SFOBB Toll Plaza (04-Ala-80-PM 1.8/2.1)
EA 04-0G420K
Contract No. 04-0G420K

INVITATION FOR BIDS

Contract Documents
NOTICE TO CONTRACTORS AND SPECIAL PROVISIONS

SAN FRANCISCO-OAKLAND BAY BRIDGE OPEN ROAD TOLLING PROJECT

Issued for Bid June 11, 2009

For use in Connection with Standard Specifications **Dated May 2006**, Standard Plans **Dated May 2006** of the California Department of Transportation, and the plans entitled "SAN FRANCISCO-OAKLAND BAY BRIDGE OPEN ROAD TOLLING PROJECT"

BAY AREA TOLL AUTHORITY
Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, California 94607-4700

BAY AREA TOLL AUTHORITY Contract No. 04-0G420K

The special provisions contained herein have been prepared by or under the direction of the following Registered Persons.

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ELECTRICAL

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STRUCTURES

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REGISTERED STRUCTURE ENGINEER

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SECTION 1. INVITATION FOR BID

LETTER OF INVITATION

For SAN FRANCISCO-OAKLAND BAY BRIDGE OPEN ROAD TOLLING PROJECT

Dear Contractor :

The Bay Area Toll Authority (BATA) invites your firm to respond to this Invitation for Bid (IFB) for:

Construction of SAN FRANCISCO-OAKLAND BAY BRIDGE OPEN ROAD TOLLING PROJECT

BATA is soliciting bids for the construction of SAN FRANCISCO-OAKLAND BAY BRIDGE OPEN ROAD TOLLING improvements at the San Francisco-Oakland Bay toll bridge to install additional Electronic Toll Collection (ETC) equipment, Changeable Message Signs (CMS), installation of sign structures, and removal of the mini toll plaza and pedestrian walkway on westbound Interstate 80 (see description of major project milestones in section 2-2, General Description of Work).The project is part of the improvements described in BATA's FasTrak® Electronic Toll Collection Strategic Plan 2009 Update, dated May 24, 2009. To meet the goals and objectives of the Strategic Plan, a comprehensive program is proposed to convert additional lanes to FasTrak®-Only and to begin to modernize the toll plazas. The purpose of the proposed improvements is to encourage additional use in the FasTrak® program and to more efficiently operate the bridge toll plazas.

This letter, together with Contract Documents/Special Provisions, Bid Forms and Project Plans comprise the IFB for this project. Responses to the IFB are to be submitted in accordance with the instructions stated herein.

Bid Submission

Interested bidders must submit their bids in sealed envelopes by 4:00 p.m. on June 30, 2009. **Proposals received after that date and time will not be considered**. **All bids must be completed and submitted on the enclosed Bid Forms, in Section 5 of this IFB, in order to be considered.**

BATA will compile a list of intended bidders for this IFB. To receive any addenda to this IFB, you must notify the Project Manager in writing of your intent to submit a bid (e-mail or fax is acceptable) at least one week prior to the due date for bids.

BATA Point of Contact

A submitted proposal shall be considered a firm offer to provide the services described for a period of one hundred twenty (120) days from the date of submittal.

Proposals and all inquiries relating to this RFP shall be submitted to the Project Manager at the address shown below. E-mail inquiries may be directed to <sbaker@mtc.ca.gov>.

Stephen Baker
Bay Area Toll Authority
Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, CA 94607-4700
510/817-5892

Bid Guaranty

Bids must be accompanied by a bid guaranty in the form of a cashier's check, a certified check, or a bid bond executed by an admitted surety insurer ("A 10" Rating or better), in the amount of 10% of the bid amount, payable to BATA. Such check or bond shall be given as a guaranty that the Bidder will, within ten (10) days of being requested to do so by BATA, enter into a contract and provide the required performance and payment bonds. If a Bidder's bond is furnished, it must conform the form provided with the bid documents herein.

If the Bidder to whom the work has been awarded refuses or fails to accept the contract and/or provide the required bonds within the specified time, the check shall be forfeited to BATA or the principal and surety on the bond shall be liable to BATA for the principal amount thereof in accordance with its terms. Bidder guarantees will be held until the contract has been finally executed, after which all Bidders' guarantees except any guarantees which have been forfeited, will be returned to the respective Bidders whose bids they accompany, but in no event will Bidder's securities be held by BATA beyond one hundred twenty (120) days from the time set for receiving bids.

References

Bidders must provide at least three (3) references for work performed by the bidder or bidder's subcontractor for work similar to the work described in this IFB. The reference information should include:

1) Name, address, contact person and telephone number of client.
2) Description of work performed that is similar to the work requested in this IFB, including contract amount and construction/installation start and completion date.
3) Bidder or bidder's subcontractor role in the construction and installation services provided, including key personnel. BATA may request any additional information to substantiate the bidder's references, as it deems appropriate.

Pre-Bid Conference

A pre-bid conference will be held on Tuesday June 16, 2009 at 9:30 at BATA Offices (Joseph P. Bort MetroCenter, 101 Eighth Street, Oakland, CA).

Specifications and Schedule

The specifications and schedule for this project are described herein. The IFB also contains substantive requirements with which Bidders must fully comply in order to guarantee responsiveness.

The time of completion for all construction work shall be **one hundred seventy five (175) calendar days**, commencing on the **twentieth (20th) calendar day** following issuance of the Notice of Award by BATA.

Bid Evaluation

Bids will be initially evaluated for responsiveness and adherence to the IFB. Quality and customer service are of the highest importance. In order to ensure superior service, references will be checked, and bidders may be required to provide additional information verifying their experience.

A contract, if awarded, will be to the responsible bidder submitting the lowest responsive bid, as indicated in the "Total Contract Price" space on the Bid Form #1 Schedule of Quantities and Prices in Section 5.

Performance and Labor & Materials Payment Bonds

Prior to contract award, BATA will require both a Performance and Labor & Materials Payment Bond, issued by a surety acceptable to BATA. Each bond shall be in a sum not less than 100% of the total bid amount, as described in Section 6, SC 3.1 and 3.2, of this IFB.

Bidder Selection Timetable

Tuesday, June16, 2009, 9:30 a.m.	Pre-Bid Conference
Friday, June 19, 2009	Deadline for requests for clarification or exception
Tuesday, June 30, 2009, 4:00 p.m.	Closing date & time for receipt of bids & bid opening
Wednesday, July 08, 2009	BATA Oversight Committee consideration of recommendation for award
Wednesday, July 15, 2009 (approximate)	Issuance of Notice of Award

General Conditions

BATA reserves the right to award a contract or to reject all bids.

A signed BATA Construction Agreement mailed or delivered to a particular bidder shall constitute a binding contract, which incorporates this IFB and its addenda, if any, and all documents referenced herein, any deviations from the specifications expressly accepted by BATA, and all terms and conditions of the Construction Agreement.

In accordance with California Public Contract Code Section 22300, Contractor may substitute securities for any money withheld under **Section 7.0 General Conditions**. At Contractors request and expense, securities equivalent to the amount withheld shall be deposited with BATA, or with a state or federally chartered bank as the escrow agent, who shall then pay such monies to Contractor. Upon satisfactory completion of the contract, the securities shall be returned to Contractor.

Authority to Commit BATA 2

The Executive Director of BATA will recommend the successful bidder to the BATA Oversight Committee, which will commit BATA to the expenditure of funds in connection with this IFB.

Thank you for your participation.

Sincerely,

Ann Flemer

Ann Flemer
Deputy Executive Director, Operations

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SECTION 2. FORWARD

2-1 Bay Area Toll Authority

There are seven state-owned toll bridges (Antioch, Benicia-Martinez, Carquinez, Richmond-San Rafael, Dumbarton, San Mateo Hayward and the San Francisco-Oakland Bay Bridge) that are owned and operated by the California Department of Transportation (Caltrans) in the San Francisco Bay Area. State-owned toll bridge operations and capital improvement projects are funded by toll revenues, which are administered by the Bay Area Toll Authority (BATA).

In May 2009, BATA adopted the FasTrak® Strategic Plan 2009 Update, which lays out a comprehensive strategy for the implementation of improvements for the FasTrak® program update, including supporting infrastructure improvements, implementing a comprehensive marketing program to inform motorists of the benefits of the program, and increasing the ease for motorists to obtain a FasTrak® toll tag.

The plan proposes that additional electronic tolling collection equipment be added to the San Francisco Oakland Bay Bridge. A key component of the lane and infrastructure plan includes installing improved pavement delineation and signage at the toll plaza. This IFB and subsequent contract are for the construction of toll plaza improvements at the San Francisco Oakland Bay Bridge.

2-2 General Description of Work

At the San Francisco-Oakland Bay Bridge toll plaza site, the work consists of installing additional Electronic Toll Collection (ETC) equipment, Changeable Message Signs (CMS) at the toll plaza and removal of the mini toll plaza and pedestrian walkway structures, installing two overhead sign structures, and installing conduit, cables and associated facilities required to operate the CMS system. The new overhead sign structures and CMS system equipment will be furnished by BATA, as specified herein. Major milestone of the project are as follows

WORK ITEM	DURATION	
	begin	end
Demolish Mini Toll Plaza and Walk Way	9/3/2009	9/10/2009
Foundations for New Gantry	9/9/2009	10/20/2009
Gantry Installation	12/1/2009	12/7/2009
Install CMS Panels	12/8/2009	12/14/2009
OHS Gantry Electronic Toll Collection (ETC) Installation	12/10/09	01/11/10
New ETC Lane Testing	01/12/10	02/01/10
Open ORT	02/01/10	02/01/10
Remove Lane 18 Equipment	02/02/10	02/03/10

NOTE:under a separate contract administered by Caltrans, SFOBB will be closed beginning at 8pm 9/03/09 until 9/5/09 It is expected that the work for the demolition of the mini toll plaza and walkway will happen during the bridge closure.

2-3 Description of the Contracting Process

The procedure that will be followed during the period between BATA's determination of the successful Bidder and its issuance of a Notice to Proceed consists of the steps listed and explained below:

- Issuance of Notice of Award (NOA)
- Signing of Construction Agreement by successful Bidder
- Submittal of Water Pollution Control Plan (WPCP), Performance Bond, Payment Bond and Insurance Certificate(s)
- Execution of Contract by BATA
- Issuance of Notice to Proceed

Notice of Award. After Bids are opened at the time and place stipulated, the contract will be awarded to the lowest responsive and responsible Bidder subject to the approval of the BATA Oversight Committee as well as BATA's right to reject any or all bids. BATA reserves the right to award a contract or to reject all bids. No Bidder may withdraw its bid for the period of days stipulated on the Bid Form after the date set for the Bid Opening. The Bid shall be subject to acceptance by BATA during this period.

Promptly upon BATA's approval of the award of the Contract, BATA will issue a "Notice of Award" (NOA) letter to the successful Bidder. Included with the NOA will be two originals of **Construction Agreement** and one original of the following:

- **Performance Bond** in the amount of 100% of the Total Contract Amount, to guarantee faithful performance of the work under the Contract, including the replacing of or making acceptable, any defective materials or faulty workmanship.
- **Payment Bond** in the amount of 100% of the Total Contract Amount, to inure to the benefit of persons performing labor or furnishing materials in connection with the work of the proposed contract. This bond shall be maintained in full force and effect until all work under the contract is completed and accepted by BATA, and until all claims for materials and labor have been paid.

Within **ten (10) calendar days** from the date of NOA, the successful Bidder shall return executed copies of these documents. Within this same period, Bidder shall furnish Certificates of Insurance as more fully described below.

Both the Performance Bond and the Payment Bond shall be issued by a surety company(ies) acceptable to BATA with a Best Guide Rating of A+10 or better and authorized to execute such in the State of California.

Should any surety or sureties be deemed unsatisfactory at any time by BATA, notice will be given Contractor to that effect, and Contractor shall forthwith substitute a new surety or sureties satisfactory to BATA.

All alterations, time extensions, extra work, additional work or any other changes authorized in the Contract, may be made without notice to, or securing the prior consent of, the surety or sureties on the Performance or Payment Bonds.

Certificates of Insurance. Bidder shall furnish original certificates showing evidence that the insurance coverage's specified in the Special Conditions herein have been obtained and are in force. All certificates shall provide that not less than sixty (60) calendar days written notice shall be given to BATA and any additional insured's in the event of cancellation, non-renewal or material change in the policy.

Forfeiture of Bid Security. Failure of the Bidder to whom the Notice of Award was issued to sign the Construction Agreement and submit all of the documents required within **10 calendar days** shall be just cause for the annulment of the award and forfeiture of Bidder's security.

Return of Bid Security. If the Bid is not accepted by BATA within the period of days stipulated on the Bid Form after the date set for Bid Opening, or if the Bidder to whom the Contract is awarded executes and delivers to BATA the required documents, then the Bidder's Bond, cash, or the amount of the certified or cashier's check shall be returned to all bidders.

Executed Contract. After Contractor's delivery of two (2) signed original Construction Agreements and all required submissions as stipulated above, BATA will sign the Construction Agreement. No agreement between BATA and Contractor shall be in effect until BATA executes the Construction Agreement.

Notice To Proceed. BATA will issue a Notice to Proceed promptly following execution of the Construction Agreement. Contractor shall commence performance of work after receipt of the Notice to Proceed, and shall continuously and diligently prosecute the work to completion on or before the time or times set forth in Section 6, **Special Conditions.** Regardless of the date of the Notice to Proceed, the first day charged shall be the **twentieth calendar day** following the date of the Notice of Award. Contractor shall not enter upon nor occupy State property or commence any materials fabrication prior to receiving the Notice to Proceed. Any work performed or expenses incurred by Contractor prior to Contractor's receipt of Notice to Proceed shall be entirely at Contractor's risk.

SECTION 3. INSTRUCTIONS TO BIDDERS

1. Scope of Work

The work consists of pavement delineation and signage improvements at the San Francisco-Oakland Bay Bridge toll plazas to install additional Electronic Toll Collection (ETC) equipment and Changeable Message Signs (CMS), installation of sign structures, and removal of the mini toll plaza and pedestrian walkway.

2. Pre-Bid Conference

A pre-bid conference will be held at the time and place set out in Section 1, **Invitation for Bid (IFB)**. The purpose of this meeting is to inform prospective Bidders and potential subcontractors of subcontracting and material supply opportunities and to receive comments and questions regarding the work and the Contract Documents from attendees.

3. Examination of the Contract Documents

Each prospective Bidder shall carefully examine the Contract Documents and become thoroughly familiar with the terms and conditions contained therein prior to the Bid Opening date. The bid submitted shall include a sum to cover the cost of all items necessary to perform the work as set forth in the Contract Documents. No allowance of any kind will be made to any Bidder because of lack of such examination or knowledge. The submittal of a bid shall be conclusive evidence that the Bidder has made such an examination.

3.1 Definitions. "Definitions and Terms," of the Standard Specifications and Contract Documents. Whenever in the Standard Specifications, Standard Plans and these contract documents the following terms are used, unless the context otherwise requires, the intent and meaning shall be interpreted as follows:

ACCEPTANCE: The formal written acceptance by BATA of an entire contract that has been completed in all respects in accordance with the plans and specifications and any modifications thereof previously approved.

BASE: A layer of specified material of planned thickness placed immediately below the pavement or surfacing.

BASEMENT MATERIAL: The material in excavation or embankments underlying the lowest layer of subbase, base, pavement, surfacing or other specified layer which is to be placed.

BATA: The Bay Area Toll Authority.

BIDDER: Any individual, firm, partnership, corporation, or combination thereof, submitting a bid for the work contemplated, acting directly or through a duly authorized representative.

BRIDGE: Any structure, with a bridge number, which carries a utility facility, or railroad, highway, pedestrian or other traffic, over a watercourse or over or under or around any obstruction.

CALENDAR DAYS: A calendar day shall be any day including all legal holidays, Saturday and Sunday.

CALTRANS: California Department of Transportation

CONDUIT: A pipe or tube in which smaller pipes, tubes or electrical conductors are inserted or are to be inserted.

CONTRACT: The written agreement covering the performance of the work and the furnishing of labor, materials, tools and equipment in the construction of the work. The contract shall incorporate this IFB, and its addenda, if any, all documents referenced herein, any deviations from the specifications expressed and accepted by BATA, and shall include the notice to contractors, proposal, plans, special conditions, general conditions, applicable Caltrans Standard plans and Specifications, and contract bonds; also any and all supplemental agreements amending or extending the work contemplated and which may be required to complete the work in a substantial and acceptable manner. Supplemental Agreements are written agreements covering alterations, amendments or extensions to the contract and include contract change orders.

CONTRACTOR: The person or persons, firm, partnership, corporation, or combination thereof, private or municipal, who have entered into a contract with the Bay Area Toll Authority.

CULVERT: Any structure, other than a bridge, which provides an opening under a roadway for drainage or other purposes.

DAYS: Unless otherwise designated, days as used in the specifications will be understood to mean calendar days.

DEPARTMENT: California Department of Transportation, unless with respect to the Standard Plans and Standard Specifications the context requires that Department mean Bay Area Toll Authority (BATA).

DEPARTMENTS OR OFFICERS: Wherever departments or officers are referred to herein, Department staff are meant for the purpose of these Contract Documents, unless with respect to the Standard Plans and Standard Specifications the context requires that Department means (BATA).

DETOUR: A temporary route for traffic around a closed portion of a road.

DIRECTOR OR DIRECTOR OF TRANSPORTATION: The Director of Congestion Management and Highway Programs or his/her duly authorized representatives.

DIVIDED HIGHWAY: A highway with separated traveled ways for traffic, generally in opposite directions.

ENGINEER: The Resident Engineer.

FEDERAL AGENCIES: Whenever, in the specifications, reference is made to any Federal agency or officer, the reference shall be deemed made to any agency or officer succeeding in accordance with law to the powers, duties, jurisdiction and authority of the agency or officer mentioned.

FIXED COSTS: Any necessary labor, material and equipment costs directly expended on the item or items under consideration that remain constant regardless of the quantity of the work done.

FRONTAGE ROAD: A local street or road auxiliary to and located generally on the side of an arterial highway for service to abutting property and adjacent areas and for control of access.

GRADING PLANE: The surface of the basement material upon which the lowest layer of subbase, base, pavement, surfacing or other specified layer is placed.

HIGHWAY: The whole right of way or area that is reserved for and secured for use in constructing the roadway and its appurtenances.

LABORATORY: The established Laboratory authorized by the Engineer to test materials and work involved in the contract.

LEGAL HOLIDAYS: Those days designated as State holidays in the Government Code.

LIQUIDATED DAMAGES: The amount prescribed in the contract documents, to be paid to BATA or to be deducted from any payments due or to become due the Contractor for each day's delay in completing the whole or any specified portion of the work beyond the time allowed in the contract documents.

MANUAL OF TRAFFIC CONTROLS: The Caltrans Department of Transportation publication entitled "MANUAL OF TRAFFIC CONTROLS for Construction and Maintenance Work Zones." This manual may be obtained from Caltrans Publications.

MEDIAN: That portion of a divided highway separating the traveled ways for traffic in opposite directions including inside shoulders.

NOTICE OF AWARD (NOA): Written notification issued by BATA awarding the contract is anticipated three (3) working days after the BATA Board awards the contract. Unless notified otherwise by BATA, the first charged day will be twenty (20) calendar days following this notification.

NOTICE OF CLAIM: Notification sent to BATA from the contractor for time extension, payment of money or damages arising from work done by or on behalf of, the contractor

pursuant to the contract and payment of which is not otherwise expressly provided for or that the contractor is not otherwise entitled to; An amount of payment which is disputed by BATA.

NOTICE TO PROCEED (NTP): Notification to the contractor to commence construction.

OVERSIGHT ENGINEER: The assigned representative of the California Department of Transportation that is duly authorized to oversee work covered by these specifications. The Oversight Engineer will have authority to stop work at any time there is a risk to public safety or when the work appears to be performed in an unsafe manner.

OWNER FURNISHED MATERIALS: Bay Area Toll Authority furnished materials.

PAVEMENT: The uppermost layer of material placed on the traveled way or shoulders. This term is used interchangeably with surfacing.

PLANS: The official project plans, Standard Plans, profiles, typical cross sections, working drawings and supplemental drawings, or reproductions thereof, which show the location, character, dimensions and details of the work to be performed. These documents are to be considered as a part of the plans.

PROCESSING: Any operation or operations of whatever nature and extent required to produce a specified material.

RESIDENT ENGINEER: Authorized representative for BATA. Also identified as the Engineer.

RESIDENT INSPECTOR: Resident Engineer or his authorized representative.

ROADBED: The roadbed is that area between the intersection of the upper surface of the roadway and the side slopes or curb lines. The roadbed rises in elevation as each increment or layer of sub-base, base, surfacing or pavement is placed. Where the medians are so wide as to include areas of undisturbed land, a divided highway is considered as including 2 separate roadbeds.

ROADWAY: That portion of the highway included between the outside lines of sidewalks, or curbs, slopes, ditches, channels, waterways, and including all the appertaining structures, and other features necessary for proper drainage and protection.

SHOULDERS: The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses.

SPECIAL PROVISIONS: The special provisions are specific clauses setting forth conditions or requirements peculiar to the work. References to these can include BATA Special Conditions, General Conditions.

SPECIFICATIONS: The directions, provisions and requirements contained in these Contract documents.

STANDARD PLANS: The Standard Plans of the State of California Department of Transportation.

STANDARD SPECIFICATIONS: The Standard Specifications of the State of California, Department of Transportation.

STATE: State of California**,** unless with respect to the Standard Plans and Standard Specifications the context requires that Department mean Bay Area Toll Authority (BATA).

STATE CONTRACT ACT: The applicable portions of the Public Contract Code. The provisions of this act and other applicable laws form and constitute a part of the provisions of this contract to the same extent as if set forth herein in full.

SUBBASE: A layer of specified material of planned thickness between a base and the basement material.

SUBGRADE: That portion of the roadbed on which pavement, surfacing, base, subbase, or a layer of any other material is placed.

SUBSTRUCTURE: All that part of the bridge below the bridge seats, tops of piers, haunches of rigid frames, or below the spring lines of arches. Backwalls and parapets of abutments and wingwalls of bridges shall be considered as parts of the substructure.

SUPERSTRUCTURE: All that part of the bridge except the bridge substructure.

SURFACING: The uppermost layer of material placed on the traveled way, or shoulders. This term is used interchangeably with pavement.

TRAFFIC LANE: That portion of a traveled way for the movement of a single line of vehicles.

TRAVELED WAY: That portion of the roadway for the movement of vehicles, exclusive of shoulders.

WORK: All the work specified, indicated, shown or contemplated in the contract to construct the Improvement, including all alterations, amendments or extensions thereto made by contract change order or other written orders of the Engineer.

WORKING DAYS: Refer to GC-30, “Time of Completion”, of Section 5, General Conditions.

3.2 Abbreviations - Each abbreviation signifies the following:

Abbreviation	Term
AAN	American Association of Nurserymen.
AASHTO	American Association of State Highway and Transportation Officials.
AISC	American Institute of Steel Construction.
AISI	American Iron and Steel Institute.
ANSI	American National Standards Institute.
APHA	American Public Health Association.
API	American Petroleum Institute.
AREA	American Railway Engineering Association.
ASME	American Society of Mechanical Engineers.
ASTM	American Society for Testing and Materials.
AWG	American Wire Gage.
AWPA	American Wood-Preservers' Association.
AWS	American Welding Society.
AWWA	American Water Works Association.
EIA	Electronic Industries Association.
IEEE	Institute of Electrical and Electronics Engineers.
NEMA	National Electrical Manufacturers Association.
UL	Underwriters' Laboratories Inc.

3.3 Units of Measurement Some of the symbols for units of measurement used in the specifications and in the Summary of Quantities and Prices are defined as follows. The symbols for other units of measurement used in the specifications are as defined in American Society for Testing and Materials (ASTM) Designation: E-380, or in the various specifications and test referenced in the specifications

Symbols as used in the Specifications	Symbols as used in the Summary of Quantities and Prices	Definitions
A	-	amperes
-	EA	each
g	G	gram
kg	KG	kilogram
ha	HA	hectare (10 ,000 m 2)
h	H	hour
J	-	joule
-	LNKM	lane kilometer
L	L	liter
-	LS	lump sum
m	M	meter
km	KM	kilometer
mm	MM	millimeter
µm	-	micrometer
nm	-	nanometer
m2	M2	square meter
m3	M3	cubic meter
N	-	newton
Nm	-	newton meter
	-	ohm
Pa	-	pascal
kPa	-	kilopascal
Mpa	-	megapascal
s	-	second
-	STA	station (100 m)
-	TAB	tablet
tonne	TONNE	metric ton (1000 kg)
W	-	watt
V	-	volt

4. Examination of Site and Existing Conditions

In addition to examination of the Contract Documents, each prospective Bidder shall, prior to the Bid Opening, become fully informed regarding all existing and expected site conditions that might in any way affect the cost or the time of performance of the work. Any failure of the prospective Bidder to fully investigate the site and inform itself of existing and anticipated site

conditions shall not relieve such Bidder from responsibility for estimating properly the cost or difficulty of performing the work.

Prospective bidders may make arrangements to visit the project sites by contacting the BATA Project Manager.

5. Addenda to Contract Documents

BATA reserves the right to make changes in the Contract Documents as it may deem appropriate up to the time set for opening of bids. Any and all changes in the Contract Documents shall be made by written Addendum, which shall be issued by BATA at http://www.mtc.ca.gov/jobs/. All potential bidders are responsible for checking the BATA website for any addenda to the bid document.

If such Addenda require changes in quantities or might affect the prices bid, or both, the date set for opening of bids may be postponed by such number of days as in the opinion of BATA shall enable Bidders to revise their bids.

Failure to acknowledge receipt of all Addenda may cause the bid to be considered non-responsive to the Contract Documents. Bidder certifies that the Contract Documents and Addenda thereto have been thoroughly read and that there are no misunderstandings as to the meaning, purpose or intent of any provision in the Contract Documents as modified by those Addenda.

6. Prevailing Wage Rates

Pursuant to appropriate Sections of the Labor Code of the State of California, the Director of the California Department of Industrial Relations has ascertained the general prevailing rate of wages (which rate includes employer payments for health and welfare, vacation, pension, and similar purposes) applicable to the work to be performed under this Contract, for straight time, overtime, Saturday, Sunday and holiday work.

Workmen employed in the work must be paid at the rates at least equal to the prevailing wage. If Contractor uses a craft or classification not shown on the prevailing wage determinations, Contractor may be required to pay the wage rate of that craft or classification most closely related to it as shown in the general determinations effective at the time of Contract award.

In the performance of the work specified in this Contract, the Prime Contractor and all subcontractors shall be responsible for compliance with California Labor Code Sections 1776 (Payroll records, retention, inspection, noncompliance penalties, rules and regulations) and 1777.5 (Employment of registered apprentices, wages, standards, number, apprenticeable craft or trade, exemptions, contributions).

7. Preparation and Submittal of Bid

The Bidder shall prepare its bid in strict accordance with all of the requirements of the Contract Documents and any addenda thereto. In order to receive consideration, all bids shall comply with the following instructions:

7.1 Bids shall be submitted on the forms provided in these Contract Documents in signed original. Bids submitted in any other form may be considered non-responsive and rejected.

7.2 Blank spaces in each bid form shall be properly filled in, and the phraseology thereof shall not be changed. Any conditions or limitations made to the items mentioned therein may be cause for rejection. Alterations by erasure or interlineation must be explained or noted in the bid over the signature of the Bidder.

7.3 No telegraphic or FAX bid or telegraphic or FAX modification of a bid will be considered. No bids received after the time fixed for receiving them will be considered. Late bids will be returned to the Bidder unopened.

7.4 All bids shall be enclosed in a sealed envelope bearing the Contract Number, the title of the project, the date and hour of the opening, and the name of the Bidder. Bids shall be addressed to the Project Manager, Bay Area Toll Authority, and shall be delivered to BATA Office at Joseph P. Bort MetroCenter, 101 Eighth Street, Oakland, CA 94607-4700 no later than the time scheduled for Bid Opening. It is the sole responsibility of the Bidder to see that its bid is received in a timely manner.

7.5 Bids shall include full compensation for furnishing all labor, material, tools, and equipment and doing all the work complete in place in accordance with the requirements of the Contract. Bid prices shall include all applicable taxes, freight charges and other applicable fees of any kind.

7.6 The quantities given in the Schedule of Quantities and Prices for which unit prices are asked to be bid are approximate only, being given as a basis for the comparison of bids, and BATA does not, expressly or by implication, represent that the actual quantities required will correspond therewith, but reserves the right to increase or decrease the quantity of any class or portion of the work, or to omit portions of the work, as BATA may deem necessary or advisable.

7.7 The Bidder shall show the Contract number and title on its bid and on all correspondence.

7.8 Wherever in this Bid an amount is stated in both words and figures, in case of discrepancy between words and figures the words shall prevail. If all or any portion of the Bid is required to be given in unit prices and totals and a discrepancy exists between any such unit prices and totals so given, the unit prices shall prevail. If the Bid contains an arithmetic error in the computation of unit price extensions or in the summation of Bid item totals, BATA will correct and revise the Total Contract Price accordingly. BATA will not make any changes on the total shown for “lump sum” items.

7.9 The successful Bidder shall sign and file with BATA the following certification prior to performing the work of the contract: *“I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers’ compensation or to undertake self-insurance in accordance with the provisions of that code,*

and I will comply with such provisions before commencing the performance of the work of this contract."

8. Bid Security

Each bid shall be accompanied by a certified or cashier's check, cash, or a Bidder's bond in the sum of not less than **10%** of the Total Contract Price and said checks or bond shall be made payable to the order of the Bay Area Toll Authority. In case the successful Bidder fails to file satisfactory bonds or provide the insurance required by the Contract Documents, or refuses to enter into a Contract within the specified time, it shall forfeit it's bid security. If the bid is not accepted by BATA within one hundred twenty (**120) calendar days** after the date set for the opening of bids, or if the Bidder to whom the contract is awarded executes and delivers to BATA the required Contract Forms, then the amount of the cash or the certified or cashier's check shall be returned to the Bidder.

9. Opening of Bids

Bids will be opened and publicly read aloud by BATA at the time and place stated in Section 1, **Invitation to Bid**.

10. Withdrawal of Bid

Any Bidder may withdraw its bid, either personally or by a written request by a duly authorized representative, at any time prior to the scheduled time for opening of bids. However, no Bidder may withdraw its bid for a period of **one hundred twenty (120) calendar days** after the Bid Opening. Bidder's attention is directed to the provisions of the Public Contract Code Sections 5100 to 5108 regarding relief of bidders.

11. Conditional Bids

Conditional bids, or those which take exception to the Contract Documents, will be considered non-responsive and will be rejected.

12. Single Bid Response

If only one bid is received in response to the Invitation to Bid, a detailed cost proposal may be required of the single Bidder. A cost/price analysis and evaluation and/or audit will be performed of the cost proposal in order to determine if the price is fair and reasonable.

13. Award or Rejection of Bids

The award of the contract to the successful Bidder will be made within one hundred twenty (**120) calendar days** after the opening of bids. If the first Bidder selected as a successful Bidder refuses or fails to execute the contract, BATA may award the contract to the second successful Bidder selected as provided herein and such an award, if made, will be made within one hundred twenty **(120) calendar days** after the opening of the bid proposals. If the second successful Bidder refuses or fails to execute the contract, BATA may award the contract to the third successful Bidder selected as above provided and such an award, if made, will be made within one hundred twenty **(120) calendar days** after opening of the bid proposals. The periods of time specified above within which the award of contract may be made shall be subject to an extension

for such further period as may be agreed upon in writing between BATA and the Bidder concerned. BATA reserves the right to reject any or all bids and to waive any informality in the bids or in the bid process. Obvious cases of bid unbalancing may be cause for rejection.

BATA is in the process of obtaining an Encroachment Permit from Caltrans. If after receipt of the bids for the project an Encroachment Permit has not been obtained, BATA reserves the right to reject all bids and re-advertise the project or extend the award period as agreed in writing between BATA and the Bidder.

14. Basis of Award

The criteria for determining the successful Bidder will include the Bidder's responsiveness to the requirements of the Contract Documents, Bidder's responsibility and price. Any Bidder may be required to furnish evidence satisfactory to BATA that it and its proposed subcontractors have sufficient means and experience in the type of work called for in the Contract Documents to assure completion of the Contract in a satisfactory manner. Award, if made, will be to the lowest responsible and responsive Bidder, based on the Total Contract Price.

15. Protest Procedures

The following procedures shall be used by Bidders seeking review of the Contract Documents or the Contract process:

15.1 General - Bidder protests shall be addressed to the Bay Area Toll Authority, Attention: Stephen Baker, and clearly marked "Bid Protest" on the outside of the envelope.

15.2 Protest of Specifications. Prospective bidders may submit written protest of items in the Contract Documents on the grounds that the specifications are biased, unduly restrictive, discourage competition, or do not comply with state or local law or regulation no later than seven (7) calendar days prior to the date bids are due. Such protests will be reviewed by BATA and responded to prior to bid opening. If appropriate, the time of bid opening will be extended to accommodate any changes in the IFB.

15.3 Selection Disputes. A bidder may protest the selection of a Contractor on the grounds that BATA procedures, or applicable provisions of state or local law, have been violated or inaccurately and/or inappropriately applied by BATA by submitting to the Project Manager a written explanation of the basis for protest within three (3) working days after award or the date the bidder is notified that it was not selected, whichever is later, for objection to Contractor Selection.

Protests of recommended awards must clearly and specifically describe the basis for the protest in sufficient detail for the BATA review officer to recommend a resolution to the BATA Executive Director.

The BATA Executive Director will respond to the protest in writing, based on the recommendation of a staff review officer. Authorization to award a contract to a particular contractor by BATA's Oversight Committee shall be deemed conditional until the expiration

of the protest period or, if a protest is filed, the issuance of a written response to the protest by the Executive Director.

Should the protesting proposer wish to appeal the decision of the Executive Director, it may file a written appeal with the BATA Oversight Committee, no later than three (3) working days after receipt of the written response from the Executive Director. The BATA Oversight Committee's decision will be the final agency decision.

16. Public Records

This IFB and any material submitted by a bidder in response to this IFB are subject to public inspection under the California Public Records Act (Government Code Section 6250 *et seq*.), unless exempt by law.

SECTION 4. CONTRACT FORMS

1. **Construction Agreement ***
2. **Performance Bond ***
3. **Payment Bond ***
4. **Sample Insurance Certificate**
5. **Alternate IRS Form W-9**

*** Form must be acknowledged by a Notary**

Return ALL Contract Forms To:

Stephen Baker

Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, California 94607-4700
Direct Phone: (510) 817-5892
Main Phone: (510 817-5700
Fax: (510) 817-5848

PLEASE NOTE:

It is not necessary to complete these forms to bid on this project. But the Bidder who is awarded the Contract will be required to execute all Contract Forms.

CONTRACT FORM #1

CONSTRUCTION AGREEMENT

This Agreement is entered into between the Bay Area Toll Authority ("BATA") and _____("Contractor") as of the date set out below.

BATA and Contractor agree as follows:

1. **Scope of Work.** Contractor shall provide all labor, materials, tools, equipment and incidentals necessary to perform the work described as

CONTRACT NO. 04-0G420K

San Francisco-Oakland Bay Bridge Open Road Tolling Project

in a satisfactory and workmanlike manner and in accordance with the provisions of the Contract Documents.

2. **Compensation.** Full compensation to Contractor for the complete and satisfactory performance of the work under this Agreement, in strict compliance with all of the provisions of the Contract Documents, and for Contractor's payment of all obligations incurred or applicable to performance of the work, shall be the Total Contract Price shown in the Schedule of Quantities and Prices attached hereto as this amount may be adjusted in accordance with other provisions of the Agreement. Payment of this compensation will be made by BATA to Contractor in accordance with the appropriate payment provisions of the Agreement.

3. **Contract Documents – Order of Precedence.** The following sections of the Contract Documents are incorporated by reference into this Construction Agreement:

Order of Precedence (Highest order listed first)

Section 1.0 through 4.0	Contract Forms and Agreement
Section 5.0	Bid Forms
Section 6.0	Special Conditions
Section 7.0	General Conditions
Section10	Contract Details
Appendix A	Contract Drawings and Plans
Caltrans Standard Plans	Dated May 2006
Caltrans Standard Specifications	Date May 2006

These documents are essential parts of the agreement between the parties and are intended to be complementary and to describe and provide for a complete work. In the event of any discrepancy between any drawing and the dimensions written thereon, the dimensions shall be taken as correct. Detail drawings shall prevail over general drawings. In the event of any other conflict among the documents, precedence shall be given in the order listed above.

4. **Quality of Work.** Where the plans or specifications describe portions of the work in general terms, but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be provided.

5. **Time of Performance.** Contractor shall commence work under the Agreement immediately upon issuance by BATA of a Notice to Proceed and shall complete all of the work under the Agreement by the dates specified in **Section 6.0 Special Conditions**. The issuance of a Notice to Proceed is contingent upon Contractor's submittal of proper insurance certificates, and executed Construction Agreement no later than **ten (10) working days** following the date of BATA's Notice of Award. The first chargeable day under this Agreement shall be the **twentieth calendar day** following the date of BATA's Notice of Award.

6. **Entire Agreement.** This Agreement constitutes the entire agreement between BATA and Contractor respecting the subject matter hereof. All other agreements, understandings and communications between the parties hereto are deemed to be merged into and superseded by the provisions of this Agreement. No modification or change to this Agreement shall have any force or effect unless it is in writing and expressly referred to as being a Change Order to this Agreement.

7. **Responsible Conduct.** Contractor shall at all times deal in good faith and truthfully with BATA. Contractor shall submit documentation to BATA, including reports, claims, requests for change orders, equitable adjustment, contract modifications or requests of any kind seeking increased compensation or decreases of an obligation on this contract only in good faith and upon an honest evaluation of the underlying circumstances and an honest calculation of any amount being sought. A violation of this standard of conduct will subject the contractor to being deemed “non-responsible” and potentially ineligible for future contracts with BATA.

IN WITNESS WHEREOF two identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by BATA and Contractor respectively, on the dates set out below.

BAY AREA TOLL AUTHORITY	**CONTRACTOR**
Steve Heminger, Executive Director	Name, Title
Date	Date
	Contractors License No.
	Class/Expiration Date

pathname

CONTRACT FORM #2

PERFORMANCE BOND FOR PUBLIC WORKS

KNOW ALL PEOPLE BY THESE PRESENTS: That

WHEREAS, the Bay Area Toll Authority ("BATA") has awarded to

_____

("Principal") a contract described as:

CONTRACT NO. 04-0G420K
San Francisco-Oakland Bay Toll Plaza

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

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

NOW THEREFORE, we, the Principal and

_____

as Surety, are held and firmly bound unto the Bay Area Toll Authority (hereinafter called "BATA"), in the penal sum of **$** _____, lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above-bound Principal, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said contract and any alteration thereof made as therein provided, on their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless BATA, its officers, agents, and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

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

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

IN WITNESS WHEREOF this instrument has been duly executed by Principal and Surety on this

_____ day of _____, 2009.

PRINCIPAL:	**SURETY:**
_____ (Company)	_____ (Company)
_____ (Signature)	_____ (Signature)
_____ (Name – Please Print)	_____ (Name – Please print)
_____ (Title)	_____ (Title)

NOTE: Signatures of those executing for Surety must be acknowledged by a Notary.

NOTE TO SURETY COMPANY:

The following form of acknowledgement should be used. If any other form of acknowledgement is used, there must be submitted a certified copy of unrevoked resolution of authority for the attorney-in-fact.

SURETY COMPANY ATTORNEY-IN-FACT

State of California)

County of _____)

On _____, before me, the undersigned, a Notary Public in and for

the State, personally appeared_____, known
to me to be the duly authorized Attorney-in-Fact of the corporate Surety named in the within instrument, known to me to be authorized to execute that instrument on behalf of said corporation, known to me to be the person whose name is subscribed to such instrument as the Attorney-in-Fact of said corporation, and acknowledged to me that he (she) subscribed the name of said corporation thereto as Surety, and his (her) own name as Attorney-in-Fact and that said corporation executed the same.

WITNESS MY HAND AND OFFICIAL SEAL:

(SEAL)

_____
Notary Public for the State of California

Acknowledgement by Attorney-in-Fact must be attached.
Corporate seals of Principal and Surety must be attached.

CONTRACT FORM #3

PAYMENT BOND FOR PUBLIC WORKS

KNOW ALL PEOPLE BY THESE PRESENTS: That

WHEREAS, the Bay Area Toll Authority ("BATA") and

_____

("Principal") have entered into a Construction Agreement for the furnishing of all materials, labor, services and transportation necessary, convenient and proper to the performance of

CONTRACT NO. 04-0G420K

San Francisco-Oakland Bay Toll Plaza and Carquinez Toll Plazas

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

WHEREAS, said Principal is required by Chapter 5 (commencing at Section 3225) and Chapter 7 (commencing at Section 3247), Title 15, Part 4, Division 3 of the California Civil Code to furnish a bond in connection with said contract;

NOW THEREFORE, we, the Principal and

_____

as Surety, are held and firmly bound unto the Bay Area Toll Authority (hereinafter called "BATA") in the penal sum of **$** _____ in lawful money of the United States of America for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal or its subcontractors, heirs, executors, administrators, successors, or assigns, shall fail to pay any of the persons named in Section 3181 of the California Civil Code, amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such claimant, or for any amounts required to be deducted, withheld and paid over to the Employment Development Department from the wages of employees of the Contractor and Subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to the work and labor, the Surety will pay for the same, in an amount not exceeding the sum hereinabove specified, and also, in case suit is brought upon this bond, 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 Section 3181 of the California Civil Code, so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or any contract, plans, or agreement pertaining or relating to any scheme or work of improvement hereinabove described or pertaining to or relating to the furnishing of labor, materials, or equipment therefor, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement hereinabove described, nor by any rescission or attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from

liability to those for whose benefit such bond has been given, by reason of any breach of contract between BATA and original contractor or on the part of any oblige named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 3110 or 3112 of the California Civil Code, and has not been paid the full amount of its claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF this instrument has been duly executed by Principal and Surety on this

_____ day of _____, 2009.

PRINCIPAL:	**SURETY:**
_____	_____
(Company)	(Company)
_____	_____
(Signature)	(Signature)
_____	_____
(Name – Please Print)	(Name – Please print)
_____	_____
(Title)	(Title)

NOTE TO SURETY COMPANY:

The following form of acknowledgement should be used. If any other form of acknowledgement is used, there must be submitted a certified copy of un-revoked resolution of authority for the attorney-in-fact.

SURETY COMPANY ATTORNEY-IN-FACT

State of California)

County of _____)

On _____, before me, the undersigned, a Notary Public in and for

the State, personally appeared_____, known to me to be the duly authorized Attorney-in-Fact of the corporate Surety named in the within instrument, known to me to be authorized to execute that instrument on behalf of said corporation, known to me to be the person whose name is subscribed to such instrument as the Attorney-in-Fact of said corporation, and acknowledged to me that he (she) subscribed the name of said corporation thereto as Surety, and his (her) own name as Attorney-in-Fact and that said corporation executed the same.

WITNESS MY HAND AND OFFICIAL SEAL:

(SEAL)

_____
Notary Public for the State of California

Acknowledgement by Attorney-in-Fact must be attached.
Corporate seals of Principal and Surety must be attached.

Certificate of Insurance

CONTRACT FORM #4

ACORD — CERTIFICATE OF INSURANCE — ISSUE DATE:

PRODUCER
INSURANCE AGENCY, INC.
1000 MAIN STREET
ANYWHERE, CA 93800

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW

INSURED
ACCURATE CONSTRUCTION COMPANY
18935 NORTHWESTERN HIGHWAY
Oakland, CA 94999

COMPANIES AFFORDING COVERAG

COMPANY A	ACME INSURANCE COMPANY
COMPANY B	DELTA INSURANCE COMPANY
COMPANY C	SHIFTING SANDS MUTUAL INSURANCE COMPANY
COMPANY	
COMPANY	

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

	TYPE OF INSURANCE	POLICY NO.	POLICY EFF. DATE MM/DD/YY	POLICY EXP. DATE MM/DD/YY	ALL LIMITS	
A	**GENERAL LIABILITY** [x] COMMERCIAL GEN. LIABILITY [ ] CLAIMS MADE [X] OCCUR.	WTO 00612	07/01/97	[illegible]	GENERAL AGGREGATE PRODUCTS-COMP/OPS AGGREGATE PERSONAL & ADVERTISING INJURY EACH OCCURRENCE	$2,000,000 $1,000,000 $1,000,000 $1,000,000
B	**AUTOMOBILE LIABILITY** [X] ANY AUTO [X] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [X] HIRED AUTOS [X] NON-OWNED AUTOS	[illegible]	[illegible]	07/01/98	COMBINED SINGLE LIMIT	$1,000,000
A	**EXCESS LIABILITY** [ ] UMBRELLA [ ] OTHER THAN UMBRELLA FORM	[illegible]YZ00064	07/01/97	07/01/98	EACH OCCURRENCE $4,000,000	AGGREGATE $4,000,000 (Per location)
C	**(IF CONTRACT OVER $75,000)** **BUILDERS RISK**	AZZ57297	07/01/97	07/01/98	ALL RISK	AMOUNT OF CONTRACT
C	**WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY**	WTC 906221	07/01/97	07/01/98	STATUTORY [X] (Each accident) (Disease-policy limit) (Disease-each employee)	$1,000,000 $1,000,000 $1,000,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS: CERTIFICATE HOLDER IS AN ADDITIONAL INSURED AS RESPECTS THE ABOVE REFERENCED AUTO LIABILITY, GENERAL LIABILITY AND EXCESS LIABILITY POLICIES. COVERAGE AFFORDED TO THE ADDITIONAL INSURED IS PRIMARY AND NOT EXCESS TO OR CONTRIBUTING WITH ANY OTHER INSURANCE OR SELF-INSURANCE MAINTAINED BY THE ADDITIONAL INSURED.

WAIVER OF SUBROGATION HAS BEEN ENDORSED TO ALL POLICIES AS STATED IN THE CONTRACT DOCUMENTS

CERTIFICATE HOLDER IS LOSS PAYABLE AS RESPECTS THE BUILDERS RISK POLICY.

Sample

CERTIFICATE HOLDER	**CANCELLATION**
BAY AREA TOLL AUTHORITY, ITS OFFICERS, OFFICIALS, EMPLOYEES & VOLUNTEERS **Joseph P. Bort MetroCenter** **101 Eighth Street** **Oakland, California 94607-4700**	**SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ~~ENDEAVOR TO~~ MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, EXCEPT 10 DAYS NOTICE FOR NON-PAYMENT, ~~BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES~~.**
ACORD 25-S (3/90)	**AUTHORIZED REPRESENTATIVE**

CONTRACT FORM #5

ALTERNATE FORM----W9

ALTERNATE TO FORM W-9
Bay Area Toll Authority
Payer's Request for Taxpayer Identification Number and Certification

Name as shown on account *(If joint account, must list and circle the name of the person or entity whose number you enter in part 1 below.)*

Business Name_____

Address _____

City, State, and ZIP code _____

List account number(s) here _____

PART 1 Taxpayer Identification Number --- For All Accounts

Enter your taxpayer Identification number in the appropriate box. For most individuals, this is your social security number.

Social Security Number		Employer Identification Number
| |	**or**	| |

PART 2 For Payees Exempt From Backup Withholding (See Instructions on IRS form W-9)

PART 3 Certification

Under penalty of perjury, I certify that:

(1) The Number shown on this form is my correct Taxpayer Identification Number (or I am waiting for a number to be issued to me), and

(2) I am not subject to backup withholding either because I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or the IRS has notified me that I am no longer subject to backup withholding.

CERTIFICATION INSTRUCTIONS – You must cross out item (2) above if you have been notified by IRS that you are subject to backup withholding because of underreporting interest or dividends on your tax return. However, if after being notified by IRS that you were subject to backup withholding you received another notification from IRS that you are no longer subject to backup withholding, do not cross out item (2).

Please Sign	Signature →	Date

Please check one box in each section below that best describes your type of organization and the transaction for which we make payment to you.

ORGANIZATION:

☐ Individual ☐ Corporation

☐ Two or more Indiv. (Joint) ☐ Real Estate Agent

☐ Sole Proprietorship ☐ Tax-Exempt Organization

TRANSACTION:

☐ Rents (Space & Machine)

☐ Medical & Health Care Service

☐ Other Services (Specify)

☐ Partnership ☐ Public Entity ☐ Interest

☐ Trust /Estate ☐ Other Organization (Specify) ☐ Goods/Merchandise

☐ Freight

☐ Other Transaction (Specify)

SECTION 5. BID FORMS

1. **Bid Form, Schedule of Quantities and Prices, Contractor Information**
2. **Bidder's Bond ***
3. **Designation of Subcontractors – Fair Practices Act**
4. **Affidavit of Non-Collusion ****

*** Form must be acknowledged by a Notary**
****Form must be subscribed and sworn to before Notary Public or other Officer**

PLEASE NOTE:

These forms are designed to contain essential information concerning the Bidder and the bid, and must be completed such that they can be read. If any of the completed forms are illegible, BATA may, at its option, declare the entire bid unresponsive.

