____

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 the Bidder has complied with the requirements of Sections 4104 of the Subletting and Subcontracting Fair Practices Act and 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; and the Debarment Suspension, Ineligibility and Voluntary Exclusion Certification; the Fair Employment Practice Addendum, the Opt Out of Payment Adjustments for Price Index Fluctuations, if elected, and Certification Of Bidder's Pre-Fabricated Bridge Manufacturer's Qualifications, are 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: _____



Name and Title of Bidder _____

Name of Firm _____

END OF PROPOSAL

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 (10) PERCENT 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 Placerville, El Dorado County, California, for the construction of the

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CONTRACT No. PW 12-30647 / CIP No. 71328

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.)

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)