BID FORM #1

Bid Form
CONTRACT NO. 04-0G420K
San Francisco-Oakland Bay Bridge Open Road Tolling Project

FROM: BIDDER'S NAME_____

TO: THE BAY AREA TOLL AUTHORITY, STATE OF CALIFORNIA

In compliance with your **Invitation to Bid** for this project, the undersigned Bidder, being thoroughly familiar with the terms and conditions of the Contract Documents, hereby proposes and agrees fully to perform the work within the time stated and in strict accordance with the Contract Documents.

The Bidder hereby acknowledges receipt of the following Addenda to the Contract Documents:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Bidder hereby incorporates by reference all provisions of the Contract Documents that follow this Bid Form.

CONTINUED ON NEXT PAGE è

SCHEDULE OF QUANTITIES AND PRICES
CONTRACT NO. 04-0G420K

San Francisco-Oakland Bay Bridge Open Road Tolling Project

The prices quoted below include all applicable taxes, fees, permits, delivery and other charges as required.

Item No.		Item Description	Unit	Estimated Quantity	Item Price	Project Total
1		Prepare Storm Water Pollution Prevention Plan	LS	1		
2		Temporary Drainage Inlet Protection	EA	16		
3		Construction Area Signs	LS	1		
4		Traffic Control System	LS	1		
5		Remove Yellow Thermoplastic Traffic Stripe	LF	400		
6		Remove Thermoplastic Traffic Stripe	LF	6,750		
7		Remove Thermoplastic Pavement Marking	SQFT	30		
8		Salvage Delineator Curb	LF	480		
9		Remove Concrete Barrier	LF	450		
10		Clearing and Grubbing	LS	1		
11		Demolish Mini Toll Plaza and Pedestrian Walkway Facilities	LS	1		
12		Lead Compliance Plan	LS	1		
13		Hot Mix Asphalt (Type A)	TON	1,770		
14		60" Cast-In-Drilled-Hole Concrete Piling	LF	200		
15		Install Sign Structure (Truss)	LB	44,800		
16		Chain Link Gate	EA	1		
3		Delineator Curb	LF	1,210		
17		Metal Railing	LF	390		
4		Concrete Barrier (Type K) Mod	LF	1,080		
18		Crash Cushion (ADIEM)	EA	1		
19		4" Thermoplastic Traffic Stripe	LF	3,070		
20		8" Thermoplastic Traffic Stripe	LF	3,230		
21		12" Thermoplastic Traffic Stripe	LF	780		
22		Thermoplastic Pavement Marking	SQFT	30		
23		4" Thermoplastic Traffic Stripe (Broken 17-7)	LF	1,000		
24		Pavement Marker (Retroreflective)	EA	164		
25		Install Bus Shelter	EA	1		
26		Portland Cement Concrete Bus Pad	EA	1		
27		Mobilization (10%)	LS	1		
TOTAL BID						

SUBMITTED BY:

Full and Correct Name of Bidder:

_____

_____

Business Address:

_____

_____

Phone: _____

Fax: _____

California Contractor's License:

Number: _____

Class: _____

Expires: _____

CONTRACTOR INFORMATION

The names of all persons as principals interested in the foregoing bid are as follows:

(IMPORTANT NOTICE: If Bidder or other interested person is a corporation, give legal name of corporation, and names of the President and Secretary thereof; if a partnership, give name of the firm, also names of all individual partners composing firm; if Bidder or other interested person is an individual, give first and last names in full. If a Bidder is a joint venture, supply the above information for each joint venture partner.)

_____

_____

_____

_____

_____

The person signing this Bid Form for the Bidder certifies that he or she is authorized by the Bidder to do so and that the Bidder shall be bound contractually by that signature.

Signature _____

Name _____
(Print)

Title _____

Date _____

BID FORM #2

BIDDER'S BOND

KNOW ALL PEOPLE BY THESE PRESENTS: That

WHEREAS the undersigned, _____

as Principal and _____

as Surety, are held and firmly bound unto the Bay Area Toll Authority, a political subdivision of the State of California (hereinafter called "BATA") in the penal sum of **10% of the Total Contract Price** of the Principal above named, submitted by said Principal to BATA for the work described below, for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that a Bid to BATA for performance of that certain construction described as

CONTRACT NO. 04-0G420K

San Francisco-Oakland Bay Bridge Open Road Tolling Project

has been submitted by Principal to BATA.

NOW THEREFORE, if the aforesaid Principal shall not withdraw said bid within **120 calendar days** after said opening, and shall within the period specified therefore, or if no period be specified, within **six working days** after the prescribed forms are presented to Principal for signature, enter into a written contract with BATA in the prescribed form in accordance with the Bid as accepted, and file two bonds with BATA; a Performance Bond in the amount of **100%** of the Contract Amount to guarantee faithful performance of the work under the Contract and a Payment Bond in the amount of **100%** of the Contract Amount to guarantee payment for labor and materials, as required by law, or in the event of the withdrawal of said Bid within the period specified or the failure to enter into such contract and give such bonds within the time specified, if the Principal shall pay BATA the difference between the amount specified in said Bid and the amount for which BATA may procure the required work, if the latter amount be in excess of the former, together with all costs incurred by BATA in again calling for bids, should that become necessary, then the above obligation shall be void and of no effect, otherwise to remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract on the call for Bids, or to the work to be performed thereunder, shall in any way affect its obligation under this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of said Contract or the call for bids, or to the work, or to the specifications.

In the event suit is brought upon this Bond by BATA and judgment is recovered, the Surety shall pay all costs incurred by BATA in such suit, including a reasonable attorney's fee to be fixed by the court in accordance with applicable statutory law.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this _____ day of _____, 2009.

PRINCIPAL:	**SURETY:**
_____ (Company)	_____ (Company)
_____ (Signature)	_____ (Signature)
_____ (Name – Please Print)	_____ (Name – Please print)
_____ (Title)	_____ (Title)

NOTE: Signatures of those executing for Surety must be acknowledged by a Notary.

NOTE TO SURETY COMPANY:

The following form of acknowledgement should be used. If any other form of acknowledgement is used, there must be submitted a certified copy of unrevoked resolution of authority for the attorney-in-fact.

SURETY COMPANY ATTORNEY-IN-FACT

State of California)

County of _____)

On _____, before me, the undersigned, a Notary Public in and for

the State, personally appeared_____, known to me to be the duly authorized Attorney-in-Fact of the corporate Surety named in the within instrument, known to me to be authorized to execute that instrument on behalf of said corporation, known to me to be the person whose name is subscribed to such instrument as the Attorney-in-Fact of said corporation, and acknowledged to me that he (she) subscribed the name of said corporation thereto as Surety, and his (her) own name as Attorney-in-Fact and that said corporation executed the same.

WITNESS MY HAND AND OFFICIAL SEAL:

(SEAL)

_____
Notary Public for the State of California

Acknowledgement by Attorney-in-Fact must be attached.
Corporate seals of Principal and Surety must be attached.

BID FORM #3

DESIGNATION OF SUBCONTRACTORS
IN COMPLIANCE WITH THE
SUBLETTING AND SUBCONTRACTING FAIR PRACTICES ACT
BATA CONTRACT # 04 OG420K

Bidder:_____

Bidder shall completely fill in the form below for each proposed subcontract in excess of one-half percent of Bidder's Total Contract Price or, in bids for the construction of streets or highways, including bridges, in excess of one-half percent of the Bidder's Total Contract Price or $10,000, whichever is greater, in compliance with the Public Contract Code of the State of California, Sections 4100-4114.

Name of Subcontractor	City/State	Portion of Work/Bid Item

Total Contract Amount:$ _____ Amount to be subcontracted: $_____

Percentage to be Subcontracted: _____%

BID FORM 4

AFFIDAVIT OF NON-COLLUSION
to be executed by Bidder and submitted with bid

CONTRACT NO. BATA – 04-0G420K

San Francisco-Oakland Bay Bridge Open Road Tolling Project

State of California)
)
County of _____) .

_____
(Name)
being first duly sworn, deposes and says he or she is

_____ of _____
(Position / Title) (Company)

the party making the foregoing bid and 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.

_____
Signature of Affiant

Subscribed and sworn to before me on this _____day of _____, 2009.

at _____, _____.
(City) (State)

_____
Signature of Notary Public or Officer Taking Oath

Seal of Notary Public or
Officer Taking Oath

SECTION 6. SPECIAL CONDITIONS

SC-1 Indemnification

The Contractor shall indemnify and hold harmless BATA, Caltrans, their Commissioners, directors, officers, agents, and employees from any and all claims, demands, suits, loss, damages, injury, and/or liability, (including any and all costs and expenses in connection therewith), incurred by reason of any negligent or other wrongful act or omission of the Contractor, its officers, agents, employees and subcontractors, or any of them, under or in connection with this Agreement; and the Contractor agrees at its own cost, expense and risk to defend any and all claims, actions, suits, or other legal proceedings brought or instituted against BATA, Caltrans, their Commissioners, directors, officers, agents, and employees, or any of them, arising out of such act or omission, and to pay and satisfy any resulting judgments.

SC-2 Insurance

2.1 Minimum Coverage. Contractor shall, at its own expense, obtain and maintain in effect at all times during the life of this Agreement the following types of insurance against claims, damages and losses due to injuries to persons or damage to property or other losses that may arise in connection with the performance of work under this Agreement, placed with insurers with a Best's rating of A-X or better.

2.1.1 Workers' Compensation Insurance, as required by law, and Employer's Liability Insurance in an amount no less than $1,000,000 (for bodily injury by accident and by disease (policy limit and each employee)). Such policy shall contain a Waiver of Subrogation endorsement in favor of MTC. Such Workers Compensation & Employers Liability may be waived, if and only for as long as Contractor is a sole proprietor with no employees. Should any bridge work require coverage for the United States Longshore Harbor Workers Act, Contractor agrees to furnish proof of insurance if required.

2.1.2 Commercial General Liability Insurance ("occurrence" form), with a combined single limit of not less than $1,000,000 for bodily injury and property damage each occurrence, a combined single limit of not less than $1,000,000 for personal injury and advertising injury, and $2,000,000 general aggregate applying separately to this project.

2.1.3 Owned, Non-Owned and Hired Automobile Liability Insurance in the amount of $1,000,000 each accident.

2.1.4 Contractor to carry Umbrella insurance in the amount of $10,000,000 providing excess limits over Employers Liability, Auto Liability and General Liability.

2.1.5 Property Insurance Contractor at Contractor's expense shall obtain a policy or policies of insurance covering loss or damage, including loss of use, for contractor's own Business Personal Property and materials or property to be purchased and/or installed on behalf of BATA in an amount equal to the full replacement value thereof, as same may exist from time to time. Such policy shall contain a Waiver of Subrogation endorsement in favor of BATA.

Coverage shall be secured for the life of the project, within the definition of "Special Form," and shall include coverage for installation and testing of any equipment that is to be installed or become part of any real property. If such insurance coverage has a deductible clause, the Contractor shall be also liable for the deductible

2.2 Deductibles. Any deductibles or self-insurance retentions over $10,000 are subject to the approval of BATA.

2.3 Notice of Termination. All Contractor policies shall provide that the insurance carrier shall give written notice to BATA at least 60 days prior to cancellation, non-renewal or material change of coverage in the policy or policies, and shall provide notice of such change to BATA and any other additional insured.

2.4 Additional Provisions. Each policy or policies of insurance described in SC 2.1, above shall contain the following provisions:

2.4.1 Inclusion of BATA, Caltrans, and their Commissioners, directors, officers, representatives, agents and employees, as additional insureds with respect to work or operations in connection with this Agreement. This provision shall only apply to Commercial General Liability Insurance and Automobile Liability Insurance.

2. Endorsement providing that such Commercial General Liability insurance and Automobile Liability insurance is primary insurance and no insurance of BATA or Caltrans will be called upon to contribute to a loss.

I

2.5 Claims Made Coverage

If any insurance specified above shall be provided on a claim-made basis, then in addition to coverage requirements above, such policy shall provide that:

2.5.1 Policy retroactive date coincides with or precedes the Contractor's start of work including subsequent policies purchased as renewals or replacements).

2.5.2 Contractor shall make every effort to maintain similar insurance for at least three (3) years following project completion, including the requirement of adding all named insureds.

2.5.3 If insurance is terminated for any reason, Contractor agrees to purchase an extended reporting provision of at least three (3) years to report claims arising from work performed in connection with this Agreement.

2.5.4 Policy allows for reporting of circumstances or incidents that might give rise to future claims.

2.6 Certificates of Insurance. Promptly on execution of this Agreement and prior to commencement of any work hereunder, Contractor shall deliver to BATA Certificates of

Insurance verifying the aforementioned coverage's. Such certificates shall make reference to all provisions and endorsements referred to above and shall be signed on behalf of the insurer by an authorized representative thereof. Contractor agrees, upon written request by BATA, to furnish copies of such policies or endorsements, certified by an authorized representative of the insurer. Contractor agrees to furnish to the BATA Project Manager a copy of all Additional Insured endorsements required under the Agreement within sixty (60) days of the Effective Date of the Agreement.

2.7 Disclaimer. The foregoing requirements as to the types and limits of insurance coverage to be maintained by Contractor are not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by Contractor pursuant hereto, including, but not limited to, liability assumed pursuant to SC-1 of these Special Conditions.

2.8 Subcontractor's Insurance. Contractor shall require each of its subcontractors to provide the aforementioned coverage's, unless such coverage's are waived or reduced in writing by the BATA Project Manager.

2.9 Work and Materials Insurance The Contractor shall be responsible for all loss or damage, howsoever caused, to the work and materials, until final acceptance by BATA. Accordingly, the Contractor shall also procure and maintain at its own expense Work and Materials insurance including but not limited to:

- Builder's Risk,
- Course of Construction,
- Installation Floater or
- Similar first-party property insurance covering the interest of the Contractor, BATA, and Caltrans as follows:

2.9.1 Coverage shall be provided on an "all-risk" basis. Coverage does not need to include the perils of earth movement and water damage.

2.9.2 Coverage shall be provided on the work and materials which is the subject of this Agreement, whether in process or manufacture or finished, including "in transit" coverage to the final agreed upon destination of delivery, and including loading and unloading operations, and such coverage shall be in force until the work and materials are accepted by BATA.

2.9.3 Coverage shall be in an amount no less than the full replacement value of the finished work and materials with no periodic reporting requirements.

2.9.4 The deductible shall not exceed $10,000 per occurrence and shall be borne by the Contractor.

2.9.5 Loss, if any, shall be adjustable with and payable to BATA as trustee for all entities having an insurable interest.

SC-3 Contract Bonds

Prior to execution of the Contract, the Contractor shall file with BATA on the forms provided herein, two surety bonds in the amounts and for the purposes noted below, duly executed by a reputable surety company satisfactory to BATA; *provided, however,* that no bonds are required on contracts of $25,000 or less. Contractor shall pay all premiums and costs relating to required bonds, whether direct or incidental thereto. Both Contractor and surety shall sign each bond.

3.1 Payment Bond. The Payment Bond shall be in an amount of 100% of the Total Contract Price and shall inure to the benefit of persons performing labor or furnishing materials in connection with the work of the proposed Contract. This bond shall be maintained in full force and effect until all work under the Contract is completed and accepted by BATA, and until all claims for materials and labor have been paid.

3.2 Performance Bond. The Performance Bond shall be in an amount of 100% of the Total Contract Price and shall insure the faithful performance by the Contractor of all work under the Contract. It shall also insure the replacing of, or making acceptable, any defective materials or faulty workmanship.

3.3 Surety Requirements. Sureties for necessary bonds (including Bid Bond, Performance Bond and Payment Bond) shall be executed by a surety company(ies) acceptable to BATA with a Best Guide Rating of "A 10" or better and authorized to execute such in the State of California.

Should any surety or sureties be deemed unsatisfactory at any time by BATA notice will be given the Contractor to that effect, and Contractor shall forthwith substitute a new surety or sureties satisfactory to BATA; *provided, however,* that the time set out in the Notice of Award for submitting bonds shall not be extended thereby. No further payment shall be deemed due or will be made under the Contract until the new sureties qualify and are accepted by BATA.

All alterations, time extensions, extra and additional work, and other changes authorized by the Specifications, or any part of the Contract, may be made without securing consent of the surety or sureties on the contract bonds.

SC-4 Time for Performance

The time limit for completion of all work under the Contract is one hundred thirty-nine **(139) calendar days** commencing on the **twentieth (20th) calendar day** following the issuance by BATA of a Notice of Award (NOA).

SC-5 Liquidated Damages

The Contractor agrees that its failure to complete the work or any part thereof within the time periods or by the dates specified in the Contract, as such time periods or dates may be revised by Change Order will result in damages being sustained by BATA. Since it is impractical and infeasible to determine the actual amount of such damage, it is further agreed that the Contractor

shall pay to BATA, as agreed, fixed and liquidated damages and not as a penalty, the amount specified hereunder for each day of delay or part thereof until such work or part thereof is completed and accepted, and the Contractor and its surety shall be liable for the amount thereof.

BATA may deduct the sum of liquidated damages from progress or final payment(s) due under this Contract as follows:

- **$5,000 per day for each and every calendar day's delay in completion of the project.**
- **For each 10 minute interval or fraction thereof past the time specified to reopen a closure, BATA will deduct $8,500 per interval from moneys due or may become due the Contractor under the contract.**

SC-6 Contract Data Requirements

The Contractor shall submit to BATA the items shown on the Contract Data Requirement List and the Technical Submittals List (both appearing in this Section 6.0, Special Conditions) in compliance with the times and in the number of copies specified therein. Requirements and procedures for preparing and transmitting items shown on the Technical Submittals List shall conform to the following:

6.1 Drawings. The Contractor shall prepare working and shop drawings as required by BATA for the performance of the work. Drawings shall be prepared on a reproducible sheet measuring 559mm x 864mm, unless otherwise approved. Each drawing shall have a blank area 127mm x 127mm minimum, located above the title block, for the acceptance stamp. The title block shall display the following:

- Contract number and name
- Number and title of drawing
- Date of drawing or revision
- Name of the Contractor and Subcontractor originating drawing
- Clear identification of contents and location of work
- Structural calculations signed and sealed by a California licensed civil engineer**,** where applicable.

6.2 Detail Drawings. The Contractor shall furnish detail drawings for temporary work and method of proposed construction for the safe and successful completion of the work.

6.3 Submittal. Cover Letter Submittals shall be accompanied by a "Submittal Cover Letter" form neatly and properly filled out. Forms will be furnished by BATA.

6.4 Copies of Drawings. The Contractor shall submit two reproducible and six legible copies of complete and detailed working and shop drawings, which shall be suitable for microfilming, to BATA. Such drawings shall include but not be limited to:

- Fabrication and erection drawings, schedule drawings and manufacturer's scale drawings. If requested by BATA, Contractor shall furnish calculations and information substantiating the details shown on the drawings satisfactory to BATA.

- Plans for temporary structures, and for such other work as may be required for construction, which does not become an integral part of the completed project. The Contractor shall submit two copies of the calculations and other information needed to describe in detail the temporary structures or systems and their intended use.

All submittals for electrical equipment shall conform to the provisions of the contract. All electrical materials shall be tagged in conformance with the provisions of GC-49, Certificates of Compliance and Testing**,** before delivery to the work site. Untagged electrical materials will be rejected.

6.5 Time for Submittal. The Contractor shall submit drawings and schedules sufficiently in advance of construction requirements as indicated in SC-51. The Contractor shall also submit six copies of supporting data such as manufacturer's literature for all items.

The approval of drawings and schedules will be general and shall not be construed as:

- Permitting any departure from contract requirements;
- Offering relief from the responsibility for any errors, or omissions including details, dimensions, and materials;
- Approving departures from details furnished by the Engineer, except as otherwise provided in **Section 10.0 Construction Details**.

6.6 Variations. If drawings show variations from contract requirements because of standard shop practice or for any other reason, such variations shall be described in the letter of submittal.

- BATA may approve or reject any or all variations.
- If variations result in an adjustment to the contract price or time for performance, the adjustment shall be subject to approval by BATA.
- Failure to describe variations shall not relieve the Contractor from the responsibility of executing the work in accordance with the Contract, even though such drawings have been approved.

6.7 Corrections. If corrections to the drawings are required, each print will be marked "MAKE CORRECTIONS NOTED" or "AMEND AND RESUBMIT" and the required corrections will be explained. One print and one reproducible copy will be returned for correction.

6.8 Re-submittals. Re-submittals will be handled in the same manner as first submittals, and the same review time shall apply.

- Specific attention shall be directed to revisions other than those requested by BATA on previous submittals by an accompanying letter or on the resubmitted drawings.
- If any corrections shown on the drawings constitute a change of contract requirements, BATA shall be notified, as previously specified.

6.9 Acceptance. If accepted by BATA, each copy of the drawing will be stamped and dated indicating acceptance. One print and one reproducible copy will be returned.

6.10 Changes. When working and shop drawings have been completed to the satisfaction of BATA, the construction shall be carried out in accordance with such drawings, and no changes shall be made thereon except upon written direction from the Engineer.

During execution of the work, the Contractor shall use only drawings that are either stamped "**MAKE CORRECTION NOTED**" or "**NO EXCEPTIONS TAKEN"** and bear BATA's signature.

6.11 Damages. The Contractor shall take responsibility for, and bear all cost of, damages that may result from ordering material or from proceeding with work before approval by BATA.

6.12 Samples. The Contractor shall furnish samples as specified and requested by BATA as soon as possible after request. Unless otherwise indicated, not less than two identical samples of each type required shall be submitted.

Shipping charges on samples shall be prepaid by the Contractor. Products for which samples are requested shall not be used until approved in writing by BATA. Each sample shall be labeled to indicate:

- Name of project and Contract number
- Name of the Contractor and Subcontractor or Supplier, if applicable
- Material or equipment represented
- Source
- Name of producer and brand (if any)
- References to the parts of Section 10, which are applicable to the sample
- Location of work

Certain samples may be tested by BATA. Approved samples not destroyed in testing may be retained by BATA. Samples not approved will be returned at the Contractor's expense, if so requested at the time of submittal.

6.13 Shipment Letter. A letter shall be mailed under separate cover submitting each shipment of samples and detailing the information required in the preceding paragraph. A copy of the letter shall be enclosed with the shipment.

6.14 Test Results. Documents such as certificates, reports, and test results specified in Section 10. Construction details shall be submitted to BATA.

- Three copies of each required shall be submitted, unless specified otherwise.
- Notice of completion of work to hold points specified in the encroachment permit must be given to BATA fourteen (14) calendar days before estimated completion of that work.

6.15 Payment. The Contractor shall receive no separate payment from BATA for complying with the above requirements and is presumed to have allocated such costs to bid price.

SC-7 Permits and Fees

The Contractor shall be responsible for securing a copy of BATA acquired permits from BATA and shall comply with said permits requirements. The Contractor shall pay all charges required to comply with the conditions outlined in the permits.

The following permits will be obtained by BATA prior to the notice to proceed unless otherwise specified:

- Caltrans Encroachment Permit issued to BATA

The Contractor shall apply for all jurisdictional permits required to perform the work and will include the cost of the required permits in the bid price.

***Caltrans Permit** – The Contractor shall obtain a copy of the Caltrans encroachment permit issued to the Bay Area Toll Authority and shall comply with all provisions of said permit.*

Contractor shall apply for Caltrans' construction encroachment permit within ten (10) days after the Notice of Award. The Contractor obtained Caltrans' construction encroachment permit will require, but is not limited to, the following provisions:

(1) Proof of payment and performance surety bonds.
(2) Permit fee will be waived by Caltrans.
(3) Other conditions as stipulated in said permit to be issued by Caltrans to BATA.

Full compensation for complying with these permit requirements shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefore.

SC-8 Materials & Services

8.1 Source of Supply and Quality of Materials The Contractor shall furnish all materials required to complete the work, except materials that are designated in the specifications to be furnished by BATA ("Owner") and materials furnished by BATA.

Only materials conforming to the requirements of the specifications shall be incorporated in the work.

The materials furnished and used shall be new, except as may be provided elsewhere in these specifications or on the contract plans. The materials shall be manufactured, handled and used in a workmanlike manner to ensure completed work in accordance with the plans and specifications.

Materials to be used in the work will be subject to inspection and tests by the Engineer or the Engineer's designated representative. The Contractor shall furnish without charge such samples as may be required.

The Contractor shall furnish the Engineer a list of the Contractor's sources of materials and the locations at which those materials will be available for inspection. The list shall be submitted on a BATA-furnished form and shall be furnished to the Engineer in sufficient time to permit inspecting and testing of materials to be furnished from the listed sources in advance of their use. BATA-furnished materials shall be identified within the baseline schedule as a separate activity as detailed in SC-23, Progress Schedule. The Engineer may inspect, sample or test materials at the source of supply or other locations, but the inspection, sampling or testing will not be undertaken until the Engineer is assured by the Contractor of the cooperation and assistance of both the Contractor and the supplier of the material. The Contractor shall assure that the Engineer or the Engineer's authorized representative has free access at all times to the material to be inspected, sampled or tested.

It is understood that the inspections and tests if made at any point other than the point of incorporation in the work in no way shall be considered as a guaranty of acceptance of the material nor of continued acceptance of material presumed to be similar to that upon which inspections and tests have been made, and that inspection and testing performed by BATA shall not relieve the Contractor or the Contractor's suppliers of responsibility for quality control.

Manufacturers' warranties, guaranties, instruction sheets and parts lists, which are furnished with certain articles or materials incorporated in the work, shall be delivered to the Engineer before acceptance of the contract.

Reports and records of inspections made and tests performed, when available at the site of the work, may be examined by the Contractor.

8.2. Owner Furnished Materials: The following materials will be furnished to the Contractor by BATA:

A. Overhead sign structures (truss) including hardware to mount Changeable Message Sign (CMS) panels.
B. CMS panels, including the controller units, power supplies, communication cables and interface equipment, spare parts, and control software, will be furnished to the Contractor. The Contractor shall furnish the Field cabinets for the CMS System.

Owner-furnished materials will be made available at a location in the San Francisco Bay Area to be specified by the Engineer. The Contractor shall arrange for the pick up, hauling and delivery of Owner-furnished materials in accordance with Section 6-1.02, "State-Furnished Materials," of the State Standard Specifications and these special conditions. Owner furnished materials shall be available for pick-up from the BATA storage facility no earlier than the following dates:

Owner Furnished Material	**Date available for pick-up**
Overhead Sign Structures	December 1, 2009

Changeable Message Sign panels and associated equipment	December 1, 2009

The Contractor shall notify the Engineer not less than five (5) working days before Owner-furnished materials are to be picked up by the Contractor. A full description of the material and the date and time the material will be picked up shall be provided to the Engineer.

Full compensation for pick-up, hauling, delivery, and on-site storage and handling of Owner-furnished materials will be considered as included in the prices paid for installing the Owner-furnished materials and no additional compensation will be allowed therefore.

8.3 Services: Construction staking shall be performed by the Contractor as described in Section 5-1.07, "Lines and Grades," of the State Standard Specifications and these special conditions. Construction stakes shall be provided for the work in accordance with Caltrans "Staking Information Pamphlet, dated May 1999. The following list establishes the minimum level of staking required for this project.

Existing monuments that will be lost due to construction shall be cross-tied and referenced with Surveyor's field notes provided to Engineer to allow for future retracement of monuments.

Limits of clearing will be flagged at 30-meter intervals with 1-meter laths.
Staking for signs shall be two 2-meter straddle stakes.
Sign structures will be staked with two 3-meter straddle stakes.
Finished grade stakes will be provided at 12-meter intervals.

Existing Monuments for horizontal and vertical controls at the locations shown on the plans shall be used to establish the lines and grades required for the completion of the work as shown on the plans.

In the event that the Contractor's operations destroy any of the construction stakes placed by the Contractor, the Contractor shall replace such stakes when instructed by the Engineer at no additional cost to BATA.

The Contractor must independently verify the primary horizontal and vertical control and inform BATA of any significant differences between published values and found values.

The Contractor's temporary horizontal and vertical control and construction stakes and marks shall be furnished and set with accuracy adequate to assure that the contemplated and completed work conforms to the lines, grades, and sections shown on the plans. Vertical alignment, horizontal alignment, and the coordinates of control points will be furnished to the Contractor for his/her use in performing the construction staking.

All computations necessary to establish the exact position of the work from control points shall be made by the Contractor. All computations, survey notes, and other records necessary to accomplish the work shall be neat, legible and accurate and be in a format as outlined in

Caltrans' Staking Manual. Such computations, notes, and other records shall be made available to the Engineer immediately upon completion of staking and prior to the start of related construction. Contractor will provide systematic and organized copies of all field notes and cut sheets to BATA no later than 24 hours following completion of field survey staking and 48 hours prior to use. Said notes shall contain all pertinent survey information including names of party chief, crewmembers, and date of survey. Submission of notes and cut sheets shall not be construed as acceptance or approval by BATA of the accuracy of the stakes.

In the event the Contractor's operations destroy any of the project control points established by the Engineer, other than those designated on the plans to be relocated, the Contractor shall either replace such control points at his expense, subject to verification by the Engineer, or request the Engineer to replace the destroyed control points. If requested to replace the control points, the Engineer will do so within ten (10) working days. The cost of any such verification or replacement of the Engineer's project control points will be deducted from any monies due or to become due the Contractor. The Contractor will not be allowed any adjustment in contract time for such verification or replacement of survey control points by the Engineer.

The Contractor shall notify BATA of any conflicts between design and existing conditions and submit a Request for Information (RFI) before commencing survey.

BATA will perform periodic verification surveys to assure the quality of construction staking effort. BATA verification surveys may be performed at any time.

The Contractor shall submit to the Engineer a schedule of values for the contract item "Construction Staking" in advance of the work in accordance with SC-51.

Payment
The contract lump sum price paid for Construction Staking shall constitute full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in construction staking including verifications of survey data, and providing survey notes, as shown on the plans, as specified in the specifications and as directed by the Engineer.

SC-9 Delivery, Unloading and Storage

The Contractor shall be completely responsible for all delivery, unloading and storage activities required for the completion of work under this contract, including "Owner Furnished Materials" of these special conditions.

SC-10 Work Sequence & Constraints

10.1 Work Sequence When required by these Special Conditions, the Contractor shall follow the sequence of operations as set forth therein.

Attention is directed to "Order of Work" of the Construction Details regarding work sequencing and the "Stage Construction/Traffic Handling Plans" for details of the proposed construction sequencing.

Full compensation for conforming to those requirements will be considered as included in the prices paid for the various items of work and no additional compensation will be allowed thereof.

10.2 Coordination Refer to Article GC-39 Cooperation/ Coordination and Work by Others.

It is anticipated that work by other contractors may be in progress adjacent to and within the limits of this project during progress of the work on this contract at the San Francisco Bay Bridge. Progress schedules for other work/contracts, if available, may be inspected by the Contractor upon approval by the Engineer. Such progress schedules are tentative and cannot be guaranteed accurate.

The CMS Manufacturer selected under another contract will provide the services and materials detailed in these special provisions. The Contractor and the Contractor's CMS Installation Contractor shall provide complete support and work closely with the CMS Manufacturer in the installation and testing of CMS controllers, power supplies, and CMS control software.

The Contractor shall coordinate its Work with all other contractors, utility companies, and subcontractors performing work on or adjacent to the site. The Contractor shall schedule its work so as to avoid conflicts with other contractors and to avoid damage to completed or incomplete Work. The Contractor shall be responsible for any damage to the work of other contractors or subcontractors if the Contractor's actions resulted in such damage. The Contractor shall take immediate action to remedy such damage so as to not delay the immediate prosecution of the work.

Full compensation for providing cooperation for work by others shall be considered as included in the prices for the various items of work involved and no additional compensation will be allowed thereof.

No State-owned parcels adjacent to the right of way are available for the exclusive use of the Contractor within the contract limits. The Contractor shall secure, at the Contractor's own expense, areas required for plant sites, storage of equipment or materials, or for other purposes.

No area is available within the contract limits for the exclusive use of the Contractor. However, temporary storage of equipment and materials on State property may be arranged with the State, subject to the prior demands of State maintenance forces and to other contract requirements. Use of the Contractor's work areas and other State-owned property shall be at

the Contractor's own risk, and the State or BATA shall not be held liable for damage to or loss of materials or equipment located within such areas.

The Contractor shall obtain encroachment permits prior to occupying State-owned parcels outside the contract limits. The required encroachment permits may be obtained from the Department of Transportation, Permit Engineer.

Residence trailers will not be allowed within the highway right-of-way.

The Contractor shall remove equipment, materials, and rubbish from the work areas and other State-owned property that the Contractor occupies. The Contractor shall leave the areas in a presentable condition in conformance with the provisions in **GC-53. Final Clean Up** and **GC-55, Final Inspection and Acceptance of the Work**.

The Contractor shall secure, at the Contractor's own expense, areas required for plant sites, storage of equipment or materials or for other purposes, if sufficient area is not available to the Contractor within the contract limits, or at the sites designated on the plans outside the contract limits.

SC-11 Mobilization

11.1 Mobilization. Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site.

11.2 Payment Attention is directed to **Section GC-59, Invoicing and Progress Payments**. Payments for mobilization will be made as follows:

When the monthly progress payment invoice of the amount earned, not including the amount earned for mobilization, is 5 percent or more of the original contract amount, 50 percent of the contract item price for mobilization or 5 percent of the original contract amount, whichever is the lesser, will be included in the invoice for payment.

When the monthly partial payment invoice of the amount earned, not including the amount earned for mobilization, is 10 percent or more of the original contract amount, the total amount earned for mobilization shall be 75 percent of the contract item price for mobilization or 7.5 percent of the original contract amount, whichever is the lesser, and that amount will be included in the invoice for payment. When the monthly partial payment invoice of the amount earned, not including the amount earned for mobilization, is 20 percent or more of the original contract amount, the total amount earned for mobilization shall be 95 percent of the contract item price for mobilization or 9.5 percent of the original contract amount, whichever is the lesser, and that amount will be included in the invoice for payment.

When the monthly partial payment invoice of the amount earned, not including the amount earned for mobilization, is 50 percent or more of the original contract amount, the total amount earned for mobilization shall be 100 percent of the contract item price for mobilization or 10 percent of the original contract amount, whichever is the lesser, and that amount will be included in the invoice for payment.

After acceptance of the contract pursuant to **GC-55, Final Inspection of All or a Portion of the Work**, the amount, if any, of the contract item price for mobilization in excess of 10 percent of the original contract amount will be included for payment in the first estimate made in conformance with the provisions in **GC-59**, **Invoicing and Progress Payments**.

The contract lump sum price paid for mobilization shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in mobilization as specified herein.

The adjustment provisions in **GC-65, Change Requests and Change Notices**, and in **GC-66, Change Order**, and the retention of funds provisions in GC-59 shall not apply to the contract lump sum item of mobilization.

SC-12 Sound Control Requirements

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

The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by the Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel.

Payment for conforming to the requirements of this section shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for performing all work involved in completing the requirements of this section, and shall be considered as included in the prices paid for the various contract items of work. No additional compensation will be allowed therefor.

SC-13 Worker's Safety Provisions

The Contractor shall promptly and fully comply with, carry out and shall without separate charge therefore to the owner enforce compliance with the safety and first aid requirements stated herein, prescribed by applicable laws and regulations and those prescribed by an official or representative charged with the enforcement thereof. The Contractor shall take such other measures as may be necessary so that work shall be done in a safe manner and that the safety and health of employees and the people of local communities are safeguarded. Compliance with these Special Conditions by subcontractors is the responsibility of the Contractor.

13.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. To that end the Contractor shall:

(1) No later than ten (10) days after receipt of the Notice of Award, submit for review Contractor's Injury Prevention Program (IPP), which shall be site and task specific, and shall meet or exceed the requirements of BATA's Injury Prevention Program, and shall comply with California Labor Code Section 6401.7. Contractor will be responsible for overseeing compliance of their Subcontractors IPP, upon request, the Subcontractors IPP may be reviewed by BATA; and (2) No later than ten days after receipt of Notice of Award, submit the resume of the full time, qualified Safety Representative(s) who reports directly to the Contractor's Project Manager or Superintendent, and allocates 100% of their time to safety oversight for field operations on the above mentioned project. The Contractor's Safety Representative(s) shall have a minimum of five (5) years heavy construction experience in administering safety programs on construction job sites, the last two of which have been administering safety in the construction discipline for which contractor is contracting with Owner. The Contractor Safety Representatives(s) shall be onsite during all operational hours. The full time Safety Representative(s) shall set up, carry forward and aggressively and effectively maintain the aforementioned Safety Program covering all phases of the Work. If at any time the Contractor wishes to replace their Safety Representative(s), the Contractor must provide written notice thirty (30) days prior to change of personnel to BATA. The Contractor shall take all precautions and follow all procedures for the safety of, and shall provide all protection to prevent injury to, all persons involved in any way in the Work and all other persons, including, without limitation, the employees, agents, guests, visitors, invitees and licensees of BATA who may be involved. These precautions shall include, but in no event be limited to the provisions of BATA's IPP. This requirement applies continuously and is not limited to normal working hours.

13.2 Attention is directed to Section 6705 of the Labor Code concerning trench excavation safety plans, "Trench Safety." Excavation for any trench 1.5m or more in depth shall not begin until the Contractor has received approval from the Engineer of the Contractor's detailed plan for worker protection from the hazards of caving ground during the excavation of that trench and any design calculations used in the preparation of the detailed plan.

The detailed plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection during the excavation. No plan shall allow the use of shoring, sloping or a protective system less effective than that required by the Construction Safety Orders of the Division of Occupational Safety and Health. If the plan complies with the shoring system standards established by the Construction Safety Orders, the plan shall be submitted at least 5 days before the Contractor intends to begin excavation for the trench.

If the plan varies from the shoring system standards established by the Construction Safety Orders, the plan shall be prepared and signed by an engineer who is registered as a Civil Engineer in the State of California, and the plan and design calculations shall be submitted at least three (3) weeks before the Contractor intends to begin excavation for the trench. Full compensation for furnishing all plans and working drawings shall be considered as included in the prices paid for the contract items of work that the drawings relate and no additional compensation will be allowed therefor.

13.3 If the Contractor encounters on the Site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB) or other Hazardous Substance (as defined in California Health and Safety Code, Chapter 6.6, and all regulations pursuant thereto and paragraph 1.5 below) which has not been rendered harmless, the Contractor shall immediately stop Work in that area affected and report the condition to BATA in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of BATA and Contractor if in fact the material is asbestos or polychlorinated biphenyl (PCB) or other hazardous substance and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB) or other hazardous substance, or when it has been rendered harmless, by written agreement of BATA and the Contractor, or in accordance with a final determination by an Environmental Consultant employed by BATA.

The Contractor shall not be required pursuant to GC- 9 to perform without consent any Work relating to asbestos, polychlorinated biphenyl (PCB) or other hazardous substance.

The Contractor shall not permit any hazardous substances to be brought onto or stored at the Project Site or used in the construction of the Work, except for specified materials and commonly used construction materials for which there are no reasonable substitute. All such materials shall be handled in accordance with all manufacturers' guidelines, warnings and recommendations and in full compliance with all applicable laws. All notices required to be given with respect to such materials shall be given by the Contractor. The Contractor shall not intentionally release or dispose of hazardous substances at the Project Site or into the soil, drains, surface or ground water, or air, nor shall the Contractor allow any Subcontractor, Sub-subcontractor or Supplier or any other person for whose acts the Contractor or any Subcontractor, Sub-subcontractor or Supplier may be liable, to do so. For purposes of Contract Documents, "hazardous substance" means any substance or material which has been determined or during the time of performance of the Work is determined to be capable of posing a risk of injury to health, safety, property or the environment by any federal, state or local governmental authority.

The Contractor and Subcontractors of each tier shall provide BATA with Material Safety Data Sheets for all materials to be incorporated into or used in the prosecution of the Work to be performed, including commonly used construction materials, which contain any hazardous substance or mixture, including without limitation any chemical listed by the State of California as a chemical known to cause cancer or reproductive harm (as defined in California Health and Safety Code, Chapter 6.6, and all regulations pursuant thereto). The Material Safety Data Sheets shall contain all necessary and legally required information concerning such substances as asphalt's, solvents, adhesives, epoxy resins, roofing sealant and bonding agents, mixtures or chemicals, in a format agreed to by BATA or as required by law.

The Contractor shall set forth in writing its safety precautions and programs in connection with the Work, which meets or exceeds any and all applicable laws, ordinances, rules, regulations, and orders of any public, quasi-public, or other authority relating to the safety of persons and their protection against injury, specifically including, but in no event limited to the:

Federal Occupational Safety and Health Act of 1970, as amended, California Occupational Safety and Health Act of 1973, the Labor Code, and all rules and regulations now or hereafter in effect pursuant to the Act and the requirements of BATA as outlined in Highway Construction IPP.

In the event of conflicting requirements, the more stringent requirement shall govern.

All Work, whether performed by the Contractor, or its Subcontractors of all tiers or anyone directly or indirectly employed by any of them, and all equipment, machinery, materials, tools and like items incorporated or used in the Work, shall be in compliance with and conform to:

All applicable laws, ordinances, rules, regulations, and orders of any public, quasi-public, or other authority relating to the safety of persons and their protection against injury, specifically including, but in no event limited to, the Federal Occupational Safety and Health Act of 1970, as amended, and all rules and regulations now or hereafter in effect pursuant to said Act; and Contractor shall provide, or cause to be provided, each worker on the Project Site the proper safety equipment for the duties performed by that worker and will not permit any worker on the Project Site who fails or refuses to use the same. BATA shall have the right, but not the obligation, to order Contractor to send a worker off the Project Site for the day or to discharge a worker for his or her failure to comply with safety practices.

13.4 The Contractor shall, throughout the performance of the Work, maintain adequate and continuous protection of all Work and temporary facilities against loss or damage from whatever cause. The Contractor shall protect the property of BATA and third parties from loss or damage from whatever cause arising out of the performance of Work and shall comply with the requirements of BATA, its insurance carriers and with all applicable laws, codes, rules and regulations with respect to the prevention of loss or damage to property as a result of fire or other hazards to:

- Employees on the Work and other persons who may be affected thereby;
- The Work and materials and equipment to be incorporated therein, whether in storage on or off the Site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- Other property at the Site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.
- Solvents, oils and any other substance, which may be harmful to plant life, shall be disposed of in containers and removed from the Site. At completion of the Work, any contaminated soil shall be removed and replaced with soil of equal quality prior to contamination by the Contractor at no increase in Contract Sum.

13.5 BATA may make periodic patrols of the Project Site as a part of its normal security and safety program. The Contractor shall not be relieved of its aforesaid responsibilities and BATA shall not assume same, nor shall it be deemed to have assumed,

any responsibility otherwise imposed upon the Contractor, as a result of safety patrols by BATA.

13.5.1 The Contractor shall be responsible for the payment of all fines levied against BATA arising from or related to activities over which Contractor has responsibility under Contract Documents, or for Work that does not conform to the Contract Documents.

The Contractor shall give notice in writing, at least forty-eight (48) hours before breaking ground, to all persons having interests on or near the Site, Public Utility Companies, owners of property having structures or improvements in proximity to the Site of the Work, Superintendents, Inspectors, or those otherwise in charge of property, streets, water pipes, gas pipes, sewer pipes, telephone cables, electric cables, railroads or otherwise who may be affected by the Contractor's operation, in order that they may remove any obstruction for which they are responsible and have a representative on Site to see that their property is properly protected. Such notice does not relieve the Contractor of responsibility for any damages, claims, and defense of all actions against BATA resulting from performance of such Work.

13.5.2 The Contractor shall erect and maintain, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent Sites and utilities.

13.5.3 Use or storage of explosives is prohibited.

13.5.4 The Contractor shall rebuild, repair, restore and make good all losses of, and injuries or damages to, the Work or any portion thereof (specifically including owner-supplied, equipment or other items to be utilized in connection with, or incorporated in the Work) before final acceptance of the Work. Such rebuilding, repair or restoration shall be at the Contractor's sole cost and expense unless the loss, injury or damage requiring such rebuilding, repair or restoration is caused by a hazard against which BATA is insured if the loss, injury or damage would not have occurred but for the negligent act or omission of the Contractor, or its Subcontractors of any tier or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, the rebuilding, repair or restoration shall be at the Contractor's cost and expense to the extent of the deductible in said insurance. If any policy of insurance covering loss or damage to the Work is voided due to any action of the Contractor or any of its Subcontractors of any tier, such rebuilding, repair or restoration shall be at the Contractor's sole cost and expense.

13.6 The Contractor shall designate a competent person for each task, as required by Cal-OSHA laws. The task competent person shall be approved by BATA, to be responsible for the prevention of accidents. If BATA or any public agency with jurisdiction notifies the Contractor of any claimed dangerous condition at the Site that is within the Contractor's care, custody or control, the Contractor shall take immediate action to rectify the condition at no additional cost to BATA. The Contractor shall be responsible for the payment of all fines

levied against BATA for deficiencies relating to the Contractor's supervision or conduct and /or control of the Work.

The Contractor shall not load or permit any part of the construction or Site to be loaded so as to endanger safety of persons or property.

The Contractor shall not permit open fires on the Project Site.

The Contractor shall no later than ten days following award forward the Emergency Action Plans to BATA.

No later than five (5) working days prior to the arrival of a crane, the Contractor must provide the most recent annual and quadrennial certificates. The Contractor must also provide crane operator certificates from the National Commission for the Certifying of Crane Operators (NCCCO), as outlined in IPP**,** no later than five working days prior to a crane operator working onsite.

Job Hazard Analysis shall be forwarded to BATA no later than five working days prior to operation being performed. All accident investigations by the Contractor shall be forwarded to BATA no later than five working days following an accident.

The Contractor shall return all improvements on or about the Site and adjacent property which are not shown to be altered, removed or otherwise changed to conditions which existed previous to starting performance under the Contract.

13.7 Emergencies In any emergency affecting the safety of persons or property, or in the event of a claimed violation of any Federal or State safety or health law or regulation, arising out of or in any way connected with the Work or its performance, Contractor shall ensure that at least one of Contractor's employees with authority shall be on duty during working hours**,** and act immediately to prevent threatened damage, injury or loss or to remedy said violation, whichever is applicable, failing which BATA may immediately take whatever action it deems necessary, including, but not limited to, suspending the Work as provided in GC-69. Contractor shall also establish and maintain adequate First Aid facilities at locations close to work areas, and mark such locations with signs of adequate size and composition. Contractor shall also ensure that at least one CPR/ first aid trained employee for every fifteen (15) employees onsite. At no time shall less than two (2) CPR/first aid trained employees be onsite during operational hours. Training records or certificates for initial and renewal CPR/ first aid training shall be forwarded to BATA no later than ten (10) days following notice of award.

SC-14 Hazardous Materials

The Contractor shall submit Material Safety Data Sheets (MSDS) for all hazardous materials being brought onto the project site, including but not limited to: asphalts, solvents, adhesives, epoxy resins, roofing sealants and bonding agents.

14.1 Aerially Deposited Lead Aerially Deposited Lead is defined as lead deposited within the unpaved areas of the project Right of Way, primarily due to vehicle emissions. Materials with total levels of lead greater than the Total Threshold Limit Concentration (TTLC) of 1000 milligrams per kilogram (mg/kg) or solubility levels, as established by the California Waste Extraction Test (WET), greater than the Solubility Threshold Limit Concentration (STLC) of 5 milligrams per liter (mg/1) shall be considered hazardous pursuant to California Code of Regulations, Title 22. The materials with aerially deposited lead are not regulated under the Federal Resource Conservation and Recovery Act (RCRA).

Aerially deposited lead contamination has been discovered through testing of materials within the project limits.

A report describing the results of the testing of materials within the project limits is available for inspection at BATA.

Caltrans has received from the California Department of Toxic Substance Control (DTSC) a Variance regarding the use of material containing aerially deposited lead. This project is subject to the conditions of the Variance, as amended. The Variance is available for inspection at BATA.

Provisions of this section shall be made a part of every subcontract executed pursuant to this contract. The Contractor shall comply with the conditions of the variance.

Excavation, transportation, placement and handling of soils containing aerially deposited lead shall result in no visible dust. The Contractor shall have a water truck available at all times while performing earthwork, excavation or grubbing activities in work areas containing aerially deposited lead at hazardous levels.

Once the Contractor has completed the placement of materials containing aerially deposited lead, in accordance with the plans, as specified in these special conditions, the Contractor shall have no responsibility for such materials in place and shall not be obligated for further cleanup, removal or remedial actions for such materials.

Excavation, reuse, and disposal of material with aerially deposited lead shall be in accordance with all rules and regulations of agencies including, but not limited to, the following:

- United States Department of Transportation (USDOT)
- United States Environmental Protection Agency (USEPA) California Department of Health Services
- California Environmental Protection Agency (Cal-EPA)
- Department of Toxic Substances Control (DTSC), Region 2 Integrated Waste Management Board
- Regional Water Quality Control Board (RWQCB), Region 2 State Air Resources Control Board

- Bay Area Air Quality Management District (BAAQMD)
- California Division of Occupational Safety and Health Administration (CAL-OSHA)

The Contractor shall prepare a project specific Health and Safety Plan to prevent or minimize exposure to potentially hazardous levels of lead. The Contractor's attention is directed to Title 8, California Code of Regulations, Section 5192 (b) (4) 03) and the Occupational Safety and Health Guidance Manual published by National Institute of Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), and USEPA for elements of the site safety plan. The Health and Safety Plan shall 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, air monitoring plan, personal protective equipment, delineation of work zones on-site, decontamination procedures, general safe work practices, security measures, emergency response plans and worker training.

The Health and Safety Plan shall utilize monitoring and exposure standards based on Construction Standards of Title 8, California Code of Regulations Section 1532.1 and as a minimum shall contain a description of activities, specific means employed to achieve compliance, report of the technology considered, schedule for implementation of the program, a work practice program, administrative control schedule, description of arrangements for information transfer between contractors concerning potential exposure to lead and other relevant information. The Health and Safety plan shall be approved by the Contractor's Certified Industrial Hygienist before submission to the Engineer. The plan shall be submitted to the Engineer for review and acceptance at least 15 days prior to beginning any work in areas containing aerially deposited lead.

Prior to performing any work in areas containing lead, personnel who have no prior training or are not current in their training status, including BATA, and BATA consultant’s personnel, shall complete a safety training program provided by the Contractor, which meets the requirements of Title 8, California Code of Regulations, Section 1532.1.

Personal protective equipment, training, and medical surveillance required by the Contractor's Health and Safety Plan shall be supplied to BATA personnel by the Contractor. The number of BATA personnel will be five (5).

Full compensation for the Health and Safety Plan including furnishing all the labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing the Health and Safety Plan, including paying a Certified Industrial Hygienist, and for providing personal protective equipment, training and medical surveillance, as specified in these special conditions, and as directed by the Engineer shall be considered as included in the lump sum price paid for Site Health and Safety Plan and no additional compensation shall be allowed therefor.

14.2 Removal of Asbestos and Hazardous Substances When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor reasonably believes to be asbestos or a hazardous substance as defined in Section 25916 and 25317 of California Code

of Regulations, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe. The Contractor shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In conformance with Section 25914.2 of the Health and Safety Code, removal of asbestos or hazardous substances including exploratory work to identify and determine the extent of the asbestos or hazardous substance will be performed by separate contract.

Pursuant to Section 25169.3 (e) of CH&SC, a DTSC certified waste hauler must transport hazardous waste to an appropriate waste disposal facility. Waste profiling and manifesting shall conform to the requirements in accordance with Health and Safety Code.

If delay of work in the area delays the current controlling operation, the delay will be considered a right of way delay and the Contractor will be compensated for the delay in conformance with the provisions in GC-32, Excusable Delays and Extension of Time.

SC-15 Construction Water Conservation

The Contractor shall, whenever possible and not in conflict with other requirements of the Contract, minimize the use of water during construction of the project. Watering equipment shall be kept in good working order; water leaks shall be repaired promptly; and washing of equipment, except when necessary for safety or for the protection of equipment, shall be discouraged. All water used for construction purposes such as dust control, compaction, cleaning streets, etc., may be reclaimed water.

SC-16 Air Pollution Control

The Contractor shall comply with all air pollution control ordinances and statutes which apply to any work performed pursuant to the contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Section 11017 of the Government Code.

Unless otherwise provided in the special provisions, material to be disposed of shall not be burned, either inside or outside the highway right of way.

SC-17 Contractor Cooperation and Coordination

Contractor shall conform to the Section SC-10-2, “Coordination,” and this section of these special conditions. Contractor shall cooperate with and coordinate its work with any private development work, utility relocation work or any other contractor, which may be performing work in the immediate area of this work.

If required Contractor shall attend weekly coordination meeting to review construction status problems, schedule, concerns, etc. and to resolve any outstanding issues, as directed by the Engineer.

SC-18 Time Related Overhead

The Contractor will be compensated for time-related overhead as described below and in conformance with “Force Account Payment” of these special provisions. The Contractor will not be compensated for time-related overhead for delays to the controlling operations caused by the Engineer that occur prior to the first working day, but will be compensated for actual overhead costs incurred, as determined by an independent Certified Public Accountant audit examination and report.

Attention is directed to "Beginning of Work, Time of Completion and Liquidated Damages," "Force Account Payment," and "Progress Schedule (Critical Path Method)" of these special provisions.

The provisions in Section 9-1.08, "Adjustment of Overhead Costs," of the Standard Specifications shall not apply.

Time-related overhead shall consist of those overhead costs, including field and home office overhead, that are in proportion to the time required to complete the work. Time-related overhead shall not include costs that are not related to time, including but not limited to, mobilization, licenses, permits, and other charges incurred only once during the contract. Time-related overhead shall not apply to subcontractors of any tier, suppliers, fabricators, manufacturers, or other parties associated with the Contractor.

Field office overhead expenses include time-related costs associated with the normal and recurring operations of the construction project, and shall not include costs directly attributable to the work of the contract. Time-related costs of field office overhead include, but are not limited to, salaries, benefits, and equipment costs of project managers, general superintendents, field office managers and other field office staff assigned to the project, and rent, utilities, maintenance, security, supplies, and equipment costs of the project field office.

Home office overhead or general and administrative expenses refer to the fixed costs of operating the Contractor's business. These costs include, but are not limited to, general administration, insurance, personnel and subcontract administration, purchasing, accounting, and project engineering and estimating. Home office overhead costs shall exclude expenses specifically related to other contracts or other businesses of the Contractor, equipment coordination, material deliveries, and consultant and legal fees.

The quantity of time-related overhead associated with a reduction in contract time for cost reduction incentive proposals accepted and executed in conformance with the provisions in Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications shall be considered a construction cost attributable to the resultant estimated net savings due to the cost reduction incentive.

If the final increased quantity of time-related overhead exceeds 149 percent of the number of working days specified in the Engineer's Estimate, the Contractor shall, within 60 days of the Engineer's written request, submit to the Engineer an audit examination and report performed by an independent Certified Public Accountant of the Contractor's actual overhead costs. The audit examination and report shall depict the Contractor's project and company-wide financial records and shall specify the actual overall average daily rates for both field and home office overhead for the entire duration of the project, and whether the costs have been properly allocated. The rates of field and home office overhead shall exclude unallowable costs as determined in the Federal Acquisition Regulations, 48 CFR, Chapter 1, Part 31.

Independent Certified Public Accountant's audit examinations shall be performed in conformance with the requirements of the American Institute of Certified Public Accountants

Attestation Standards. Audit examinations and reports shall determine if the rates of field office overhead and home office overhead are:

A. Allowable in conformance with the requirements of the Federal Acquisition Regulations, 48 CFR, Chapter 1, Part 31.
B. Adequately supported by reliable documentation.
C. Related solely to the project under examination.

Within twenty (20) days of receipt of the Engineer's written request, the Contractor shall make its financial records available for audit by the State for the purpose of verifying the actual rate of time-related overhead specified in the audit submitted by the Contractor. The actual rate of time-related overhead specified in the audit, submitted by the Contractor, will be subject to approval by the Engineer.

If the Engineer requests the independent Certified Public Accountant audit, or if it is requested in writing by the Contractor, the contract item payment rate for time-related overhead, in excess of 149 percent of the number of working days specified in the Engineer's Estimate, will be adjusted to reflect the actual rate.

The cost of performing an independent Certified Public Accountant audit examination and submitting the report, requested by the Engineer, will be borne equally by the State and the Contractor. The division of the cost will be made by determining the cost of providing an audit examination and report in conformance with the provisions of Section 9-1.03B, "Work Performed by Special Forces or Other Special Services," of the Standard Specifications, and paying to the Contractor one-half of that cost. The cost of performing an audit examination and submitting the independent Certified Public Accountant audit report for overhead claims other than for the purpose of verifying the actual rate of time-related overhead shall be entirely borne by the Contractor. The cost of performing an audit examination and submitting the independent Certified Public Accountant audit report to verify actual overhead costs incurred prior to the first working day shall be entirely borne by the Contractor.

The quantity of time-related overhead to be paid will be measured by the working day, designated in the Engineer's Estimate as WDAY. The estimated number of working days is the number of working days, excluding days for plant establishment, as specified in "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions. The quantity of time-related overhead will be increased or decreased only as a result of suspensions or adjustments of contract time which revise the current contract completion date, and which satisfy any of the following criteria:

A. Suspensions of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications, except:

    1. Suspensions ordered due to weather conditions being unfavorable for the suitable prosecution of the controlling operation or operations.
    2. Suspensions ordered due to the failure on the part of the Contractor to carry out orders given, or to perform the provisions of the contract.

3. Suspensions ordered due to factors beyond the control of and not caused by the State or the Contractor, for which the Contractor is granted extensions of time in conformance with the provisions of the third paragraph of Section 8-1.07, "Liquidated Damages," of the Standard Specifications.
4. Other suspensions that mutually benefit the State and the Contractor.

B. Extensions of contract time granted by the State in conformance with the provisions in the fifth paragraph in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and set forth in approved contract change orders, in conformance with the provisions in Section 4-1.03, "Changes," of the Standard Specifications.
C. Reductions in contract time set forth in approved contract change orders, in conformance with the provisions in Section 4-1.03, "Changes," of the Standard Specifications.

In the event an early completion progress schedule, as defined in "Progress Schedule (Critical Path Method)" of these special provisions, is submitted by the Contractor and approved by the Engineer, the amount of time-related overhead eligible for payment will be based on the total number of working days for the project, in conformance with the provisions in "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions, rather than the Contractor's early completion progress schedule.

The contract price paid per working day for time-related overhead shall include full compensation for time-related overhead, including the Contractor's share of costs of the independent Certified Public Accountant audit of overhead costs requested by the Engineer, as specified in these special provisions, and as directed by the Engineer.
The provisions in Sections 4-1.03B, "Increased or Decreased Quantities," and 4-1.03C, "Changes in Character of the Work," of the Standard Specifications shall not apply to the contract item of time-related overhead.

Full compensation for additional overhead costs involved in incentive and disincentive provisions to satisfy internal milestone or multiple calendar requirements shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

Full compensation for additional overhead costs incurred during days of inclement weather when the contract work is extended into additional construction seasons due to delays caused by the State shall be considered as included in the time-related overhead paid during the contract working days, and no additional compensation will be allowed therefor.
Full compensation for additional overhead costs involved in performing additional contract item work that is not a controlling operation shall be considered as included in the contract items of work involved and no additional compensation will be allowed therefor.

Full compensation for overhead, other than time-related overhead measured and paid for as specified above, and other than overhead costs included in the markups specified in "Force Account Payment" of these special provisions, shall be considered as included in the various items of work and no additional compensation will be allowed therefor.

Overhead costs incurred by subcontractors of any tier, suppliers, fabricators, manufacturers, and other parties associated with the Contractor shall be considered as included in the various items of work and as specified in Section 9-1.03, “Force Account Payment,” of the Standard Specifications.

For the purpose of making partial payments pursuant to the provisions in Section 9-1.06, "Partial Payments," of the Standard Specifications, the number of working days to be paid for time-related overhead in each monthly partial payment will be the number of working days, specified above to be measured for payment that occurred during that monthly estimate period, including compensable suspensions and right of way delays. Working days granted by contract change order due to extra work or changes in character of the work, will be paid for upon completion of the contract. The amount earned per working day for time-related overhead shall be the lesser of the following amounts:

A. The contract item price.
B. Twenty percent of the original total contract amount divided by the number of working days specified in "Beginning of Work, Time of Completion and Liquidated Damages," of these special provisions.

After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, the amount of the total contract item price for time-related overhead not yet paid, will be included for payment in the first estimate made after acceptance of the contract in conformance with the provisions in Section 9-1.07, "Payment After Acceptance," of the Standard Specifications.

After the work has been completed, the amount of the total contract item price for time-related overhead not yet paid will be included for payment in the first estimate made after completion of roadway construction work, in conformance with the provisions in Section 9-1.06, "Partial Payments," of the Standard Specifications.

SC-19 Final Pay Quantities

When the estimated quantity for a specific portion of the work is designated on the plans or in the Schedule of Quantities and Prices as a final pay quantity (F), the estimated quantity shall be the final quantity for which payments for the specific portion of the work will be made, unless the dimensions of the portion of the work shown on the plans are revised by BATA, or unless the portion of the work is eliminated. If the dimensions of the specific portion of the work are revised, and the revisions result in an increase or decrease in the estimated quantity of the portion of the work, the final quantity for payment will be revised in the amount represented by the changes in the dimensions. If the specific portion of the work is eliminated, the final pay quantity designated for the specific portion of the work will be eliminated. In the event that the quantity of a final pay item shown on the Schedule of Quantities and Prices differs from a quantity that can be calculated from dimensions or lines shown on the Plans, the quantity shown on the Schedule of Quantities and Prices shall govern.

When portions of an item have been designated on the plans or in the Schedule of Quantities and Prices as final pay quantities, portions so designated will be measured and paid for in accordance with the provisions of **GC-59, Invoicing and Progress Payments**.

SC-20 Schedule of Values

Following execution of the Contract, the Contractor shall prepare and submit for approval a detailed cost breakdown of Bid Items and scheduled work activities setting forth the estimated value of the various subdivisions of the work in conformity with level 4 summary of P3 Activity Code Breakdown structure, furnished by the Resident Engineer, and detailed in **SC-23, Progress Schedule**. This breakdown shall be for the purpose of enabling the Engineer to check and verify the periodical invoices submitted by Contractor in connection with requests for partial payments.

SC-21 Increase or Decreased Quantities, and Quantity Variation

Reference is made to **GC-57, Increase or Decreased Quantities, and Quantity Variation**. GC-57 is deleted in its entirety and replaced with the following:

If the actual quantity on any item of work paid for on a unit price basis varies from the quantity for such item in the Schedule of Quantities and Prices by 25 percent or less, payment for the item of the work will be made at the contract unit price.

If the actual quantity of such a contract item of the work exceeds the quantity for such item in the Schedule of Quantities and Prices by more than 25 percent, the compensation payable to the Contractor for the amount in excess of the 125 percent of the quantity will be reviewed by the Contractor and BATA, and an equitable adjustment may be made to the unit price for such excess amount by means of a change order to credit BATA with any reduction in cost or to compensate the Contractor for any increase in the cost resulting from the change in quantity. This review of the adjustment will be made on a force account basis in accordance with GC-60 Force Account Payment, at the time mutually acceptable to BATA and the Contractor.
If the actual quantity of such a contract item of the work is less than 75 percent of the quantity for such item in the schedule of quantities and prices, the compensation payable to the contractor will be reviewed by the contractor and BATA, and an equitable adjustment may be made to the unit price for the entire quantity by means of a change order credited to BATA with any reduction in cost or compensate the contractor for any increase in cost resulting from the change in quantity. This review of the adjustment will be made on a force account basis in accordance with GC-60 Force Account Payment, at the time mutually acceptable to BATA and the Contractor. The payment for the total pay quantity of the work so adjusted in accordance with these provisions included in this paragraph will in no case exceed the payment that would have been made for 75% of the original quantity at the original contract price.

SC-22 Project Close-Out Requirements - Record Drawings

During the project, Contractor shall keep a master set of drawings updated, noting any variation of the Work. Upon completion of the Work, Contractor shall produce a master “Record” set of plans by neatly transferring all such noted variations to blueprint copies of the same drawings, and shall deliver same to the Engineer for signed receipt, certification, and certification.

Payment
Full compensation for work involved in complying with the requirements in **SC-22, Project Close-Out Requirements - Record Drawings**, of these special conditions shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor

SC-23 Progress Schedule

23.1 General Requirements: Scheduling of work under this contract shall be performed by the Contractor in accordance with this **SC-23 Progress Schedule**. Development of the schedule and project status reporting requirements shall employ computerized Critical Path Method (CPM) scheduling.

All schedules prepared by the Contractor shall meet the requirements for access, sequencing, construction staging, delivery of Owner furnished materials, contract milestone and completion dates, as specified in the Contract Documents.

The approved baseline schedule, including the most recent accepted update (the Current CPM Schedule), shall be the basis for evaluating job progress and time extension requests. Responsibility for developing the schedule and monitoring actual progress, as compared to the approved baseline schedule, rests with the Contractor.

Inaccuracy of the schedule or failure of the schedule to include any element of the work shall not relieve the Contractor from responsibility for accomplishing the work in accordance with the contract requirements.

23.2 Specific Requirements

23.2.1 Software: All schedules shall be prepared using the latest version of SureTrak or Primavera Project Planner, version 3.1 software. However, other computerized scheduling programs may be allowed by BATA, and will be considered on a case-by-case basis. Use of other scheduling software must be requested and approved in writing, prior to submission of any schedules.

23.2.2 General Submittal Requirements: The Contractor shall submit three (3) copies of each submittal item and an electronic copy on compact disk for all schedule submittals, including but not limited to baseline CPM schedule, CPM schedule update, schedule revisions, recovery schedule, Time Impact Evaluation, and mitigation plan. Unless otherwise specified in this **SC-23**, procedures for the submission, review and acceptance of all schedule submittals shall be per **SC-6, Contract Data Requirements**.

23.3 Schedule Float

23.3.1 Total Float is the amount of time between an activity's early and late start dates, or between its early and late finish dates in the CPM schedule. A baseline CPM schedule with negative float will not be accepted.

23.3.2 Float Ownership: Neither BATA nor the Contractor owns the float; the Project owns the float. As such, float is considered an expiring resource available to both parties on a non-discriminatory basis.

23.3.3 Early Completion Schedule: Should the Contractor submit a baseline schedule that shows completion dates earlier than the contract dates specified in **Special Conditions SC-4 and SC-10**, BATA, upon acceptance of the schedule, and at its discretion, may adjust by change order the contract dates consistent with the early completion milestone dates in the Contractor's baseline schedule. No additional compensation shall be provided to the Contractor for such adjustments to the contract milestones. In the event that BATA elects to not adjust the milestones, the amount of time between the contract milestone date and the early finish date of such milestone shall be considered project float and is subject to the provisions contained in this Special Condition. Impact to the early completion date caused by BATA will not be considered as a basis for a time extension or entitlement to extended overhead compensation unless all available float has expired.

23.4 Baseline CPM Schedule

23.4.1 Submittal: The Contractor shall prepare and submit for acceptance by BATA, a detailed CPM Schedule within 30 calendar days after Notice of Award. The schedule shall present an orderly and realistic plan for completion of the work, in conformance with all contract requirements. The data date of the baseline CPM schedule shall be the date of Notice of Award.

BATA's review and comments on the schedule shall be limited to contract compliance. If the schedule is rejected (marked "amend and resubmit"), the Contractor shall resubmit the Schedule within fourteen (14) calendar days after receipt of rejection notice. The Contractor shall make corrections to the schedule necessary to comply with contract requirements and shall revise the schedule to address and incorporate all review comments from the review of the baseline CPM schedule. The Contractor shall provide a line-by-line response to all comments from the review of the baseline CPM schedule.

23.4.2 Detailed Requirements: The baseline CPM schedule shall have sufficient number of activities to assure adequate planning of the project and to permit monitoring and evaluation of progress and the analysis of time impacts. It shall depict how the Contractor plans to complete the work involved and shall show all activities that defines the critical path. The baseline CPM schedule shall be time scaled and shall comply with the following requirements:

- All activities in the schedule, with the exception of the first and last activities, shall have a minimum of one predecessor and a minimum of one successor.
- No activity in the schedule shall have duration greater than fifteen (15) working days, with the exception of submittal, approval, fabrication and procurement activities, unless otherwise

approved by BATA. Activity durations shall be the total number of actual working days required to perform an activity.

- Durations for all schedule activities that are sensitive to weather and susceptible to weather delays will be developed so as to allow for the anticipated lost working days per month as shown in **SC-23.13, Adverse Weather Delays**.
- Procurement of each major item or type of material or equipment, from submittal, approval, placement of the order through receipt and inspection at the job site, shall be identified as a separate activity.
- Receipt of Owner Furnished Materials and equipment, if any, shall be identified as separate activities.
- Dependencies (or relationships) between activities shall be shown.
- Activities for BATA review and acceptance of submittals and shop drawings for all contract-required material and equipment shall be shown. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates. The Contractor shall be responsible for all impacts resulting from resubmittal of shop drawings and other items.
- Time shall be included for testing, BATA testing, training of BATA personnel, delivery of spare parts, submittal of operating and maintenance manuals, developing punch lists, completing punch list items, and clean-up of the work included in any completion milestone or contract completion.
- The interface with the work of other contractors and agencies such as, but not limited to, utility companies, shall be indicated.
- Detailed subcontractor's work activities shall be shown. As determined by BATA, Contractor shall submit, on subcontractor letterhead, a statement certifying that the subcontractor concurs with the Contractor's incorporation into the baseline CPM schedule of the subcontractor's related schedules, including activity duration’s, and resource loading.
- The schedule shall be accompanied by a list of anticipated non-work days and holidays, but shall exclude weekends from this list. This list shall be consistent with the non-workdays and holidays identified in the Contractor’s baseline CPM schedule.

23.4.3 Baseline CPM Schedule Narrative A baseline CPM schedule narrative shall be submitted. This narrative shall describe the basis, assumptions, planned sequence of work operations, production rates, equipment, resources, constraints, etc., used to develop the baseline CPM schedule.

23.4.4 Acceptance of the Baseline CPM Schedule: When the schedule is accepted, it shall be considered as the "Approved Baseline CPM Schedule" which will then be updated to reflect the current status of the work. The Approved Baseline CPM Schedule will be the basis of measuring the progress of the project. Such acceptance will be based solely upon the schedule's compliance with the contract requirements.

Acceptance of the schedule by BATA shall not relieve the Contractor of the responsibility for scheduling, sequencing, coordination and prosecuting the work to comply with the requirements of the contract.

BATA reserves the right to require that the Contractor modify, adjust, add to, or clarify any portion of the schedule which may later be discovered to be insufficient or inaccurate for planning, monitoring, or prosecuting the work. No additional compensation shall be provided for such modifications, adjustments, additions, or clarifications.

Submittal of the baseline CPM schedule and subsequent schedule updates, shall be understood to be the Contractor's representation that the submitted schedule meets all of the requirements of the contract and that work shall be executed in the sequence, durations, and methods indicated on the submitted schedule.

23.5 CPM Schedule Update Following acceptance of the Contractor's baseline CPM schedule, the Contractor shall monitor progress of work and formally update the schedule monthly, effective the last Friday of each month, to reflect actual progress, any anticipated changes to planned activities, and corrections to out-of-sequence logic.

Each update shall show all work activities including those already completed. These completed activities shall accurately reflect "as-built" information by indicating when activities were actually started and completed, logic revisions, or activity resequencing.

The accepted updated schedule shall be considered the Current CPM Schedule.

Neither updating, changing or revising any report, schedule or narrative submitted to BATA by the Contractor under this Contract, nor BATA's review or acceptance of any such report, schedule or narrative shall have the effect of amending or modifying, in any way, the contract completion date or milestone dates or of modifying or limiting, in any way, the Contractor's obligations under this contract.

The CPM schedule update, statused through the last Friday of each month, shall be submitted within seven (7) calendar days following that status date. If BATA so requires prior to a given month's update, it may meet with the Contractor and its scheduler to review and agree upon the progress of schedule activities and proposed logic revisions for the given month. This meeting will be conducted 7 calendar days in advance of the last Friday of the month. This meeting, if required, will be referred to as the Monthly Schedule Review Meeting.

BATA will, within fourteen (14) calendar days after receipt of the updated CPM Schedule, either accept, accept with comments, or reject ("amend and resubmit") the submittal.

- If accepted, no additional action by the Contractor is required for that period's submittal.
- If accepted with comments, those comments must be incorporated into the next period's schedule update. Failure to incorporate the comments into the subsequent schedule update will be cause for rejection of the subsequent update.
- If rejected, the Contractor will have seven (7) calendar days to incorporate BATA's comments and resubmit the schedule update for BATA's review. The Contractor shall provide a line-by-line response to all comments from BATA's review of the CPM schedule update. Only one (1) schedule resubmittal per month will be accepted by BATA. Failure to

achieve an accepted schedule update for any given month will result in the forfeiture of payment for that associated progress payment period's installment of the schedule pay item (see **SC-23.15 Payment Provisions**).

23.6 Schedule Reports: The following reports for all schedules shall be submitted by the Contractor to BATA:

- Schedule logic report listing activities, their early, late and actual start and finish dates, duration, float, responsibility code and the predecessor and successor relationship of activities sorted by early start.
- Schedule plots presenting time scaled network diagram showing activities and their relationships.

23.7 Contract Status Report: The Contractor shall provide a written narrative of the contract status report in conjunction with each CPM schedule update which shall include:

- Status of major project components (percent complete, amount of time ahead or behind schedule) and an explanation of how the Project will be brought back on schedule, if delays have occurred.
- Progress made on critical activities indicated on CPM schedule.
- Explanations for any lack of work on critical path activities planned to be performed during the previous month.
- Explanations for any schedule changes, including changes to logic or to activity durations.
- List of critical activities scheduled to be performed in the next three (3) week period.
- Status of major material and equipment procurement.
- Any delays encountered during the reporting period.
- List of any working days lost due to weather beyond the adverse weather allowances shown in **SC-23.13, Adverse Weather Delays.**
- Any other information pertinent to status of the Contract. The Contractor shall include additional status information requested by BATA at no additional cost.

23.8 Weekly Schedule Report: At the weekly progress meeting, the Contractor shall provide and present a time scaled three-week look-ahead schedule that contains the actual progress for the previous week and planned activities for the upcoming three weeks. The activities in the three-week look-ahead schedule shall be based upon and correlated by activity number of the Current CPM Schedule. The format of the weekly schedule report shall be subject to review and acceptance by BATA. The weekly schedule report shall be prepared using Primavera Project Planner, version 3.1, SureTrak, or Microsoft Excel software. Handwritten schedules will not be accepted by BATA. BATA may request electronic transmittal of the weekly schedule report, either by electronic mail, or compact disks, at least one day ahead of the weekly progress meeting. The weekly schedule reports submitted during a given month shall form part of the basis for the CPM schedule update provided for in **SC-23.5, CPM Schedule Update.**

23.9 Schedule Revisions: Periodic updating of the schedule to reflect actual progress shall not be considered a revision to the schedule. Since scheduling is a dynamic process, such

modifications of activity durations and sequences are usual and customary occurrences. Occasions may arise, however, whether directed by BATA, requested by the Contractor, or in reaction to project events, where true revisions to the schedule are required beyond those actions associated with the mere updating of progress.

To reflect revisions to the schedule, the Contractor shall provide BATA with a written narrative with a description and a reason for each revision. For revisions affecting the sequence of work and activity durations, the Contractor shall provide a schedule logic diagram which compares the original sequence and durations to the revised sequence of work and activity durations.

Schedule revisions shall not be incorporated into any schedule update until the revisions have been accepted by BATA.

BATA will review and advise the Contractor of BATA's decision concerning schedule revision acceptance. If the Contractor disagrees with BATA's decision, the Contractor shall, within seven (7) calendar days from receipt of BATA's decision, provide a written narrative explaining or clarifying the revision. If BATA still does not agree with the Contractor's revision, BATA's decision shall govern, and the schedule shall be updated in accordance with BATA's decision. The Contractor's failure to respond in writing within seven (7) calendar days shall be contractually interpreted as acceptance of BATA's decision and the Contractor waives its rights to subsequently dispute or file a claim regarding BATA's decision.

Upon request by BATA, Contractor shall provide the subcontractor certifications for revisions affecting any subcontractors.

23.10 Recovery Schedule If the CPM schedule update shows a completion date over twenty (20) working days beyond any contract milestone date, or if specifically directed by BATA, the Contractor shall, within seven (7) calendar days after the submittal of the CPM schedule update, submit to BATA the Contractor's proposed schedule revisions to recover the lost time. As part of this submittal, the Contractor shall provide a written narrative for each revision made to recover the lost time. The narrative shall explain the Contractor's proposed methodology, basis and assumptions made in the recovery of lost time. If the revisions include sequence changes, the Contractor shall provide a schedule diagram comparing the original sequence to the revised sequence of work. The recovery schedule shall be prepared as a modification to the Current CPM Schedule that incorporates proposed revisions to recover lost time.

The proposed revisions in a Recovery Schedule shall not be incorporated into any schedule update until they have been accepted by BATA.

If the Contractor's revisions are not accepted by BATA, the Contractor shall follow the procedures in **Section 23.9 of the Special Conditions**.

Upon request by BATA, Contractor shall provide the subcontractor certifications for revisions affecting any Subcontractors.

23.11 Time Impact Evaluation for Change Orders and Other Delays: When the Contractor becomes aware of circumstances considered to be a change to the contract (including change notices and force account directives), the Contractor shall prepare and submit a Time Impact Evaluation (TIE) which includes both a written narrative and a schedule diagram depicting how the changed work affects other schedule activities. The schedule diagram shall show how the Contractor proposes to incorporate the changed work in the current schedule and how it impacts the critical path of the Current CPM Schedule. The Contractor is also responsible for requesting time extensions based on the TIE's impact on the critical path. The diagram must be tied to the main sequence of schedule activities to enable BATA to evaluate the impact of the changed work to the scheduled critical path. The Contractor shall submit the TIE within fourteen (14) calendar days of recognition of such change.

The Contractor shall be responsible for all costs associated with the preparation of TIE's, and the process of incorporating them into the current schedule update. The Contractor shall provide BATA with three (3) copies of each TIE.

Once accepted by BATA, the TIE shall be incorporated into the next CPM schedule update. If the Contractor and BATA are unable to reach agreement, the Contractor shall incorporate changes in accordance with BATA's direction.

If the Contractor does not submit a TIE, for a specific issue, by the stated deadline and in accordance with the requirements of this section, it is mutually agreed that the Contractor does not require a time extension for said issue and that Contractor waives any rights to claim a time extension based on said issue in the future.

23.12 Time Extensions: The Contractor is solely responsible for requesting a time extension for any change, delay, or disruption that, in the opinion of the Contractor, impacts the critical path of the Current CPM Schedule. Time extension will be granted only to the extent that the change, delay, or disruption that impacts the critical path is beyond the control and without fault or negligence of the Contractor or any subcontractor.

The Contractor may be entitled to a compensable time extension for Owner-caused delays that are not concurrent with Contractor-caused or other excusable but non-compensable delays (i.e., weather). The Contractor may be entitled to a non-compensable time extension for Owner-caused delays that are concurrent with Contractor-caused or other excusable but non-compensable delays.

In the event that an Owner-caused delay impacts a contract milestone or the contract completion date, the Contractor shall provide a mitigation plan, including a schedule diagram, which explains how the impact can be mitigated. The Contractor shall also include a detailed cost breakdown of the labor, equipment and material the Contractor would expend to mitigate Owner-caused delay. The Contractor shall submit its mitigation plan to BATA within 14 calendar days from the date of discovery of said impact. The Contractor is responsible for the cost to prepare the mitigation plan.

Failure to request time extension, provide TIE, or provide the required mitigation plan within the time specified in this **Section SC-23**, will result in the Contractor waiving its right to both the time extension and the recovery of costs associated with mitigating the delay.

BATA will not consider any time extension request unless the requirements of this **Section SC-23** are met. BATA will not be responsible or liable to the Contractor for any constructive acceleration due to the failure of the Contractor to comply with the submission requirements and justification requirements of this contract for time extension requests.

Failure of the Contractor to perform in accordance with the Current CPM Schedule shall not be excused by submittal of time extension requests.

23.13 Adverse Weather Delays. The table below lists the typical number of working days that can be expected to be lost due to weather per month on critical path activities for this type of contract. Working days lost due to weather in a given month in excess of those listed for that month, will be considered for a time extension. Days are not cumulative from month to month. Such time extension must be requested by the Contractor and comply with the provisions of **Sections 23.11 and 23.12 of SC-23, Progress Schedule**.

Typical Number of Working Days Lost to Weather

Month	# of Days
January	5
February	5
March	5
April	4
May	3
June	0
July	0
August	0
September	0
October	0
November	3
December	5

Contract time extensions for such weather delays will only be considered for days during which, as a direct result of the weather, 60% (or more) of the Contractor's planned work forces are unable to work on critical path activities during the course of a workday. Such time extensions, if approved, will be non-compensable. Such weather delays may consist of days lost to adverse weather conditions, days lost to dry out of exposed soil, and days lost to site clean-up due to adverse weather. The Contractor shall provide substantiation for all such adverse weather days; whether incorporated in the scheduled work activities pursuant to the following chart, or in addition thereto.

23.14 Daily Contractor Construction Report: Contractor shall submit to BATA a daily construction activity report for each working day, including weekends and holidays when work occurred. Each daily construction report shall be submitted no later than the day following the workday represented by the report. The following information shall be included in the report:

1. Project name and Contract/Project number
2. Contractor's name and address
3. Weather, temperature, and any unusual site conditions
4. Brief description of day's activities (work activities shall be referenced by activity number and activity description in the CPM schedule)
5. Labor quantities for Contractor and subcontractors
6. Equipment and other tools utilized by Contractor and subcontractors
7. Unusual occurrences, problems and accidents, if any

23.15 Payment Provisions In the event that the contract contains a separate pay item for a "Progress Schedule", that pay item will be administered as follows: 25% of the pay item upon acceptance by BATA of an approved baseline schedule as described in **Section 23.4** herein. The remainder of the pay item will be invoiced in equal installments by the Contractor computed by dividing the remainder of the pay item amount by the number of progress payment periods from BATA's acceptance date of the baseline CPM schedule or sixty (60) days from the first charged day, whichever is earlier, through contract completion. The final installment will be invoiced when final acceptance of the work occurs. There will be no separate payment provided for all other schedule submittals required in **Special Conditions, SC-23**, other than for the baseline CPM schedule and the CPM schedule update.

If the Contractor fails to submit the baseline CPM schedule within sixty (60) calendar days from Notice of Award, 25% of the pay item for "Progress Schedule" shall be forfeited. The pay item for any progress payment period for which the Contractor does not have an accepted schedule shall not be paid by BATA. No payment for a missed period shall be made retroactively by BATA. Forfeiture of any payments shall not relieve the Contractor from the responsibility to submit the CPM schedule update and all other requirements of this section including weekly schedule reports, daily contractor construction reports, time impact evaluations and recovery schedules throughout the term of the contract.

In addition to the amount retained by BATA from each progress payment, as provided for in **General Conditions, GC-59**, BATA may withhold additional amounts not to exceed 10% of the total progress payment for Contractor's failure to meet the requirements of **Special Conditions, SC-23**. BATA will pay the Contractor the amount withheld once BATA has determined that the Contractor has satisfactorily complied with the requirements of **Special Conditions, SC-23.**

SC-24 Water Pollution Control Plan (WPCP)

Requirements for Water Pollution Control Plan (WPCP) and its implementation shall conform to the terms and conditions specified within **section 10 Construction Details**.

SC-25 Surface Mining and Reclamation Act

Attention is directed to the Surface Mining and Reclamation Act of 1975, commencing in Public Resources Code, Mining and Geology, Section 2710, which establishes regulations pertinent to surface mining operations.
Material from mining operations furnished for this project shall only come from permitted sites in compliance with the Surface Mining and Reclamation Act of 1975.

SC-26 Laboratory

When a reference is made in the specifications to the "Laboratory," the reference shall mean Division of Engineering Services - Materials Engineering and Testing Services and Division of Engineering Services - Geotechnical Services of the Department of Transportation, or established laboratories of the various Districts of the Department, or other laboratories authorized by the State to test materials and work involved in the contract. When a reference is made in the specifications to the "Transportation Laboratory," the reference shall mean Caltrans

Division of Engineering Services - Materials Engineering and Testing Services and Division of Engineering Services - Geotechnical Services, located at 5900 Folsom Boulevard, Sacramento, CA 95819, Telephone (916) 227-7000.

SC-27 (Not Used)

SC-28 Partnering

BATA will promote the formation of a Partnering relationship with Contractor in order to effectively complete the contract to the benefit of both parties. The purpose of this relationship will be to maintain cooperative communication and mutually resolve conflicts at the lowest possible management level.

Contractor may request the formation of such a Partnering relationship by submitting a request in writing to the Engineer after Notice of Award. If Contractor's request for Partnering is approved by the Engineer, scheduling of a Partnering Workshop, selecting the Partnering Facilitator and workshop site, and other administrative details shall be as agreed to by both parties.

The costs involved in providing a facilitator and a workshop site will be borne equally by BATA and Contractor. Contractor shall pay all compensation for the wages and expenses of the facilitator and of the expenses for obtaining the workshop site. BATA's share of such costs will be reimbursed to Contractor in a change order written by the Engineer. Markups will not be added. All other costs associated with the "Partnering" relationship will be borne separately by the party incurring the costs.

The establishment of a Partnering relationship will not change or modify the terms and conditions of the contract and will not relieve either party of the legal requirements of the contract.

SC-29 Bridge Tolls

Toll-free passage on the San Francisco-Oakland Bay Bridge will be granted only for cars, trucks and special construction equipment which are clearly marked on the exterior with the Contractor's identification and which are being operated by the Contractor exclusively for the project, and which are used for the purpose of transporting materials and workers directly to and from the project site.
The Contractor shall make application to the Engineer in advance for toll-free passage. The Contractor will be held accountable for the proper use of passes issued, and upon completion of the work, shall return unused passes to the Engineer.
Attention is directed to Section 23302, "Evasion of Toll," of the Vehicle Code.

SC-30 Value Engineering Change Proposals (VECP)

Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECPs) voluntarily. This Article applies to those Value Engineering Change Proposals that are originated, initiated and developed by Contractor to change the drawings, specifications or other requirements of the Contract. In order to be accepted under this Article, each VECP shall:

- Be identified by Contractor at the time of submittal to BATA as submitted pursuant to this Article; and
- Require a change to the Contract; and
- Decrease the Contract Price; and
- Result in a net savings to BATA of a minimum of $50,000, or result in a reduction in the overall schedule of thirty (30) calendar days minimum; and
- Maintain the items' required functions such as service life, reliability, economy of operation, ease of maintenance and necessary standardized features and appearance, and not require an unacceptable extension of Contract time.

Provided, that it does not involve a change

- In deliverable end item quantities only; or
- To the contract type only.

30.1 Content of VECP Any VECP Contractor submits shall be in sufficient detail to clearly define the proposed change including:

- A description of the difference between the existing and the proposed Contract requirements, and the comparative advantages and disadvantages of each;
- Contract requirements recommended to be changed if the proposal is accepted;
- A detailed estimate of the amount of the net savings that will result from acceptance of the proposal;
- A prediction of any effects the proposed change would have on costs of maintenance and operation;
- A description and estimate of costs BATA may incur in implementing the VECP, such as test and evaluation and operating and support costs; and
- A statement of the time by which the proposal must be accepted so as to obtain the maximum price reduction, noting any effect upon the Contract completion time.

30.2 Acceptance of VECP BATA may accept or reject part or all of any VECP by giving Contractor written notice thereof. Until such notice is issued, Contractor shall remain obligated to perform in accordance with the terms of the Contract. VECPs will be processed expeditiously; however, BATA shall not be liable for any delay in acting upon any proposal submitted pursuant to this Article. The decision of BATA as to acceptance of any such proposal shall be final. The denial of any VECP shall not provide Contractor with any basis for claim for damages or delay, nor for release from contractual responsibilities. BATA's approval of a value engineering proposal shall not entitle Contractor to additional compensation or time if the work incorporating the proposal is defective, more expensive, or takes more time.

30.3 VECP Contract Price Adjustment When a VECP submitted pursuant to this Article is

accepted:

- An equitable adjustment in the Contract price and in any other affected provisions of the Contract shall be made and the Contract modified in accordance with this Article, or other applicable articles of the Contract.
- The net savings resulting from the change shall be shared between Contractor and BATA on the basis of 40 percent for Contractor and 60 percent for BATA. Net savings shall be determined by deducting from the estimated gross savings, Contractor's costs of developing and implementing the proposal, including any amount attributable to a subcontractor, and the estimated amount of increased costs to BATA resulting from the change, such as review implementation, inspection, related items and BATA-furnished property. Estimated gross savings shall include Contractor's labor, material, equipment, overhead profit and bond. *Gross saving shall be computed by comparing the cost of performing the work under the existing contract with the cost of performing the work as proposed. All costs shall be determined in accordance with Section GC-60 of these Contract Documents.* The Contract price shall be reduced by the sum of BATA's costs and BATA's share of the net savings.
- Contractor is entitled to share in instant contract savings only, to the full extent provided for in this Article. For purposes of sharing under this Article, the term instant contract shall not include any supplemental agreements to or other modifications of the Contract, executed subsequent to acceptance of the particular VECP, by which BATA increases the quantity of any item or adds any item.

30.4 Inclusion in Subcontracts Contractor shall include value engineering arrangements in any subcontract which, in Contractor's judgment, appears to offer sufficient value engineering potential.

30.5 Identical VECP A VECP identical to one submitted under any other contract, by this or by any other contractor, may also be submitted under the Contract, provided that the proposal originated with such Contractor and not with BATA.

30.6 Restrictions Contractor may restrict BATA's right to use any VECP data by marking it with the following statement:

"This data, furnished pursuant to the Value Engineering article of the Contract, shall not be duplicated, used or disclosed in whole or in part, for any purpose except to evaluate the VECP, unless the proposal is accepted by BATA. The restriction does not limit BATA's right to use information contained in this data if it is or has been obtained, or is otherwise available, from Contractor or from another source, without limitations. When this proposal is accepted by BATA, BATA shall have the right to duplicate, use and disclose any data in any manner and for any purpose whatsoever, and have others do so whether under this or any Contract."

Contractor shall have no right to share any future savings derived from incorporation of the VECP in future BATA Contracts.

SC-31 Alternative Methods of Construction

Whenever the plans or specifications provide that more than one specified method of construction or more than one specified type of material or construction equipment may be used to perform portions of the work and leave the selection of the method of construction or the type of material or equipment to be used up to Contractor, it is understood that BATA does not guarantee that every specified method of construction or type of material or equipment can be used successfully throughout all or any part of any project.

It shall be Contractor's responsibility to select and use the alternative or alternatives, which will satisfactorily perform the work under the conditions encountered. In the event some of the alternatives are not feasible or it is necessary to use more than one of the alternatives on any project, full compensation for any additional cost involved shall be considered as included in the contract price paid for the item of work involved and no additional compensation will be allowed therefor.

SC-32 Highway Construction Equipment

Pursuant to the authority contained in Section 591 of the Vehicle Code, BATA has determined that, within such areas as are within the limits of the project and are open to public traffic, the following requirements of the Vehicle Code will apply: the lighting requirements in Section 25803; the brake requirements in Chapter 3, Division 12; the splash apron requirements in Section 27600; and, when operated on completed or existing treated base, surfacing, pavement or structures, except as otherwise provided in **SC-41, Weight Limitations**.

SC-33 Quality Assurance Program

Contractor shall at his/her own expense arrange, submit for BATA's approval and implement a Quality Assurance Program consistent with the requirements of Section 10 Construction detyails,.

SC-34 Conformity With Contract Documents and Allowable Deviations

Work and materials shall conform to the lines, grades, typical cross sections, dimensions and material requirements, including tolerances, shown on the plans or indicated in the specifications. Although measurement, sampling and testing may be considered evidence as to conformity, the Engineer shall be the sole judge as to whether the work or materials deviate from the plans and specifications, and the Engineer's decision as to any allowable deviations there from shall be final.

SC-35 Use Of Materials Found On The Work

Unless designated as selected material as provided in Section 19-2.07, "Selected Material" of the State Standard Specifications, Contractor, with the approval of the Engineer, may use in the proposed construction such stone, gravel, sand or other material suitable in the opinion of the Engineer as may be found in excavation. Contractor will be paid for the excavation of those materials at the contract price for the excavation, but Contractor shall replace at Contractor's expense with other suitable material all of that portion of the material so removed and used

which was contemplated for use in the work, except that Contractor need not replace, at Contractor's expense, any material obtained from structure excavation used as structure backfill. No charge for materials so used will be made against Contractor. Contractor shall not excavate or remove any material from within the highway location that is not within the excavation, as indicated by the slope and grade lines, without written authorization from the Engineer.

SC-36 Certificates of Compliance

Reference is made to GC-49, Certificates of Compliance Testing. GC-49 is deleted in its entirety and replaced with Section 6, Control of Materials of the Standard Specifications.

Section 6-3.01 "General" of the Standard Specifications is amended to include the following:

BATA will pay for initial tests. Monies will be deducted from the Contractor for any subsequent tests or re-tests.

SC-37 Environmental Coordination and Cooperation

SC-37.1 Not Used

SC-37.2 Mitigation Measures Department has approved a Categorical Exception/Categorical Exemption for this project. Contractor is advised that compliance with the provisions of this document is a requirement of the Contract. Contractor shall comply with the mitigation measures contained in said document:

NOISE MEASURES

During all site preparation, grading and construction, Contractor shall maintain and operate all equipment consistent with the manufacturer's specifications. Construction equipment will include available noise suppression devices and properly maintained mufflers.

During all site preparation, and construction, Contract shall site fixed and mobile equipment to minimize noise emissions outside the state right-of-way in the vicinity of sensitive land uses.

During all site preparation, and construction, Contractor shall minimize the staging of construction equipment and unnecessary idling of equipment in the vicinity of sensitive land uses.

SC-37.3 Migratory Nesting Birds

The Contractor's attention is directed to the nesting season of Cliff Swallows, Northern Rough-wing Swallows, White-throated Swifts, other migratory birds (including raptors), and roosting bats. The nesting season generally is from February 15th to September 1st. It is against the law to harm these birds as per the Migratory Bird Treaty Act and California Fish and Game Code. It is the Contractor's responsibility to ensure that these birds are not

allowed to nest on structures in the construction area or in vegetation that may be impacted by construction so that the birds and nestlings are not harmed.

Prior to and during construction, the Contractor shall inspect all vegetation, grounds, and structures etc. that may be impacted by construction every two (2) days, and will be required to remove nests that are less than half built and maintain and submit a weekly log documenting the time, date, condition and any actions taken. The Contractor shall install and maintain all nesting exclusion devices throughout the breeding season, or until work in the area makes the devices unnecessary. The Contractor shall remove all exclusion devices when all of the work is complete.

The Contractor shall be responsible for the removal of new and partially built nests before the nests are halfway completed. Nests could be removed with a long pole or could be hosed off with water, or as approved by the Engineer. These methods are to be directed at the partially built nests only and not at the birds. No birds, nests with eggs, or nests with hatchlings will be disturbed.

If BATA or their representative discovers any major problems during the life of the contract, the contractor will be notified and expected to correct the problem within twenty-four (24) hours. The Contractor will be responsible for the maintenance, repair or replacement of the nesting exclusion devices until all of the work is complete.

If nest completions go undetected or nests are completed and eggs are laid, any work around these nests that could harm the birds or their now active nests must be stopped until consultation (as described below) has been performed.

The Contractor shall be responsible for any work stoppages and shall be expected to complete all work as specified in Section SC-4, "Time For Performance" and Section SC-5, "Liquidated Damages," of these Special Conditions.

Should an active nest be present or establish in the project area, all work which might impact that nest(s) will be halted until the contractor coordinates with BATA, California Department of Fish and Game (CDFG), and a CDFG approved ornithologist to develop alternatives to avoid take of the nest. No additional time or compensation will be allowed therefor.

SC-37.4 Payment Full compensation for work involved in complying with the requirements herein **SC-37, Environmental Coordination and Cooperation**, shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

SC-38 Resident Engineer's Office

Contractor shall be responsible for providing a separate, private, professional working area for the Resident Engineer's Office. The space shall be air conditioned and provide proper office facilities which supplies phone services (one service for each BATA Representative including equipment and long distance calling capability), electrical power, drinking/running water, bathrooms, garbage/cleaning service, desks, file cabinets, fax machine/service (one machine for every six BATA Representatives), ISP service (one for each BATA Representative), copy

machine(s), janitorial service, office alarm system, office supplies (paper, files, etc.) to allow for a professional working environment. The equipment and space as described, will be necessary to accommodate *3* BATA employees or Representatives. Each employee office space shall be a minimum of 12.0 square meters. The office shall also include an additional filing area of 12.0 square meters. Resident Engineer's Office facilities must be separated from contractor facilities with secured access by lock and key to be provided to the BATA designated Representative.

Commencing on the date of Notice of Award and continuing through acceptance of the project, Contractor will assume responsibility for payment of rental of the office and furnishings as listed in this specification. Contractor shall be responsible for all costs associated with days of delay in closing the office including but not limited to weather and /or contractor schedule completion delays as determined by the Engineer. Contractor shall maintain insurance for such facility to cover any losses of equipment or material within this space.

The Contract lump sum price paid for Resident Engineer's Office shall also include full compensation for maintaining the office as described herein until project acceptance including all administrative and incidental costs.

The Contract lump sum price paid for Resident Engineer's Office shall also include removing the office equipment, office supplies, and discontinuing services as specified in these special conditions and as directed by the Engineer. Payment for Resident Engineer's Office will be made as follows:

At such time as the Contractor assumes responsibility for payment of rental and services of the RE office, a payment equal to 25 percent of the contract item for Resident Engineer's Office will be made.

At such time as fifty percent of the work is completed, a payment equal to 50 percent of the contract item (total of 75 percent) for Resident Engineer's Office will be made.

At such time as one hundred percent of the work is accepted, a payment equal to 25 percent of the contract item (total of 100 percent) for Resident Engineer's Office will be made.

SC-39 Final Inspection and Acceptance

Refer to **GC-55.1, Final Inspection and Acceptance of all the Work**, This paragraph is amended to include the following:

There will be no portions of the work for which the Contractor may be relieved of the duty of maintenance and protection as provided in the above paragraph.

SC-40 Dust Control

This work shall consist of applying water, dust palliative, or both, etc. for the alleviation or prevention of dust nuisance.

Dust resulting from Contractor's work either inside or outside the right-of-way, shall be controlled in conformance with the General Conditions of this contract.

It is also understood that this special condition will not prevent Contractor from applying water or dust palliative for Contractor's convenience if so desired. Water shall be applied as provided in Section 17, "Watering," of the Standard Specifications and dust palliative shall conform to and be applied as provided in Section 18, "Dust Palliative" " of the Standard Specifications.

The Contractor shall be required to meet or exceed all air quality standards as applicable by law.

No separate payment will be made for work performed or materials used to control dust. Payment for conforming to the requirements of this section shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for performing all work involved in completing the requirements of this section, and shall be considered as included in the prices paid for the various contract items of work. No additional compensation will be allowed therefor.

SC-41 Weight Limitations

Unless expressly permitted, construction equipment or vehicles of any kind which, laden or unladen, exceed the maximum weight limitations set forth in Division 15 of the Vehicle Code, shall not be operated over completed or existing treated bases, surfacing, pavement or structures in any areas within the limits of the project except as follows in this section.

After application of the curing seal, no traffic or Contractor's equipment will be permitted on cement treated base or lean concrete base for a period of 72 hours. After 72 hours, traffic and equipment operated on the base shall be limited to that used in paving operations and placing additional layers of cement treated base. No traffic or Contractor's equipment will be permitted on treated permeable base except for that equipment required to place the permeable base and the subsequent layer of pavement. Trucks used to haul treated base, Portland cement concrete, or asphalt concrete shall enter onto the base to dump at the nearest practical entry point ahead of spreading equipment. Empty haul trucks shall exit from the base at the nearest practical exit point. Entry and exit points shall not be more than 300m ahead of spreading equipment except in locations where specifications prohibit operation of trucks outside the area occupied by the base or where steep slopes or other conditions preclude safe operation of hauling equipment. In those locations, entry and exit points shall be established at the nearest point ahead of spreading equipment permitted by specifications and allowing safe operation of hauling equipment. Damage to curing seal or base shall be repaired promptly by the Contractor, at Contractor's expense, as directed by the Engineer.

Within the limits of the project and subject to the control of the Engineer, and provided that Contractor, at Contractor's expense, shall provide such protective measures as are deemed necessary by the Engineer and shall repair any damage caused by the operations, Contractor will be permitted to:

(1) Make transverse crossings of those portions of an existing public road or street that are within the highway right of way, with construction equipment which exceeds the size or weight limitations set forth in Division 15 of the Vehicle Code.

(2) Make transverse crossings of treated bases, surfacing or pavement that are under construction or which have been completed, with construction equipment that exceeds the size or weight limitations set forth in Division 15 of the Vehicle Code.

(3) Cross bridge structures that are not open to public traffic and which are designed for HS20-44 Live Loading (culverts and pipes excluded), with construction equipment which exceeds the size or weight limitations set forth in Division 15 of the Vehicle Code, but not exceeding the load limitations hereinafter specified, provided that Contractor furnishes to the Engineer the dimensions and maximum axle loadings of equipment proposed for use on bridge structures:

(a) The maximum loading on bridge structures due to pneumatic-tired truck and trailer combinations shall not exceed (1) 12 700 kg for single axles, (2) 21 700 kg for tandem axles, nor (3) 27 200 kg total gross load for single vehicles or 50 000 kg total gross load for truck and trailer or semi-trailer combinations.

(b) The loading on bridge structures due to 2 and 3 axle pneumatic-tired earthmovers shall not exceed that shown in the following table.

ALLOWABLE CONSTRUCTION LOADING ON BRIDGES FOR 2 AND 3 AXLE EARTHMOVERS	
Spacing of Bridge Girders (center to center in meters)	**Maximum Axle Loading (in kilograms)**
1.2	12,700
1.5	13,100
1.8	13,600
2.1	14,500
2.4	15,400
2.7	16,700
3.0 and over	18,000
Minimum Axle Spacing For 3-axle earthmovers: Axles 1 to 2 = 2.4 m Axles 2 to 3 = 6.1 m For 2-axle earthmovers: Axles 1 to 2 = 6.1 m	

Move equipment within the limits of the project over completed or existing base, surfacing, pavement and structures, whether or not open to the public, in accordance with the limitations and conditions in the "Permit Policy" of the Department of Transportation.

Within the limits of the project and subject to the condition that Contractor shall repair, at Contractor's expense, any damage caused thereby, Contractor will be permitted to cross culverts and pipes with construction equipment which exceeds the size or weight limitations set forth in Division 15 of the Vehicle Code in accordance with the conditions set forth on the plans. If the conditions are not set forth on the plans, the provisions in the first paragraph in this Special Condition will apply.

Should Contractor desire to increase the load carrying capacity of a structure or structures that are to be constructed as a part of the contract, in order to facilitate Contractor's own operations, Contractor may request the Engineer to consider redesigning the structure or structures. Proposals by Contractor to increase the load carrying capacity of structures above 59,000kg per single axle or pair of axles less than 2.4m apart, or above 149,000kg total gross vehicle weight, will not be approved. The request shall include a description of the structure or structures involved and a detailed description of the overloads to be carried, the date the revised plans would be required, and a statement that Contractor agrees to pay all costs involved in the strengthening of the structure or structures, including the cost of revised plans, and further that Contractor agrees that no extension of time will be allowed by reason of any delay to the work which may be due to the alteration of the structure or structures. If the Engineer determines that strengthening the structure or structures will be permitted, the Engineer will inform Contractor of the estimated cost of the alterations, including engineering, and the date that revised plans could be furnished. If the cost and date are satisfactory to Contractor, the Engineer will prepare a change order providing for the agreed upon alterations.

SC-42 Public Convenience and Safety

SC-42.1 Public Convenience. This Section SC-42.1 defines Contractor's responsibility with

regard to convenience of the public and public traffic in connection with Contractor's operations.

Attention is directed **GC-38, Public Convenience and Safety** and **Section 10 Construction, Details** for provisions relating to the passage of traffic around the work over detours or lane closures.

Attention is directed to **SC-42.2, Public Convenience and Safety**, for provisions relating to the Contractor's responsibility for the safety of the public. The provisions in **SC-42.2** are in addition to the provisions in this **SC-42.1** and Contractor will not be relieved of the responsibilities as set forth in **SC-42.2** by reason of conformance with any of the provisions in this **SC-42.1**.

Attention is directed to **SC-43**, **Flagging** and **Section 12, "Construction Area Traffic Control Devices" of the Standard Specifications** for provisions concerning flagging and traffic handling equipment and devices used in carrying out the provisions in this **SC-42.1** and **SC-42.2**.

In the event of a suspension of the work, attention is directed to **GC-69, Suspension of Work**.

The Contractor shall so conduct operations as to offer the least possible obstruction and inconvenience to the public and shall have under construction no greater length or amount of work than can be prosecuted properly with due regard to the rights of the public.

Unless otherwise provided in the special provisions, all public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible. Where possible, public traffic shall be routed on new or existing paved surfaces.

Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor at the Contractor's expense.

Existing traffic signals and highway lighting shall be kept in operation for the benefit of the traveling public during progress of the work, and other forces will continue routine maintenance of existing systems.

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property owners.

Convenient access to driveways, houses, and buildings along the line of the work shall be maintained and temporary approaches to crossings or intersecting highways shall be provided and kept in good condition. When the abutting property owner's access across the right of way line is to be eliminated, or to be replaced under the contract by other access facilities, the existing access shall not be closed until the replacement access facilities are usable.

The Contractor may be required to cover certain signs that regulate or direct public traffic to

roadways that are not open to traffic. The Engineer will determine which signs shall be covered. Except as otherwise provided for construction area signs in Section 12, Construction Area Traffic Control Devices, of the Standard Specifications, furnishing, installing and removing covers will be paid for as extra work as provided in **GC-65, Change Requests and Change Notices**, and **GC-66, Change Orders**.

Roadway excavation and the construction of embankments shall be conducted in such a manner as to provide a reasonably smooth and even surface satisfactory for use by public traffic at all times; sufficient fill at culverts and bridges to permit traffic to cross shall be placed in advance of other grading operations; and if ordered by the Engineer roadway cuts shall be excavated in lifts and embankments constructed part width at a time, construction being alternated from one side to the other and traffic routed over the side opposite the one under construction. Culvert installation or culvert construction shall be conducted on but one-half the width of the traveled way at a time, and that portion of the traveled way being used by public traffic shall be kept open and unobstructed until the opposite side of the traveled way is ready for use by traffic.

Upon completion of rough grading at the grading plane, or placing any subsequent layer thereon, the surface of the roadbed shall be brought to a smooth, even condition free of humps and depressions, satisfactory for the use of public traffic.

After the surface of the roadbed has been brought to a smooth and even condition for the passage of public traffic as above provided, any work ordered by the Engineer for the accommodation of public traffic prior to commencing subgrade operations will be paid for as extra work as provided in **GC-65, Change Requests and Change Notices**, and **GC-66, Change Orders**. After subgrade preparation for a specified layer of material has been completed, Contractor shall, at Contractor's expense, repair any damage to the roadbed or completed subgrade, including damage caused by Contractor's operations or use by public traffic.
While subgrade and paving operations are underway, public traffic shall be permitted to use the shoulders and, if half-width paving methods are used, shall also be permitted to use the side of the roadbed opposite the one under construction. When sufficient width is available, a passageway wide enough to accommodate at least two (2) lanes of traffic shall be kept open at locations where subgrade and paving operations are in active progress. Any shaping of shoulders or reshaping of subgrade necessary for the accommodation of public traffic thereon during subgrade preparation and paving operations will be paid for as extra work as provided in **GC-65, Change Requests and Change Notices**, and **GC-66, Change Order**s.

When ordered by the Engineer, Contractor shall furnish a pilot car and driver and flaggers for the purpose of expediting the passage of public traffic through the work under one-way controls, and the cost thereof will be paid for as extra work as provided in **GC-65, Change Requests and Change Notices**, and **GC-66, Change Order**s, except that the cost of flaggers furnished for this purpose will be paid for as provided in **SC-43, Flagging**. At locations where traffic is being routed through construction under one-way controls and when ordered by the Engineer, the movement of Contractor's equipment from one portion of the work to another shall be governed in accordance with the one-way controls.

Water or dust palliative shall be applied if ordered by the Engineer for the alleviation or prevention of dust nuisance as provided in **SC-40, Dust Control**.

In order to expedite the passage of public traffic through or around the work and where ordered by the Engineer, Contractor shall install signs, lights, flares, temporary railing (Type K), barricades and other facilities for the sole convenience and direction of public traffic. Also where directed by the Engineer, Contractor shall furnish competent flaggers whose sole duties shall consist of directing the movement of public traffic through or around the work. The cost of furnishing and installing the signs, lights, flares, temporary railing (Type K), barricades, and other facilities, not to be paid for as separate contract items, will be paid for as extra work as provided in **GC-65, Change Requests and Change Notices**, and **GC-66, Change Orders**.

The cost of furnishing flaggers for the sole convenience and direction of public traffic will be paid for as provided in **SC-43, Flagging**.

Contractor will be required to pay the cost of replacing or repairing all facilities installed under extra work for the convenience or direction or warning of public traffic that are lost while in Contractor's custody, or are damaged by reason of Contractor's operations to such an extent as to require replacement or repair, and deductions from any moneys due or to become due Contractor will be made to cover the cost.

Whenever a section of surfacing, pavement or the deck of a structure has been completed, Contractor shall open it to use by public traffic if the Engineer so orders or may open it to use by public traffic if the Engineer so consents. In either case Contractor will not be allowed any compensation due to any delay, hindrance or inconvenience to Contractor's operations caused by public traffic, but will thereupon be relieved of responsibility for damage to completed permanent facilities caused by public traffic, within the limits of that use. Contractor will not be relieved of any other responsibility under the contract nor will Contractor be relieved of cleanup and finishing operations.
Except as otherwise provided in this **SC-42.1** or otherwise in the special conditions, full compensation for conforming to the provisions in this **SC-42.1** shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

SC-42.2 Public Safety It is Contractor's responsibility to provide for the safety of traffic and the public during construction.

Attention is directed to **GC-45, Protection and Restoration of Property** and **SC-1, Indemnification**.

Attention is directed to **SC-42.1, Public Convenience**, for provisions relating to Contractor's responsibility for providing for the convenience of the public in connection with Contractor's operations.
Attention is directed to **Section 12, Construction Area Traffic Control Devices, of the**

Standard Specifications, for provisions concerning flagging and traffic-handling equipment and devices used in carrying out the provisions of **SC-42.1** and **SC-42.2**.
Whenever Contractor's operations create a condition hazardous to traffic or to the public, Contractor shall, at Contractor's expense and without cost to BATA, furnish, erect and maintain those fences, temporary railing (Type K), barricades, lights, signs and other devices and take such other protective measures that are necessary to prevent accidents or damage or injury to the public.

Contractor shall install temporary railing (Type K) between a lane open to public traffic and an excavation, obstacle, or storage area when the following conditions exist:

(1) Excavations**.** The near edge of the excavation is 3.6m or less from the edge of the lane, except:

(a) Excavations covered with sheet steel or concrete covers of adequate thickness to prevent accidental entry by traffic or the public.
(b) Excavations less than 0.3m deep.
(c) Trenches less than 0.3m wide for irrigation pipe or electrical conduit, or excavations less than 0.3m in diameter.
(d) Excavations parallel to the lane for the purpose of pavement widening or reconstruction.
(e) Excavations in side slopes, where the slope is steeper than 1:4 (vertical:horizontal).
(f) Excavations protected by existing barrier or railing.

(2) Temporarily Unprotected Permanent Obstacles**.** The work includes the installation of a fixed obstacle together with a protective system, such as a sign structure together with protective railing, and Contractor elects to install the obstacle prior to installing the protective system; or Contractor, for Contractor's convenience and with permission of the Engineer, removes a portion of an existing protective railing at an obstacle and does not replace such railing complete in place during the same day.
(3) Storage Areas**.** Material or equipment is stored within 3.6m of the lane and the storage is not otherwise prohibited by the provisions of the Standard Specifications and these special provisions.

The approach end of temporary railing (Type K) installed in conformance with the provisions in this section and shall be offset a minimum of 4.6m from the edge of the traffic lane open to public traffic. The temporary railing shall be installed on a skew toward the edge of the traffic lane of not more than 0.3m transversely to 3m longitudinally with respect to the edge of the traffic lane. If the 4.6m minimum offset cannot be achieved, the temporary railing shall be installed on the 10 to 1 skew to obtain the maximum available offset between the approach end of the railing and the edge of the traffic lane, and an array of temporary crash cushion modules shall be installed at the approach end of the temporary railing.

Temporary railing (Type K) shall conform to the provisions in Section 12-3.08, Temporary Railing (Type K), of the Standard Specifications. Temporary railing (Type K), conforming to the details shown on 1995 Standard Plan T3 or 1992 Standard Plan T3, may be used.

Temporary railing (Type K) fabricated prior to January 1, 1993, and conforming to 1988 Standard Plan B11-30 may be used, provided the fabrication date is printed on the required Certificate of Compliance.

The fourteenth paragraph of Section 12-3.08, Temporary Railing (Type K), of the Standard Specifications is amended to read: Each rail unit placed within 3m of a traffic lane shall have a reflector installed on top of the rail as directed by the Engineer. A Type P marker panel shall also be installed at each end of railing installed adjacent to a two-lane, two-way highway and at the end facing traffic of railing installed adjacent to a one-way roadbed. If the railing is placed on a skew, the marker shall be installed at the end of the skew nearest the traveled way. Type P marker panels shall conform to the provisions in Section 82, "Markers and Delineators," except that the Contractor shall furnish the marker panels.

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

- Approach speed of public traffic (Posted Limit over 72 KPH)- Work areas can be within 1.8m of a traffic lane but not on a traffic lane
- Approach speed of public traffic (Posted Limit between 56 and 72 KPH)- Work areas can be within 0.9 m of a traffic lane but not on a traffic lane (Kilometers Per Hour) 8a

For the requirements of this section, Temporary Railing (Type K) shall not be deemed as Construction Area Traffic Control Devices, as defined in Section 12 of the Standard Specifications.

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

When traffic cones or delineators are used to delineate a temporary edge of traffic lane, the line of cones or delineators shall be considered to be the edge of traffic lane, however, Contractor shall not reduce the width of an existing lane to less than 3m without written approval from the Engineer.
When work is not in progress on a trench or other excavation that required closure of an adjacent lane, the traffic cones or portable delineators used for the lane closure shall be placed off of and adjacent to the edge of the traveled way. The spacing of the cones or delineators shall be not more than the spacing used for the lane closure.

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

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

Fences, temporary railing (Type K), barricades, lights, signs, and other devices furnished, erected and maintained by Contractor, at Contractor's expense, are in addition to any construction area traffic control devices for which payment is provided for elsewhere in the specifications.

Pedestrian access facilities shall be provided through construction areas within right of way as specified herein. The surface shall be skid resistant and free of irregularities. Hand railings shall be provided on each side of walkway as necessary to protect pedestrian traffic from hazards due to construction operations. Protective overhead covering shall be provided as necessary to ensure protection from falling objects and drip from overhead structures. Railing shall be constructed of wood, S4S, and shall be painted white. Railing, overhead cover, and walkways shall be maintained in good condition and shall be kept clear of obstructions.

Full compensation for providing pedestrian facilities and protection shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

The Contractor shall also furnish such flaggers as are necessary to give adequate warning to traffic or to the public of any dangerous conditions to be encountered, and payment therefor will be made as provided in **SC-43, Flagging**.

Signs, lights, flags, and other warning and safety devices and their use shall conform to the requirements set forth in the current Manual of Traffic Controls. Signs or other protective devices furnished and erected by Contractor, at Contractor's expense, as above provided, shall not obscure the visibility of, nor conflict in intent, meaning and function of either existing signs, lights and traffic control devices or any construction area signs and traffic control devices for which furnishing of, or payment for, is provided elsewhere in the specifications. Signs furnished and erected by Contractor, at Contractor's expense, shall be approved by the Engineer as to size, wording and location.

The installation of general roadway illumination shall not relieve Contractor of the responsibility for furnishing and maintaining any of the protective facilities herein before specified.

Construction equipment shall enter and leave the highway via existing ramps and crossovers and shall move in the direction of public traffic. All movements of workmen and construction equipment on or across lanes open to public traffic shall be performed in a manner that will not endanger public traffic.

Contractor's trucks or other mobile equipment which leave a freeway lane, that is open to public traffic, to enter the construction area, shall slow down gradually in advance of the location of the turnoff to give following public traffic an opportunity to slow down.

When leaving a work area and entering a roadway carrying public traffic, Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic.

Lanes, ramps and shoulders shall be closed in accordance with the details shown on the plans, the provisions of Section 12, Construction Area Traffic Control Devices of the Standard Specifications, and as provided in these specifications.

No material or equipment shall be stored where it will interfere with the free and safe passage of public traffic, and at the end of each day's work and at other times when construction operations are suspended for any reason, Contractor shall remove all equipment and other obstructions from that portion of the roadway open for use by public traffic.

Temporary facilities that Contractor uses to perform the work shall not be installed or placed where they will interfere with the free and safe passage of public traffic.

Temporary facilities that could be a hazard to public safety if improperly designed shall comply with design requirements specified in the contract for those facilities or, if none are specified, with standard design criteria or codes appropriate for the facility involved. Working drawings and design calculations for the temporary facilities shall be prepared and signed by an engineer who is registered as a Civil Engineer in the State of California and shall be submitted to the Engineer for approval pursuant to **SC-51, Technical Submittals**. The submittals shall designate thereon the standard design criteria or codes used. Installation of the temporary facilities shall not start until the Engineer has reviewed and approved the drawings.

Should Contractor appear to be neglectful or negligent in furnishing warning devices and taking protective measures as above provided, the Engineer may direct attention to the existence of a hazard and the necessary warning devices shall be furnished and installed and protective measures taken by Contractor at Contractor's expense. Should the Engineer point out the inadequacy of warning devices and protective measures, that action on the part of the Engineer shall not relieve Contractor from responsibility for public safety or abrogate the obligation to furnish and pay for these devices and measures.

Provision for the payment for signs, lights, flares, temporary railing (Type K), barricades, and other facilities by extra work **GC-38, Public Convenience and Safety** or by contract item as provided in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, shall in nowise relieve the Contractor from the responsibility as provided in this **SC-42.2**.

Except as otherwise provided in this **SC-42.2**, full compensation for conforming to all of the provisions in this **SC-42.2** shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

SC-43 Flagging

Attention is directed to **SC-42.1, Public Convenience** and **SC-42.2, Public Safety**, Flaggers while on duty and assigned to traffic control or to give warning to the public that the highway is under construction and of any dangerous conditions to be encountered as a result thereof, shall perform their duties and shall be provided with the necessary equipment in conformance with the

current "Instructions to Flaggers" of the Department of Transportation. The equipment shall be furnished and kept clean and in good repair by Contractor at Contractor's expense.

The cost of furnishing all flaggers, including transporting flaggers, to provide for public traffic through the work under the provisions in **SC-42.1** and **SC 42.2** will be borne equally by BATA and Contractor. The cost of providing stands or towers for use of flaggers shall be considered as part of cost of furnishing flaggers. The bid item unit price per hour for Flagging shall not exceed $35.00 per unit (hour), which is considered to constitute BATA's portion of the flagging cost. The bid price paid for flagging cost shall constitute full compensation for furnishing all labor, equipment, transportation, materials, tools and incidentals to perform this item of work. BATA's portion of the flagging cost includes an allowance for overtime.

SC-44 Clearing and Grubbing

In addition to any requirements which may be included in **GC–53, Cleanup,** clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these special conditions.

Attention is directed to **SC-14.1, Aerial Deposited Lead**.

Clearing and grubbing operations shall result in no visible dust. No material containing lead shall be deposited on public roads. Contractor shall indemnify BATA and State from any costs due to any discharge of material containing lead.

Vegetation shall be cleared and grubbed only within the excavation and embankment slope lines. At locations where there is no grading adjacent to a bridge or other structure, clearing and grubbing of vegetation shall be limited to 1.5m outside the physical limits of the bridge or structure.

Existing vegetation outside the areas to be cleared and grubbed shall be protected from injury or damage resulting from Contractor's operations.

Activities controlled by Contractor, except cleanup or other required work, shall be confined within the graded areas of the roadway.

Nothing herein shall be construed as relieving Contractor of the responsibility for final cleanup of the highway as provided in **GC-53, Cleanup**, and **GC-55, Final Inspection and Acceptance of All or a Portion of the Work**.

Trees shown on the plans to be removed shall be removed and disposed of outside of the right of way.

Payment
Clearing and grubbing will be paid for at a lump sum.

Unless otherwise specified in the special conditions, the work of clearing and grubbing disposal sites or material sites will not be paid for when the sites are outside the right of way and Contractor is permitted to exercise the option as to whether or not Contractor elects to use the disposal sites.

The contract lump sum price paid for clearing and grubbing shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, including pruning existing trees within 6.0m of the finished grade, tree removal and disposal, and for doing all the work involved in clearing and grubbing as shown on the plans, and as specified in these specifications and the special conditions, and as directed by the Engineer, including removal and disposal of the resulting material.

SC-45 Equipment And Plants

Only equipment and plants suitable to produce the quality of work and materials required will be permitted to operate on the project.

Plants shall be designed and constructed in accordance with general practice for the equipment and shall be of sufficient capacity to ensure the production of sufficient material to carry the work to completion within the time limit.

The Contractor shall provide adequate and suitable equipment and plants to meet the above requirements, and when ordered by the Engineer shall remove unsuitable equipment from the work and discontinue the operation of unsatisfactory plants.

The Contractor shall identify each piece of equipment other than hand tools, by means of an identifying number plainly stenciled or stamped on the equipment at a conspicuous location, and shall furnish to the Engineer a list giving the description of each piece of equipment and its identifying number. In addition, the make, model number and empty gross mass of each unit of compacting equipment shall be plainly stamped or stenciled in a conspicuous place on the unit. The gross mass shall be either the manufacturers rated mass or the scale weight, expressed in metric units.

The make, model, serial number and manufacturer's rated capacity in metric units for each scale shall be clearly stamped or stenciled on the load receiving element and its indicator or indicators. All meters shall be similarly identified, rated and marked. Upon request of the Engineer, the Contractor shall furnish a statement by the manufacturer, designating sectional and weighbridge capacities of portable vehicle scales.

SC-46 Preservation of Property

Attention is directed to **GC-45, Protection and Restoration of Property**, and these special conditions.

Existing trees, shrubs and other plants, that are not to be removed as shown on the plans or specified in these special provisions, and are injured or damaged by reason of the Contractor's operations, shall be replaced by the Contractor.

The minimum size of tree replacement shall be 600mm box and the minimum size of shrub replacement shall be No. 15 container. Replacement ground cover plants shall be from flats and shall be planted 300mm on center. Replacement of Carpobrotus ground cover plants shall be from cuttings and shall be planted 300mm on center.

Replacement planting shall conform to the requirements in Section 20-4.07, Replacement, of the Standard Specifications. Contractor shall water replacement plants in conformance with the provisions in Section 20-4.06, Watering, of the Standard Specifications.

Damaged or injured plants shall be removed and disposed of outside the highway right of way in conformance with the provisions in **GC-51 Disposal of Materials**. Replacement planting of injured or damaged trees, shrubs and other plants shall be completed not less than 20 working days prior to acceptance of the contract. Replacement plants shall be watered as necessary to maintain the plants in a healthy condition. All landscaping within any project temporary construction easement (TCE) or property of which BATA has been granted a permit to enter during the construction period shall be left, upon project completion, in a condition equal to or better than the pre-existing construction condition. Landscaping, hardscape, etc. which is damaged shall be replaced in these areas at the Contractor’s expense. Prior to the start of any work within a TCE, Contractor shall provide the Engineer with a photo record, with date shown on the photo, of the existing condition prior to construction. Additionally, Contractor shall tour the area with the Engineer, to confirm the condition of the area with the photos. Failure of the contractor to provide and perform these duties shall result in Contractor restoring the TCE to the satisfaction of the engineer at Contractor’s expense. Full compensation for furnishing all labor, materials, equipment and incidentals, and for doing all work involved shall be considered as included in the prices for the various contract items of work and no additional compensation will be allowed therefor.

SC-47 Utilities

The Contractor shall make arrangements to obtain electrical power, water or compressed air or other utilities required for the Contractor's operations and shall make and maintain the necessary service connections at the Contractor's own expense.

SC-48 Sanitary Facilities

State sanitary facilities will not be available for use by the Contractor's employees.

SC-49 Measurement of Quantities

All work to be paid for at a contract price per unit of measurement will be measured by the Engineer in accordance with these contract documents.

Unless shipped by rail, material paid for by mass shall be weighed on scales furnished by and at the expense of the Contractor or on other sealed scales regularly inspected by the Division of Measurement Standards or its designated representative.
Weighing, measuring and metering devices used to measure the quantity of materials used in the work shall be suitable for the purpose intended and shall conform to the tolerances and specifications as outlined in Title 4, Chapter 9 of the California Code of Regulations, the provisions of the California Business and Professions Code, Division 5, and these specifications. Devices not Type-approved by the Division of Measurement Standards shall be Type-approved in conformance with the requirements in California Test 109.

Elements of the material plant controller that affect the accuracy or delivery of data shall be made available for the application of security seals. These devices will be inspected and adjusting elements sealed prior to the first production of materials for the contract. The security seals will be furnished by the Engineer. Material production shall cease when alteration, disconnection or otherwise manipulation of the security seals occur, and production shall not resume until the device is inspected and resealed by the Engineer.

Weighing, measuring or metering devices used to determine the quantity of materials to be paid for will be considered to be "commercial devices" and shall be sealed by the Division of Measurement Standards or its authorized representative as often as the Engineer may deem necessary. The installation of all portable vehicle scales must be approved by the Engineer prior to sealing.

Vehicle scales shall be of sufficient size to permit the entire vehicle or combination of vehicles to rest on the scale deck while being weighed. Combination vehicles may be weighed as separate units provided they are disconnected while being weighed. The maximum concentrated load shall not exceed the manufacturer's designed sectional capacity of the scale.

Weighing, measuring or metering devices required by these specifications for the purpose of proportioning a material or product will be considered to be "non-commercial devices" and shall be tested and approved in conformance with the requirements in California Test 109. This testing shall be done by one of the following, in the presence of the Engineer, as often as the Engineer deems necessary:
(1) A County Sealer of Weights and Measures;
(2) A Scale Service Agency; or
(3) A Division of Measurement Standards Official.

The Contractor shall notify the Engineer at least twenty-four (24) hours in advance of testing the device.

Under supports for scale bearing points shall be constructed of Portland cement concrete produced from commercial quality aggregates and cement, which contains not less than 275kg of cement per cubic meter. Undersupports shall be constructed in a manner to prevent any shifting or tilting of the support and shall have a minimum height of 350mm above ground line. The footings shall have a minimum depth of 150mm below the ground line. The bearing surface of the footings shall have a minimum width of 760mm and shall be of sufficient area so the

pressure does not exceed 200kPa. Adequate drainage shall be provided to prevent saturation of the ground under the scale. Scale bulkheads shall be of adequate material and strength to resist displacement. If timber bulkheads are used, the minimum cross section shall be 200mm x 200mm. Wedges shall not be used to shim the supports. If shimming is necessary, the shimming shall be done by securely attached metal shims, or by grouting. Shimming shall not exceed 75mm. The approach ramps shall be level with the scale deck for a distance of not less than one-half the length of the scale deck. The mechanical indicating elements shall be installed level and plumb and shall be rigidly mounted upon a concrete foundation.

The lever system and mechanical indicating elements of hopper scales shall be rigidly attached to non-yielding supports in such a manner as to prevent any loss in weight due to bending and distortion of the supports.

When a multiple beam type scale is used in proportioning materials, an over and under indicator shall be provided which will give positive visible evidence of the amount of any over and under weight. The indicator shall be so designed that the indicator will operate during the addition of the last 90kg of any weighing. The over-travel of the indicator shall be at least one-third of the loading travel. Indicators shall be enclosed against moisture and dust.

Over and under dials, and other indicators for weighing and measuring systems used in proportioning materials shall be grouped so that the smallest increment for each indicator can be accurately read from the point at which the proportioning operation is controlled.

The Contractor shall bear the expense of all service fees for testing and approving of "non-commercial devices." The cost of the equipment, labor and materials furnished by the Contractor to assist in the testing of weighing, measuring or metering devices will be considered as included in the contract prices paid for the various contract items of work requiring the weighing, measuring or metering and no separate payment will be made therefor.

Whenever pay quantities of material are determined by weighing, the scales shall be operated by a weighmaster licensed in conformance with the requirements in the California Business and Professions Code, Division 5, Chapter 7. The Contractor shall furnish a Public weighmasters certificate or certified daily summary weigh sheets. A representative of the Department may, at the discretion of the Engineer, be present to witness the weighing and to check and compile the daily record of the scale weights.

When required by the Engineer, the operator of each vehicle weighed shall obtain a weight or load slip from the weigher and deliver that slip to the Engineer at the point of delivery of the material.

If material is shipped by rail, the car mass will be accepted provided that actual mass of material only will be paid for and not minimum car mass used for assessing freight tariff, and provided further that car mass will not be acceptable for material to be passed through mixing plants.

Vehicles used to haul material being paid for by mass shall be weighed empty daily and at additional times as the Engineer may direct. Each vehicle shall bear a plainly legible

identification mark. Vehicles may from time to time be required by the Engineer to have the mass of the material to be paid for verified by weighing the empty and loaded vehicle on such other scales as the Engineer may designate.

Materials which are specified for measurement by the cubic meter "measured in the vehicle" shall be hauled in vehicles of such type and size that the actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. Vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery. Loads hauled in vehicles not meeting the above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for that material.
When material is to be measured and paid for on a volume basis and it is impractical to determine the volume by the specified method of measurement, or when requested by the Contractor in writing and approved by the Engineer in writing, the material will be weighed in accordance with the requirements specified for mass measurement and the mass will be converted to volume measurement for payment purposes. Factors for conversion from mass measurement to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor before that method of measurement of pay quantities will be adopted.

Quantities of material wasted or disposed of in a manner not called for under the contract; or rejected loads of material, including material rejected after it has been placed by reason of the failure of the Contractor to conform to the provisions of the contract; or material not unloaded from the transporting vehicle; or material placed outside of the lines indicated on the plans or established by the Engineer; or material remaining on hand after completion of the work will not be paid for, and those quantities will be deducted from the final total quantities. No compensation will be allowed for hauling and disposing of rejected material.

The mass of all aggregate or other roadway material which is to be paid for on a mass basis, except imported borrow, imported topsoil, straw, fiber, aggregate subbases, aggregate bases or aggregate for cement treated bases, will be determined by deducting from the mass of material, the mass of water in the material at the time of weighing in excess of 3 percent of the dry mass of the material. When imported borrow, imported topsoil or aggregate subbase is being paid for on a mass basis, the mass to be paid for will be determined by deducting from the mass of the material, the mass of water in the material at the time of weighing in excess of 6 percent of the dry mass of the material. When straw is being paid for on a mass basis, the mass to be paid for will be determined by deducting from the mass of straw, the mass of water in the straw at the time of weighing in excess of 15 percent of the dry mass of the straw. When fiber is being paid for on a mass basis, the mass of water in the fiber at the time of weighing shall not exceed 15 percent of the dry mass of the fiber. No deduction will be made for the mass of water in fiber. The percentage of water in the material shall be determined by California Test 226. The mass of aggregate base and aggregate for cement treated bases which are to be paid for on a mass basis, will be determined as provided in Section 26, "Aggregate Bases," and Section 27, "Cement Treated Bases," of the Standard Specifications respectively.

The mass of water deducted as provided in this Section will not be paid for.

Full compensation for all expense involved in conforming to the requirements specified in this Section shall be considered as included in the unit prices paid for the materials being measured or weighed and no additional compensation will be allowed therefor.

SC-50 CONTRACT DATA REQUIREMENTS LIST

DESCRIPTION		REFERENCE *	DUE DATE/FREQUENCY
1.	Construction Agreement	Section 4.0	No later than (NLT) six (6) working days following Notice of Award (NOA)
2.	Performance Bond	SC-3	"
3.	Payment Bond	SC-3	"
4.	Certificate(s) of Insurance	SC-2	"
5.	Alternate Form W-9	Section 4.0	"
6.	Material Suppliers List, including subcontractors.	—	NLT ten (10) working days following NOA
7.	Personnel to sign Change Orders	GC-24	"
8.	Emergency Contacts	GC-24	"
	EEO Officer – Contractor and all subcontractors	SC-26	"
9.	Full time Safety Representative(s) – Name(s) and resume(s) of person(s).	SC-13	"
10.	Prevailing Wages Rates	GC-8.3	"
11.	Certified Rates	GC-58	Weekly
12.	Not Used		
4.	Executed Subcontracts	GC-20	NLT sixty (60) calendar days of NOA
5.	Equipment and Plants – List of Equipment	SC-45	Monthly

* ***GC = General Condition***
SC = Special Condition

This list is intended to summarize the requirements for submittal of documents as specified in the Contract Documents. If conflicts exist between the list and the referenced paragraph, the referenced paragraph will take precedence. Contractor shall refer to the Special Conditions, General Conditions for required contract data.

For technical documents, refer to Technical Submittals List found in SC-51of the Special Conditions.

SC-51 TECHNICAL SUBMITTALS LIST

	ITEM	REFERENCE *	DUE DATE/ FREQUENCY	COMMENTS
1.	Schedule of Owner Furnished Materials	SC-8	NLT 30 days after Notice to Proceed	6 copies
2.	Submittal of all Field Notes & Cut Sheets	SC-8.3	No later than twenty-four (24) hours following completion of field survey staking and forty-eight (48) hours prior to use	6 copies
3.	Injury Prevention Plan (IPP)	SC-13	NLT ten days following NOA	6 copies
4.	Site Safety Plan (s)	SC-13 GC-38	NLT ten days following NOA	6 copies
5.	Emergency Action Plan	SC-13.6	NLT ten days following NOA	6 copies
6.	Copies of all accident investigations	SC-13.6	NLT five days following accident	6 copies
7.	Copies of annual and quadrennial crane certifications	SC-13.6	NLT five days prior to a crane working onsite	6 copies
8.	Copies of Job Hazard Analysis	SC-13.6	NLT five days prior to operation being performed	6 copies
9.	List of first aid / CPR trained employees and proof of training	SC-13.7	NLT ten days following NOA	6 copies
10.	Material Safety Data Sheets (MSDS)	SC-14	NLT ten days following NOA	6 copies
11.	Aerially Deposited Lead Submittal	SC-14.1	At least 15 days prior to beginning any work in areas containing Aerially Deposited Lead	6 copies
12.	Electrical Utility Shutdowns	SC-17	At least 30 days prior notice	6 copies
13.	Schedule of Values	SC-20	NLT 20 days after Notice to Proceed	6 copies
14.	Interim CPM Schedule	SC-23 GC-31	NLT 15 days following NOA	3 copies
15.	Baseline CPM Schedule	SC-23 GC-31	NLT 30 days following NOA	3 copies
16.	Monthly CPM Schedule Updates	SC-23 GC-31	5 days in advance of progress payment	3 copies
17.	Quality Assurance Plan	SC-33	NLT ten days following NOA	6 copies
18.	Debris Containment and Collection Program	10.13	NLT ten days following NOA	6 copies
19.	WPCP (Water Pollution Control Plan)	10.14	NLT five days following NOA	10 copies
20.	Product Data Sheets	GC-43	NLT ten (10) days following NOA	6 copies
21.	Warranties	GC-73	Before Final Acceptance	As Required

	ITEM	REFERENCE *	DUE DATE/ FREQUENCY	COMMENTS
22.	Disposal – Submit Sampling and Analysis Plan		At least fifteen (15) days prior to beginning sampling or analysis	6 copies
23.	Sampling and Analysis Plan		NLT fifteen (15) days before any sampling or analysis	6 copies
24.	Health and Safety Plan		At least fifteen (15) days prior to beginning work	6 copies
25.	Welding Quality Control Plan		Within seven (7) days following the performance of any welding	As Required
26.	Operations & Maintenance Manuals		Before Final Acceptance	As Required
27.	Written Schedule of Planned Closures		One (1) week in advance of any lane closure	6 copies
28.	Amendment to the Closure Schedule		At least three (3) days in advance of a planned closure	6 copies
29.	Not Used			
30.	Shop Drawings		No less than three (3) weeks in advance of work operation	6 copies
31.	Not Used			
32.	Not Used			
33.	Cost Breakdown for Electrical Work		NLT fifteen (15) days after Notice to Proceed	6 copies
34.	Not Used			

The above table represents only a partial listing of submittal requirements. The above list is a reminder to the Contractor of his responsibility to submit submittals in a timely manner.

The technical submittal list is intended to summarize the requirements for submittal of documents as specified in the Contract Documents. If conflicts exist between the list and the referenced paragraph, the referenced paragraph will take precedence.

7.0 GENERAL CONDITIONS

7.1 LEGAL RESPONSIBILITIES AND RELATIONSHIPS

GC-1 Applicable Law and Jurisdiction

This Contract incorporates provisions required by the laws of the State of California and the Federal Government. It shall be the Contractor's responsibility to determine the applicability of State and Federal laws, rules and regulations to the work to be performed under this Contract.

This Contract shall be governed by California law. Any lawsuit or legal action arising from this Contract shall be commenced and prosecuted in the courts of Alameda County, California.

GC-2 Compliance With Laws and Regulations

The Contractor shall keep itself informed of, comply with, and shall cause all of its agents, employees, suppliers and subcontractors of any tier, to observe and comply with all applicable Federal, State, and local laws, regulations, and policies, including, but not limited to, all applicable terms and conditions prescribed for third party contracts by the U.S. Department of Transportation (DOT). Contractor shall indemnify, defend, and hold harmless the State, BATA, the Municipality or other entity within whose jurisdiction or on whose property the work is being performed, and Commissioners, their Board of Supervisors, Board of Directors, Councils, officers, agents, consultants and employees from any claim, liability, loss, injury or damage arising out of, or in connection with, the performance of this Contract by the Contractor and/or its agents, employees or subcontractors, excepting only loss, injury or damage caused by the active or sole negligence or willful misconduct of personnel employed by the indemnitees.

GC-3 Contractors' Licensing Requirements

Contractors are required by law to be licensed in the State of California and are regulated by the Contractors' State License Board. Any questions related thereto may be referred to the Registrar of the Board whose address is:

Contractors' State License Board
1020 N Street
Sacramento, CA 95814

GC-4 Independent Contractor

The Contractor represents that it is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly licensed, equipped, organized and financed to perform such work. The Contractor shall act as an independent contractor and not as the agent or employee of BATA in performing the Contract, maintaining complete control over its employees. Nothing contained in this Contract or any subcontract awarded by the Contractor shall create any contractual relationship between any such subcontractor and BATA, and the Contractor shall perform all work in accordance with its own methods subject to compliance with the Contract.

GC-5 Permits, Licenses, Fees and Notices

As specified in **Section 6.0 - Special Conditions**, or as otherwise required by law, the Contractor shall, before beginning any work which requires a permit or similar authorization, secure and pay for all necessary licenses, fees, bonds, charges, inspections, customs or import duties, permits, and similar authorizations from all governmental authorities required to fulfill the Contract requirements and the Contractor's obligations.

GC-6 Nondiscrimination

The Contractor shall comply with Section 1735 of the California Labor Code, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, or sex of such persons, except as provided in Section 12940 of the Government Code, and every contractor for public works violating this section is subject to all the penalties imposed for a violation of this chapter."

In the performance of this Contract, the Contractor and its subcontractors shall not unlawfully discriminate, harass or allow harassment, against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), marital status, age (over 40), and the denial of family care leave. Contractor and its subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Contractor and its subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code §12900 *et seq.*) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285.0 *et seq.*). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code, Section 12290 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations are incorporated into this Contract by reference and made a part hereof as if set forth in full. The Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. The Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under this Contract. The Contractor and its subcontractors shall permit access to all records of employment, employment

advertisements, application forms, and other pertinent data and records by the State Fair Employment Practices and Housing Commission, or any other agency of the State of California designated by the State, for the purpose of investigation to ascertain compliance with this clause.

GC-7 Prohibited Interests

No BATA Commissioner, officer, or employee shall have any direct or indirect interest in this Contract or the proceeds thereof.

GC-8 Labor Provisions

8.1 Safety Pursuant to Section 107 of the Contract Work Hours and Safety Standards Act and Department of Labor Regulations at 29 CFR Section 1926, no laborer or mechanic working on this Contract shall be required to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to their health and safety as determined under applicable health standards promulgated by the Secretary of Labor.

In addition to the Contractor's own safety procedures, and any safety procedures required under Federal, state, or local laws or regulations, including compliance with the provisions of the California Occupational Safety and Health Act of 1973 and any additional safety requirements contained in **Section 6.0 Special Conditions**, Contractor shall implement and enforce all safety requirements that are determined by BATA's Safety Coordinator to be applicable to the performance of any Work under this Contract.

8.2 Overtime Requirements Neither the Contractor nor any subcontractor of any tier shall require or permit any worker to work in excess of eight (8) hours in any day or in excess of forty (40) hours in any work week (defined as seven (7) sequential calendar days) unless such worker 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 eight hours in any day or in excess of forty (40) hours in such work week, whichever is greater. Failure to comply with the preceding requirements shall subject The Contractor or any subcontractor of any tier to the penalties specified in Labor Code §1813.

8.3 Prevailing Wage Rates Pursuant to appropriate Sections of the Labor Code of the State of California, the Director of the California Department of Industrial Relations has ascertained the general prevailing rate of wages (which rate includes employer payments for health and welfare, vacation, pension, and similar purposes) applicable to the Work to be performed under this Contract, for straight time, overtime, Saturday, Sunday and holiday work. Said prevailing wage rates are incorporated herein by reference. These wage rates are available through the California State Department of Industrial Relations, **http://www.dir.ca.gov**. The Contractor shall post a copy of the prevailing wage rates at the jobsite or material staging area.

Workmen employed in the work must be paid at the rates at least equal to the prevailing wage rates as adopted. If Contractor uses a craft or classification not shown on the prevailing wage determinations, the Contractor may be required to pay the wage rate of that craft or

classification most closely related to it as shown in the general determinations effective at the time of Contract award.

8.4 Liability for Unpaid Wages In the event of any violation of the clause set forth in subparagraph (b) (1) of 29 CFR Section 5.5, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages.

8.5 Withholding for Unpaid Wages and Liquidated Damages DOT or BATA may 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 monies 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 subparagraph (b) (2) of 29 CFR Section 5.5.

8.6 Travel and Subsistence Payments Pursuant to Labor Code §1773.8, the Contractor shall be liable for travel and subsistence payments to each worker needed to execute the Work, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with the provisions of Labor Code §1773.8.

8.7 Retention of Labor Records In the performance of the work specified in this Contract, the prime Contractor shall be responsible for compliance with California Labor Code Section 1776 pertaining to payroll records. Contractor and all of its subcontractors of any tier shall maintain all payrolls and basic payroll records during the course of the work and shall preserve them for a period of three (3) years from the completion of the Contract. Such records shall contain the names of all employees, their address, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. These records shall be made available by the Contractor or any of its subcontractors of any tier for inspection, copying, or transcription by authorized representatives of DOT, BATA or the Department of Labor, and the Contractor or any of its subcontractors of any tier shall permit such representatives to interview employees during working hours on the job.

8.8 Employment of Apprentices In the performance of the work specified in this Contract, the prime Contractor shall be responsible for compliance with California Labor Code Section 1777.5, pertaining to the employment of registered apprentices.

8.9 Subcontracts The Contractor shall insert in all of its subcontracts the clauses set forth in this **GC-8, Labor Provisions** and also a clause requiring its subcontractors to include these clauses in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this **GC-8, Labor Provisions**. Pursuant to Public Contract Code §6109, the Contractor is prohibited from performing work on the Project with a subcontractor who is ineligible to perform work on a public works project pursuant to Sections 1777.1 or 1777.7 of the California Labor Code.

GC-9 Hazardous Materials or Unusual Conditions

In the event underground tanks, vaults, materials or unusual conditions as specified in Public Contract Code §7104(a) are encountered during prosecution of the Work, Contractor shall immediately, and before disturbing such conditions, notify BATA in writing of any:

a. Material that the Contractor believes may be material that is hazardous waste as defined in Section 25117 of the Health and Safety Code that is required to be removed to a Class I, II or III disposal site in accordance with the provisions of existing law.
b. Subsurface or latent physical conditions at the site differing from those indicated.
c. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract.

BATA shall promptly investigate the conditions, and if it finds the conditions to be materially different or to involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work, shall issue a Change Order under the procedures described in **GC-65, Change Requests and Change Notices** and **GC-66, Change Order.** Any suspension of Work shall be administered in accordance with the provisions of **GC-69 – Suspension of the Work.** If a dispute arises between BATA and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by this Contract, but shall proceed with all work to be performed under this Contract; *provided, however,* the Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

GC-10 Not Used

GC-11 Tree Removal

During performance of Work under this Contract, The Contractor shall adhere to the tree removal policy of the jurisdiction within whose boundaries the Work takes place. Trees which are required to be removed in order to construct the project **will be shown on the plans and jointly marked in the field by BATA and the Contractor,** as trees to be removed. These will be the only trees whose removal by the Contractor shall be permitted by the terms of the Contract and the costs therefor shall be deemed to be included in the appropriate pay items of the Contract. Trimming or removal of any trees not specifically designated on the plans shall only be allowed upon review, conditioning and approval by BATA.

Existing trees, shrubs, and other plants, that are not to be removed and are injured or damaged by reason of the Contractor's operations, shall be examined by a certified arborist to determine if the tree, shrub or plant will recover with treatment or must be removed and replaced. The arborist will be retained by BATA for consultation and any required treatment of the tree, shrub or plant, and will be paid for by the Contractor. In the event that the arborist recommends removal and

replacement, and no jurisdictional tree, shrub or plant replacement policy is applicable, the Contractor shall replace in accordance with the following:

- The minimum size of the tree replacement for an 18-inch diameter or 52-inch circumference tree removed shall be four 24-inch box trees, and two (2) 24-inch box trees for each tree removed between 12 and 18 inches in diameter. All other trees removed shall be replaced by one 15-gallon tree at a ratio of 1:1.
- The minimum size of shrub replacement shall be 15-gallon. Replacement ground cover plants shall be from flats and shall be planted 12 inches on center. Replacement of Carpobrotus ground cover plants shall be from cuttings and shall be planted 12 inches on center.

Replacement planting of injured or damaged trees, shrubs and other plants shall be completed prior to Final Inspection (**GC-55**). Replacement plants shall be watered as necessary to maintain the plants in a healthy condition.

Damaged or injured plants shall be removed and disposed of outside the limits of work in accordance with the provisions in **GC-51 Disposal of Materials**. At the option of BATA, removed trees and shrubs (except those which are diseased) may be reduced to chips. BATA may direct that such chipped material be spread within the limits of work at locations designated by BATA.

GC-12 Archaeological/Historical Discoveries

If this project has been designated in the Section **1.0 Invitation to Bidders** as an archaeological sensitive project, refer to **Section 6.0 Special Conditions**.

Should any archaeological or historical artifacts or skeletal material be discovered or unearthed during construction activities, all work within ten (10) meters of the find shall be halted. The Contractor (Subcontractor) [or Engineer or Inspector as appropriate] shall immediately notify BATA, and BATA will initiate procedures in accordance with 36 CFR 800.11, State Law (California Public Resources Code Section 5097.98, Health and Safety Code Section 7050.5, and Alameda County Ordinance Code Sections B6-16 through B6-23. Construction activities within ten (10) meters of the find shall remain halted until authorization is obtained from the Environmental Program Manager, or the Environmental Program Manager's named and designated agent, that construction in the vicinity of the find may resume.

In the event of work suspension pursuant to this section, the Contractor shall, within twenty-four (24) hours, notify BATA of the costs involved resulting from said work stoppage. The Contractor shall maintain a log of each such stoppage of work, setting forth the date and time of notification of work stoppage, date and time of actual cessation of operations in the area, and date and time of commencement of operations and costs incurred herein. The Contractor shall submit a claim for reimbursement of such costs within seventy-two (72) hours thereof and shall notify BATA of the anticipated amount of claim within twenty-four (24) hours of said work suspension. In the event of work suspension thereunder, the Contractor shall exert all reasonable

efforts to otherwise utilize labor and equipment affected by the suspension in other portions of the project.

GC-13 Not Used

GC-14 Patent Rights

Any discovery or invention which is an integral part of the items being furnished under this Contract, as well as all information, design, specifications, data and findings which arise or is developed in the course of performing the work under this Contract, shall become the property of BATA.

GC-15 Intellectual Property, Copyright and Patent Infringement

Contractor, upon BATA's request, shall defend BATA and Caltrans against any claim against BATA and/or Caltrans for patent, copyright, trademark, trade secret, or other intellectual property infringement based upon BATA's or Caltrans' use of any work, goods, or services provided by the Contractor pursuant to this Contract. If BATA requests the Contractor to defend against such claim, Contractor shall hold BATA and Caltrans harmless from, and indemnify BATA and Caltrans Municipality for, any liability arising from the claim, provided that (i) BATA notifies Contractor in writing promptly, but not more than thirty (30) days after BATA has actual notice of the claim; (ii) Contractor has sole control of the defense and all related settlement negotiations, unless otherwise agreed by the Parties; and (iii) BATA gives Contractor all available information and reasonable assistance for that defense. If Contractor fails or refuses to defend any such claim, BATA and/or Caltrans may assume control of the defense and Contractor shall indemnify and hold BATA and Caltrans harmless for all fees, costs and expenses associated with or arising from such defense.

This obligation shall not apply when the alleged infringement arises entirely from modification of the work, goods, or services by BATA or Municipality without the Contractor's approval.

GC-16 Rights in Technical Data

BATA shall have the right to use, duplicate or disclose, in whole or in part, in any manner and for any purpose whatsoever, and to have or permit others to use: Any manuals, instructional materials prepared for installation, operation, maintenance or training purposes and technical data pertaining to end items, components or processes which were prepared for the purpose of identifying sources, size, configuration, mating and attachment characteristics, functional characteristics and performance requirements ("form, fit and function" data; e.g., specification control drawings, catalog sheets, outline drawing). The term Technical Data as used herein means technical writing, sound records, pictorial reproductions, drawings, or other graphic representations and works of a technical nature, whether or not copyrighted, which are specified to be delivered pursuant to this Contract. The term does not include financial reports, costs analyses, and other information incidental to contract administration.

For copyrighted material, the Contractor agrees to and does hereby grant to BATA and Caltrans, and to their Commissioners, Directors, officers, agents and employees acting within the scope of their official duties, a royalty-free, nonexclusive and irrevocable license for BATA and/or

Caltrans to publish, translate, reproduce, deliver, perform, dispose of, and to authorize others to use, all Technical Data now or hereafter covered by copyright.

No such copyrighted matter shall be included in Technical Data furnished hereunder without written notice of the copyright owner granting BATA and State consent to use such copyrighted matter in the manner above described.

The Contractor shall report to BATA promptly and in reasonable written detail each notice or claim of copyright infringement received by the Contractor with respect to any Technical Data delivered hereunder.

BATA reserves the right to use the design and the tooling developed for the furnishing of equipment under this Contract in future contracts based on this specification. The Contractor shall maintain design data, including drawings, layouts, and any relevant engineering data, and all necessary tooling in good order for a minimum of four (4) years after final acceptance of the last items furnished under this Contract, and shall transfer that data, including tooling, to BATA upon request at no cost to BATA. All plans, drawings, diagrams, schematics, and specifications shall become the property of BATA, unless otherwise designated by BATA.

GC-17 Ownership of Work and Material

BATA shall own all materials, work in progress, and finished goods produced by the Contractor pursuant to this Contract, for which progress payments have been made and which have been satisfactorily delivered to a designated area. Such ownership shall be free of all encumbrances, or, if it is not, BATA may obtain a priority lien secured pursuant to appropriate sections of the Uniform Commercial Code and other applicable state laws or local ordinances to secure its title rights. Nevertheless, the Contractor shall be responsible for risk of loss for those items of Work for which the Contractor has care, custody and control, until Final Acceptance.

Unless otherwise specifically provided in this Contract, the Contractor shall provide and pay for materials, equipment, tools, utilities, transportation, and other facilities and services necessary for the prosecution of the Work provided for in this Contract.

The Contractor will submit to BATA a "Final Release of All Liens and Claims" as a condition precedent to receiving final payment under this Contract.

GC-18 Title and Risk of Loss

Unless otherwise provided for, title to the Work and risk of loss shall pass to BATA upon final acceptance of the Work, and the Contractor shall furnish or execute all necessary documents of title at that time.

GC-19 Assignment and Delegation

The Contractor shall not assign any of its rights or delegate any of its responsibilities under this Contract without the prior written consent of BATA.

GC-20 Subcontracts

The Contractor shall be fully responsible and liable for the products and actions of all subcontractors and suppliers of any tier, and shall include in each subcontract any provisions necessary to make all of the provisions of this Contract fully effective. The Contractor shall provide all necessary plans, specifications, schedules, and instructions to its suppliers and subcontractors to enable them to properly perform their work. The Contractor shall submit executed copies of all subcontracts entered into pursuant to this Contract to BATA within sixty (**60) calendar days** from issuance of a Notice of Award.

GC-21 Waiver and Non-waiver

A waiver by one party of a right to a remedy for breach of this Contract by the other party shall not be deemed to waive the right to a remedy for a subsequent breach by the other party. BATA's acceptance of goods, or services or payment under this Contract, shall not preclude BATA from recovering against the Contractor or the Contractor's surety for damages due to the Contractor's failure to comply with this Contract.

GC-22 Antitrust Claims

In entering into a public works contract, or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor agrees to assign to the awarding body all rights and title to, and all interest in all causes of action it may have under Section 4 of the Clayton Act, or under the Cartwright Act, arising from the purchases of goods, services, or materials pursuant to the public works contracts or subcontracts. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgement by the parties.

GC-23 Stop Notices

BATA will withhold payments otherwise due the Contractor in order to satisfy Stop Notices which have been properly filed, in accordance with the requirements of California Civil Code Title 15, Chapter 4, regarding Stop Notices. The Contractor shall include this **GC - 23, Stop Notices** in all subcontracts and similar documents entered into by Contractor for the performance of Work under this Contract.

7.2 AUTHORIZED REPRESENTATIVES AND COMMUNICATIONS

GC-24 Authorized Representatives

The Contractor shall designate, in writing, before starting work, an Authorized Representative who, during performance of the Contract, shall have full authority to act on the Contractor's behalf in all matters within the scope of this Contract.

When the Contractor is comprised of two or more persons, firms, partnerships, or corporations functioning on a joint venture basis, said authorized representative shall have the authority to represent and act for the joint venture.

Said authorized representative shall be present at the site of the Work at all times while work is actually in progress on the Contract. When work is not in progress and during periods when work is suspended, arrangements acceptable to BATA shall be made for any emergency work that may be required.

Whenever said authorized representative is not present on any particular part of the Work where BATA may desire to give direction, orders will be given by BATA, which shall be received and obeyed by the superintendent or foremen who may have charge of the particular work in reference to which the orders are given.

Except as hereinafter provided, all orders by BATA shall be given in writing. Those not so given shall be considered to be invalid and not binding. Emergency conditions dealing with safety of persons and protection of property are accepted, and such oral directions will be confirmed in writing as soon as possible, but shall be immediately complied with by Contractor.

BATA will similarly designate, in writing, an Authorized Representative to be its formal contact between BATA and Contractor. Said Authorized Representative will be responsible for all matters relating to the execution of work within the scope of this Contract and will decide all questions which may arise as to the quality or acceptability of the Work and as to the manner of performance and rate of progress of the Work; all questions which may arise as to the interpretation of plans and specifications; all questions as to the acceptable fulfillment of the Contract on the part of Contractor; and all questions as to compensation for work performed.

Matters regarding the terms and conditions of this Contract shall be the responsibility of BATA's General Counsel.

Written notification to the other party shall be provided, in advance, of changes in the name or address or the scope of authority vested in such Authorized Representative.

Each Authorized Representative may, from time to time, delegate to other named individuals certain authority and responsibilities. The names of such individuals, the scope of their authority and responsibility, and the designation of their titles will be communicated to the other party in writing.

The designation of Authorized Representatives of the parties and their delegates as outlined above shall take place at the pre-construction meeting as specified in **GC-26, Pre- Construction Meeting.**

GC-25 Notices and Communications

25.1 Notices All notices and other communications concerning this Contract shall be written in English, shall bear the number assigned to this Contract by BATA and shall follow BATA's correspondence format and reference system. Notices and other communications may be delivered personally, by telegram, by private package delivery, by FAX, or by regular, certified, or registered mail.

The names of the individuals for each of the parties and their addresses to which other communications and correspondence should be delivered will be established and made known to the other party at the pre-construction meeting as specified in **GC-26, Pre-Construction Meeting**.

A notice to BATA will be effective only if it is delivered to BATA's Authorized Representative at the address to be made known to Contractor at the pre-construction meeting as specified in **GC-26, Pre-Construction Meeting**.

A notice to Contractor will be effective only if it is delivered to Contractor's Authorized Representative at the address to be made known to BATA at the pre-construction meeting as specified in **GC-26, Pre-Construction Meeting**.

25.2 Drawing/Plan Clarification An answer from the owner, in response to an inquiry from Contractor, intended to make some requirement(s) of the drawings or plans clearly understood. Drawing clarifications/plan clarifications may be sketches, drawings or in narrative form and will not change any requirement of the drawings or plans. Responses to Contractor inquiries shall be as outlined in the Article 25.3 "Requests for Information" of these General Conditions.

25.3 Requests for Information (RFIs) In the event that Contractor, subcontractor or supplier, at any tier, determines that some portion of the drawings, specifications or other contract documents requires clarification or interpretation by the owner, Contractor shall submit a Request for Information (RFI) in writing to BATA. Requests for Information may only be submitted by Contractor and shall only be submitted on the Request for Information form provided by BATA. Contractor shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed from BATA. In the RFI, Contractor shall set forth its own interpretation or understanding of the requirement along with the reasons why it has reached such an understanding.

BATA will review all RFI to determine whether they are Requests for Information within the meaning of this Contract. If BATA determines that the document is not a RFI it will be returned to Contractor, unreviewed as to content, for resubmittal as the appropriate document required by the subject matter.

Responses to RFI shall be issued within five (5) working days of receipt of the request from Contractor unless BATA determines that a longer period of time is necessary to provide an adequate response. If a longer period of time is determined necessary by BATA, BATA will, within five (5) working days of receipt of the request notify Contractor of the anticipated response time. The five (5) working days referred to herein will start on the date stamped received "In From Contractor" by BATA and depends on the date stamped "Out to Contractor" by BATA If Contractor submits a RFI on an activity with five (5) working days or less of float on the current project schedule, Contractor shall mark the RFI as "Critical." Contractor shall not be entitled to any time extension due to the time it takes BATA to respond to such Critical request provided that BATA responds within the five (5) working days set forth above.

Responses from BATA will not change any requirement of the Contract documents unless so noted in the response to the RFI. In the event Contractor believes that a response to a RFI will cause a change to the requirements of the Contract, Contractor shall immediately give written notice to BATA in accordance with GC-65, Change Requests and Change Notices. Failure to give such written notice shall waive Contractor's right to seek additional time or cost in accordance with Section GC-65.1,Change Requests, of the Contract documents.

GC-26 Pre-Construction Meeting

Prior to issuance of a Notice to Proceed, a pre-construction meeting will be held at a time and place to be designated by notice from BATA. At this meeting, detailed procedures will be discussed for handling the following items:

- Authorized Representative
- Correspondence
- Notices
- Change requests and change notices
- Change orders
- Submittals
- Approvals
- Progress payments
- Schedules
- Community relations
- Inspection plans
- Requests for Information (RFI)
- Other pertinent agenda items

GC-27 Project Meetings

BATA will schedule and preside over all meetings (including but not limited to weekly, pre-production, periodic, and special meetings) throughout the progress of the Work. Agendas for the meetings may include, but are not necessarily limited to, discussions of performance observations, problems, conflicts, schedules, delivery schedules, supplier fabrication, quality standards, Contract modifications, and any other topics that BATA determines to be relevant to the project. Contractor attendance at these meetings is mandatory.

GC-28 Publicity Releases

All publicity releases or releases of reports, papers, articles, maps, or other documents in any way concerning this Contract or the Work hereunder which Contractor or any of its subcontractors desires to make shall be subject to approval by BATA prior to release.

7.3 TIME FOR PERFORMANCE OF WORK

GC-29 Notice to Proceed

Contractor shall commence performance of Work under this Contract immediately after receipt of the Notice to Proceed issued by BATA, and shall continuously and diligently prosecute the Work to completion on or before the time or times set forth in **Section 6.0 Special Conditions** of this Contract. Any work performed or expenses incurred by Contractor prior to Contractor's receipt of Notice to Proceed shall be entirely at Contractor's risk.

A forty-eight (48)-hour advance notice will be required before starting work. Contract personnel will be allowed on the job site only during normal working hours unless otherwise authorized by BATA.

GC-30 Time of Completion

Time is of the essence in this Contract. Contractor's failure to perform Work, deliver goods, or provide services on time and in accordance with the approved progress schedule shall be a material breach of this Contract.

Time periods measured in days shall be computed by excluding the day upon which the period begins to run and including the last day of the period unless the last day is Saturday, Sunday, or a U. S. legal holiday, in which case the period shall run until, and shall include, the next day that is not a Saturday, Sunday, or U.S. legal holiday. All time periods measured in days shall be based upon working days unless specified otherwise.

A **"working day"** is defined to mean any day not a Saturday, Sunday, or U.S. legal holiday. In addition, during actual construction, a calendar day shall not be a "working day" if Contractor is specifically required by the Contract Documents to suspend construction operations, or if Contractor is prevented by inclement weather or otherwise, as determined by BATA and agreed to by Contractor, from proceeding with the Work as anticipated by the parties.

GC-31 Progress Schedule

Contractor shall develop and maintain progress schedules in CPM format identifying critical events involved in the performance of the Work under the Contract in accordance with the requirements of **Section 6.0 Special Conditions.**

GC-32 Excusable Delays and Extensions of Time

Except with respect to defaults of Subcontractors, neither Contractor nor BATA shall be considered in default by reason of any failure to perform in accordance with the Contract schedule if such failure arises out of causes beyond the control and without the fault or negligence of the defaulting party. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the government in its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes or other labor disputes, freight embargoes, and unusually severe weather, but in every case the failure to perform must be beyond the control and without the fault or negligence of the defaulting party. If the failure to perform of either Contractor or BATA is caused by the default of a Subcontractor or a third party Contractor to

BATA, and if such default arises out of causes beyond the control of all the parties, and without the fault or negligence of any of them, neither Contractor nor BATA shall be in default by reason of any such failure to perform. As used herein, the terms "Subcontractor" and "Subcontractors" mean Subcontractor(s) or Supplier(s) to Contractor at any tier.

GC-33 Failure to Complete the Work on Time

If the Work is not completed by Contractor in the time specified, as that time may be extended as authorized elsewhere in the Contract, it is understood that BATA will suffer damage; and, it being impracticable and extremely difficult to determine the amount of actual damage, it is agreed that Contractor shall pay as fixed and liquidated damages, and not as a penalty, the sum set forth in **Section 6.0 Special Conditions** of the Contract for each calendar day of delay until the Work is completed and accepted, and Contractor and its surety shall be liable for the amount thereof.

7.4 PERFORMANCE OF WORK

GC-34 Not Used

GC-35 Temporary Construction Facilities and Utilities

Contractor shall furnish all temporary construction facilities, utilities, and services that are necessary to prosecute the Work. This includes, but is not limited to, fencing, flagmen, sanitary facilities, security, power, water and weather protection. Contractor shall remove all temporary facilities upon completion of the Work or when they are no longer needed for Contractor's purposes, whichever is earlier.

GC-36 Character of Workmen

If any Subcontractor or person employed by Contractor shall appear to BATA to be incompetent or to act in a disorderly, improper or unsafe manner, such person shall be discharged immediately on the request of BATA, and such person shall not again be employed on the Work.

GC-37 Working Environment

Contractor shall ensure and maintain a working environment free of personal harassment and intimidation between Contractor's forces and BATA employees and members of the public at all BATA project sites and in all BATA facilities at which Contractor's forces are assigned to work. Conduct that creates an intimidating, hostile, or offensive working environment is prohibited. Failure to comply with the above will be considered a material breach of this Contract.

GC-38 Public Convenience and Safety

Contractor shall so conduct its operations as to offer the least possible obstruction and inconvenience to the public and shall have under construction no greater length or amount of work than can be prosecuted properly with due regard to the rights of the public. Unless otherwise provided in the Contract, all public traffic shall be permitted to pass through the Work

with as little inconvenience or delay as possible. Where possible, such traffic shall be routed on new or existing paved surfaces. Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by Contractor at its expense. Existing traffic signal and highway lighting systems shall be kept in operation for the benefit of the traveling public during progress of the Work, and other forces will continue routine maintenance of existing systems.
The Contractor shall install signs, lights, flares, barricades, and other facilities for the sole convenience and direction of public traffic and shall furnish competent flaggers or a uniformed police officer whose sole duties shall consist of directing the movement of public traffic through or around the Work.

Work shall be performed in such a manner as to eliminate unnecessary noise, obstructions and other annoyances to occupants. The Contractor will not encumber premises with materials, equipment, and/or parking of cars; Contractor shall store materials, equipment and park cars in designated areas.

See **Section 10.0 Construction Details** for additional traffic control requirements, if any.

GC-39 Cooperation/Coordination and Work by Others

Contractor shall coordinate its Work with all other contractors and subcontractors performing Work on the site. Contractor shall schedule its Work so as to avoid conflicts with other contractors and to avoid damage to completed or incomplete Work. Contractor shall be responsible for any damage to the Work of other contractors or subcontractors if Contractor's actions resulted in such damage and are a) willful or b) negligent and the proximate cause. Contractor shall take immediate action to remedy such damage so as to not delay the immediate prosecution of the Work.

GC-40 Security

Contractor shall provide and be responsible for all security at the job site that is required to protect its material and equipment and all Work in place. Contractor shall also be responsible for providing all security and traffic control required by any city having jurisdiction in the area where Work is being performed.

GC-41 Product Options, Supplier Approval and Substitutions

For products specified in this Contract or in Contractor's submittals by brand name or manufacturer, whether or not followed by the words "or approved equal," Contractor shall select any product or manufacturer named, or shall submit a request to substitute an equal product or manufacturer. As required by the California Public Contracts Code §3400, such request shall be made within thirty-five (**35) calendar days** from date of the Notice of Award in order to receive consideration, unless later submission of a request is agreed to by BATA. The Contractor shall submit a separate request for each substitution. The burden of proof as to the equality of any material, process or article shall rest with Contractor. BATA's determination of the equality or superiority of an article proposed for substitution shall be based upon but need not be limited to consideration of such factors as are specified in the Technical Specifications; dimensional

compatibility with other materials with which it combines to produce a unified design system; all aspects of finished appearance including form, texture, and color, as it affects other design elements. In the event an approved substitution is more expensive than the specified materials, process or article, the difference in cost of such material, process or article so furnished shall be borne by Contractor. Contractor may not make a substitution without BATA's prior written approval. If applicable, specific requirements for the submittal of such requests will be contained in **Section 6.0 Special Conditions**.

BATA shall approve or disapprove Contractor's request for substitution of suppliers or products within thirty (30) days of BATA's receipt of all information required by BATA for such determination.

GC-42 Source of Materials

The Contractor shall be completely responsible for locating, identifying, and furnishing all materials required to be furnished under this Contract, except for BATA furnished materials specified in **Section 6.0 Special Conditions.** BATA shall perform or cause to be performed all tests required to demonstrate to BATA's satisfaction that the proposed materials satisfy the requirements of the Contract.

GC-43 Submittal of Shop Drawings, Product Data and Samples

Working and shop drawings may consist of drawings, diagrams, schedules, or other data prepared by Contractor, or any subcontractor of any tier, manufacturer, supplier or distributor, as are necessary to adequately control the Work or to illustrate or detail some portion of the Work. No change shall be made by Contractor in any working or shop drawing after it has been approved by BATA.

Working Drawings for any part of the permanent Work shall include, but not be limited to: stress sheets, anchor bolt layouts, shop details, erection plans, equipment lists and any other information specifically required elsewhere in the Contract.

Working drawings for cribs, cofferdams, falsework, temporary support systems, haul bridges, centering and form work and for other temporary work and methods of construction Contractor proposes to use, shall be submitted when required by the Contract or ordered by BATA.

Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, or other information furnished by Contractor to illustrate materials, products, systems, or equipment for some portion of the Work.

Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work shall be judged.

Working drawings and shop drawings, product data, samples, and similar submittals shall not modify any Contract requirement, except as expressly allowed by this Contract. The purpose of their submittal is to demonstrate, for those portions of the Work for which submittals are required, the way Contractor proposes to comply with Contract requirements.

Contractor shall review, approve, and submit to BATA all working and shop drawings, product data, samples, or similar submittals required by this Contract, or that are necessary for its proper completion, in accordance with the Schedule for Technical Submittals shown in **Section 6.0, SC-51** and **Section10.0, Construction Details,** in a sequence that causes no delay in the Work, or in the work of BATA or any other BATA contractor.

By approving and submitting working and shop drawings, alternative construction methods, product data, samples, or similar submittals, Contractor represents that it has determined and verified all related materials, measurements, and construction criteria, and that it has checked and coordinated the information contained within its submittals with the requirements of the Work and this Contract.

Contractor shall not be relieved of responsibility for any deviation from the requirements of this Contract by BATA's approval of shop and working drawings, product data, samples, plans, programs, schedules, or similar submittals unless Contractor has specifically informed BATA at the time of submittal in writing of the deviation and BATA has given written approval of the specific deviation. Contractor shall not be relieved of responsibility for errors or omissions in working and shop drawings, product data, samples, plans, programs, schedules or similar submittals by BATA's approval of the submittal. Contractor shall not deviate from approved working and shop drawings, product data, samples, or similar submittals without BATA's written approval.

Contractor shall not commence any portion of the Work requiring submission of shop or working drawings, product data, samples, or similar submittals until the required submittal has been approved by BATA.

Contractor shall direct specific attention, in writing or on resubmitted shop and working drawings, product data, samples, or similar submittals, to revisions other than those required by BATA on previous submittals.

Specific requirements for the submittal of shop and working drawings, product data and samples are contained in **Section 6.0, SC-6**, and **Section 7.0, GC-43**.

Full compensation for furnishing all working and shop drawings, product data and samples shall be considered as included in the prices paid for the Contract items of Work to which such drawings relate and no additional compensation will be allowed.

GC-44 Not Used

GC-45 Protection and Restoration of Property

In addition to any other requirements imposed by law, Contractor shall shore up, brace, underpin, and protect as may be necessary, all foundations and other parts of all existing structures adjacent to and adjoining the site of the Work which are in any way affected by Contractor's operations. Whenever any notice is required to be given by BATA or Contractor to any adjoining or adjacent

landowner or other party before beginning any Work under this Contract, such notice shall be given by Contractor.

Any damage arising from or in consequence of the performance of the Contract, to improvements or property, whether above or below ground, private or public, within or adjacent to the project limits, shall be repaired at once by Contractor. If the best interests of BATA require such repair to be made prior to the execution of any part of the Work included in this Contract, BATA will so notify Contractor who shall delay or discontinue the performance of that part of the Work until the necessary repair has been made. Such delay shall not be considered unavoidable, and no extension of time for completion of the Contract will be made.

When ordered by BATA to make any such repair, Contractor shall start work thereon within four hours and shall prosecute the same with diligence to completion. Upon failure of Contractor to so comply with such order, or upon Contractor's failure to make immediate emergency repairs which are necessary in the best interests of BATA or of the Public, BATA shall have the authority to cause such repair to be made and to deduct the costs thereof from any money due, or which may become due Contractor.

In any emergency affecting the safety of life or property including adjoining property, Contractor, without special instructions or authorization from BATA, is authorized to act at Contractor's discretion to prevent such threatened loss or injury, and Contractor shall so act whether or not it is instructed to do so by BATA.

GC-46 Utility Paint Markings

Contractor shall completely remove all utility paint markings at project completion. Removal shall be by use of the high water pressure method only. Payment for removal of all utility paint markings shall be considered as included in the price paid for other items of work and no additional compensation will be allowed therefor.

GC-47 Not Used

GC-48 Inspection

BATA shall at all times have access to the Work and shall be furnished every reasonable facility for verifying that the materials and workmanship conform to the requirements of the Contract. BATA may test and inspect, either at Contractor's, subcontractor's or supplier's facility, all components, subsystems or workmanship prior to assembly of such components into the Work and prior to acceptance of the Work by BATA. Following such testing and inspection, BATA will issue a deficiency list to Contractor listing those items that fail to comply with the Contract. BATA may either reject or require correction of defective material, workmanship, or nonconformity to this Contract. Contractor shall, at its own expense, make available tools, pits, hoists, scaffolds, platforms, other equipment, facilities, drawings, and assistance as may be necessary for inspections or tests.

Costs of the Inspectors shall be borne by BATA and shall not be a part of the Contract Price. Costs of re-inspection shall be back charged to Contractor. The performance of, or the failure to perform, such inspection shall not relieve Contractor of any responsibility for complete Contract performance. Where shop inspection is required by the terms of the Contract, Contractor shall not ship materials until BATA releases such materials for shipment.

GC-49 Certificates of Compliance and Testing

49.1 General BATA shall use certain methods for testing the quality of materials and work. These methods are identified by number and are referred to in the specifications as California Test. Copies of individual California Tests are available and will be furnished to interested persons upon request.

Whenever the specifications require compliance with specified values for the following properties, tests will be made by the California Test indicated unless otherwise specified:

Properties	*California Test*
Relative Compaction	216 or 231
Sand Equivalent	217
Resistance (R-value)	301
Grading (Sieve Analysis)	202
Durability Index	229

Whenever a reference is made in the specifications to a California Test by number, it shall mean the California Test in effect on the day the Notice of Award for the work is dated.

Whenever the specifications provide an option between two (2) or more tests, BATA will determine the test to be used.

Whenever a reference is made in the specifications to a specification, manual, or test designation either of the American Society of Testing and Materials, the American Association of State Highway and Transportation Officials, Federal Specifications, or any other recognized national organization, and the number or other identification representing the year of adoption or latest revision is omitted, it shall mean the specification, manual, or test designation in effect on the day the Notice to Bidders is dated. Whenever said specification manual or test designation provides for test reports (such as certified mill test reports) from the manufacturer, copies of such reports, identified as to the lot of material, shall be furnished to BATA. When material that cannot be identified with specific test reports is proposed for use, BATA may, at its discretion, select random samples from the lot for testing. Test specimens from the random samples, including those required for retest, shall be prepared in accordance with the referenced specification and furnished by Contractor at their own expense. The number of such samples and test specimens shall be entirely at the discretion of BATA.

When requested by BATA, Contractor shall furnish, without charge, samples of all materials entering into the work, and no material shall be used prior to approval by BATA, except as

provided in **GC-49 Certificates of Compliance and Testing.** Samples of material from local sources shall be taken by or in the presence of BATA, otherwise the samples will not be considered for testing."

49.2 Certificates of Compliance When so authorized in the Contract or when permitted by BATA, the use of certain materials or assemblies shall be allowed if accompanied by a Certificate of Compliance. BATA reserves the right to refuse to permit the use of material on the basis of a Certificate of Compliance. If such use is permitted, the form of the Certificate of Compliance and its disposition shall be as directed by BATA. The certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall be furnished with each lot of material delivered to the Work and the lot so certified must be clearly identified in the Certificate.

All materials used on the basis of a Certificate of Compliance may be sampled and tested by BATA at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract and any such material not conforming to such requirements will be subject to rejection whether in place or not.

49.3 Testing - Unless otherwise specified, BATA shall perform or cause to be performed all testing of materials and work in accordance with the tests specified in **Section 10.0,Construction Details** and the Standard Specifications. Contractor shall furnish without cost adequate samples of all materials necessary for testing, and shall also designate the source of such material where appropriate. Costs of the first test will be paid by BATA. If the material fails the first test, all subsequent tests until the material passes shall be paid by Contractor and such costs will be deducted from any moneys due or to become due Contractor.

GC-50 Removal of Rejected or Unauthorized Work

All work that has been rejected shall be remedied, or removed and replaced by Contractor in a manner acceptable to BATA, and no compensation will be made for such removal, replacement or remedial work.

Any work performed outside of the limits of Work shown on the drawings or established by BATA, or any extra work done without written authorization of BATA will not be paid for. Upon order of BATA such unauthorized work shall be remedied, removed or replaced at Contractor's expense.

If Contractor fails to comply promptly with any such order of BATA, BATA may cause the rejected or unauthorized work to be removed, replaced, or remedied, and to deduct the costs thereof from any moneys due to Contractor.

GC-51 Disposal of Materials

Except for materials generated pursuant to **GC-9, Hazardous Materials or Unusual Conditions**, Contractor shall be responsible for the disposal of all excess materials generated

during the performance of this Contract. When any material is to be disposed of outside the project area, other than a public dump, Contractor shall first obtain a written permit from the property owner on whose property the disposal is to be made and he shall file with BATA said permit or a certified copy thereof together with a written release from the property owner absolving BATA from any and all responsibility in connection with the disposal of material and said property, and before any material is disposed of on said property, Contractor shall obtain written permission from BATA to dispose of the material at the location designated in said permit.

GC-52 Protection of Completed Portions of Work

Contractor shall protect completed portions of the Work until final acceptance of the Work by BATA. Contractor shall take prompt action to remedy or repair any and all damage sustained to Work that is partially or wholly complete and has not yet been accepted by BATA.

GC-53 Cleanup

In addition to any requirements which may be included in **Section 10,** Contractor shall at all times during performance of Work under this Contract, keep the site clean from all rubbish and debris. Before final inspection of the Work, Contractor shall clean the material sites and all ground occupied by it in connection with the Work of all rubbish, excess materials, falsework, forms, temporary structures, and equipment. All parts of the Work shall be left in a neat and presentable condition.

GC-54 Redlined Construction Drawings

Drawings showing all approved changes made during construction which differ from the approved drawing set for construction, shall be furnished by Contractor prior to the acceptance of the Work. Final construction drawings submitted to BATA shall be in the form of redlined drawings clearly and neatly indicating all changes made with the approval of BATA and other field changes made which reflect the as-built condition of the Contract. During the construction period, redlined construction drawings shall be maintained by Contractor and made available to BATA for review on a daily basis.

GC-55 Final Inspection and Acceptance of All or a Portion of the Work

55.1 Final Inspection and Acceptance of all the Work When Contractor considers that all of the Work, or any discrete portion of the Work covered under this Contract has reached final completion, Contractor shall so inform BATA in writing. If necessary and required, acceptance tests on the Work or discrete portion thereof will be performed as set forth in **Section 10.0 – Construction Details** and the Standard Specifications. BATA will prepare a punch list covering any part of the Work that fails to pass the acceptance tests or is otherwise unacceptable and will reject such work. Contractor shall proceed immediately to correct or replace unsatisfactory, incomplete or unacceptable work. For items of work not completed by Contractor BATA may proceed to have the items corrected or completed using BATA or

third party forces. The costs of such corrections shall be deducted from compensation due Contractor.

Unless otherwise stipulated, title to such rejected work and risk of loss shall remain with Contractor, and Contractor shall have the responsibility and bear all costs to correct all defects or damage. All acceptance testing of Work which has been rejected previously shall be at Contractor's expense and costs incurred by BATA to perform such re-tests shall be deducted and withheld by BATA from payments otherwise due to Contractor.

Final acceptance of all of the Work or the particular discrete portion deemed complete will occur after successful completion of all testing, corrections of deficiencies, punch list items, and BATA's determination that the Work conforms in all respects to all the Contract requirements. BATA shall inform Contractor of such acceptance of the Work by issuing a final certificate stating that the Work has been completed in accordance with the Contract requirements and is accepted under the terms and conditions thereof. Acceptance of the Work will be made by BATA only upon issuance of said certificate together with a final estimate. After BATA has accepted the Work, Contractor will be relieved of the duty of maintaining and protecting the accepted Work and will not be required to perform any further work thereon; and Contractor shall be relieved of its responsibility for injury to persons or property or damage to the work that occurs after formal acceptance by BATA. Such final acceptance of the Work shall not relieve Contractor from responsibility for errors, improper fabrication, non-conformance to a Contract requirement, latent defects, or for deficiencies within Contractor's control. Unless otherwise stipulated, all warranties begin with the date of such final acceptance. Coincident with such final acceptance, BATA will record a Notice of Completion.

55.2 Final Inspection and Acceptance of a Portion of The Work BATA retains the right to direct Contractor to complete a portion of the Work at a time different than that specified in the Contract or reflected in the currently approved progress schedule. Such direction will be in writing. If such direction modifies the amount of compensation or time required for the completion of the Work, a change order will be issued. The following will apply if BATA accepts, pays for, takes title to and occupies the portion of the Work so accepted:

- Contractor will be relieved of maintenance responsibility for that portion of the Work.
- Contractor's warranty on that portion of the Work will commence.

7.5 COMPENSATION, PAYMENTS, RECORDS AND AUDIT

GC-56 Compensation

Contractor shall accept the compensation set out in the Contract as full payment for:

- furnishing all labor, materials, tools, equipment, and incidentals necessary to properly perform and satisfactorily complete all the Work included under this Contract;

- all loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work until final acceptance by BATA;
- all risks of every description connected with the prosecution of the Work, and for all expenses incurred in consequence of the suspension or discontinuance of the Work as provided in the Contract.

Neither the payment of any progress payment nor any retained percentage shall relieve Contractor of any obligation to make good any defective work or material.

No compensation will be made in any case for the loss of anticipated profits.

GC-57 Increased or Decreased Quantities and Quantity Variation

GC-57.1 Increased or Decreased Quantities. For Items paid for on a unit price basis, increases or decreases in the quantity of an item of the Work will be determined by comparing the actual quantity of such item of the Work with the Quantity for that item of the Work in the Schedule of Quantities and Prices.

GC-57.2 Quantity Variation If the actual quantity of any item of the Work paid for on a unit price basis varies from the Quantity for such item in the Schedule of Quantities and Prices by 25 percent or less, payment for the item of the Work will be made at the contract unit price..

If the actual quantity of such a contract item of the Work exceeds the Quantity for such item in the Schedule of Quantities and Prices by more than 25 percent, the compensation payable to the Contractor for the amount in excess of 125 percent of the Quantity will be reviewed by the Contractor and BATA, and an equitable adjustment may be made to the unit price for such excess amount by means of a Change Order to credit BATA with any reduction in cost or to compensate Contractor for any increase in cost resulting from the change in quantity. This review of the adjustment will be made at a time mutually acceptable to BATA and the Contractor. If the review results in no change in unit price, the record shall so state.

If the actual quantity of such a contract item of the Work is less than 75 percent of the Quantity for such item in the Schedule of Quantities and Prices, the compensation payable to the Contractor will be reviewed by the Contractor and BATA, and an equitable adjustment may be made to the unit price for the entire quantity by means of a Change Order to credit BATA with any reduction in cost or to compensate the Contractor for any increase in cost resulting from the change in quantity. This review of the adjustment will be made at a time mutually acceptable to BATA and the Contractor. If the review results in no change in unit price, the record shall so state.

GC-58 Certified Payrolls

Contractor shall submit weekly for each week in which any Contract Work is performed, a certified copy of all payrolls for its employees and a certified copy of all of its subcontractor's

payrolls, to BATA. The payrolls submitted shall conform to the requirements of 29 CFR Sec. 5.5 (a) (3) (i) and shall be in a form acceptable to BATA.

GC-59 Invoicing and Progress Payments

Contractor will be paid for the value of all accepted quantities for the various items of work satisfactorily completed in accordance with the Contract and computed in accordance with the applicable measurement for payment provisions of the Contract. Before any payment becomes due, Contractor shall prepare for BATA's approval a schedule of values of the main categories of the Work included in any items paid for as a lump sum and any items for which partial payment for materials on hand will be made. Each item in the schedule of values shall include its proper share of overhead and profit. The values in the schedule shall be used only for determining the amount of each progress payment. A proposed schedule may be rejected if any item is determined by BATA to be unbalanced. BATA may request a detailed cost breakdown of such items.

Prior to the end of each payment period, Contractor shall prepare and forward to BATA a progress payment invoice in writing consisting of the value of the total amount of Work done plus the value of the acceptable materials on hand. Acceptable materials on hand consist of materials or equipment furnished and delivered by Contractor to the site but not yet incorporated in the Work and properly stored in a location acceptable to BATA. In order for materials on hand to be considered for payment, Contractor shall request payment for them on BATA-furnished forms accompanied by documentation as therein required including, but not limited to, evidence of purchase if appropriate.

BATA will retain **ten percent** of such invoiced value as part security for the fulfillment of the Contract by Contractor, and shall pay to Contractor the balance not retained, after deducting therefrom all previous payments and all sums to be kept or retained under the provisions of the Contract. No such invoice or payment shall be construed to be an acceptance of any defective work or improper materials.

After 50% of the Contract Amount, as modified by any Change Orders, has been earned, and if satisfactory progress has been made in accordance with the approved Contract progress schedule, BATA will make the remaining progress payments in full, without retention. If, however, Contractor subsequently falls behind the approved Contract progress schedule, BATA may resume retention up to **ten percent** of all progress payments, including those payments that were made in full.

In accordance with the provisions of applicable California law, Contractor may be permitted to substitute securities in lieu of the withholding from progress payments specified above. Substitutions shall be done in accordance with California Public Contract Code Section 22300 (see below).

Work completed in place shall be an estimate only, and no inaccuracy or error in said estimates shall operate to release Contractor or any Surety from damages arising from such Work or from enforcing each and every provision of this Contract, and BATA shall have the right to

subsequently correct any error made in any invoice submitted for payment. No such invoice or payment shall be required to be made when, as determined by BATA, the Work is not proceeding in accordance with the provisions of the Contract, or when the total value of the Work done since the last estimate amounts to less than $500.00.

In addition to the amounts that BATA may retain as provided hereinabove, BATA may withhold additional amounts from any payments otherwise due to Contractor as it determines necessary to cover:

a) Payments which may be past due and payable for just claims against Contractor or any Subcontractor for labor or materials furnished in performance of the Work under the Contract;

b) For defective work not remedied;

c) For failure of Contractor to make proper payments to any of its Subcontractors;

d) A reasonable doubt that Contractor will complete the Work within the Contract time limits;

e) Damage to other work or property caused by Contractor or its Subcontractor of any tier; if applicable;

f) An amount, not less than 10 percent of the total progress payment, due to the failure to abate, within one (1) working day or immediately in cases of imminent danger, infractions of BATA's Injury Prevention Program (BATA/IPP), Contractor's Safety Plan, CAL/OSHA, FEDERAL OSHA, ANSI or other applicable safety standards;

g) An amount not to exceed 20 percent of the total progress payment, due to four or more repeated infractions in a single payment period of BATA/IPP, Contractor's Safety Plan CAL/OSHA, FEDERAL OSHA, ANSI and all other applicable safety standards.

Contractor shall not be entitled to have any payment estimates processed or be entitled to have any payment made for work performed so long as any lawful or proper direction concerning the Work or any portion thereof given by BATA remains uncomplied with.

Whenever BATA, in accordance herewith, withholds any moneys otherwise due Contractor, written notice of the amount withheld and the reasons therefor shall be given Contractor, and when Contractor removes the grounds for such withholding, BATA will pay Contractor the amount so withheld.

Progress payments shall be based on a four-week period as mutually agreed to by BATA.

Securities may be substituted in lieu of the withholding of progress payments in accordance with Public Contract Code § 22300, which states:

§ 22300 Substitution of Securities for Retentions; Escrow Account

(a) Provisions shall be included in any invitation for bid and in any contract documents to permit the substitution of securities for any moneys withheld by a public agency to ensure performance under a contract, however, substitution of securities provisions shall not be required in contracts in which there will be financing provided by the Farmers Home Administration of the United States Department of Agriculture pursuant to the Consolidated Farm and Rural Development Act (7 U.S.C. § 1921 et. seq.), and where federal regulations or policies, or both, do not allow the substitution of securities. At the request and expense of Contractor, securities equivalent to the amount withheld shall be deposited with the public agency, or with a state or federally chartered bank in this state as the escrow agent, who shall then pay those moneys to the Contractor. Upon satisfactory completion of the contract, the securities shall be returned to Contractor.

(b) Alternatively, Contractor may request and the Owner shall make payment of retentions earned directly to the escrow agent at the expense of Contractor. At the expense of Contractor, Contractor may direct the investment of the payments into securities and Contractor shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by Contractor. Upon satisfactory completion of the contract, Contractor shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the owner, pursuant to the terms of this section.

(c) Securities eligible for investment under this section shall include those listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and the public agency.

Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

Failure to include these provisions in bid and contract documents shall void any provisions for performance retentions in a public agency contract.

For purposes of this section, the term “public agency” shall include, but shall not be limited to, chartered cities.

(d)(1) Any contractor who elects to receive interest on moneys withheld in retention by a public agency shall, at the request of any subcontractor, make that option available to the subcontractor regarding any moneys withheld in retention by the contractor from the subcontractor. If the contractor elects to receive the identical rate of interest received by the contractor on any retention moneys withheld from the subcontractor by the contractor, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the subcontractor. If the contractor elects to substitute securities in lieu of retention, then, by mutual consent of the contractor and subcontractor, the subcontractor may substitute securities in exchange for the release of moneys held in retention by the contractor.

(2) This subdivision shall apply only to those subcontractors performing more than five percent of the contractor's total bid.

(3) No contractor shall require any subcontractor to waive any provision of this section.

(e) The Legislature hereby declares that the provisions of this section are of statewide concern and are necessary to encourage full participation by contractors and subcontractors in public contract procedures.

(f) The escrow agreement used hereunder shall be null, void, and unenforceable unless it is substantially similar to the following form:

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between

_____ whose address is _____
hereinafter called"Owner,"
_____ whose address is _____
hereinafter called"Contractor" and _____, a state or federally chartered bank, whose address is _____ hereinafter called "Escrow Agent."
For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between the owner and Contractor for _____ in the amount of _____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of Contractor, the owner shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the owner and Contractor. Securities shall be held in the name of _____, and shall designate Contractor as the beneficial owner.

(2) The Owner shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the Owner makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time that the escrow created under this contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor, and Escrow Agent.

(5) The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.

(7) The Owner shall have a right to draw upon the securities in the event of default by Contractor. Upon seven days' written notice to the Escrow Agent from the owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the Owner.

(8) Upon receipt of written notification from the owner certifying that the Contract is final and complete, and that Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from the owner and Contractor pursuant to Sections (5) to (8), inclusive, of this agreement and the owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

(10) The names of the persons who are authorized to give written notice or to receive written notice on behalf of the owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of Owner:
_____ (Title)
_____ (Name)
_____ (Signature)
_____ (Address)
On behalf of Contractor:
_____ (Title)
_____ (Name)
_____ (Signature)
_____ (Address)
On behalf of Escrow Agent:
_____ (Title)

_____ (Name)
_____ (Signature)
_____ (Address)

(11) Securities eligible for deposit by Contractor or investment hereunder shall be _____ and no others.

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

_____ (Owner)
_____ (Title)
_____ (Name)
_____ (Signature)

_____ (Contractor)
_____ (Title)
_____ (Name)
_____ (Signature)

GC-60 Force Account Payment

If work is directed by BATA to be performed on a force account basis, compensation shall be made as set forth in this provision. Such payment shall constitute full compensation to Contractor for work directed to be performed on force account and no additional compensation will be allowed therefor. Labor, materials and equipment used in the performance of work on a force account basis shall be approved daily by BATA.

60.1 Work Performed by Contractor. Contractor will be paid the direct costs for labor, materials and equipment used in performing the Work as hereinafter provided except where agreement has been reached to pay in accordance with the **GC-60.7**. A markup may be added to the total of the direct costs computed as provided in **GC-60.2, 60.3, 60.4.** The added markup shall not exceed 20 percent of the cost of labor, 15 percent of the cost of material, 15 percent of the equipment rental and 5 percent of the cost of subcontractors.

The above markups shall constitute full compensation for all overhead costs (general overhead, supervision, office expenses, field office facilities, utilities, and transportation) that shall be deemed to include all items of expense not specifically designated as cost or equipment rental in accordance with the subsections entitled **"Labor," "Materials," and "Equipment Rental."**

When work paid for on a force account basis is performed by forces other than Contractor's organization, Contractor shall reach agreement with such other forces as to the distribution of

the payment made by BATA for such work. No additional payment therefor will be made by BATA by reason of the performance of the Work by a subcontractor or other forces.

60.2 Labor Contractor will be paid the cost of labor for the workmen (including foremen when authorized by BATA) used in the actual and direct performance of the Work. The cost of labor, whether the employer is Contractor, subcontractor, or other forces, will be the sum of the following:

a) **Actual Wages** The actual wages paid shall include any employer payments to or on behalf of the workmen for health and welfare, pension, vacation, insurance, overtime, plus other additives in accordance with collective bargaining agreements.

b) **Labor Surcharge** To the actual wages, as defined above, will be added a Labor Surcharge as set forth in the State of California Department of Transportation publication entitled *Labor Surcharge & Equipment Rental Rates*, which was in effect on the date upon which the Work was accomplished. Said labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workmen, other than actual wages as defined above and the actual subsistence and travel allowance. Provided, however that any costs for workers compensation insurance provided by BATA shall be deducted from the above Labor Surcharge total.

60.3 Materials BATA reserves the right to furnish such materials as it deems advisable, and Contractor shall have no claims for costs and markup on such materials. Only materials furnished by Contractor and necessarily used in the performance of the Work will be paid for. The cost of such materials will be the cost to the purchaser, whether Contractor, subcontractor or other forces, from the supplier thereof, except as the following are applicable:

- If a cash or trade discount by the actual supplier is offered or available to the purchaser, it shall be credited to BATA notwithstanding the fact that such discount may not have been taken.

- If materials are procured by the purchaser by any method which is not a direct purchase from and a direct billing by the actual supplier to such purchaser, the cost of such materials shall be deemed to be the price paid to the actual supplier as determined by BATA. No markup except for actual costs incurred in the handling of such materials will be permitted.

- If the materials are obtained from a supply or source owned wholly or in part by the purchaser, payment therefor will not exceed the price paid by the purchaser for similar materials furnished from said source on contract items or the current wholesale price for such materials delivered to the jobsite, whichever price is lower.

- If the cost of such materials is, in the opinion of BATA, excessive, then the cost of such material shall be deemed to be the lowest current wholesale price at which such materials are available in quantities concerned delivered to the jobsite, less any discounts as provided above.

60.4 Equipment Rental Compensation for equipment used on force account work shall be determined from the latest schedule of equipment rental rates listed in the State of California, Department of Transportation, Business and Transportation Agency Publication, "L*abor Surcharge & Equipment Rental Rates*," and in use at the time the equipment is used. The equipment rental rates listed in said publication shall be used regardless of ownership and any rental or other agreement, if such may exist for the use of such equipment entered into by Contractor. If it is deemed necessary by BATA to use equipment not listed in the said publication, a suitable rental rate for such equipment will be established by BATA prior to the work being done. Contractor shall furnish any cost data that might assist BATA in the establishment of such rental rate.

The rental rate paid as above provided shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance and all incidentals.

Operators of rental equipment will be paid for as provided in the Subsection entitled **"Labor."**

All equipment shall, in the opinion of BATA, be in good working condition and suitable for the purpose for which the equipment is to be used.

Unless otherwise specified, manufacturer's ratings and manufacturer-approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment that has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

Individual pieces of equipment or tools having a replacement value of $250 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.

Rental time will not be allowed while equipment is inoperative due to breakdowns.

60.5 Equipment at the Site of the work The rental time to be paid for equipment on the Work shall be the time the equipment is in operation on the Work being performed, and in addition, shall include the time required to move the equipment to the location of the Work and return it to the original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used at the site of the Work on other than such work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made if the equipment is used at the site

of the Work on other than such Work. The following shall be used in computing the rental time of equipment on the Work:

- When hourly rates are listed, less than thirty (30) minutes of operation shall be considered to be one-half hour of operation.

- When daily rates are listed, less than four (4) hours of operation shall be considered to be one-half day of operation.

60.6 Equipment Not at the Site of the Work For the use of equipment moved onto the site of the Work and used exclusively for work paid for on a force account basis Contractor will be paid the rental rates as determined in the Subsection entitled **"Equipment Rental"** and for the cost of transporting the equipment to the location of the Work and its return to its original location, all in accordance with the following provisions:

- The original location of the equipment to be hauled to the location of the Work shall be agreed to by BATA in advance.
- BATA will pay the cost of loading and unloading such equipment.
- The cost of transporting equipment in low bed trailers shall not exceed the hourly rates listed in the State of California Department of Transportation publication entitled *Labor Surcharge & Equipment Rental Rates.*
- The cost of transporting equipment shall not exceed the applicable minimum established rates of the Public Utilities Commission.

The rental period shall begin at the time the equipment is unloaded at the site of the Work, shall include each day that the equipment is at the site of the Work, excluding Saturdays, Sundays, and BATA holidays unless the equipment is used to perform the Work on such days, and shall terminate at the end of the day on which BATA directs Contractor to discontinue the use of such equipment. The rental time to be paid per day will be in accordance with the following:

Hours of Operation	Hours to Be Paid
0	4
0.5	4.25
1	4.5
1.5	4.75
2	5
2.5	5.25
3	5.5
3.5	5.75
4	6
4.5	6.25
5	6.5
5.5	6.75
6	7

6.5..... 7.25
7 ..... 7.5
7.5..... 7.75
8 8
Over 8..... Actual hours in operation

The hours to be paid for equipment that is operated less than eight (8) hours due to breakdowns shall not exceed eight (8) less the number of hours the equipment is inoperative due to breakdowns.

When hourly rates are listed, less than thirty (30) minutes of operation shall be considered to be one-half hour of operation. When daily rates are listed, payment for one-half day will be made if the equipment is not used. If the equipment is used, payment will be made for one day. The minimum rental time to be paid for the entire rental period on an hourly basis shall not be less than eight (8) hours or if on a daily basis shall not be less than one day.

Should Contractor desire the return of the equipment to a location other than its original location, BATA will pay the cost of transportation in accordance with the above provisions, provided such payment shall not exceed the cost of moving the equipment to the Work.

Payment for transporting, and loading and unloading equipment, as provided above, will not be made if the equipment is used on the Work in any other way than upon Work paid for on a force account basis.

When work, other than work specifically designated as Work in the Contract Documents, is to be paid for on a force account basis and BATA determines that such work requires Contractor to move on to the site equipment which could not reasonable have been expected to be needed in the performance of the Contract, payment for the use of such equipment at equipment rental rates in excess of those listed as applicable for the use of such equipment will be made subject to the following additional conditions:

- BATA shall specifically approve the necessity for the use of particular equipment on such Work.
- Contractor shall establish to the satisfaction of BATA that such equipment cannot be obtained from its normal equipment source or sources and those of its subcontractors.
- Contractor shall establish to the satisfaction of BATA that the proposed equipment rental rate for such equipment from its proposed source is reasonable and appropriate for the expected period of use.
- BATA shall approve the equipment source and the equipment rental rate to be paid by BATA before Contractor begins work involving the use of said equipment.

60.7 Work Performed by Special Forces or Other Special Services When BATA and Contractor, by mutual agreement, determine that a special service or an item or work cannot

be performed by the forces of Contractor, or those of any of its subcontractors, such service or work item may be performed by a specialist. Invoices for such service or item of work, performed by a specialist on the basis of the current market price thereof, may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with the established practice of the special service industry to provide such complete itemization.

In those instances wherein a Contractor is required to perform work necessitating a fabrication or machining process in a fabrication or machine shop facility away from the jobsite, the charges for that portion of the Work performed in such a facility, may by mutual agreement, be accepted as a specialist billing.

In lieu of the percent markups provided above in the Subsection entitled **"Work Performed by Contractor"**, a 15 percent markup will be added to the specialist price, less a credit to BATA for any cash or trade discount offered or available, whether or not such discount may have been taken.

60.8 Owner-Operated Equipment. When "Owner-Operated Equipment" is used to perform work to be paid on a force account basis, Contractor will be paid for the equipment and operator, as follows:

- Payment for the Equipment will be made in accordance with the Subsection 60.4 herein entitled **"Equipment Rental."**

- Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by Contractor to other workmen operating similar equipment already on the project or, in the absence of such other workmen, at the rates for such labor established by collective bargaining agreements for the type of workmen and location of the Work, whether or not the "Owner-Operator" is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein, in accordance with the provisions of Subsection 60.2 b entitled "**Labor Surcharge."**

- To the direct cost of equipment rental and labor, computed as provided herein, will be added the markups for labor and equipment rental as provided in Subsection 60.1 entitled **"Work Performed by Contractor."**

If, at any time after Contractor commences the force account work, a method of compensation other than that specified in this Article has been agreed upon for the force account work or a portion of such work, such compensation shall be made in accordance with such agreement.

Contractor shall keep accurate daily records of the actual cost to Contractor for all work performed pursuant to this Article and shall make them available to BATA upon reasonable notice and request. Such records shall be maintained in such a manner so as to be completely discernible from records associated with the basic Contract scope.

GC-61 Prompt Payment

61.1 Payment to Contractor Public Contract Code Section 20104.50 requiring prompt payment to contractors is applicable to this contract. Undisputed and properly submitted payment requests shall be paid within thirty (30) days of receipt by BATA. Any undisputed and properly submitted payment request not paid within thirty (30) days shall accrue interest at the legal rate set forth in Code of Civil Procedure Section 685.010.

Any payment request determined by BATA not to be a proper payment request suitable for payment shall be returned to Contractor within seven days of receipt setting forth in writing the reasons why the payment request is not proper.

61.2 Payment to Subcontractors Contractor shall adhere to all federal and California prompt payment laws and regulations including Business and Professions Code Section 7108.5 requiring Contractor to pay subcontractors within ten (10) days of receipt of each progress payment to the extent of each subcontractor's interest therein, unless otherwise agreed to in writing.

Notwithstanding the time for payment of retention provided for in Public Contract Code Section 7101(d), Contractor shall pay retention proceeds to subcontractors within thirty (30) days after the subcontractor's work is satisfactorily completed, unless the time for payment calculated pursuant to Section 7101(d) would result in earlier payment of retention to the subcontractor.

GC-62 Final Payment

Final payment shall not become due until the following actions have been satisfactorily completed:

a) Satisfactory completion of final inspection of all the Work under the Contract and the issuance by BATA of a Letter of Final Acceptance.

b) The recording of a Notice of Completion by BATA.

c) Contractor submittal to BATA of:

- An affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work have been paid or otherwise satisfied, and
- A release of liens and claims arising out of the Contract, to the extent and in the form designated by BATA. If a claim remains unsatisfied after all payments are made, Contractor shall reimburse BATA for all monies that BATA may be compelled to pay in discharging the claim, including all costs and reasonable attorney's fees.

BATA may at its option and at any time retain out of any amounts due Contractor, sums sufficient to cover claims, filed pursuant to Section 3179 et seq. of the Civil Code.

BATA will make final payment, including outstanding retention, within **30-60 calendar days** of the recording of the Notice of Completion.

The acceptance of final payment by Contractor shall constitute a waiver of all claims against BATA arising under the Contract.

GC-63 Project Records

Comprehensive records and documentation relating to this project shall be kept by Contractor. The records shall include, but are not limited to Contract Documents, Drawings, Specifications, Addenda, Shop Drawings and Submittals, Change Orders, Modifications, Test Records, redlined construction plans, As-Built Drawings, and cost and pricing data. Contractor shall maintain a complete set of records relating to this Contract for a period of seven years from final payment for this Work. The cost records shall be complete and in sufficient detail to allow evaluation of the accuracy and completeness, and currency of the costs or prices. Contractor shall permit the authorized representatives of BATA to examine and audit all such records and any subcontracts under this Contract during the time period so specified. In addition, every contract involving the expenditure of public funds in excess of ten thousand dollars ($10,000) entered into by a public entity in the State of California shall be subject to the examination and audit of the State Auditor, at the request of the public entity or as part of any audit of the public entity, for a period of three years after final payment under the contract.

7.6 CONTRACT MODIFICATIONS, DISPUTES AND CLAIMS

GC-64 Not Used

GC-65 Change Requests and Change Notices

65.1 Change Requests. Contractor may make a written request to BATA to modify the Contract (Change Request) based upon the receipt of, or the discovery of information that changes the scope, price, schedule, level of performance, or other facet of the Contract.

Contractor shall deliver a document entitled **"Change Request"** to BATA within 30 calendar days after receipt of, or the discovery of, information (other than receipt of a **"Change Notice"**) that Contractor believes will cause a change to the scope, price, schedule, level of performance, or other facet of the Contract. Upon receipt of a Change Notice, Contractor shall follow the procedures of **GC-65.2**. All Change Requests, and any Claims based thereon including any request or claim for cumulative impact costs shall be deemed waived unless a Change Request is delivered to BATA within the 30 calendar days specified herein.

The Change Request shall include information necessary to substantiate the effect of the change and any impacts to the work, including any change in schedule or Contract Price, and shall include all existing documentation or a description of anticipated documentation. In addition, the Change Request shall contain a detailed description of the proposed adjustment

to the Contract Price or currently approved progress schedule, or both, and shall reference any other provisions of the Contract that will require modification because of the change. If a Change Request proposes an adjustment in the Contract Price, upon request of BATA, Contractor shall submit a complete breakdown of costs including detailed pricing information and back up for all work and any impacts thereto contemplated by the change.

The unavailability of all information necessary to quantify the change shall not excuse the timely submission of the Change Request. Contractor shall supplement the Change Request with additional information or documentation, as it becomes available. If BATA has not received sufficient substantiating documentation or information within a reasonable time after receipt of the Change Request, such insufficiency may be grounds to deny the Change Request.

If a Change Request or portions thereof are acceptable to BATA, BATA will issue a Contract Change Order consistent therewith. If a Change Request or portions thereof are not acceptable to BATA, BATA shall notify the Contractor in writing.

Any request by Contractor to modify the contract must first be submitted to BATA and proceed as a Change Request pursuant to these provisions. The Contractor may submit the matter as a Claim pursuant to GC 68, Claims only if, i) the Change Request has been denied by BATA in whole or in part, or ii) the Change Request has not been resolved within 90 days after receipt by BATA.

In the event of a dispute, Contractor shall proceed with the Work without delay, as directed by BATA.

65.2 Change Notice. BATA may, at any time during performance of the Contract notify Contractor of changes to the Contract by issuing a **Change Notice** to that effect. Contractor shall, within 15 calendar days after receipt of such Change Notice, provide to BATA a written response identifying any proposed adjustment in Contract Price, including any adjustment for cumulative impact costs and schedule to perform the changes identified in the Change Notice, unless another time period for response is specified in the Change Notice. BATA shall then issue an appropriate Change Order.

If BATA directs Contractor to perform additional work, the basis for compensation for such work shall be either: 1) extension of Contract items, 2) negotiated lump sum price, or 3) force account, as determined by BATA. The markups described in **GC-60.1** shall be the maximum allowed for all additional work directed by BATA.

If the Contractor and BATA cannot agree on the appropriate adjustment to the Contract Price or schedule, Contractor may either accept BATA's determination or identify and submit the matter as a Claim pursuant to the provisions of **GC 68,** Claims. In the event of a dispute, Contractor shall proceed with the Work without delay as directed by BATA.

GC-66 Change Order

A Change Order is a written document issued by BATA, that:

- Changes the Contract Price, as modified by any previously executed Change Orders, or
- Alters the scope of Work under the Contract, or
- Alters the schedule for performance of the Work under the Contract as set forth in the currently approved schedule, or
- Makes any other change to the Contract, or makes a combination of any of the aforementioned Contract changes.

GC-67 Differing Site Conditions

67.1 Soil Boring or Other Data. Where BATA has included soil boring information or other data in the Contract, they are included for Contractor's information only and BATA does not guarantee the accuracy of the information contained therein.

67.2 Notice of Differing Conditions. Contractor shall promptly and before such conditions are disturbed, notify BATA in writing of subsurface or latent physical conditions at the site differing materially from those indicated in the Contract, or unknown physical conditions at the site, of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract.

All Change Requests involving differing site conditions and any Claims based thereon shall be deemed waived unless the Contractor has given written notice before the conditions are disturbed as specified herein.

BATA will, as soon as practicable, investigate or cause to be investigated the items noted by Contractor and, if it is determined that such conditions do materially so differ and cause an increase or decrease in Contractor's cost of or time required for the performance of any part of the Work under the Contract, whether or not changed as a result of such conditions, an equitable adjustment will be made and the Contract modified.

GC-68 Claims

68.1 Claim Defined "Claim" means a separate demand by Contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or that Contractor is not otherwise entitled to, or (C) an amount the payment of which is disputed by BATA.

68.2 Claim Requirements:

1. **A**ny submittal intended by the Contractor to be evaluated by BATA as a Claim shall be entitled "Claim".

2. All claims shall be submitted by the Contractor within thirty (30) days after the date of the event giving rise to the Claim, such as, for example, the denial by BATA of a Change Request, the failure of BATA to respond to a Change Request within ninety (90) days after receipt of required substantiating information and documentation, or the issuance by BATA of a disputed Change Order. Any Claim not submitted within the specified thirty (30) days shall be deemed waived.

3. Claims shall be in writing and must be submitted with all documents necessary to substantiate the Claim. A Claim must state in as much detail as possible the basis for the Claim and the additional compensation or extra time to which Contractor believes it is entitled. If the Claim is silent regarding entitlement to extra time, Contractor shall be entitled to no extra time in connection with the Claim. If the Claim is silent regarding additional compensation, Contractor shall be entitled to no additional compensation in connection with the Claim.

4. Contractor must notify BATA promptly in writing of any changes in its estimates of additional compensation or extra time, and the notification must state the reasons for the changes.

5. All Claims and any amendments thereto shall include the fully executed certification set forth below. Any Claim submitted without a fully executed certification shall be rejected by BATA and returned to the Contractor.

I,_____, BEING THE_____(MUST BE AN OFFICER) OF_____(CONTRACTOR), DECLARE UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA, AND DO PERSONALLY CERTIFY AND ATTEST THAT I HAVE THOROUGHLY REVIEWED THE ATTACHED CLAIM FOR ADDITIONAL COMPENSATION AND/OR EXTENSION OF TIME, AND KNOW ITS CONTENTS, AND SAID CLAIM IS MADE IN GOOD FAITH; THE SUPPORTING DATA IS TRUTHFUL AND ACCURATE; THAT THE AMOUNT REQUESTED ACCURATELY REFLECTS THE CONTRACT ADJUSTMENT FOR WHICH THE CONTRACTOR BELIEVES THE OWNER IS LIABLE; AND, FURTHER, THAT I AM FAMILIAR WITH CALIFORNIA PENAL CODE SECTION 72 AND CALIFORNIA GOVERNMENT CODE 12650, ***ET SEQ.***, PERTAINING TO FALSE CLAIMS, AND FURTHER KNOW AND UNDERSTAND THAT SUBMISSION OR CERTIFICATION OF A FALSE CLAIM MAY LEAD TO FINES, IMPRISONMENT, AND/OR OTHER SEVERE LEGAL CONSEQUENCES.

By_____

6. No Claims shall be filed later than the date of final payment.

68.3 Claim Review. BATA shall respond in writing to Contractor's Claim within forty-five (45) calendar days after BATA's receipt of the Claim or BATA may request in writing, within 30 days of receipt of the Claim, any additional information or documentation supporting the Claim or relating to defenses to the Claim BATA may have against the

Contractor. For claims exceeding $375,000 BATA may, at its option, notify Contractor of extended time periods for review and response.

BATA's written response to the Claim, as further documented, shall be submitted to Contractor within fifteen (15) days after receipt of the further information or documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

68.4 Meet and Confer If Contractor disputes BATA's written response, or if BATA fails to respond within the time prescribed, Contractor may so notify BATA, in writing, either within fifteen (15) days of receipt of BATA's response or within fifteen (15) days of BATA's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, BATA shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

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

The above procedures do not apply to Government Code claims for tort damages and are not intended, and shall not be construed, to change the time for filing such claims.

68.5 Procedures for Civil Actions. Public Contract Code Section 20104.4, set forth below, establishes the following procedures for all civil actions filed to resolve claims of $375,000 or less under this Contract:

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

(b) (1) If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3

of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.

(3) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

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

The above claims procedures are also subject to Public Contract Code § 20104.6, which provides:

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

7.7 SUSPENSION OF WORK, CONTRACT TERMINATION

GC-69 Suspension of the Work

In addition to the right of BATA to suspend Work under any other provision of this Contract, BATA may require Contractor to suspend all or part of the Work called for by this Contract at any time for up to **ninety (90) days** after a written Suspension Order is delivered to Contractor, and for any further period to which the parties may agree. The Suspension Order shall include the following:

- A clear description of the Work to be suspended;
- Guidance as to the action to be taken on subcontracts; and
- Other requests for minimizing costs.

Upon receipt of a Suspension Order, Contractor shall comply with its terms immediately and take all reasonable steps to minimize cost allocable to the Work covered by the Order during the period of work stoppage. Within the period specified by the Order, or within any extension of that period to which the parties may agree, BATA may:

- Terminate the Work covered by the Order as set forth in this section.
- Cancel the Suspension Order; or
- Allow the period of the Suspension Order to expire.

Contractor shall resume work upon the cancellation or expiration of a Suspension Order. An equitable adjustment shall be made in the Work scope, Contract Price, or Contract time, as appropriate, and the Contract shall be modified in writing in accordance with **GC-32, Excusable Delays and Extensions of Time** and **GC-69, Suspension of the Work** if:

- The Suspension Order results in an increase in the time required for, or in Contractor's cost properly allocable to, the performance of any part of this Contract; and
- Contractor asserts a claim for an adjustment within 30 days after the end of the period of work stoppage; and
- The Suspension Order was not caused by Contractor's default or other act or omission within the control or responsibility of Contractor.

In preparation for and during suspensions of work, Contractor shall take every reasonable precaution to prevent damage to or deterioration of the Work. Contractor shall repair or replace, at no cost to BATA, Work that is damaged or deteriorated during a work suspension due to Contractor's failure to comply with this duty. If BATA determines that Contractor is not taking reasonable precautions and Contractor fails to take the corrective action within five days after written notice from BATA, BATA may cause such action to be taken and recover the reasonable cost thereof from Contractor.

GC-70 Termination for Convenience or in the Public Interest

BATA may terminate this Contract in whole or in part at any time by written notice to Contractor if BATA determines that termination is in the best interest of BATA or the public. If this Contract is so terminated, Contractor shall be entitled to payment for all Work performed acceptably, all acceptable goods or services ordered by and delivered to Contractor before termination, and all reasonable termination costs, up to the maximum amount payable under this Contract, provided that Contractor provides a final itemized invoice for the above amounts within thirty (30) days after receiving the termination notice.

GC-71 Termination for Default

BATA may, by written notice of default to Contractor, terminate Contractor's right to proceed with the Work under the Contract, in whole or with regard to any part:

- if Contractor fails to supply an adequate working force, or materials of proper quality, or otherwise refuses or fails to prosecute the Work, or any separable part thereof, with such

diligence as will ensure its completion within the time specified in this Contract, or authorized extension thereof; or

- if Contractor fails to make prompt payment to its subcontractors or suppliers upon receipt of progress payments from BATA; or

- if Contractor persistently disregards laws, ordinances, or instructions of BATA, and

- if Contractor does not cure such failure within a period of seven days (or such longer period as BATA may authorize in writing) after receipt of notice from BATA specifying such failure.

In the event of such termination for default, BATA may take over the Work and prosecute the same to completion, by contract or otherwise, and may take possession of and use all or any part of Contractor's material, tools, equipment, and appliances as may be on the site of the Work and which are necessary for performance of the Work. Upon completion of such work, Contractor is entitled to return of all unused materials and its equipment, tools and appliances, except that there shall be no claim on account of usual and ordinary depreciation, loss, or wear and tear.

If Contractor's right to proceed is so terminated, Contractor shall not be entitled to receive any further payment until the Work is completed. Contractor and its surety(s) shall be liable to BATA for any additional costs of completion of the Work, including compensation for additional managerial and administrative services, plus liquidated damages accruing under the terms of this Contract from the Contract completion date, as extended by authorized time extensions, to the date of final completion.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of BATA.

GC-72 Contractor's Duties Upon Termination

After receipt of a Notice of Termination, either for default or convenience, Contractor shall:

- stop work under the Contract on the date and to the extent specified in the Notice of Termination;

- place no further orders or subcontracts for materials, services, or facilities, except as may be necessary for completion of such portion of the Work under the Contract as is not terminated;

- terminate all orders and subcontracts to the extent that they relate to the performance of Work terminated by the Notice of Termination;

- assign to BATA in a manner, at the times, and to the extent directed by BATA, all of the right, title, and interest of Contractor under the orders and subcontracts so terminated.

7.8 WARRANTY PROVISIONS

GC-73 Warranty

It is a condition of this Contract that the equipment, materials or design furnished, and workmanship performed by the Contractor or any subcontractor or supplier at any tier, shall conform to the requirements of this contract and shall be free of any defect. Neither inspection, testing and acceptance by BATA of such equipment, materials, design or work performed, partial or final payment, nor any provisions of the Contract shall relieve the Contractor from responsibility for any latent defect, gross mistakes or fraud. The Contractor and its surety(s) shall warrant, regardless of the warranties obtained from the Subcontractors, all equipment, materials, design and workmanship for a period of one year from the date of Final Acceptance by BATA of all of the work under the Contract or any discrete portion thereof. The Contractor's warranty with respect to work repaired or replaced shall also run for one year from the date of repair or replacement. In addition, the Contractor shall furnish a written guarantee covering all or certain items of work and shall extend any warranty from a subcontractor or supplier that exceeds the above warranty period. If such additional or varying guarantees are required, they will be specified in Section 6.0 - Special Conditions of this contract. BATA retains the right, at its sole discretion, to assign to a third Party any warranty received under this Contract. .

GC-74 Warranty Work

The Contractor is responsible for all warranty-covered repair work during the warranty period as specified above. The Contractor shall provide at its own expense, all spare products and tools required for repairs. To the extent practicable, BATA will allow the Contractor or its designated representative to perform such work. When warranty repairs are required, BATA and the Contractor's representative shall agree on the most appropriate remedy to be performed within a reasonable time. If the Contractor fails to remedy any failure or defect within a reasonable time, BATA shall have the right to replace, repair, or otherwise remedy the failure or defect at the Contractor's expense. At its discretion, BATA may also perform such work if it deems necessary to do so to meet its operational commitments or other requirements. The Contractor shall reimburse BATA of all expenses for such work including materials and labor. The hourly shop labor rates shall be based on BATA's current labor cost accounting system. The Contractor shall reimburse BATA for such work within sixty days of receipt of warranty claim.

GC-75 Warranty on Replaced Parts

Any materials, parts or components that are used for replacement under the initial warranty period shall be warranted again for the total original warranty period of the replaced particular material, part or component.

GC-76 Systematic Failures

In the event that, during the warranty period, repairs or modifications necessitated by defective design, material, or workmanship occur to an extent in excess of 10 percent of the components used for the same function in the same assembly or subsystem purchased under this Contract, the Contractor shall promptly furnish all necessary labor and material to effect such repairs and

modifications for every system delivered under the Contract under the terms and conditions outlined, including systems in which the item has not yet failed. When requested by BATA, the Contractor will be required to provide a written failure analysis report for defective products supplied under this contract and which occurred during the warranty period. The report shall be received by BATA within forty-five (45) days from the date of request.

SECTION 8. MISCELLANEOUS

8-1. PREQUALIFIED AND TESTED SIGNING AND DELINEATION MATERIALS

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

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

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

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

PAVEMENT MARKERS, PERMANENT TYPE

Retroreflective With Abrasion Resistant Surface (ARS)

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

Retroreflective With Abrasion Resistant Surface (ARS)

(for recessed applications only)

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

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

Non-Reflective, 4-inch Round

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

PAVEMENT MARKERS, TEMPORARY TYPE

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

1. Vega Molded Products "Temporary Road Marker" (3" x 4")
2. Filtrona Extrusion, Halftrack model 25, 26 and RPM 35

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

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

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

STRIPING AND PAVEMENT MARKING MATERIAL

Permanent Traffic Striping and Pavement Marking Tape

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

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

1. Advanced Traffic Marking, Series 200
2. Brite-Line, Series 100
3. Garlock Rubber Technologies, Series 2000
4. P.B. Laminations, Aztec, Grade 102
5. Swarco Industries, "Director-2"
6. Trelleborg Industries, R140 Series

7. 3M Series 620 "CR", and Series A750
8. 3M Series A145, Removable Black Line Mask
   (Black Tape: for use only on Hot mix asphalt surfaces)
9. Advanced Traffic Marking Black "Hide-A-Line"
   (Black Tape: for use only on Hot mix asphalt surfaces)
10. Brite-Line "BTR" Black Removable Tape
    (Black Tape: for use only on Hot mix asphalt surfaces)
11. Trelleborg Industries, RB-140
    (Black Tape: for use only on Hot mix asphalt surfaces)

Preformed Thermoplastic (Heated in place)

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

Ceramic Surfacing Laminate, 6" x 6"

1. Highway Ceramics, Inc.

CLASS 1 DELINEATORS

One Piece Driveable Flexible Type, 66-inch

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

Special Use Type, 66-inch

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

Surface Mount Type, 48-inch

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

CHANNELIZERS

Surface Mount Type, 36-inch

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

Lane Separation System

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

CONICAL DELINEATORS, 42-inch

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

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

OBJECT MARKERS

Type "K", 18-inch

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

Type "Q" Object Markers, 24-inch

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

7. Three D Traffic Works ID No. 520896W

CONCRETE BARRIER MARKERS AND
TEMPORARY RAILING (TYPE K) REFLECTORS

Impactable Type

1. ARTUK, "FB"
2. Filtrona Extrusion, Models PCBM-12 and PCBM-T12
3. Duraflex Corp., "Flexx 2020" and "Electriflexx"
4. Hi-Way Safety, Inc., Model GMKRM100
5. Plastic Safety Systems "BAM" Models OM-BARR and OM-BWAR
6. Three D Traffic Works "Roadguide" Model TD 9300

Non-Impactable Type

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

METAL BEAM GUARD RAIL POST MARKERS

(For use to the left of traffic)

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

CONCRETE BARRIER DELINEATORS, 16-inch

(For use to the right of traffic)

1. Filtrona Extrusion, Model PCBM T-16
2. Safe-Hit, Model SH216RBM
3. Three D Traffic Works "Roadguide" Model 9400

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

1. Stinson Equipment Company "SaddleMarker"

GUARD RAILING DELINEATOR

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

Wood Post Type, 27-inch

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

Steel Post Type

1. Carsonite, Model CFGR-327

RETROREFLECTIVE SHEETING

Channelizers, Barrier Markers, and Delineators

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

Traffic Cones, 4-inch and 6-inch Sleeves

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

Drums

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

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

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

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

1. Avery Dennison, W-2100 Series

Vertical Clearance Signs: Structure Mounted

1. 3M Model 4061, Diamond Grade DG3, Fluorescent Yellow

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SPECIALTY SIGNS

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

ALTERNATIVE SIGN SUBSTRATES

Fiberglass Reinforced Plastic (FRP) and Expanded Foam PVC

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

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

1. Alcan Composites "Dibond Material, 80 mils"
2. Mitsubishi Chemical America, Alpolic 350
3. Bone Safety Signs, Bone Light ACM

SECTION 8.2 – CONCRETE

8-2.1 PORTLAND CEMENT CONCRETE

Portland cement concrete shall conform to the provisions in Section 90, "Portland Cement Concrete," of the Standard Specifications and these special provisions.

The Department maintains a list of sources of fine and coarse aggregate that have been approved for use with a reduced amount of supplementary cementitious material in the total amount of cementitious material to be used. A source of aggregate will be considered for addition to the approved list if the producer of the aggregate submits to the Transportation Laboratory certified test results from a qualified testing laboratory that verify the aggregate complies with the requirements. Before the testing starts, the aggregate test shall be registered with the Department. A registration number can be obtained by calling (916) 227-7228. The registration number shall be used as the identification for the aggregate sample in correspondence with the Department. Upon request, a split of the tested sample shall be provided to the Department. Approval of aggregate will depend upon compliance with the specifications, based on the certified test results submitted, together with any replicate testing the Department may elect to perform. Approval will expire 3 years from the date the most recent registered and evaluated sample was collected from the aggregate source.

Qualified testing laboratories shall conform to the following requirements:

1. Laboratories performing ASTM Designation: C 1293 shall participate in the Cement and Concrete Reference Laboratory (CCRL) Concrete Proficiency Sample Program and shall have received a score of 3 or better on each test of the previous 2 sets of concrete samples.
2. Laboratories performing ASTM Designation: C 1260 shall participate in the Cement and Concrete Reference Laboratory (CCRL) Pozzolan Proficiency Sample Program and shall have received a score of 3 or better on the shrinkage and soundness tests of the previous 2 sets of pozzolan samples.

Aggregates on the list shall conform to one of the following requirements:

1. When the aggregate is tested in conformance with the requirements in California Test 554 and ASTM Designation: C 1293, the average expansion at one year shall be less than or equal to 0.040 percent; or
2. When the aggregate is tested in conformance with the requirements in California Test 554 and ASTM Designation: C 1260, the average of the expansion at 16 days shall be less than or equal to 0.15 percent.

If the aggregates used in the concrete are on the Department's list, the minimum amount of supplementary cementitious material shall conform to the following:

1. If fly ash or natural pozzolan conforming to the provisions in Section 90-2.01C, "Required Use of Supplementary Cementitious Materials," of the Standard Specifications is used, the minimum amount of supplementary cementitious material shall be 15 percent by weight of the total cementitious material; or
2. If silica fume conforming to the provisions in Section 90-2.01C, "Required Use of Supplementary Cementitious Materials," of the Standard Specifications is used, the

minimum amount of supplementary cementitious material shall be 7 percent by weight of the total cementitious material.

The limitation on tricalcium silicate (C_3S) content in Type II cement specified in Section 90-2.01A, "Cement," of the Standard Specifications shall not apply.

8-2.2 CORROSION CONTROL FOR PORTLAND CEMENT CONCRETE

Portland cement concrete at is considered to be in a corrosive environment and shall conform to the provisions in Section 90, "Portland Cement Concrete," of the Standard Specifications and these special provisions.

Cementitious material to be used in portland cement concrete shall conform to the provisions in Section 90-2, "Materials," of the Standard Specifications, and shall be a combination of either Type II or Type V portland cement and supplementary cementitious material.

Cementitious material to be used in portland cement concrete shall conform to the provisions in Section 90-2, "Materials," of the Standard Specifications, and shall be a combination of Type II portland cement and supplementary cementitious material.

Concrete in a corrosive environment shall contain not less than 675 pounds of cementitious material per cubic yard.

Reduction in the cementitious material content specified or ordered, in conformance with the provisions in Section 90-4.05, "Optional Use of Chemical Admixtures," of the Standard Specifications, is not permitted for concrete in a corrosive environment.

Unless otherwise specified, for concrete in a corrosive environment, the amount of portland cement shall be 75 percent by weight, and the amount of supplementary cementitious material shall be 25 percent by weight, of the total amount of cementitious material to be used in the concrete mix.

For concrete at , the cementitious material shall be comprised of either:

A. 20 percent by weight of either flyash or natural pozzolan, 5 percent by weight of silica fume, and 75 percent by weight of portland cement.
B. 10 percent by weight of silica fume and 90 percent by weight of portland cement.
C. 50 percent by weight of ground granulated blast furnace slag, and 50 percent by weight of portland cement.
D. 10 percent by weight of metakaolin conforming to AASHTO Designation: M 295 Class N and 90 percent by weight of portland cement. Metakaolin shall also conform to the following chemical and physical requirements:

Chemical Requirements	Percent
Silicon Dioxide (SiO_2) + Aluminum Oxide (Al_2O_3)	92.0 min.
Calcium Oxide (CaO)	1.0 max
Sulfur Trioxide (SO_3)	1.0 max.
Loss on ignition	1.2 max.
Available Alkalies (as Na_2O) equivalent	1.0 max.

Physical Requirements	Percent
Retained No. 325sieve	2.0 max
Strength Activity Index with portland cement 7 days 28 days	 100 (minimum % of control) 100 (minimum % of control)

The amount of free water used in concrete in a corrosive environment shall not exceed 305 pounds per cubic yard plus 45 pounds for each 100 pounds of cementitious material in excess of 675 pounds per cubic yard.

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

8-3.1 WELDING

GENERAL

Flux cored welding electrodes conforming to the requirements of AWS A5.20 E6XT-4 or E7XT-4 shall not be used to perform welding for this project.
Wherever reference is made to the following AWS welding codes in the Standard Specifications, on the plans, or in these special provisions, the year of adoption for these codes shall be as listed:

AWS Code	Year of Adoption
D1.1	2006
D1.4	2005
D1.5	2002
D1.6	1999

Requirements of the AWS welding codes shall apply unless otherwise specified in the Standard Specifications, on the plans, or in these special provisions. Wherever the abbreviation AWS is used, it shall be equivalent to the abbreviations ANSI/AWS or AASHTO/AWS.

Section 6.1.1.1 of AWS D1.5 is replaced with the following:

Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and as necessary to ensure that materials and workmanship conform to the requirements of the contract documents.

Unless otherwise specified, Sections 6.1.3 through 6.1.4.3 of AWS D1.1, Section 7.1.2 of AWS D1.4, and Sections 6.1.1.2 through 6.1.3.3 of AWS D1.5 are replaced with the following:

The QC Inspector shall be the duly designated person who acts for and on behalf of the Contractor for inspection, testing, and quality related matters for all welding.
Quality Assurance (QA) is the prerogative of the Engineer. The QA Inspector is the duly designated person who acts for and on behalf of the Engineer.
The QC Inspector shall be responsible for quality control acceptance or rejection of materials and workmanship, and shall be currently certified as an AWS Certified Welding Inspector (CWI) in conformance with the requirements in AWS QC1, "Standard for AWS Certification of Welding Inspectors."

The QC Inspector may be assisted by an Assistant QC Inspector provided that this individual is currently certified as an AWS Certified Associate Welding Inspector (CAWI) in conformance with the requirements in AWS QC1, "Standard for AWS Certification of Welding Inspectors." The Assistant QC Inspector may perform inspection under the direct supervision of the QC Inspector provided the assistant is always within visible and audible range of the QC Inspector. The QC Inspector shall be responsible for signing all reports and for determining if welded materials conform to workmanship and acceptance criteria. The ratio of QC Assistants to QC Inspectors shall not exceed 5 to 1.
When the term "Inspector" is used without further qualification, it shall refer to the QC Inspector.

When any work is welded in conformance with the provisions in Section 75, "Miscellaneous Metal," of the Standard Specifications, not including Section 75-1.035, "Bridge Joint Restrainer Units," of the Standard Specifications, Section 6.1.4 of AWS D1.1 is replaced with the following:

The QC Inspector shall be responsible for quality control acceptance or rejection of materials and workmanship and shall be currently certified as an AWS CWI in conformance with the requirements in AWS QC1, "Standard for AWS Certification of Welding Inspectors," or as a Welding Inspector Specialist (WIS) in conformance with the requirements in AWS B5.2, "Specification for the Qualification of Welding Inspector Specialists and Welding Inspector Assistants."

Section 6.14.6, "Personnel Qualification," of AWS D1.1, Section 7.8, "Personnel Qualification," of AWS D1.4, and Section 6.1.3.4, "Personnel Qualification," of AWS D1.5 are replaced with the following:

Personnel performing nondestructive testing (NDT) shall be qualified and certified in conformance with the requirements of the American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A and the Written Practice of the NDT firm. The Written Practice of the NDT firm shall meet or exceed the guidelines of the ASNT Recommended Practice No. SNT-TC-1A. Individuals who perform NDT, review the results, and prepare the written reports shall be either:

A. Certified NDT Level II technicians, or;

B. Level III technicians who hold a current ASNT Level III certificate in that discipline and are authorized and certified to perform the work of Level II technicians.

Section 6.5.4 of AWS D1.5 is replaced with the following:

The QC Inspector shall inspect and approve each joint preparation, assembly practice, welding technique, joint fit-up, and the performance of each welder, welding operator, and tack welder to make certain that the applicable requirements of this code and the approved Welding Procedure Specification (WPS) are met. The QC Inspector shall examine the work to make certain that it meets the requirements of Sections 3 and 6.26. The size and contour of all welds shall be measured using suitable gages. Visual inspection for cracks in welds and base metal, and for other discontinuities shall be aided by strong light, magnifiers, or such other devices as may be helpful. Acceptance criteria different from those specified in this code may be used when approved by the Engineer.

Section 6.6.5, "Nonspecified NDT Other than Visual," of AWS D1.1, Section 7.6.5 of AWS D1.4 and Section 6.6.5 of AWS D1.5 shall not apply.

For any welding, the Engineer may direct the Contractor to perform NDT that is in addition to the visual inspection or NDT specified in the AWS or other specified welding codes, in the Standard Specifications, or in these special provisions. Except as provided for in these special provisions, additional NDT required by the Engineer, and associated repair work, will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications. Prior to release of welded material by the Engineer, if testing by NDT methods other than those originally specified discloses an attempt to defraud or reveals a gross nonconformance, all costs associated with the repair of the deficient area, including NDT of the weld and of the repair, and any delays caused by the repair, shall be at the Contractor’s expense. A gross nonconformance is defined as the sum of planar type rejectable indications in more than 20 percent of the tested length.

When less than 100 percent of NDT is specified for any weld, it is expected that the entire length of weld meet the specified acceptance-rejection criteria. Should any welding deficiencies be discovered by additional NDT directed or performed by the Engineer that utilizes the same NDT method as that originally specified, all costs associated with the repair of the deficient area, including NDT of the weld and of the weld repair, and any delays caused by the repair, shall be at the Contractor's expense.

Repair work to correct welding deficiencies discovered by visual inspection directed or performed by the Engineer, and any associated delays or expenses caused to the Contractor by performing these repairs, shall be at the Contractor's expense.

The Engineer shall have the authority to verify the qualifications or certifications of any welder, QC Inspector, or NDT personnel to specified levels by retests or other means approved by the Engineer.

Inspection and approval of all joint preparations, assembly practices, joint fit-ups, welding techniques, and the performance of each welder, welding operator, and tack welder shall be documented by the QC Inspector on a daily basis for each day welding is performed. For each inspection, including fit-up, Welding Procedure Specification (WPS) verification, and final weld inspection, the QC Inspector shall confirm and document compliance with the requirements of the AWS or other specified code criteria and the requirements of these special provisions on all welded joints before welding, during welding, and after the completion of each weld.

In addition to the requirements specified in the applicable code, the period of effectiveness for a welder's or welding operator's qualification shall be a maximum of 3 years for the same weld process, welding position, and weld type. If welding will be performed without gas shielding, then qualification shall also be without gas shielding. Excluding welding of fracture critical members, a valid qualification at the beginning of work on a contract will be acceptable for the entire period of the contract, as long as the welder's or welding operator's work remains satisfactory.

In addition to the requirements of AWS D1.1, welding procedures qualification for work welded in conformance with that code shall conform to the following:

When a nonstandard weld joint is to be made using a combination of WPSs, a single test may be conducted combining the WPSs to be used in production, provided the essential variables, including weld bead placement, of each process are limited to those established in Table 4.5.

In addition to the requirements of AWS D1.5, Section 5.12 or 5.13, welding procedures qualification for work welded in conformance with that code shall conform to the following requirements:

A. Unless considered prequalified, fillet welds shall be qualified in each position. The fillet weld soundness test shall be conducted using the essential variables of the WPS as established by the Procedure Qualification Record (PQR).
B. For qualification of joints that do not conform to Figures 2.4 and 2.5 of AWS D1.5, a minimum of two WPS qualification tests are required. The tests shall be conducted using both Figure 5.1 and Figure 5.3. The test conforming to Figure 5.1 shall be conducted in conformance with AWS D1.5, Section 5.12 or 5.13. The test conforming to Figure 5.3 shall be conducted using the welding electrical parameters that were established for the test conducted conforming to Figure 5.1. The ranges of welding electrical parameters established during welding per Figure 5.1 in conformance with AWS D1.5, Section 5.12, shall be further restricted according to the limits in Table 5.3 during welding per Figure 5.3.
C. Multiple zones within a weld joint may be qualified. The travel speed, amperage, and voltage values that are used for tests conducted per AWS D1.5 Section 5.13 shall be consistent for each pass in a weld joint, and shall in no case vary by more than ±10 percent for travel speed, ±10 percent for amperage, and ±7 percent for voltage as measured from a predetermined target value or average within each weld pass or zone. The travel speed shall in no case vary by more than ±15 percent when using submerged arc welding.

D. For a WPS qualified in conformance with AWS D1.5 Section 5.13, the values to be used for calculating ranges for current and voltage shall be based on the average of all weld passes made in the test. Heat input shall be calculated using the average of current and voltage of all weld passes made in the test for a WPS qualified in conformance with Section 5.12 or 5.13.
E. Macroetch tests are required for WPS qualification tests, and acceptance shall be per AWS D1.5 Section 5.19.3.
F. When a nonstandard weld joint is to be made using a combination of WPSs, a test conforming to Figure 5.3 may be conducted combining the WPSs to be used in production, provided the essential variables, including weld bead placement, of each process are limited to those established in Table 5.3.
G. Prior to preparing mechanical test specimens, the PQR welds shall be inspected by visual and radiographic tests. Backing bar shall be 3 inches in width and shall remain in place during NDT testing. Results of the visual and radiographic tests shall comply with AWS D1.5 Section 6.26.2, excluding Section 6.26.2.2. Test plates that do not comply with both tests shall not be used.

WELDING QUALITY CONTROL

Welding quality control shall conform to the requirements in the AWS or other specified welding codes, the Standard Specifications, and these special provisions.

Unless otherwise specified, welding quality control shall apply when any work is welded in conformance with the provisions in Section 49, "Piling," Section 52, "Reinforcement," Section 55, "Steel Structures," or Section 75-1.035, "Bridge Joint Restrainer Units," of the Standard Specifications.

All welding will require inspection by the Engineer. The Contractor shall request inspection at least 3 business days prior to the beginning of welding for locations within California and 5 business days for locations outside of California. The Contractor shall request inspection at:

http://www.dot.ca.gov/hq/esc/Translab/OSM/smbforms.htm

Continuous inspection shall be provided when any welding is being performed. Continuous inspection, as a minimum, shall include having a QC Inspector within such close proximity of all welders or welding operators so that inspections by the QC Inspector of each welding operation at each welding location does not lapse for a period exceeding 30 minutes.

When joint weld details that are not prequalified to the details of Section 3 of AWS D1.1 or to the details of Figure 2.4 or 2.5 of AWS D1.5 are proposed for use in the work, the joint details, their intended locations, and the proposed welding parameters and essential variables, shall be approved by the Engineer. The Contractor shall allow the Engineer 15 days to complete the review of the proposed joint detail locations. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted,

in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications. Upon approval of the proposed joint detail locations and qualification of the proposed joint details, welders and welding operators using these details shall perform a qualification test plate using the WPS variables and the joint detail to be used in production. The test plate shall have the maximum thickness to be used in production and a minimum length of 18 inches. The test plate shall be mechanically and radiographically tested. Mechanical and radiographic testing and acceptance criteria shall be as specified in the applicable AWS codes.

The Engineer will witness all qualification tests for WPSs that were not previously approved by the Department. Unless otherwise specified, an approved independent third party will witness the qualification tests for welders or welding operators. The independent third party shall be a current CWI and shall not be an employee of the contractor performing the welding. The Contractor shall allow the Engineer 15 days to review the qualifications and copy of the current certification of the independent third party. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications. The Contractor shall notify the Engineer 7 days prior to performing any qualification tests. Witnessing of qualification tests by the Engineer shall not constitute approval of the intended joint locations, welding parameters, or essential variables.

The Contractor shall designate in writing a welding Quality Control Manager (QCM). The QCM shall be responsible directly to the Contractor for the quality of welding, including materials and workmanship, performed by the Contractor and subcontractors.

The QCM shall be the sole individual responsible to the Contractor for submitting, receiving, reviewing, and approving all correspondence, required submittals, and reports to and from the Engineer. The QCM shall be a registered professional engineer or shall be currently certified as a CWI.

Unless the QCM is hired by a subcontractor providing only QC services, the QCM shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project. The QCM may be an employee of the Contractor.

Welding inspection personnel or NDT firms to be used in the work shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project, except for the following conditions:

A. The work is welded in conformance with AWS D1.5 and is performed at a permanent fabrication or manufacturing facility that is certified under the AISC Quality Certification Program, Category Cbr, Major Steel Bridges and Fracture Critical endorsement F, when applicable.
B. The work is welded in conformance with AWS D1.1 at a permanent pipe manufacturing or fabrication facility that maintains a QC program that is independent from production.

For welding performed at such facilities, the inspection personnel or NDT firms may be employed or compensated by the facility performing the welding provided the facility maintains a QC program that is independent from production.

Prior to submitting the Welding Quality Control Plan (WQCP) required herein, a prewelding meeting between the Engineer, the Contractor's QCM, and a representative from each entity performing welding or inspection for this project, shall be held to discuss the requirements for the WQCP.

The Contractor shall submit to the Engineer, in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications, 2 copies of a separate WQCP for each subcontractor or supplier for each item of work for which welding is to be performed.

The Contractor shall allow the Engineer 15 days to review the WQCP submittal after a complete plan has been received. No welding shall be performed until the WQCP is approved in writing by the Engineer. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

An amended WQCP or any addendum to the approved WQCP shall be submitted to, and approved in writing by the Engineer, for proposed revisions to the approved WQCP. An amended WQCP or addendum will be required for revisions to the WQCP, including but not limited to a revised WPS; additional welders; changes in NDT firms, QC, or NDT personnel or procedures; or updated systems for tracking and identifying welds. The Engineer shall have 7 days to complete the review of the amended WQCP or addendum. Work affected by the proposed revisions shall not be performed until the amended WQCP or addendum has been approved. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Information regarding the contents, format, and organization of a WQCP, is available at the Transportation Laboratory and at:

http://www.dot.ca.gov/hq/esc/Translab/OSM/smbresources.htm

After final approval of the WQCP, amended WQCP, or addendum, the Contractor shall submit 7 copies to the Engineer of the approved documents. A copy of the Engineer approved document shall be available at each location where welding is to be performed.

A daily production log for welding shall be kept for each day that welding is performed. The log shall clearly indicate the locations of all welding. The log shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each QC Inspector shall also be included in the log.

The following items shall be included in a Welding Report that is to be submitted to the Engineer within 15 days following the performance of any welding:

A. A daily production log.
B. Reports of all visual weld inspections and NDT.
C. Radiographs and radiographic reports, and other required NDT reports.
D. A summary of welding and NDT activities that occurred during the reporting period.
E. Reports of each application of heat straightening.
F. A summarized log listing the rejected lengths of weld by welder, position, process, joint configuration, and piece number.
G. Documentation that the Contractor has evaluated all radiographs and other nondestructive tests and corrected all rejectable deficiencies, and that all repaired welds have been reexamined using the required NDT and found acceptable.

The following information shall be clearly written on the outside of radiographic envelopes: name of the QCM, name of the nondestructive testing firm, name of the radiographer, date, contract number, complete part description, and all included weld numbers, report numbers, and station markers or views, as detailed in the WQCP. In addition, all interleaves shall have clearly written on them the part description and all included weld numbers and station markers or views, as detailed in the WQCP. A maximum of 2 pieces of film shall be used for each interleave.

Reports of all visual inspections and NDT shall be signed by the inspector or technician and submitted daily to the QCM for review and signature prior to submittal to the Engineer. Corresponding names shall be clearly printed or typewritten next to all signatures. Reports of all NDT, whether specified, additional, or informational, performed by the Contractor shall be submitted to the Engineer.

The Engineer will review the Welding Report to determine if the Contractor is in conformance with the WQCP. Except for steel pipe piling, the Engineer shall be allowed 15 days to review the report and respond in writing after the complete Welding Report has been received. Prior to receiving notification from the Engineer of the Contractor's conformance with the WQCP, the Contractor may encase in concrete or cover welds for which the Welding Report has been submitted. However, should the Contractor elect to encase or cover those welds prior to receiving notification from the Engineer, it is expressly understood that the Contractor shall not be relieved of the responsibility for incorporating material in the work that conforms to the requirements of the plans and specifications. Material not conforming to these requirements will be subject to rejection. Should the Contractor elect to wait to encase or cover welds pending notification by the Engineer, and in the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or

interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

For steel pipe piling, including bar reinforcement in the piling, the Contractor shall allow the Engineer 2 business days to review the Welding Report and respond in writing after the required items have been received. No field welded steel pipe piling shall be installed, and no reinforcement in the piling shall be encased in concrete until the Engineer has approved the above requirements in writing.

In addition to the requirements in AWS D1.1 and AWS D1.5, second-time excavations of welds or base metal to repair unacceptable discontinuities, regardless of NDT method, and all repairs of cracks require prior approval of the Engineer.

The Engineer shall be notified immediately in writing when welding problems, deficiencies, base metal repairs, or any other type of repairs not submitted in the WQCP are discovered, and also of the proposed repair procedures to correct them. For requests to perform second-time repairs or repairs of cracks, the Contractor shall include an engineering evaluation of the proposed repair. The engineering evaluation, at a minimum, shall address the following:

A. What is causing each defect?
B. Why the repair will not degrade the material properties?
C. What steps are being taken to prevent similar defects from happening again?

The Contractor shall allow the Engineer 7 days to review these procedures. No remedial work shall begin until the repair procedures are approved in writing by the Engineer. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The QCM shall sign and furnish to the Engineer, a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each item of work for which welding was performed. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work, have been performed in conformance with the details shown on the plans, the Standard Specifications, and these special provisions.

WELDING FOR OVERHEAD SIGN AND POLE STRUCTURES

The Contractor shall meet the following requirements for any work welded in conformance with the provisions in Section 56-1, "Overhead Sign Structures," or Section 86-2.04, "Standards, Steel Pedestals and Posts," of the Standard Specifications.

Welding inspection personnel or NDT firms to be used in the work shall not be employed or compensated by any subcontractor, or by other persons or entities hired by subcontractors, who will provide other services or materials for the project, except for when the welding is performed at a permanent fabrication or manufacturing facility which is certified under the AISC Quality Certification Program, Category Sbd, Conventional Steel Building Structures.

Welding Qualification Audit

Contractors or subcontractors performing welding operations for overhead sign and pole structures shall not deliver materials to the project without having successfully completed the Department's "Manufacturing Qualification Audit for Overhead Sign and Pole Structures," hereinafter referred to as the audit, not more than one year prior to the delivery of the materials. The Engineer will perform the audit. Copies of the audit form, and procedures for requesting and completing the audit, are available at the Transportation Laboratory or at:

http://www.dot.ca.gov/hq/esc/Translab/OSM/smbresources.htm

An audit that was approved by the Engineer no more than one year prior to the beginning of work on this contract will be acceptable for the entire period of this contract, provided the Engineer determines the audit was for the same type of work that is to be performed on this contract.

Successful completion of an audit shall not relieve the Contractor of the responsibility for furnishing materials or producing finished work of the quality specified in these special provisions and as shown on the plans.

Welding Report

A daily production log for welding shall be kept for each day that welding is performed. The log shall clearly indicate the locations of all welding. The log shall include the welders' names, amount of welding performed, any problems or deficiencies discovered, and any testing or repair work performed, at each location. The daily report from each QC Inspector shall also be included in the log.

A Welding Report shall be submitted to the Engineer 48 hours prior to furnishing a Certificate of Compliance for the material in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The Welding Report shall include the following items:

A. A daily production log.
B. Reports of all visual weld inspections and NDT.
C. Radiographs and radiographic reports, and other required NDT reports.
D. summary of welding and NDT activities that occurred during the reporting period.
E. Documentation that the Contractor has evaluated all radiographs and other nondestructive tests and corrected all rejectable deficiencies, and all repaired welds have been reexamined by the required NDT and found acceptable.

Welding Report

For work welded in conformance with the provisions in Section 56-1, "Overhead Sign Structures," or Section 86-2.04, "Standards, Steel Pedestals and Posts," of the Standard Specifications, a Welding Report shall be submitted in conformance with the provisions in "Welding Quality Control" of these special provisions.

STEEL PIPE PILING QUALIFICATION AUDIT

The Contractor shall submit documentation that one of the following steel pipe piling qualification audits has been successfully completed before welding operations are performed, other than field welding, for steel pipe piling:

A. "Class R Steel Pipe Piling Qualification Audit"
B. "Class N Steel Pipe Piling Qualification Audit"

An audit shall have been completed for each pipe pile diameter, thickness, grade of steel, and class of piling, to be supplied for this project. The procedures for requesting and completing the audit are available at:

http://www.dot.ca.gov/hq/esc/Translab/OSM/smbresources.htm

An audit that was approved by the Department no more than 3 years before the beginning of work on this contract will be acceptable for the entire period of this contract, provided the Engineer determines the audit was for the same type of work that is to be performed on this contract.

A list of facilities who have successfully completed the audit and are authorized to provide material for this contract is available at:

http://www.dot.ca.gov/hq/esc/Translab/OSM/smdocuments/Internet_auditlisting.pdf

Successful completion of an audit shall not relieve the Contractor of the responsibility for furnishing materials or producing finished work of the quality specified in these special provisions and as shown on the plans.

PAYMENT

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

SECTION 9. (BLANK)
NOT USED

SECTION 10. CONSTRUCTION DETAILS
SECTION 10-1. GENERAL

10-1.01 ORDER OF WORK

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these special provisions.

Gantry Structure (Truss) shall be furnished by another contractor by December 4, 2009. Upon delivery contractor shall immediately install Gantry Structure (Truss). Installation of the Gantry structure shall be completed within 5 working days following delivery.

Additional damages to those specified in Section 8-1.07, "Liquidated Damages," of the Standard Specifications are $10,000 per day starting after the 5 working days following delivery of the Gantry Structure (Truss) until installation of the Gantry Structure (Truss) on State Highway Route 80 is complete.

Immediately following completion of the Gantry Structure Truss contractor shall notify system integrator contractor to initiate coordination in accordance with "Cooperation" of these special provisions.

10-1.02 WATER POLLUTION CONTROL

GENERAL

Water pollution control work shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications, section of these special provisions entitled "Relations With California Regional Water Quality Control Board," and these special provisions.

The Contractor shall perform water pollution control work in conformance with the requirements in the "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual" and its addenda in effect on the day the Notice to Contractors is dated. This manual is referred to as the "Preparation Manual." Copies of the Preparation Manual may be obtained from:

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

The Preparation Manual and other references for performing water pollution control work are available from the Department's Construction Storm Water and Water Pollution Control web site at:

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

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

A. Rules and regulations
B. Implementation and maintenance for:

    1. Temporary Soil Stabilization
    2. Temporary Sediment Control
    3. Tracking Control
    4. Wind Erosion Control

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

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

The WPCM shall be:

A. Responsible for water pollution control work.
B. The primary contact for water pollution control work.
C. Have authority to mobilize crews to make immediate repairs to water pollution control practices.

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

WATER POLLUTION CONTROL PROGRAM

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

The WPCP shall include water pollution control practices:

A. For storm water and non-storm water from areas outside of the job site related to construction activities for this contract such as:

    1. Staging areas.
    2. Storage yards.
    3. Access roads.

B. Appropriate for each season as described in "Implementation Requirements" of these special provisions.

The WPCP shall include a schedule that:

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

The WPCP shall include the following temporary water pollution control practices and their associated contract items of work as shown on the plans or specified in these special provisions:

A. Temporary Sediment Control

1. Street Sweeping
2. Temporary Drainage Inlet Protection

B. Wind Erosion Control

1. Construction Site Management

C. Non-Storm Water Management

1. Construction Site Management

D. Waste Management and Materials Pollution Control

1. Temporary Concrete Washout (Portable)
2. Construction Site Management

Within 7 days after contract approval, the Contractor shall submit 2 copies of the WPCP to the Engineer. The Contractor shall allow 15 days for the Engineer's review. If revisions are required, the Engineer will provide comments and specify the date that the review stopped. The Contractor shall revise and resubmit the WPCP within 7 days of receipt of the Engineer's comments. The Engineer's review will resume when the complete WPCP is resubmitted. When the Engineer approves the WPCP, the Contractor shall submit 3 copies of the approved WPCP to the Engineer. The Contractor may proceed with construction activities if the Engineer conditionally approves the WPCP while minor revisions are being completed. If the Engineer fails to complete the review within the time allowed and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay, the Contractor will be compensated for resulting losses, and an extension of time will be granted, as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

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

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

If directed by the Engineer or requested in writing by the Contractor and approved by the Engineer, changes to the water pollution control work specified in these special provisions will be allowed. Changes may include addition of new water pollution control practices. The Contractor shall incorporate these changes in the WPCP. Additional water pollution control work will be paid for as extra work in accordance with Section 4-1.03D, "Extra Work," of the Standard Specifications.

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

IMPLEMENTATION REQUIREMENTS

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

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

Year-Round

The Contractor shall monitor the National Weather Service weather forecast on a daily basis during the contract. The Contractor may use an alternative weather forecasting service if approved by the Engineer. Appropriate water pollution control practices shall be in place before precipitation.

The Contractor may discontinue earthwork operations for a disturbed area for up to 21 days and the disturbed soil area will still be considered active. When earthwork operations in the

disturbed area have been completed, the Contractor shall implement appropriate water pollution control practices within 15 days or before predicted precipitation, whichever occurs first.

Rainy Season

Soil stabilization and sediment control practices conforming to these special provisions shall be in place during the rainy season between October 15 and April 15.

The Contractor shall implement soil stabilization and sediment control practices a minimum of 10 days before the start of the rainy season.

INSPECTION AND MAINTENANCE

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

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

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

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

REPORTING REQUIREMENTS

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

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

PAYMENT

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

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

The contract lump sum price paid for prepare water pollution control program shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing, obtaining approval of, and amending the WPCP and inspecting water pollution control practices as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payments for prepare water pollution control program will be made as follows:

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

Implementation of water pollution control practices in areas outside the highway right of way not specifically provided for in the WPCP or in these special provisions will not be paid for.

Water pollution control practices for which there are separate contract items of work will be measured and paid for as those contract items of work.

10-1.03 CONSTRUCTION SITE MANAGEMENT

Construction site management shall consist of controlling potential sources of water pollution before they come in contact with storm water systems or watercourses. The Contractor shall control material pollution and manage waste and non-storm water existing at the construction site by implementing effective handling, storage, use, and disposal practices.

Attention is directed to "Water Pollution Control" of these special provisions regarding the Contractor's appointment of a water pollution control manager (WPCM) for the project.

The Contractor shall train all employees and subcontractors regarding:

A. Material pollution prevention and control;

B. Waste management;
C. Non-storm water management;
D. Identifying and handling hazardous substances; and
E. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances.

Training shall take place before starting work on this project. New employees shall receive the complete training before starting work on this project. The Contractor shall have regular meetings to discuss and reinforce spill prevention and control; material delivery, storage, use, and disposal; waste management; and non-storm water management procedures.

Instructions for material and waste handling, storage, and spill reporting and cleanup shall be posted at all times in an open, conspicuous, and accessible location at the construction site.

Nonhazardous construction site waste and excess material shall be recycled when practical or disposed of in accordance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications, unless otherwise specified.

Vehicles and equipment at the construction site shall be inspected by the WPCM on a frequent, predetermined schedule, and by the operator each day of use. Leaks shall be repaired immediately, or the vehicle or equipment shall be removed from the construction site.

SPILL PREVENTION AND CONTROL

The Contractor shall implement spill and leak prevention procedures when chemicals or hazardous substances are stored. Spills of petroleum products; substances listed under CFR Title 40, Parts 110, 117, and 302; and sanitary and septic waste shall be contained and cleaned up as soon as is safe.

Minor spills involve small quantities of oil, gasoline, paint, or other material that can be controlled by the first responder upon discovery of the spill. Cleanup of minor spills includes:

A. Containing the spread of the spill,
B. Recovering the spilled material using absorption,
C. Cleaning the contaminated area, and
D. Disposing of contaminated material promptly and properly.

Semi-significant spills are those that can be controlled by the first responder with the help of other personnel. Cleanup of semi-significant spills shall be immediate. Cleanup of semi-significant spills includes:

A. Containing the spread of the spill;
B. Recovering the spilled material using absorption if the spill occurs on paved or an impermeable surface;
C. Containing the spill with an earthen dike and digging up contaminated soil for disposal if the spill occurs on dirt;

D. Covering the spill with plastic or other material to prevent contaminating runoff if the spill occurs during precipitation; and
E. Disposing of contaminated material promptly and properly.

Significant or hazardous spills are those that cannot be controlled by construction personnel. Notifications of these spills shall be immediate. The following steps shall be taken:

A. Construction personnel shall not attempt to cleanup the spill until qualified staff have arrived;
B. Notify the Engineer and follow up with a written report;
C. Obtain the services of a spills contractor or hazardous material team immediately;
D. Notify the local emergency response team by dialing 911 and county officials at the emergency phone numbers kept on the construction site;
E. Notify the Governor's Office of Emergency Services Warning Center at (805) 852-7550;
F. Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities in conformance with CFR Title 40, Parts 110, 119, and 302;
G. Notify other agencies as appropriate, including:

1. Fire Department,
2. Public Works Department,
3. Coast Guard,
4. Highway Patrol,
5. City Police or County Sheriff Department,
6 Department of Toxic Substances,
7. California Division of Oil and Gas,
8. Cal OSHA, or
9. Regional Water Resources Control Board.

The WPCM shall oversee and enforce proper spill prevention and control measures. Minor, semi-significant, and significant spills shall be reported to the Contractor's WPCM who shall notify the Engineer immediately.

The Contractor shall prevent spills from entering storm water runoff before and during cleanup. Spills shall not be buried or washed with water.

The Contractor shall keep material or waste storage areas clean, well organized, and equipped with enough cleanup supplies for the material being stored. Plastic shall be placed under paving equipment when not in use to catch drips.

MATERIAL MANAGEMENT

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

The Contractor shall implement the practices described in this section when taking delivery of, using, or storing the following materials:

A. Hazardous chemicals including:

   1. Acids,
   2. Lime,
   3. Glues,
   4. Adhesives,
   5. Paints,
   6. Solvents, and
   7. Curing compounds;

B. Soil stabilizers and binders;
C. Fertilizers;
D. Detergents;
E. Plaster;
F. Petroleum products including:

   1. Fuel,
   2. Oil, and
   3. Grease;

G. Asphalt components and concrete components; and
H. Pesticides and herbicides.

The Contractor shall supply the Material Safety Data Sheet to the Engineer for material used or stored. The Contractor shall keep an accurate inventory of material delivered and stored at the construction site.

Employees trained in emergency spill cleanup procedures shall be present when hazardous materials or chemicals are unloaded.

The Contractor shall use recycled or less hazardous products when practical.

Material Storage

The Contractor shall store liquids, petroleum products, and substances listed in CFR Title 40, Parts 110, 117, and 302 in containers or drums approved by the United States Environmental Protection Agency, and place them in secondary containment facilities.

Secondary containment facilities shall be impervious to the materials stored there for a minimum contact time of 72 hours.

Throughout the rainy season secondary containment facilities shall be covered during non-working days and when precipitation is predicted. Secondary containment facilities shall be adequately ventilated.

The Contractor shall keep the secondary containment facility free of accumulated rainwater or spills. After precipitation, or in the event of spills or leaks, accumulated liquid shall be collected and placed into drums within 24 hours. These liquids shall be handled as hazardous waste in accordance with the provisions in "Hazardous Waste" of these special provisions, unless testing determines them to be nonhazardous.

Incompatible materials, such as chlorine and ammonia, shall not be stored in the same secondary containment facility.

Materials shall be stored in the original containers with the original product labels maintained in legible condition. Damaged or illegible labels shall be replaced immediately.

The secondary containment facility shall have the capacity to contain precipitation from a 24-hour-long, 25-year storm; and 10 percent of the aggregate volume of all containers, or all of the volume of the largest container within the facility, whichever is greater.

The Contractor shall store bagged or boxed material on pallets. Throughout the rainy season, bagged or boxed material shall be protected from wind and rain during non-working days and when precipitation is predicted.

The Contractor shall provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas shall be kept clean, well organized, and equipped with cleanup supplies appropriate for the materials being stored.

The Contractor shall repair or replace perimeter controls, containment structures, covers, and liners as needed. Storage areas shall be inspected before and after precipitation, and at least weekly during other times.

Stockpile Management

The Contractor shall reduce or eliminate potential air and water pollution from stockpiled material including soil, paving material, or pressure treated wood. Stockpiles shall be located out of floodplains when possible, and at least 50 feet from concentrated flows of storm water, drainage courses, or inlets unless written approval is obtained from the Engineer.

The Contractor may discontinue adding or removing material for up to 21 days and a stockpile will still be considered active.

The Contractor shall protect active stockpiles with plastic or geotextile cover, soil stabilization measures, or with linear sediment barrier when precipitation is predicted. Active stockpiles of cold mix asphalt concrete shall be placed on an impervious surface and covered with plastic when precipitation is predicted.

The Contractor shall protect inactive soil stockpiles with a plastic or geotextile cover, or with soil stabilization measures at all times during the rainy season. A linear sediment barrier around the perimeter of the stockpile shall also be used. During the non-rainy season soil stockpiles shall be

covered and protected with a linear sediment barrier when precipitation is predicted. The Contractor shall control wind erosion during dry weather as provided in Section 10, "Dust Control," of the Standard Specifications.

Stockpiles of portland cement concrete rubble, asphalt concrete (AC), hot mix asphalt (HMA), AC and HMA rubble, aggregate base, or aggregate subbase shall be covered with plastic or geotextile, or protected with a linear sediment barrier at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

Stockpiles of cold mix asphalt concrete shall be placed on and covered with impermeable material at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

Stockpiles of pressure treated wood shall be covered with impermeable material and placed on pallets at all times during the rainy season, and when precipitation is predicted during the non-rainy season.
The Contractor shall repair or replace linear sediment barriers and covers as needed or as directed by the Engineer to keep them functioning properly. Sediment shall be removed when it accumulates to 1/3 of the linear sediment barrier height.

WASTE MANAGEMENT

Solid Waste

The Contractor shall not allow litter or debris to accumulate anywhere on the construction site, including storm drain grates, trash racks, and ditch lines. The Contractor shall pick up and remove trash and debris from the construction site at least once a week. The WPCM shall monitor solid waste storage and disposal procedures on the construction site. The Contractor shall provide enough dumpsters of sufficient size to contain the solid waste generated by the project. Dumpsters shall be emptied when refuse reaches the fill line. Dumpsters shall be watertight. The Contractor shall not wash out dumpsters on the construction site. The Contractor shall provide additional containers and more frequent pickup during the demolition phase of construction

Solid waste includes:

A. Brick,
B. Mortar,
C. Timber,
D. Metal scraps,
E. Sawdust,
F. Pipe,
G. Electrical cuttings,
H. Non-hazardous equipment parts,
I. Styrofoam and other packaging materials,
J. Vegetative material and plant containers from highway planting, and
K. Litter and smoking material, including litter generated randomly by the public.

Trash receptacles shall be provided and used in the Contractor's yard, field trailers, and locations where workers gather for lunch and breaks.

Hazardous Waste

The Contractor shall implement hazardous waste management practices when waste is generated on the construction site from the following substances:

A. Petroleum products,
B. Asphalt products,
C. Concrete curing compound,
D. Pesticides,
E. Acids,
F. Paints,
G. Stains,
H. Solvents,
I. Wood preservatives,
J. Roofing tar, and
K. Materials classified as hazardous by California Code of Regulations, Title 22, Division 4.5; or listed in CFR Title 40, Parts 110, 117, 261, or 302.

Nothing in these special provisions shall relieve the Contractor of the responsibility for compliance with Federal, State, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.

Hazardous material existing on the construction site before mobilization shall be handled and disposed of in accordance with "Material Containing Lead", "Lead Related Construction Work", and "Disposal of Electrical Equipment" of these special provisions.

The WPCM shall oversee and enforce hazardous waste management practices. Production of hazardous materials and hazardous waste on the construction site shall be kept to a minimum. Perimeter controls, containment structures, covers, and liners shall be repaired or replaced when damaged.

The Contractor shall have a laboratory certified by the Department of Health Services (DHS) sample and test waste when hazardous material levels are unknown to determine safe methods for storage and disposal.

The Contractor shall segregate potentially hazardous waste from nonhazardous waste at the construction site. Hazardous waste shall be handled, stored, and disposed of as required in California Code of Regulations, Title 22, Division 4.5, Section 66262.34; and in CFR Title 49, Parts 261, 262, and 263.

The Contractor shall store hazardous waste in sealed containers constructed and labeled with the contents and date accumulated as required in California Code of Regulations, Title 22, Division

4.5; and in CFR Title 49, Parts 172, 173, 178, and 179. Hazardous waste containers shall be kept in temporary containment facilities conforming to the provisions in "Material Storage" of these special provisions.

There shall be adequate storage volume and containers shall be conveniently located for hazardous waste collection. Containers of hazardous waste shall not be overfilled and hazardous wastes shall not be mixed. Containers of dry waste that are not watertight shall be stored on pallets. The Contractor shall not allow potentially hazardous waste to accumulate on the ground. Hazardous waste shall be stored away from storm drains, watercourses, moving vehicles, and equipment.

The Contractor shall clean water based or oil based paint from brushes or equipment within a contained area and shall not contaminate soil, watercourses, or storm drain systems. Paints, thinners, solvents, residues, and sludges that cannot be recycled or reused shall be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths shall be disposed of as solid waste.

The Contractor shall dispose of hazardous waste within 90 days of being generated. Hazardous waste shall be disposed of by a licensed hazardous waste transporter using uniform hazardous waste manifest forms and taken to a Class I Disposal Site. A copy of the manifest shall be provided to the Engineer.

Contaminated Soil

The Contractor shall identify contaminated soil from spills or leaks by noticing discoloration, odors, or differences in soil properties. Soil with evidence of contamination shall be sampled and tested by a laboratory certified by DHS. If levels of contamination are found to be hazardous, the soil shall be handled and disposed of as hazardous waste.

Contaminated soil existing on the construction site before mobilization shall be handled and disposed of in accordance with " Material Containing Lead "of these special provisions.

The Contractor shall prevent the flow of water, including ground water, from mixing with contaminated soil by using one or a combination of the following measures:

A. Berms,
B. Cofferdams,
C. Grout curtains,
D. Freeze walls, or
E. Concrete seal course.

If water mixes with contaminated soil and becomes contaminated, the water shall be sampled and tested by a laboratory certified by the DHS. If levels of contamination are found to be hazardous, the water shall be handled and disposed of as hazardous waste.

Concrete Waste

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

Portland cement concrete, AC, or HMA waste shall be collected at the following locations and disposed of:

A. Where concrete material, including grout, is used;
B. Where concrete dust and debris result from demolition;
C. Where sawcutting, coring, grinding, grooving, or hydro-concrete demolition of portland cement concrete, AC, or HMA creates a residue or slurry; or
D. Where concrete trucks or other concrete-coated equipment is cleaned at the construction site.

Sanitary and Septic Waste

Wastewater from sanitary or septic systems shall not be discharged or buried within the Department right of way. The WPCM shall inspect sanitary or septic waste storage and monitor disposal procedures at least weekly. Sanitary facilities that discharge to the sanitary sewer system shall be properly connected and free from leaks.

The Contractor shall obtain written approval from the local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system, and provide a copy to the Engineer. The Contractor shall comply with local health agency requirements when using an on-site disposal system.

Liquid Waste

The Contractor shall not allow construction site liquid waste, including the following, to enter storm drain systems or watercourses:

A. Drilling slurries or fluids,
B. Grease-free or oil-free wastewater or rinse water,
C. Dredgings,
D. Liquid waste running off a surface including wash or rinse water, or
E. Other non-storm water liquids not covered by separate permits.

The Contractor shall hold liquid waste in structurally sound, leak proof containers such as:

A. Sediment traps,
B. Roll-off bins, or
C. Portable tanks.

Liquid waste containers shall be of sufficient quantity and volume to prevent spills and leaks. The containers shall be stored at least 50 feet from storm drains, watercourses, moving vehicles, and equipment.

The Contractor shall remove and dispose of deposited solids from sediment traps as provided in "Solid Waste" of these special provisions, unless determined infeasible by the Engineer.

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

Drilling fluids and residue shall be disposed of outside the highway right of way. If the Engineer determines that an appropriate location is available, fluids and residue exempt under California Code of Regulations, Title 23, Section 2511(g) may be dried by infiltration and evaporation in a leak proof container. The remaining solid waste may be disposed of as provided in "Solid Waste" of these special provisions.

NON-STORM WATER MANAGEMENT

Water Control and Conservation

The Contractor shall prevent erosion or the discharge of pollutants into storm drain systems or watercourses by managing the water used for construction operations. The Contractor shall obtain the Engineer's approval before washing anything on the construction site with water that could discharge into a storm drain system or watercourse. Discharges shall be reported to the Engineer immediately.

The Contractor shall implement water conservation practices when water is used on the construction site. Irrigation areas shall be inspected and watering schedules shall be adjusted to prevent erosion, excess watering, or runoff. The Contractor shall shut off the water source to broken lines, sprinklers, or valves, and they shall be repaired as soon as possible. When possible, water from waterline flushing shall be reused for landscape irrigation. Paved areas shall be swept and vacuumed, not washed with water.

Construction water runoff, including water from water line repair, shall be directed to areas to infiltrate into the ground and shall not be allowed to enter storm drain systems or watercourses. Spilled water shall not be allowed to escape water truck filling areas. When possible, the Contractor shall direct water from off-site sources around the construction site, or shall minimize contact with the construction site.

Illegal Connection and Discharge Detection and Reporting

The Contractor shall inspect the construction site and the site perimeter before beginning work for evidence of illegal connections, discharges, or dumping. Subsequently, the construction site and perimeter shall be inspected on a frequent, predetermined schedule.

The Contractor shall immediately notify the Engineer when illegal connections, discharges, or dumping are discovered. The Contractor shall take no further action unless directed by the Engineer. Unlabeled or unidentifiable material shall be assumed to be hazardous.

The Contractor shall look for the following evidence of illegal connections, discharges, or dumping:

A. Debris or trash piles,
B. Staining or discoloration on pavement or soils,
C. Pungent odors coming from drainage systems,
D. Discoloration or oily sheen on water,
E. Stains or residue in ditches, channels or drain boxes,
F. Abnormal water flow during dry weather,
G. Excessive sediment deposits,
H. Nonstandard drainage junction structures, or
I. Broken concrete or other disturbances near junction structures.

Vehicle and Equipment Cleaning

The Contractor shall limit vehicle and equipment cleaning or washing on the construction site to that necessary to control vehicle tracking or hazardous waste. Vehicles and equipment shall not be cleaned on the construction site with soap, solvents, or steam until the Engineer has been notified. The resulting waste shall be contained and recycled, or disposed of as provided in "Liquid Waste" or "Hazardous Waste" of these special provisions, whichever is applicable. The Contractor shall not use diesel to clean vehicles or equipment, and shall minimize the use of solvents.

The Contractor shall clean or wash vehicles and equipment in a structure equipped with disposal facilities. If using a structure is not possible, vehicles and equipment shall be cleaned or washed in an outside area with the following characteristics:

A. Located at least 50 feet from storm drainage systems or watercourses,
B. Paved with AC, HMA, or portland cement concrete,
C. Surrounded by a containment berm, and
D. Equipped with a sump to collect and dispose of wash water.

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

Wash racks shall discharge to a recycle system or to another system approved by the Engineer. Sumps shall be inspected regularly, and liquids and sediments shall be removed as needed.

Vehicle and Equipment Fueling and Maintenance

The Contractor shall fuel or perform maintenance on vehicles and equipment off the construction site whenever practical. When fueling or maintenance must be done at the construction site, the Contractor shall designate a site, or sites, and obtain approval from the Engineer before using. The fueling or maintenance site shall be protected from storm water, shall be on level ground, and shall be located at least 50 feet from drainage inlets or watercourses. The WPCM shall inspect the fueling or maintenance site regularly. Mobile fueling or maintenance shall be kept to a minimum.

The Contractor shall use containment berms or dikes around the fueling and maintenance area. Adequate amounts of absorbent spill cleanup material and spill kits shall be kept in the fueling

and maintenance area and on fueling trucks. Spill cleanup material and kits shall be disposed of immediately after use. Drip pans or absorbent pads shall be used during fueling or maintenance unless performed over an impermeable surface.

Fueling or maintenance operations shall not be left unattended. Fueling nozzles shall be equipped with an automatic shutoff control. Vapor recovery fueling nozzles shall be used where required by the Air Quality Management District. Nozzles shall be secured upright when not in use. Fuel tanks shall not be topped-off.

The Contractor shall recycle or properly dispose of used batteries and tires.

Material and Equipment Used Over Water

Drip pans and absorbent pads shall be placed under vehicles or equipment used over water, and an adequate supply of spill cleanup material shall be kept with the vehicle or equipment. Drip pans or plastic sheeting shall be placed under vehicles or equipment on docks, barges, or other surfaces over water when the vehicle or equipment will be idle for more than one hour.

The Contractor shall provide watertight curbs or toe boards on barges, platforms, docks, or other surfaces over water to contain material, debris, and tools. Material shall be secured to prevent spills or discharge into water due to wind.

Structure Removal Over or Adjacent to Water

The Contractor shall not allow demolished material to enter storm water systems or watercourses. The Contractor shall use covers and platforms approved by the Engineer to collect debris. Attachments shall be used on equipment to catch debris on small demolition operations. Debris catching devices shall be emptied regularly and debris shall be handled as provided in "Waste Management" of these special provisions.

The WPCM shall inspect demolition sites within 50 feet of storm water systems or watercourses every day.

Paving, Sealing, Sawcutting, and Grinding Operations

The Contractor shall prevent the following material from entering storm drain systems or water courses:

A. Cementitious material,
B. Asphaltic material,
C. Aggregate or screenings,
D. Grinding or sawcutting residue,
E. Pavement chunks, or
F. Shoulder backing.

The Contractor shall cover drainage inlets and use linear sediment barriers to protect downhill watercourses until paving, sealing, sawcutting, or grinding operations are completed and excess

material has been removed. Drainage inlets and manholes shall be covered during the application of seal coat, tack coat, slurry seal, or fog seal.

Dring the rainy season or when precipitation is predicted, paving, sawcutting, and grinding operations shall be limited to places where runoff can be captured. Seal coat, tack coat, slurry seal, or fog seal operations shall not begin if precipitation is predicted for the application or the curing period. The Contractor shall not excavate material from existing roadways during precipitation.

The Contractor shall vacuum up slurry from sawcutting operations immediately after the slurry is produced. Slurry shall not be allowed to run onto lanes open to public traffic or off the pavement.

The Contractor shall collect residue from portland cement concrete grinding operations with a vacuum attachment on the grinding machine. The residue shall not be left on the pavement or allowed to flow across the pavement.

Material excavated from existing roadways may be stockpiled as provided in "Stockpile Management" of these special provisions if approved by the Engineer. AC or HMA chunks used in embankment shall be placed above the water table and covered by at least one foot of material.

Substances used to coat asphalt trucks and equipment shall not contain soap, foaming agents, or toxic chemicals.

Thermoplastic Striping and Pavement Markers

Thermoplastic striping and preheating equipment shutoff valves shall work properly at all times when on the construction site. The Contractor shall not preheat, transfer, or load thermoplastic within 50 feet of drainage inlets or watercourses. The Contractor shall not fill the preheating container to more than 6 inches from the top. Truck beds shall be cleaned daily of scraps or melted thermoplastic.

The Contractor shall not unload, transfer, or load bituminous material for pavement markers within 50 feet of drainage inlets or watercourses. All pressure shall be released from melting tanks before removing the lid to fill or service. Melting tanks shall not be filled to more than 6 inches from the top.

The Contractor shall collect bituminous material from the roadway after marker removal.

Pile Driving

The Contractor shall keep spill kits and cleanup material at pile driving locations. Pile driving equipment shall be parked over drip pans, absorbent pads, or plastic sheeting where possible. When not in use, pile driving equipment shall be stored at least 50 feet from concentrated flows of storm water, drainage courses, or inlets. The Contractor shall protect pile driving equipment by parking it on plywood and covering it with plastic when precipitation is predicted. The WPCM shall inspect the pile driving area every day for leaks and spills.

The Contractor shall use vegetable oil instead of hydraulic fluid when practical.

Concrete Curing

The Contractor shall not overspray chemical curing compound. Drift shall be minimized by spraying as close to the concrete as possible. Drainage inlets shall be covered before applying curing compound.

The Contractor shall minimize the use and discharge of water by using wet blankets or similar methods to maintain moisture when curing concrete.

Concrete Finishing

The Contractor shall collect and dispose of water and solid waste from high-pressure water blasting. Drainage inlets within 50 feet shall be covered before sandblasting. The nozzle shall be kept as close to the surface of the concrete as possible to minimize drift of dust and blast material. Blast residue may contain hazardous material.

Containment structures for concrete finishing operations shall be inspected for damage before each day of use and before predicted precipitation. Liquid and solid waste shall be removed from the containment structure after each work shift.

DEWATERING

Dewatering shall consist of discharging accumulated storm water, ground water, or surface water from excavations or temporary containment facilities. The Contractor shall discharge water within the limits of the project.

Dewatering discharge shall not cause erosion, scour, or sedimentary deposits that impact natural bedding materials.

The Contractor shall conduct dewatering activities in accordance with the Field Guide for Construction Dewatering available at:

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

Before dewatering the Contractor shall submit a Dewatering and Discharge Plan to the Engineer in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and "Water Pollution Control," of these special provisions. At a minimum, the Dewatering and Discharge Plan shall include the following:

A. A title sheet and table of contents;
B. A description of the dewatering and discharge operations detailing the locations, quantity of water, equipment, and discharge point;
C. The estimated schedule for dewatering and discharge (begin and end dates, intermittent or continuous);

D. Discharge alternatives such as dust control or percolation; and
E. Visual monitoring procedures with inspection log.

The Contractor shall not discharge storm water or non-storm water that has an odor, discoloration other than sediment, an oily sheen, or foam on the surface and shall notify the Engineer immediately upon discovery.

If water cannot be discharged within the project limits due to site constraints it shall be disposed of in the same manner specified for material in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

PAYMENT

The contract lump sum price paid for construction site management shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in spill prevention and control, material management, waste management, non-storm water management, and dewatering and identifying, sampling, testing, handling, and disposing of hazardous waste, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Summary

This work includes street sweeping.

The SWPCP must describe and include the use of street sweeping as a water pollution control practice for sediment control and tracking control.

Submittals

At least 5 business days before starting clearing and grubbing, earthwork, or other activities with the potential for tracking sediment or debris, submit:

1. Number of sweepers described in the SWPPP
2. Type of sweeper technology

Quality Control and Assurance

Retain and submit records of street sweeping including:

1. Quantity of sweeping waste disposal
2. Sweeping times and locations

CONSTRUCTION

Street Sweepers

Sweepers must use one of these technologies:

1. Mechanical sweeper followed by a vacuum-assisted sweeper
2. Vacuum-assisted dry (waterless) sweeper
3. Regenerative-air sweeper

Operation

Street sweeping must be done at:

1. Paved roads at job site entrance and exit locations
2. Paved areas within the job site that flow to storm drains or water bodies

Street sweeping must be done:

1. During roadway structural section activities
2. When vehicles are entering and leaving the job site
3. After soil disturbing activities
. After observing offsite tracking of material

Monitor paved areas and roadway within the jobsite. Street sweeping must be done:

1. Within 1 hour, if sediment or debris is observed during activities that require sweeping
2. Within 24 hours, if sediment or debris is observed during activities that do not require sweeping

At least 1 sweeper must be on the job site at all times when sweeping work is required. The sweeper must be in good working order.

Perform street sweeping to minimize dust. If dust generation is excessive or sediment pickup is ineffective, use water or a vacuum.

You may stockpile collected material on the jobsite according to the approved WPCP. Dispose of collected material at least once per week.

Material collected during street sweeping must be removed and disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Your WPCM must inspect paved roads at job site access points:

1. Daily if earthwork and other sediment or debris generating activities occur daily
2. Weekly if earthwork and other sediment or debris generating activities do not occur daily
3. When the National Weather Service predicts precipitation with a probability of at least 30 percent

MEASUREMENT AND PAYMENT

The contract lump sum price paid for street sweeping includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in street sweeping, including disposal of collected material, as shown on the plans, as specified in the Standard Specifications, these special provisions, and as directed by the Engineer.

0-1.05 TEMPORARY CONCRETE WASHOUT (PORTABLE)

GENERAL

Summary

his work includes removal and disposal of concrete waste by furnishing, maintaining, and removing portable temporary concrete washouts.

WPPP must describe and include the use of a portable temporary concrete washout as a water pollution control practice for waste management and materials pollution control.

Submittals

At least 5 business days before concrete activities start, submit:

1. Name and location of off-site concrete waste disposal facility to receive concrete waste
2. Copy of permit issued by RWQCB for off-site commercial disposal facility
3. Copy of license for off-site commercial disposal facility
4. Copy of permit issued by state or local agency having jurisdiction over disposal facility if disposal site is located outside of the State of California

Quality Control and Assurance

Retain and submit records of disposed concrete waste including:

1. Weight tickets
2. Delivery and removal of temporary concrete washouts

MATERIALS

Portable Temporary Concrete Washout

Portable temporary concrete washout must:

1. Be a commercially available watertight container.
2. Have sufficient capacity to contain all liquid and concrete waste generated by washout activities without seepage or spills.
3. Have at least 55-gallon capacity.
4. Be labeled for the exclusive use as a concrete waste and washout facility. Stencil "Concrete Waste material" in 3-inch high letters on white background. Top of stenciling must be 12 inches from the top of the container.

Concrete Washout Sign

Concrete washout sign must comply with the provisions in Section 12-3.06B, "Portable Signs" of the Standard Specifications and:

1. Be approved by the Engineer
2. Consist of base, framework, and sign panel
3. Be made of plywood
4. Be minimum 2' x 4' in size
5. Read "Concrete Washout" with 3 inches high black letters on white background

CONSTRUCTION

Placement

Place portable temporary concrete washouts at job site:

1. Before concrete placement activities start
2. In the immediate area of concrete work as approved by the Engineer
3. No closer than 50 feet from storm drain inlets, open drainage facilities, ESAs, or watercourses
4. Away from construction traffic or public access areas

Install a concrete washout sign adjacent to each portable temporary concrete washout location.

Operation

Use portable temporary concrete washouts for:

1. Washout from concrete delivery trucks
2. Slurries containing portland cement concrete or hot mix asphalt from sawcutting, coring, grinding, grooving, and hydro-concrete demolition
3. Concrete waste from mortar mixing stations

Relocate portable temporary concrete washouts as needed for concrete construction work.

Replace portable temporary concrete washouts when filled to capacity. Do not fill higher than 6 inches below rim.

Your WPC manager must inspect portable temporary concrete washouts:

1. Daily if concrete work occurs daily
2. Weekly if concrete work does not occur daily

Maintenance

When relocating or transporting a portable temporary concrete washout within the job site, secure it to prevent spilling of concrete waste material. If any spilled material is observed, remove spilled material and place it into portable temporary concrete washout.

Removal

Dispose of concrete waste material at a facility specifically licensed to receive solid concrete waste, liquid concrete waste, or both. When portable temporary concrete washout is full, remove and dispose of concrete waste within 2 days.

PAYMENT

The contract lump sum price paid for temporary concrete washout (portable) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing, maintaining, and removing the portable temporary concrete washout, including removal and disposal of concrete waste, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

TEMPORARY DRAINAGE INLET PROTECTION

GENERAL

Summary

This work includes constructing, maintaining, and removing temporary drainage inlet protection. Drainage inlet protection settles and filters sediment before stormwater runoff discharges into storm drainage systems.

The WPCP must describe and include the use of temporary drainage inlet protection as a water pollution control practice for sediment control.
Temporary drainage inlet protection must be Type 3A.**Submittals**

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

1. Erosion control blanket
2. Fiber rolls
3. Safety cap for metal posts
4. Silt fence fabric
5. Sediment filter bag
6. Foam barrier
7. Rigid plastic barrier
8. Gravel-filled bag fabric

If you substitute the steel wire staple with an alternative attachment device, submit a sample of the device for approval at least 5 business days before installation.

MATERIALS

Geosynthetic Fabrics

Geosynthetic fabrics for temporary drainage inlet protection must consist of one of the following:

1. Polyester

2. Polypropylene
3. Combined polyester and polypropylene

Geosynthetic fabrics for temporary drainage inlet must comply with the specifications for water pollution control in Section 88-1.05, "Water Pollution Control," of the Standard Specifications.

Foam barrier must comply with:

Foam Barrier

Property	ASTM Designation	Specification
Grab breaking load 1-inch grip, lb, min. in each direction	D 4632	200
Apparent elongation percent, min., in each direction	D 4632	15
Water Flow Rate max. average roll value, gallons per minute/square foot	D 4491	100-150
Permittivity 1/sec., min.	D 4491	0.05
Apparent opening size max. average roll value, U.S. Standard sieve size	D 4751	40
Ultraviolet Degradation percent of original unexposed grab breaking load 500 hr, minimum	D 4595	70

Sample under ASTM D 4354, Procedure C.

Test under ASTM D 4759. All properties are based on Minimum Average Roll Value (MARV).

Identify, store, and handle under ASTM D 4873.

Erosion Control Blanket

Erosion control blanket must be:

1. Described as a rolled erosion control product (RECP)
2. Classified as temporary and degradable or long-term and non-degradable
3. Machine-made mats
4. Provided in rolled strips
5. Classified by the Erosion Control Technology Council (ECTC)

Erosion control blanket classified as temporary and degradable must be one of the following:

1. Double net excelsior blanket:

    1.1. Classified as ECTC Type 2D
    1.2. Classified as an erosion control blanket
    1.3. Designed to last for at least one year after installation
    1.4. With a Universal Soil Loss Equation (USLE) C-Factor of not more than 0.20 at a 2:1 (horizontal:vertical) slope
    1.5. With 80 percent of the wood excelsior fibers being 6 inches or longer
    1.6. Capable to withstand a maximum shear stress of 1.75 pounds per square foot under ASTM D 6460
    1.7. With a minimum tensile strength of 75 pounds per foot under ASTM D 5035
    1.8. With top and bottom surfaces covered with lightweight non-synthetic netting

2. Double net straw and coconut blanket:

    2.1. Classified as ECTC Type 2D
    2.2. Classified as an erosion control blanket
    2.3. Designed to last for at least one year after installation
    2.4. With a USLE C-Factor of not more than 0.20 at a 2:1 (horizontal:vertical) slope
    2.5. Comprised of 70 percent straw and 30 percent coconut fiber
    2.6. Capable to withstand a maximum shear stress of 1.75 pounds per square foot under ASTM D 6460
    2.7. With a minimum tensile strength of 75 pounds per foot under ASTM D 5035
    2.8. With top and bottom surfaces covered with lightweight non-synthetic netting

3. Jute netting:

    3.1. Classified as ECTC Type 3B
    3.2. Classified as an open weave textile and have from 14 to 20 strands per foot in each direction
    3.3. Designed to last for at least one year after installation
    3.4. With a USLE C-Factor of not more than 0.25 at a 1.5:1 (horizontal:vertical) slope
    3.5. Comprised of 100 percent unbleached and undyed spun yarn made of jute fiber
    3.6. With an average open area from 63 to 70 percent
    3.7. From 48 to 72 inches in width
    3.8. Capable to withstand a maximum shear stress of 2.0 pounds per square foot under ASTM D 6460
    3.9. With a minimum tensile strength of 100 pounds per foot under ASTM D 5035
    3.10. From 0.90 to 1.20 pounds per square yard in weight

4. Coir netting:

    4.1. Classified as ECTC Type 4
    4.2. Classified as an open weave textile and from 13 to 18 strands per foot in each direction
    4.3. Designed to last for at least three years after installation

4.4. With a USLE C-Factor of not more than 0.25 at a 1:1 (horizontal:vertical) slope
4.5. Comprised of 100 percent unbleached and undyed spun coir yarn made of coconut fiber
4.6. With an average open area from 63 to 70 percent
4.7. From 72 to 158 inches in width
4.8. Capable to withstand a maximum shear stress of 2.25 pounds per square foot under ASTM D6460
4.9. With a minimum tensile strength of 125 pounds per foot under ASTM D 5035
4.10. From 1.20 to 1.67 pounds per square yard in weight

Erosion control blanket classified as long-term and non-degradable must:

1. Be a geosynthetic fabric
2. Comply with the specifications for rock slope protection fabric (Class 8) in Section 88-1.06, "Channel and Shore Protection," of the Standard Specifications

Staples

You may use an alternative attachment device such as a geosynthetic pins or plastic pegs to install erosion control blanket.

Rock

Rock must comply with:

1. Requirements under Section 72-2.02, "Materials," of the Standard Specifications
2. Following sizes:

Square Screen Size (inch)	Percentage Passing	Percentage Retained
6	100	0
3	0	100

Rope

Rope for fiber rolls must be:

1. Biodegradable, such as sisal or manila
2. At least 1/4 inch in diameter

Fiber Rolls

Fiber rolls must:

1. Last for at least one year after installation
2. Be Type 1 or Type 2

For Type 1, fiber rolls must be:

1. Made from an erosion control blanket classified as temporary and degradable
2. Rolled along the width
3. Secured with natural fiber twine every 6'-6" from each end
4. Finished to be either:

    4.1. From 8 to 10 inches in diameter, from 10 to 20 feet long, and at least 0.5 pounds per linear foot
    4.2. From 10 to 12 inches in diameter, at least 10 feet long, and at least 2 pounds per linear foot

For Type 2, fiber rolls must:

1. Be filled with rice or wheat straw, wood excelsior, or coconut fiber
2. Be covered withbiodegradable jute, sisal, or coir fiber netting
3. Have netting secured tightly at each end
4. Be finished to be either:

    4.1. From 8 to 10 inches in diameter, from 10 to 20 feet long, and at least 1.1 pounds per linear foot
    4.2. From 10 to 12 inches in diameter, at least 10 feet long, and at least 3 pounds per linear foot

Wood Stakes

Wood stakes must be:

1. Untreated fir, redwood, cedar, or pine and cut from sound timber
2. Straight and free of loose or unsound knots and other defects which would render the stakes unfit for use
3. Pointed on the end to be driven into the ground

For fiber rolls, wood stakes must be at least:

1. 1" x 1" x 24" in size for Type 1 installation
2. 1" x 2" x 24" in size for Type 2 installation

Posts

Posts must be wood or metal.

Wood posts must be:

1. Untreated fir, redwood, cedar, or pine and cut from sound timber
2. Straight and free of loose or unsound knots and other defects that would render the stakes unfit for use
3. Pointed on the end to be driven into the ground
4. At least 2" x 2" in size, and 4 feet long

Metal posts must:

1. Be made of steel.
2. Have a "U," "T," "L," or other cross sectional shape that can resist failure from lateral loads.
3. Be pointed on the end to be driven into the ground.
4. Weigh at least 0.75-pound per foot.
5. Be at least 4 feet long.
6. Have a safety cap attached to the exposed end. The safety cap must be orange or red plastic and fit snugly to the metal post.

Silt Fence

Silt fence must be:

1. Constructed with silt fence fabric, posts, and fasteners
2. Prefabricated or assembled at the job site

Silt fence fabric must be attached to posts using these methods:

1. If prefabricated silt fence is used, posts must be inserted into sewn pockets
2. If assembled on the job site:

    2.1. If wood posts are used, fasteners must be staples or nails
    2.2. If steel posts are used, fasteners must be tie wires or locking plastic fasteners
    2.3. Spacing of the fasteners must be at least 8 inches

Gravel-filled Bags

Gravel-filled bags must:

1. Be made from fabric.
2. Have inside dimensions from 24 to 32 inches in length, and from 16 to 20 inches in width.
3. Have the opening bound to retain the gravel. The opening must be sewn with yarn, bound with wire, or secured with a closure device.
4. Weigh from 30 to 50 pounds when filled with gravel.

Gravel for gravel-filled bags must be:

1. From 3/8 to 3/4 inch in diameter
2. Clean and free from clay balls, organic matter, and other deleterious materials

Sediment Filter Bag

Sediment filter bag must:

1. Be made of fabric
2. Be sized to fit the catch basin or drainage inlet
3. Include a high-flow bypass

Sediment filter bag may include a metal frame. Sediment filter bags that do not have a metal frame and are deeper than 18 inches must:

1. Include lifting loops and dump straps
2. Include a restraint cord to keep the sides of the bag away from the walls of the catch basin

Foam Barriers

Foam barriers must:

1. Be filled with a urethane foam core
2. Have a geosynthetic fabric cover and flap
3. Have a triangular, circular, or square shaped cross section
4. Have a vertical height of at least 5 inches after installation
5. Have a horizontal flap of at least 8 inches in width
6. Have a length of at least 4 feet per unit
7. Have the ability to interlock separate units into a longer barrier so that water does not flow between the units
8. Be secured to:

    8.1. Pavement with 1-inch concrete nails with 1-inch washers and solvent-free adhesive
    8.2. Soil with 6-inch nails with 1-inch washers

Rigid Plastic Barriers

Rigid plastic barriers must:

1. Have an integrated filter
2. Have a formed outer jacket of perforated high density polyethylene (HDPE) or polyethylene terephthalate (PET)
3. Have a flattened tubular shaped cross section
4. Be made from virgin or recycled materials
5. Be free from biodegradable filler materials that degrade the physical or chemical characteristics of the finished filter core or outer jacket
6. Have a length of at least 4 feet per unit
7. Have the ability to interlock separate units into a longer barrier so that water does not flow between the units
8. Be secured to:

    8.1 Pavement with 1-inch concrete nails with 1-inch washers and solvent-free adhesive, with gravel-filled bags, or a combination

8.2 Soil with 6-inch nails with 1-inch washers and wood stakes

9. Comply with the following properties:

Specification	Requirements
Grab tensile strength of outer jacket material, pounds/square inch, min. in each direction ASTM D 4632*	4000
Break strength of outer jacket, pounds/square inch ASTM D 4632*	1300
Permittivity of filter core, 1/sec., min. ASTM D 4491	0.38
Flow rate of filter core, gallons per minute per square foot, ASTM D 4491	100 min. 200 max.
Filter core aperture size, max., Average Opening Size (AOS), microns	425
Ultraviolet stability (outer jacket & filter core), percent tensile strength retained after 500 hours, min. ASTM D 4355 (xenon-arc lamp and water spray weathering method)	90

* or appropriate test method for specific polymer

If used at a curb inlet without a grate, rigid plastic barriers must:

1. Have a horizontal flap of at least 6 inches with an under-seal gasket to prevent underflows
2. Include a high-flow bypass
3. Have a vertical height of at least 7 inches after installation
4. Be sized to fit the catch basin or drainage inlet

If used at a grated catch basin without a curb inlet, rigid plastic barriers must:

1. Cover the grate by at least 2 inches on each side and have an under-seal gasket to prevent underflows
2. Include a high-flow bypass
3. Have a vertical height of at least 1.5 inches after installation
4. Be sized to fit the catch basin or drainage inlet

If used at a curb inlet with a grate, rigid plastic barriers must:

1. Have a horizontal flap that covers the grate by at least 2 inches on the 3 sides away from the curb opening and have an under-seal gasket to prevent underflows
2. Include a high-flow bypass
3. Have a vertical section that covers the curb opening by at least 5 inches after installation
4. Be sized to fit the catch basin or drainage inlet

If used as a linear sediment barrier, rigid plastic barriers:

1. Must have an installed height of at least 6 inches
2. May have a horizontal flap of at least 4 inches

Linear Sediment Barrier

Linear sediment barriers must consist of one or more of the following:

1. Silt fence
2. Gravel-filled bags
3. Fiber roll
4. Rigid plastic barrier
5. Foam barrier

Flexible Sediment Barrier

Flexible sediment barriers consist of one or more of the following:

1. Rigid plastic barrier
2. Foam barrier

CONSTRUCTION

For drainage inlet protection at drainage inlets in paved and unpaved areas:

1. Prevent ponded runoff from encroaching on the traveled way or overtopping the curb or dike. Use linear sediment barriers to redirect runoff and control ponding.
2. Clear the area around each drainage inlet of obstructions including rocks, clods, and debris greater than one inch in diameter before installing the drainage inlet protection.
3. Install a linear sediment barrier up-slope of the existing drainage inlet and parallel with the curb, dike, or flow line to prevent sediment from entering the drainage inlet.

Erosion Control Blanket

To install erosion control blanket and geosynthetic fabric:

1. Secure blanket or fabric to the surface of the excavated sediment trap with staples and embed in a trench adjacent to the drainage inlet
2. Anchor the perimeter edge of the erosion control blanket in a trench

Silt Fence

If silt fence is used as a linear sediment barrier:

1. Place fence along the perimeter of the erosion control blanket, with the posts facing the drainage inlet
2. Install fence with the bottom edge of the silt fence fabric in a trench. Backfill the trench with soil and compact manually

Gravel Bag Berm

If gravel bag berm is used as a linear sediment barrier:

1. Place gravel-filled bags end-to-end to eliminate gaps
2. Stack bags in a way that the bags in the top row overlap the joints in the lower row

If gravel bag berms are used for Type 3A and Type 3B:

1. Place gravel-filled bags end-to-end to eliminate gaps
2. Stack bags in a way that the bags in the top row overlap the joints in the lower row
3. Arrange bags to create a spillway by removing one or more gravel-filled bags from the upper layer

If used within shoulder area, place gravel-filled bags behind temporary railing (Type K).

Fiber Rolls

If fiber rolls are used as a linear sediment barrier:

1. Place fiber rolls in a furrow.
2. Secure fiber rolls with stakes installed along the length of the fiber rolls. Stakes must be installed from 6 to 12 inches from the end of the rolls.

If fiber rolls are used as a linear sediment barrier for Type 4A, place them over the erosion control blanket.

Foam Barriers

If foam barriers are used as a linear sediment barrier:

1. Install barriers with the horizontal flap in a 3 inch deep trench and secured with nails and washers placed no more than 4 feet apart
2. Secure barriers with 2 nails at the connection points where separate units overlap
3. Place barriers without nails or stakes piercing the core

Flexible Sediment Barriers

If flexible sediment barriers are used:

1. Secure barriers to the pavement with nails and adhesive, gravel-filled bags, or a combination
2. Install barriers flush against the sides of concrete, asphalt concrete, or hot mix asphalt curbs or dikes
3. Place barriers to provide a tight joint with the curb or dike and anchored in a way that runoff cannot flow behind the barrier

If flexible sediment barriers are used for Type 4B:

1. Secure barriers to the pavement according to the angle and spacing shown on the plans
2. Place barriers to provide a tight joint with the curb or dike. Cut the cover fabric or jacket to ensure a tight fit

Rigid Sediment Barriers

If rigid sediment barriers are used at a grated catch basin without a curb inlet:

1. Place barriers using the gasket to prevent runoff from flowing under the barrier
2. Secure barriers to the pavement with nails and adhesive, gravel-filled bags, or a combination

If rigid sediment barriers are used for linear sediment barriers:

1. Install barriers in a trench. Backfill the trench with soil and compact manually
2. Place barrier with separate units overlapping at least 4 inches
3. Reinforce barriers with a wood stake at each overlap
4. Fasten barriers to the wood stakes with steel screws, 16 gauge galvanized steel wire, or with UV stabilized cable ties that are from 5 to 7 inches in length

Sediment Filter Bags

Install sediment filter bags for Type 5 by:

1. Removing the drainage inlet grate
2. Placing the sediment bag in the opening
3. Replacing the grate to secure the sediment filter bag in place

MAINTENANCE

Maintain temporary drainage inlet protection to provide sediment holding capacity and to reduce runoff velocities.

Remove sediment deposits, trash, and debris from temporary drainage inlet protection as needed or when directed by the Engineer. If removed sediment is deposited within project limits, it must be stabilized and not subject to erosion by wind or water. Trash and debris must be removed and disposed of as specified in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Maintain temporary drainage inlet protection by removing sediment from:

1. Behind flexible sediment barriers when sediment exceeds 1 inch in depth
2. Surface of the erosion control blanket when sediment exceeds 1 inch in depth
3. Sediment trap for Type 2 when the volume has been reduced by approximately one-half
4. Behind silt fence when the sediment is 1/3 the height of the silt fence fabric above ground
5. Sediment filter bags when filled or when the restraint cords are no longer visible

If rills and other evidence of concentrated runoff occur beneath the linear sediment barrier, repair or adjust the barrier.

If silt fence fabric becomes split, torn, or unraveled, repair or replace silt fence.

If geosynthetic fabric becomes split, torn, or unraveled, repair or replace foam barriers.

Repair or replace sagging or slumping linear sediment barriers with additional stakes. Replace broken or split wood stakes.

Reattach foam barriers and rigid plastic barriers that become detached or dislodged from the pavement.

Repair split or torn rigid plastic barriers with 16 gauge galvanized steel wire or UV stabilized cable ties that are from 5 to 7 inches in length.

For sediment filter bags without metal frames, empty by placing one inch steel reinforcing bars through the lifting loops and then lift the filled bag from the drainage inlet. For sediment filter bags with metal frames, empty by lifting the metal frame from the drainage inlet. Rinse before replacing in the drainage inlet. When rinsing the sediment filter bags, do not allow the rinse water to enter a drain inlet or waterway.

Repair temporary drainage inlet protection within 24 hours of discovering damage unless the Engineer approves a longer period.

If your vehicles, equipment, or activities disturb or displace temporary drainage inlet protection, repair temporary drainage inlet protection at your expense.

The Department does not pay maintenance costs for cleanup, repair, removal, disposal, or replacement due to improper installation or your negligence.

REMOVAL

When the Engineer determines that the temporary drainage inlet protection is not required, it must be removed and disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Ground disturbance, including holes and depressions, caused by the installation and removal of the temporary drainage inlet protection must be backfilled and repaired under Section 15-1.02, "Preservation of Property," of the Standard Specifications.

MEASUREMENT AND PAYMENT

Quantities of temporary drainage inlet protection will be determined from actual count in place. The protection will be measured one time only and no additional measurement will be recognized.

The contract unit price paid for temporary drainage inlet protection includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the temporary drainage inlet protection, complete in place, including removal of materials, cleanup and disposal of retained sediment and debris, and backfilling and repairing holes, depressions and other ground disturbance, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

No additional compensation will be made if the temporary drainage inlet protection is relocated during the course of construction.

10-1.07 COOPERATION

It is anticipated that work by another contractor may be in progress adjacent to or within the limits of this project during progress of the work on this contract. The following table lists contracts anticipated to be in progress during this contract.

Contract No.	Co-Rte-PM	Location	Type of Work
04-0120R4	04-80	SFOBB	SFOB Bridge Closure for new structure that will join the self-anchored suspension span to the upper and lower decks of the YBI tunnel.
		SFOBB Toll Plaza	System Integrator
EA 04-0120L4	04-80		Build two roadway sections, new electrical substation, and relocate underground utilities.

Comply with Section 7-1.14, "Cooperation," of the Standard Specifications.

Contractor shall provide adequate notification and coordination with the Bridge closure contractor (C.C. Myers, Inc.) for the all items of work to be completed during the Labor Day Weekend. Attention is directed to "Order of Work" in these special provisions for specific efforts involved during the freeway closure.
Contractor will work cooperatively with the system integrator contractor to complete all necessary installation of equipment for the toll plaza.

10-1.08 PROGRESS SCHEDULE (CRITICAL PATH METHOD)

GENERAL

Summary

Comply with Section 8-1.04, "Progress Schedule," of the Standard Specifications, except you must:

1. Use a computer software to prepare the schedule
2. Furnish compatible software for the Engineer's exclusive possession and use

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.

Definitions

contract completion date: The current extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer as specified in Section 8-1.06, "Time of Completion," of the Standard Specifications.

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."

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.

near critical path: A chain of activities with total float exceeding that of the critical path but having no more than 10 working days of total float.

time-scaled network diagram: A graphic depiction of a CPM schedule comprised of activity bars with relationships for each activity represented by arrows. The tail of each arrow connects to the activity bar for the predecessor and points to the successor.

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

Submittals

General Requirements

Submit to the Engineer baseline, monthly updated, and final updated schedules, each consistent in all respects with the time and order of work requirements of the contract. Perform work in the sequence indicated on the current accepted schedule.

Each schedule must show:

1. Calculations using critical path method to determine controlling activities.
2. Duration activities less than 20 working days.
3. Each required constraint. Constraints other than those required by the special provisions may be included only if authorized.

The Engineer's review and acceptance of schedules does not waive any contract requirements and does not relieve you of any obligation or responsibility for submitting complete and accurate information. Correct rejected schedules and resubmit them within 7 days of notification by the Engineer, at which time a new review period of 7 days will begin.

Errors or omissions on schedules do not relieve you from finishing all work within the time limit specified for completion of the contract. If, after a schedule has been accepted by the Engineer,

either you or the Engineer discover that any aspect of the schedule has an error or omission, you must correct it on the next updated schedule.

Computer Software

Submit to the Engineer for review a description of proposed schedule software to be used. After the Engineer accepts the proposed software, furnish schedule software and all original software instruction manuals. All software must be compatible with the current version of the Windows operating system in use by the Engineer. The schedule software must include:

1. Latest version of Primavera SureTrak Project Manager for Windows, or equivalent
2. Latest version of schedule-comparing HST SureChange, or equivalent

If a schedule software equivalent to SureTrak is proposed, it must be capable of generating files that can be imported into SureTrak. The schedule-comparing software must be compatible with schedule software submitted and must be able to compare two schedules and provide reports of changes in activity ID, activity description, constraints, calendar assignments, durations, and logic ties.

The schedule software and schedule-comparing software will be returned to you before the final estimate. The Department will compensate you as specified in Section 4-1.03, "Extra Work," of the Standard Specifications for replacement of software or manuals damaged, lost, or stolen after delivery to the Engineer.

Instruct the Engineer in the use of the software and provide software support until the contract is accepted. Within 15 days of contract approval, provide a commercial 8-hour training session for 2 Department employees in the use of the software at a location acceptable to the Engineer. It is recommended that you also 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 schedule software other than SureTrak is submitted, then the training session must be a total of 16-hours for each Department employee.

Network Diagrams, Reports, and Data

Include the following with each schedule submittal:

1. Two sets of originally plotted, time-scaled network diagrams
2. One read-only compact disk or floppy diskette containing the schedule data

The time-scaled network diagrams must conform to the following:

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 critical path using graphical presentation
4. Be prepared on 11" x 17" or larger size

5. Include a title block and a timeline on each page

Baseline Schedule

Submit to the Engineer a baseline schedule within 20 days of approval of the contract. Allow 20 days for the Engineer's review after the baseline schedule and all support data are submitted. Beginning the week the baseline schedule is first submitted, meet with the Engineer weekly to discuss and resolve schedule issues until the baseline schedule is accepted.

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

The baseline schedule must not extend beyond the number of working days originally provided in these special provisions.

Updated Schedule

Submit an updated schedule and meet with the Engineer to review contract progress on or before the 1st day of each month, beginning one month after the baseline schedule is accepted. Allow 15 days for the Engineer's review after the updated schedule and all support data are submitted, except that the review period will not start until any previous month's required schedule is accepted. Updated schedules that are not accepted or rejected within the review period are considered accepted by the Engineer.

The updated schedule must show:

1. Data date of the 21st day of the month or other date established by the Engineer
2. Changes from approved revised schedules

Final Updated Schedule

Submit a final updated schedule with actual start and finish dates for the activities within 30 days after completion of contract work. Provide 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 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.

PAYMENT

Full compensation for furnishing software is considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed.

10-1.09 SMALL BUSINESS UTILIZATION REPORT

Submit a completed Small Business Utilization Report form on or before the following dates for the prior reporting period:

1. January 15th
2. April 15th
3. July 15th
4. October 15th

Submit a completed final Small Business Utilization Report form within 30 days after contract acceptance.

The Department pays $250 for each report submitted. The contract unit price paid for small business utilization report includes full compensation for doing all the work involved in submitting the completed Small Business Utilization Report form. If you fail to submit a completed form by the specified time, you will not receive payment for that report.
The Department does not adjust payment for an increase or decrease in the quantity of small business utilization reports submitted. Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications does not apply.
The work to complete the final Small Business Utilization Report contract item is excluded from Section 7-1.17, "Acceptance of Contract," of the Standard Specifications.
Failure to submit the Small Business Utilization Report is not considered a performance failure. Section 9-1.053, "Performance Failure Withholds," of the Standard Specifications does not apply.

10-1.10 CONSTRUCTION AREA TRAFFIC CONTROL DEVICES

Flagging, signs, and temporary traffic control devices furnished, installed, maintained, and removed when no longer required shall conform to the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.
Category 1 temporary traffic control devices are defined as small and lightweight (less than 100 pounds) devices. These devices shall be certified as crashworthy by crash testing, crash testing of similar devices, or years of demonstrable safe performance. Category 1 temporary traffic control devices include traffic cones, plastic drums, portable delineators, and channelizers.
If requested by the Engineer, the Contractor shall provide written self-certification for crashworthiness of Category 1 temporary traffic control devices at least 5 business days before beginning any work using the devices or within 2 business days after the request if the devices are already in use. Self-certification shall be provided by the manufacturer or Contractor and shall include the following:

A. Date,
B. Federal Aid number (if applicable),
C. Contract number, district, county, route and post mile of project limits,
D. Company name of certifying vendor, street address, city, state and zip code,

E. Printed name, signature and title of certifying person; and
F. Category 1 temporary traffic control devices that will be used on the project.

The Contractor may obtain a standard form for self-certification from the Engineer.
Category 2 temporary traffic control devices are defined as small and lightweight (less than 100 pounds) devices that are not expected to produce significant vehicular velocity change, but may cause potential harm to impacting vehicles. Category 2 temporary traffic control devices include barricades and portable sign supports.
Category 2 temporary traffic control devices shall be on the Federal Highway Administration's (FHWA) list of Acceptable Crashworthy Category 2 Hardware for Work Zones. This list is maintained by FHWA and can be located at:

http://safety.fhwa.dot.gov/roadway_dept/road_hardware/listing.cfm?code=workzone

The Department also maintains this list at:

http://www.dot.ca.gov/hq/traffops/signtech/signdel/pdf/Category2.pdf

Category 2 temporary traffic control devices that have not received FHWA acceptance shall not be used. Category 2 temporary traffic control devices in use that have received FHWA acceptance shall be labeled with the FHWA acceptance letter number and the name of the manufacturer. The label shall be readable and permanently affixed by the manufacturer. Category 2 temporary traffic control devices without a label shall not be used.
If requested by the Engineer, the Contractor shall provide a written list of Category 2 temporary traffic control devices to be used on the project at least 5 business days before beginning any work using the devices or within 2 business days after the request if the devices are already in use.
Category 3 temporary traffic control devices consist of temporary traffic-handling equipment and devices that weigh 100 pounds or more and are expected to produce significant vehicular velocity change to impacting vehicles. Temporary traffic-handling equipment and devices include crash cushions, truck-mounted attenuators, temporary railing, temporary barrier, and end treatments for temporary railing and barrier.
Type III barricades may be used as sign supports if the barricades have been successfully crash tested, meeting the NCHRP Report 350 criteria, as one unit with a construction area sign attached.
Category 3 temporary traffic control devices shall be shown on the plans or on the Department's Highway Safety Features list. This list is maintained by the Division of Engineering Services and can be found at:

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

Category 3 temporary traffic control devices that are not shown on the plans or not listed on the Department's Highway Safety Features list shall not be used.
Full compensation for providing self-certification for crashworthiness of Category 1 temporary traffic control devices and for providing a list of Category 2 temporary traffic control devices used on the project shall be considered as included in the prices paid for the various items of

work requiring the use of the Category 1 or Category 2 temporary traffic control devices and no additional compensation will be allowed therefor.

10-1.11 CONSTRUCTION AREA SIGNS

Construction area signs for temporary traffic control shall be furnished, installed, maintained, and removed when no longer required in conformance with the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.

Attention is directed to "Furnish Sign" of these special provisions.

Attention is directed to the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions. Type II retroreflective sheeting shall not be used on construction area sign panels. Type III, IV, VII, VIII, or IX retroreflective sheeting shall be used for stationary mounted construction area sign panels.

Unless otherwise shown on the plans or specified in these special provisions, the color of construction area warning and guide signs shall have black legend and border on orange background, except W10-1 or W47(CA) (Highway-Rail Grade Crossing Advance Warning) sign shall have black legend and border on yellow background.

Orange background on construction area signs shall be fluorescent orange.

Repair to construction area sign panels will not be allowed, except when approved by the Engineer. At nighttime under vehicular headlight illumination, sign panels that exhibit irregular luminance, shadowing or dark blotches shall be immediately replaced at the Contractor's expense.

The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least 2 business days, but not more than 14 days, prior to commencing excavation for construction area sign posts. The regional notification centers include, but are not limited to, the following:

Notification Center	Telephone Number
Underground Service Alert	811

Excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes. The post hole diameter, if backfilled with portland cement concrete, shall be at least 4 inches greater than the longer dimension of the post cross section.

Construction area signs placed within 15 feet from the edge of the travel way shall be mounted on stationary mounted sign supports as specified in "Construction Area Traffic Control Devices" of these special provisions.

The Contractor shall maintain accurate information on construction area signs. Signs that are no longer required shall be immediately covered or removed. Signs that convey inaccurate information shall be immediately replaced or the information shall be corrected. Covers shall be replaced when they no longer cover the signs properly. The Contractor shall immediately restore to the original position and location any sign that is displaced or overturned, from any cause, during the progress of work.

10-1.12 MAINTAINING TRAFFIC

Maintaining traffic shall conform to the provisions in Sections 7-1.08, "Public Convenience," Section 7-1.09, "Public Safety," and Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.

Closure is defined as the closure of a traffic lane or lanes, including shoulder, ramp or connector lanes, within a single traffic control system.

Closures shall conform to the provisions in "Traffic Control System for Lane Closure" of these special provisions.

Designated legal holidays are: January 1st, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, November 11th, Thanksgiving Day, and December 25th. When a designated legal holiday falls on a Sunday, the following Monday shall be a designated legal holiday. When November 11th falls on a Saturday, the preceding Friday shall be a designated legal holiday.
Ramps adjacent to the closed freeway lane may be closed.

The SC6-3(CA) or SC6-4(CA) signs shall be installed at least 7 days before closing the connector or ramp, but not more than 15 days before the connector or ramp closure. The Contractor shall notify the Engineer at least 2 business days before installing the SC6-3(CA) or SC6-4(CA) signs.

Accurate information shall be maintained on the SC6-3(CA) or SC6-4(CA) signs. The SC6-3(CA) or SC6-4(CA) signs, when no longer required, shall be immediately covered or removed.

Freeways may be closed only if signed for closing 7 days in advance. The Contractor shall notify the Engineer not less than 5 business days prior to signing the freeway. If the freeway is not closed on the posted day, the closure shall be changed to allow a 3-business-day advance notice before closure.
Freeway closure charts are for the various items of work to be completed during the Labor Day weekend. Attention is directed to Section 4, "Beginning of Work, Time of Completion, and Liquidated Damages", of these special provision, and other work as approved in writing by the Engineer.

When work vehicles or equipment are parked within 6 feet of a traffic lane to perform active construction, the shoulder area shall be closed as shown on the plans.
If minor deviations from the lane requirement charts are required, a written request shall be submitted to the Engineer at least 15 days before the proposed date of the closure. The Engineer may approve the deviations if there is no significant increase in the cost to the State and if the work can be expedited and better serve the public traffic.
Full compensation for furnishing, erecting, maintaining, and removing and disposing of the SC6-3(CA), SC6-4(CA), W20-1, W21-5b, and C24(CA) signs shall be considered as included in the

contract lump sum price paid for construction area signs and no additional compensation will be allowed therefor.

Chart No. 1
Freeway/Expressway Lane Requirements

County: Alameda | Route/Direction: I-80/WB | PM: 1.2/2.1

Closure Limits: I-80 Carpool lane bypass-Between PM 1.2 and PM 2.1

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	C	C	C	C																				C	C
Fridays	C	C	C	C																				C	C
Saturdays	C	C	C	C	C	C																		C	C
Sundays	C	C	C	C	C	C																		C	C

Legend:
[ ] No lane closure allowed.

REMARKS:
1. This lane closure chart shall only be used for construction work between PM 1.2 and PM 2.1 for the carpool lane bypass to the SFOBB Toll Plaza. This lane becomes toll both lane number 22.

Chart No. 1
Freeway/Expressway Lane Requirements

County: Alameda | Route/Direction: I-880 Connector/WB | PM: 34.5

Closure Limits: I-880 Connector Carpool lane bypass to the San Francisco Oakland Bay Bridge Toll Plaza

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	C	C	C	C																				C	C
Fridays	C	C	C	C																				C	C
Saturdays	C	C	C	C	C	C																		C	C
Sundays	C	C	C	C	C	C																		C	C

[ ] No lane closure allowed.

REMARKS:
1. This lane closure chart shall only be used for construction work on westbound I- 880 carpool lane between PM 34.5 on I-880 and PM 2.1 on I-80. This lane becomes toll booth lane number 21.

Chart No. 1
Freeway/Expressway Lane Requirements

County: Alameda | Route/Direction: I-80/WB | PM: 2.0

Closure Limits: San Francisco Oakland Bay Bridge Toll Plaza (Toll Booths No. 18)

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	C	C	C	C																			C	C	
Fridays	C	C	C	C																			C	C	
Saturdays	C	C	C	C	C	C																	C	C	
Sundays	C	C	C	C	C	C																	C	C	

No lane closure allowed.

REMARKS:
1. This lane closure chart shall only be used for construction work at the SFOBB Toll Plaza (Toll Booth No. 18).

CLOSURE SCHEDULE

A written schedule of planned closures for the next week period, defined as Sunday noon through the following Sunday noon, shall be submitted by noon each Monday. A written schedule shall be submitted not less than 25 days and not more than 125 days before the anticipated start of any operation that will:

1. Reduce horizontal clearances, traveled way, including shoulders, to two lanes or less due to such operations as temporary barrier placement and paving
2. Reduce the vertical clearances available to the public due to such operations as pavement overlay, overhead sign installation, or falsework or girder erection

The Closure Schedule shall show the locations and times of the proposed closures. The Closure Schedule request forms furnished by the Engineer shall be used. Closure Schedules submitted to the Engineer with incomplete or inaccurate information will be rejected and returned for correction and resubmittal. The Contractor will be notified of disapproved closures or closures that require coordination with other parties as a condition of approval.

Closure Schedule amendments, including adding additional closures, shall be submitted by noon to the Engineer, in writing, at least 3 business days in advance of a planned closure. Approval of Closure Schedule amendments will be at the discretion of the Engineer.

The Engineer shall be notified of cancelled closures 2 business days before the date of closure.

Closures that are cancelled due to unsuitable weather may be rescheduled at the discretion of the Engineer.

CONTINGENCY PLAN

A detailed contingency plan shall be prepared for reopening closures to public traffic. If required by "Beginning of Work, Time of Completion and Liquidated Damages" of these special

provisions, the contingency plan shall be submitted to the Engineer before work at the job site begins. Otherwise, the contingency plan shall be submitted to the Engineer within one business day of the Engineer's request.

LATE REOPENING OF CLOSURES

If a closure is not reopened to public traffic by the specified time, work shall be suspended in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications. No further closures are to be made until the Engineer has accepted a work plan, submitted by the Contractor, that will insure that future closures will be reopened to public traffic at the specified time. The Engineer will have 2 business days to accept or reject the Contractor's proposed work plan. The Contractor will not be entitled to compensation for the suspension of work resulting from the late reopening of closures.

For each 10-minute interval, or fraction thereof past the time specified to reopen the closure, the Department will deduct the amount per interval shown below from moneys due or that may become due the Contractor under the contract. Damages are limited to 5 percent of project cost per occurrence and will not be assessed when the Engineer requests that the closure remain in place beyond the scheduled pickup time.

Type of Facility	Route or Segment	Period	Damages/interval ($)
Mainline		1st half hour 2nd half hour 2nd hour and beyond	$1,000 / 10 minutes $1,000 / 10 minutes $1,000 / 10 minutes
Connector		1st half hour 2nd half hour 2nd hour and beyond	$1,000 / 10 minutes $1,000 / 10 minutes $ 1,000 / 10 minutes

COMPENSATION

The Engineer shall be notified of delays in the Contractor's operations due to the following conditions, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of those conditions, and the Contractor's loss due to that delay could not have been avoided by rescheduling the affected closure or by judicious handling of forces, equipment and plant, the delay will be considered a right of way delay and will be compensated in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications:

1. The Contractor's proposed Closure Schedule is denied and his planned closures are within the time frame allowed for closures in "Maintaining Traffic" of these special provisions, except that the Contractor will not be entitled to compensation for amendments to the Closure Schedule that are not approved.
2. The Contractor is denied a confirmed closure.

Should the Engineer direct the Contractor to remove a closure before the time designated in the approved Closure Schedule, delay to the Contractor's schedule due to removal of the closure will be considered a right of way delay and compensation for the delay will be determined in

conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

10-1.14 IMPACT ATTENUATOR VEHICLE

GENERAL

Summary

Work includes protecting traffic and workers by using impact attenuator vehicle as a shadow vehicle when placing and removing components of a traffic control system, and when performing a moving lane closure.
Comply with Section 12-3.03, "Flashing Arrow Signs," of the Standard Specifications.
Impact attenuator vehicle must comply with the following test levels under National Cooperative Highway Research Program 350:

1. Test level 3 for pre-construction posted speed limit of 50 mph or more
2. Test levels 2 or 3 for pre-construction posted speed limit of 45 mph or less

Comply with the attenuator manufacturer's recommendations for:

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

Definitions

Impact attenuator vehicle: Support truck towing a deployed attenuator mounted to a trailer or support truck with a deployed attenuator mounted to the support truck.

Submittals

Upon request, submit a Certificate of Compliance for attenuator to the Engineer under Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.

Quality Control and Assurance

Attenuator must be a brand listed on the Department's pre-approved list at:
http://www.dot.ca.gov/hq/esc/approved_products_list/HighwaySafe.htm

MATERIALS

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 pounds or greater than 26,400 pounds.
If using the Trinity MPS-350 truck-mounted attenuator, the support truck must not have any underneath fuel tank mounted within 10'-6" of the rear of the support truck.
Each impact attenuator vehicle must:

1. Have standard brake lights, taillights, sidelights, and turn signals

2. Have an inverted "V" chevron pattern placed across the entire rear of the attenuator composed of alternating 4 inch wide non-reflective black stripes and 4 inch wide yellow retroreflective stripes sloping at 45 degrees
3. Have a Type II flashing arrow sign
4. Have a flashing or rotating amber light
5. Have an operable 2-way communication system for maintaining contact with workers

CONSTRUCTION

Use impact attenuator vehicle to follow behind equipment and workers who are placing and removing components of a traffic control system for a lane closure or a ramp closure. Flashing arrow sign must be operating in arrow mode during this activity. Follow at a distance to prevent intrusion into the workspace from passing traffic.

After placing components of a traffic control system for a lane closure or a ramp closure you may use impact attenuator vehicle in a closed lane and in advance of a work area to protect traffic and workers.

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

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

MEASUREMENT AND PAYMENT

Full compensation for furnishing and operating impact attenuator vehicle is included in the contract lump sum price paid for traffic control system, and no additional compensation will be allowed therefor.

10-1.15 TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE

A traffic control system shall consist of closing traffic lanes and ramps in conformance with the details shown on the plans, the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, the provisions under "Maintaining Traffic" and "Construction Area Signs" of these special provisions, and these special provisions.

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

Each vehicle used to place, maintain and remove components of a traffic control system on multilane highways shall be equipped with a Type II flashing arrow sign which shall be in operation when the vehicle is being used for placing, maintaining or removing components. Vehicles equipped with Type II flashing arrow sign not involved in placing, maintaining or removing components when operated within a stationary lane closure shall only display the caution display mode. The sign shall be controllable by the operator of the vehicle while the vehicle is in motion. The flashing arrow sign shown on the plans shall not be used on vehicles which are being used to place, maintain and remove components of a traffic control system and shall be in place before a lane closure requiring its use is completed.

The 1,700-foot section of lane closure, shown along lane lines between the 1,000-foot lane closure tapers on the plans entitled "Traffic Control System for Lane Closures on Freeways and

Expressways" and "Traffic Control System for Lane and Complete Closures on Freeways and Expressways" shall not be used.

The traffic cones shown to be placed transversely across closed traffic lanes and shoulders on the plans entitled "Traffic Control System for Lane Closures on Freeways and Expressways" and "Traffic Control System for Lane and Complete Closures on Freeways and Expressways" shall not be placed.

If components in the traffic control system are displaced or cease to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair the components to the original condition or replace the components and shall restore the components to the original location.

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

The contract lump sum price paid for traffic control system shall include full compensation for furnishing all labor, materials (including signs), tools, equipment, and incidentals, and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the traffic control system shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

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

Traffic control system required by work which is classed as extra work, as provided in Section 4-1.03D of the Standard Specifications, will be paid for as a part of the extra work.

10-1.16 PORTABLE CHANGEABLE MESSAGE SIGNS

GENERAL

Summary

Work includes furnishing, placing, operating, maintaining, and removing portable changeable message signs.

Comply with Section 12-3.12 "Portable Changeable Message Signs," of the Standard Specifications.

Definitions

Useable shoulder area: Paved or unpaved contiguous surface adjacent to the traveled way with:

1. Sufficient weight bearing capacity to support portable changeable message sign
2. Slope not greater than 6:1 (horizontal:vertical)

Submittals

Upon request, submit a Certificate of Compliance for each portable changeable message sign under Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.

Quality Control and Assurance

Comply with the manufacturer's operating instructions for portable changeable message sign.
Approaching drivers must be able to read the entire message for all phases at least twice at the posted speed limit before passing portable changeable message sign. You may use more than 1 portable changeable message sign to meet this requirement.
Only display the message shown on the plans or ordered by the Engineer or specified in these special provisions.

MATERIALS

The text of the message displayed on portable changeable message sign must not scroll, or travel horizontally or vertically across the face of the message panel.

CONSTRUCTION

Continuously repeat the entire message in no more than 2 phases of at least 3 seconds per phase.
If useable shoulder area is at least 15 feet wide, the displayed message on portable changeable message sign must be minimum 18-inch character height. If useable shoulder area is less than 15 feet wide, you may use a smaller message panel with minimum 12-inch character height to prevent encroachment in the traveled way.
You or your representative must be available by cell phone for operations that require portable changeable message signs. Give the Engineer your cell phone number. When the Engineer contacts you, immediately comply with the Engineer's request to modify the displayed message.
Start displaying the message on portable changeable message sign 30 minutes before closing the lane.

Place portable changeable message sign in advance of the first warning sign for:

1. Each stationary lane closure
2. Each ramp closure
3. Each connector closure
4. Each shoulder closure

Place portable changeable message sign as far from the traveled way as practicable where it is legible to traffic and does not encroach on the traveled way. Place portable changeable sign before or at the crest of vertical roadway curvature where it is visible to approaching traffic.

Avoid placing portable changeable message sign within or immediately after horizontal roadway curvature. Where possible, place portable changeable message sign behind guardrail or temporary railing (Type K).
Except where placed behind guardrail or temporary railing (Type K) use traffic control for shoulder closure to delineate portable changeable message sign.
Remove portable changeable message sign when not in use.

MEASUREMENT AND PAYMENT

Full compensation for portable changeable message signs, including furnishing, placing, operating, modifying messages, maintaining, transporting from location to location, removing, and repairing or replacing defective or damaged portable changeable message signs is included in the contract lump sum price paid for traffic control system and no separate payment will be made therefor.

10-1.17 TEMPORARY CRASH CUSHION MODULE

This work shall consist of furnishing, installing, and maintaining sand filled temporary crash cushion modules in groupings or arrays at each location shown on the plans, as specified in these special provisions or where designated by the Engineer. The grouping or array of sand filled modules shall form a complete sand filled temporary crash cushion in conformance with the details shown on the plans and these special provisions.
Temporary crash cushions shall be secured in place prior to commencing work for which the temporary crash cushions are required.
Whenever the work or the Contractor's operations establishes a fixed obstacle, the exposed fixed obstacle shall be protected with a sand filled temporary crash cushion. The sand filled temporary crash cushion shall be in place prior to opening the lanes adjacent to the fixed obstacle to public traffic.
Sand filled temporary crash cushions shall be maintained in place at each location, including times when work is not actively in progress. Sand filled temporary crash cushions may be removed during a work period for access to the work provided that the exposed fixed obstacle is 15 feet or more from a lane carrying public traffic and the temporary crash cushion is reset to protect the obstacle prior to the end of the work period in which the fixed obstacle was exposed.
When no longer required, as determined by the Engineer, sand filled temporary crash cushions shall be removed from the site of the work.
Sand filled temporary crash cushion modules shall be one of the following, or equal, and be manufactured after March 31, 1997:

1. Energite III and Fitch Inertial Modules, manufactured by Energy Absorption Systems, Inc., 35 East Wacker Drive, Suite 1100, Chicago, IL 60601:

    1.1. Northern California: Traffic Control Service, Inc., 8585 Thys Court, Sacramento, CA 95828, telephone (800) 884-8274, FAX (916) 387-9734
    1.2. Southern California: Traffic Control Service, Inc., 1818 E. Orangethorpe, Fullerton, CA 92831-5324, telephone (800) 222-8274, FAX (714) 526-9501

2. TrafFix Sand Barrels, manufactured by TrafFix Devices, Inc., 220 Calle Pintoresco, San Clemente, CA 92672, telephone (949) 361-5663, FAX (949) 361-9205

    2.1. Northern California: United Rentals, Inc., 1533 Berger Drive, San Jose, CA 95112, telephone (408) 287-4303, FAX (408) 287-1929
    2.2. Southern California: Statewide Safety & Sign, Inc., P.O. Box 1440, Pismo Beach, CA 93448, telephone (800) 559-7080, FAX (805) 929-5786

3. CrashGard Model CC-48 Sand Barrels, manufactured by Plastic Safety Systems, Inc., 2444 Baldwin Road, Cleveland, OH 44104:

    3.1. Northern California:

        3.1.1. Capitol Barricade Safety & Sign, 6329 Elvas Ave, Sacramento, CA 95819, telephone (888) 868-5021, FAX (916) 451-5388
        3.1.2. Sierra Safety, Inc., 9093 Old State Highway, New Castle, CA 95658, telephone (916) 663-2026, FAX (916) 663-1858

    3.2. Southern California: Hi Way Safety Inc., 13310 5th Street, Chino, CA 91710, telephone (909) 591-1781, FAX (909) 627-0999

Modules contained in each temporary crash cushion shall be of the same type at each location. The color of the modules shall be the standard yellow color, as furnished by the vendor, with black lids. The modules shall exhibit good workmanship free from structural flaws and objectionable surface defects. The modules need not be new. Good used undamaged modules conforming to color and quality of the types specified herein may be utilized. If used Fitch modules requiring a seal are furnished, the top edge of the seal shall be securely fastened to the wall of the module by a continuous strip of heavy duty tape.

Modules shall be filled with sand in conformance with the manufacturer's directions, and to the sand capacity in pounds for each module shown on the plans. Sand for filling the modules shall be clean washed concrete sand of commercial quality. At the time of placing in the modules, the sand shall contain not more than 7 percent water as determined by California Test 226.

Modules damaged due to the Contractor's operations shall be repaired immediately by the Contractor at the Contractor's expense. Modules damaged beyond repair, as determined by the Engineer, due to the Contractor's operations shall be removed and replaced by the Contractor at the Contractor's expense.

Temporary crash cushion modules may be placed on movable pallets or frames. Comply with dimensions shown on the plans. The pallets or frames shall provide a full bearing base beneath the modules. The modules and supporting pallets or frames shall not be moved by sliding or skidding along the pavement or bridge deck.

A Type R or P marker panel shall be attached to the front of the crash cushion as shown on the plans, when the closest point of the crash cushion array is within 12 feet of the traveled way. The marker panel, when required, shall be firmly fastened to the crash cushion with commercial quality hardware or by other methods determined by the Engineer.

At the completion of the project, temporary crash cushion modules, sand filling, pallets or frames, and marker panels shall become the property of the Contractor and shall be removed

from the site of the work. Temporary crash cushion modules shall not be installed in the permanent work.

Temporary crash cushion modules placed in conformance with Section 7-1.09, "Public Safety," of the Standard Specifications will not be measured nor paid for.

10-1.18 EXISTING HIGHWAY FACILITIES

The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions.

Except as otherwise provided for damaged materials in Section 15-2.04, "Salvage," of the Standard Specifications, the delineator curb to be salvaged shall remain the property of BATA, and shall be stored on-site at the toll plaza maintenance yard.

Existing culverts and utility pipelines, where shown on the plans to be abandoned, shall be abandoned in place or, at the option of the Contractor, the culverts and pipelines shall be removed and disposed of. Resulting openings into existing structures that are to remain in place shall be plugged with concrete conforming to the provisions in Section 90-10 "Minor Concrete," of the Standard Specifications. The concrete shall contain not less than 505 pounds of cementitious material per cubic yard.
Abandoning culverts and pipelines in place shall conform to the following:

1. Culverts and pipelines that intersect the side slopes shall be removed to a depth of not less than 3 feet measured normal to the plane of the finished side slope, before being abandoned.
2. Culverts and pipelines 12 inches in diameter and larger, shall, at the Contractor's option, be backfilled with either sand, controlled low strength material or slurry cement backfill conforming to the provisions in Section 19-3.062, "Slurry Cement Backfill," of the Standard Specifications by any method acceptable to the Engineer that completely fills the pipe. Sand backfill material shall be clean, free draining, and free from roots and other deleterious substances.
3. The ends of culverts and pipelines shall be securely closed by a 0.5-foot thick tight fitting plug or wall of commercial quality concrete.

Culverts and pipelines shall not be abandoned until their use is no longer required. The Contractor shall notify the Engineer in advance of any intended culvert or pipeline abandonment.

Controlled low strength material and slurry cement backfill, if used at the Contractor's option, will be measured and paid for by the cubic yard as sand backfill.

Full compensation for concrete plugs, pipe removal, structure excavation, and backfill (including sand, controlled low strength material or slurry cement backfill) shall be considered as included in the contract price paid per linear foot for abandon culvert and no additional compensation will be allowed therefor.

REMOVE PAVEMENT MARKER

Existing pavement markers, including underlying adhesive, when no longer required for traffic lane delineation as determined by the Engineer, shall be removed and disposed of.

REMOVE TRAFFIC STRIPE AND PAVEMENT MARKING

Traffic stripe and pavement marking shall be removed at the locations shown on the plans and as directed by the Engineer.

Waste from removal of yellow thermoplastic and yellow painted traffic stripe contains lead chromate in average concentrations greater than or equal to 5 mg/L Soluble Lead or 1000 mg/kg Total Lead. Yellow thermoplastic and yellow paint traffic stripe exist as shown on the plans. Residue produced from the removal of yellow thermoplastic and yellow paint contains heavy metals in concentrations that exceed thresholds established by the California Health and Safety Code and Title 22 of the California Code of Regulations. The Contractor shall assume that the residue is not regulated under the Federal Resource Conservation and Recovery Act (RCRA). Yellow thermoplastic and yellow paint may produce toxic fumes when heated.

The removed yellow thermoplastic and yellow paint shall be disposed of at a Class 1 disposal facility in conformance with the requirements of the disposal facility operator within 30 days after accumulating 220 pounds of residue and dust. The Contractor shall make necessary arrangements to test the yellow thermoplastic and yellow paint residue as required by the disposal facility and these special provisions. Testing shall include, at a minimum, (1) Total Lead by EPA Method 6010B and Chromium by EPA Method 7000 series, (2) Soluble Lead and Chromium by California Waste Extraction Test, and (3) Soluble Lead and Chromium by Toxicity Characteristic Leaching Procedure. From the first 222 gallons of waste, or portion thereof if less than 222 gallons of waste are produced, a minimum of four randomly selected samples shall be taken and analyzed individually. Samples shall not be composited. From each additional 888 gallons of waste, or portion thereof if less than 888 gallons are produced, a minimum of one additional random sample shall be taken and analyzed. Each sample shall be homogenized prior to analysis by the laboratory performing the analyses. A sample aliquot sufficient to cover the amount necessary for the total and the soluble analyses shall then be taken. This aliquot shall be homogenized a second time and the total and soluble (if necessary) run on this aliquot. The homogenization process shall not include grinding of the samples. The Contractor shall submit the name and location of the disposal facility and analytical laboratory along with the testing requirements to the Engineer not less than 5 days prior to the start of removal of yellow thermoplastic and yellow painted traffic stripe. The analytical laboratory shall be certified by the Department of Health Services Environmental Laboratory Accreditation Program for all analyses to be performed. Test results shall be provided to the Engineer for review prior to signing a waste profile as requested by the disposal facility, prior to issuing an EPA identification number, and prior to allowing removal of the waste from the site.

The Contractor shall prepare a project specific Lead Compliance Plan to prevent or minimize worker exposure to lead while handling removed yellow thermoplastic and yellow paint residue. Attention is directed to Title 8, California Code of Regulations, Section 1532.1, "Lead," for specific Cal-OSHA requirements when working with lead.

The Lead Compliance Plan shall contain the elements listed in Title 8, California Code of Regulations, Section 1532.1(e)(2)(B). Before submission to the Engineer, the Lead Compliance Plan shall be approved by an Industrial Hygienist certified in Comprehensive Practice by the

American Board of Industrial Hygiene. The Plan shall be submitted to the Engineer at least 7 days prior to beginning removal of yellow thermoplastic and yellow paint.

Prior to removing yellow thermoplastic and yellow painted traffic stripe, personnel who have no prior training, including State personnel, shall complete a safety training program provided by the Contractor that meets the requirements of Title 8, California Code of Regulations, Section 1532.1, "Lead," and the Contractor's Lead Compliance Program.
Personal protective equipment, training, and washing facilities required by the Contractor's Lead Compliance Plan shall be supplied to State personnel by the Contractor. The number of State personnel will be 3.
Where grinding or other methods approved by the Engineer are used to remove yellow thermoplastic and yellow painted traffic stripe, the removed residue, including dust, shall be contained and collected immediately. Collection shall be by a high efficiency particulate air (HEPA) filter equipped vacuum attachment operated concurrently with the removal operations or other equally effective methods approved by the Engineer. The Contractor shall submit a written work plan for the removal, storage, and disposal of yellow thermoplastic and yellow painted traffic stripe to the Engineer for approval not less than 15 days prior to the start of the removal operations. Removal operations shall not be started until the Engineer has approved the work plan.
The removed yellow thermoplastic and yellow painted traffic stripe residue shall be stored and labeled in covered containers. Labels shall conform to the provisions of Title 22, California Code of Regulations, Sections 66262.31 and 66262.32. Labels shall be marked with date when the waste is generated, the words "Hazardous Waste," composition and physical state of the waste (for example, asphalt grindings with thermoplastic or paint), the word "Toxic," the name and address of the Engineer, the Engineer's telephone number, contract number, and Contractor or subcontractor. The containers shall be a type approved by the United States Department of Transportation for the transportation and temporary storage of the removed residue. The containers shall be handled so that no spillage will occur. The containers shall be stored in a secured fenced enclosure at a location within the project limits until disposal, as approved by the Engineer.
If the yellow thermoplastic and yellow painted traffic stripe residue is transported to a Class 1 disposal facility as a hazardous waste, a manifest shall be used, and the transporter shall be registered with the California Department of Toxic Substance Control. The Engineer will obtain the United States Environmental Protection Agency Identification Number and sign all manifests as the generator within 2 working days of receiving sample test results and approving the test methods.

Nothing in these special provisions shall relieve the Contractor of the Contractor's responsibilities as specified in Section 7-1.09, "Public Safety," of the Standard Specifications.
Attention is directed to "Material Containing Lead" of these special provisions regarding payment for the Lead Compliance Plan. One Lead Compliance Plan shall be prepared that addresses exposure to lead from traffic stripe and from lead in soil in unpaved areas.

Full compensation for providing a written work plan for the removal, storage, and disposal of yellow thermoplastic and yellow painted traffic stripe shall be considered as included in the

contract prices paid per linear_foot for remove yellow thermoplastic traffic stripe and remove yellow painted traffic stripe and no separate payment will be made therefor.

REMOVE UTILITY FACILLITIES

Existing water and gas pipelines and power and communication conduits, as specified on plans, shall be removed and disposed of.
Removing water and gas pipelines shall conform to the following:

A. Water and gas pipelines and power and communication conduit that conflict with the limits of Demolish Mini Toll Plaza and Pedestrian Walkway Facilities of these special provisions shall be removed and capped at the location shown on the plans.
B. Existing steel pipe shall be capped with an approved fitting.

Existing Water and gas pipelines shall not be removed until they are disconnected from their source. The Contractor shall notify the Engineer 15 working days in advance of any intended pipeline and conduit removal.
Full compensation for disconnecting, removing, disposing, and capping water and gas pipelines and power and communication conduit shall be included in the lump sum cost for the demolition of the mini toll plaza and pedestrian walkway facilities and no additional compensation will be allowed therefor.

MODIFY DRAINAGE SYSTEM

Existing drainage system, at the locations shown on the plans, shall be modified in conformance with these special provisions.
Modify drainage system shall consist of installing an 8" ductile iron pipe, 90 degree elbow, and a 6" high-density polyethylene pipe and connecting to existing pipe as shown on the plans and as directed by the Engineer. In additional, modify drainage system shall consist of drilling a hole through the existing concrete wall as shown on the plans and as directed by the Engineer.
Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in modify drainage system shall be considered as included in the contract lump sum price paid for modify drainage system as specified in these special provisions and as directed by the Engineer.

COLD PLANE ASPHALT CONCRETE PAVEMENT

Existing asphalt concrete pavement shall be cold planed at the locations and to the dimensions shown on the plans.
Planing asphalt concrete pavement shall be performed by the cold planing method. Planing of the asphalt concrete pavement shall not be done by the heater planing method.
Cold planing machines shall be equipped with a cutter head not less than 30 inches in width and shall be operated so that no fumes or smoke will be produced. The cold planing machine shall plane the pavement without requiring the use of a heating device to soften the pavement during or prior to the planing operation.

The depth, width, and shape of the cut shall be as shown on the plans or as designated by the Engineer. The final cut shall result in a uniform surface conforming to the plans. The outside lines of the planed area shall be neat and uniform. Planing asphalt concrete pavement operations shall be performed without damage to the surfacing to remain in place.

Planed widths of pavement shall be continuous except for intersections at cross streets where the planing shall be carried around the corners and through the conform lines. Following planing operations, a drop-off of more than 0.15-foot will not be allowed between adjacent lanes open to public traffic.

Where transverse joints are planed in the pavement at conform lines no drop-off shall remain between the existing pavement and the planed area when the pavement is opened to public traffic. If Hot Mix Asphalt (HMA) has not been placed to the level of existing pavement before the pavement is to be opened to public traffic a temporary HMA taper shall be constructed. HMA for temporary tapers shall be 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.

HMA for temporary tapers shall be the same quality as the HMA used elsewhere on the project or shall conform to the material requirements for minor HMA. HMA for tapers shall be compacted by any method that will produce a smooth riding surface. Temporary HMA tapers shall be completely removed, including the removal of loose material from the underlying surface, before placing the permanent surfacing. The removed material shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Operations shall be scheduled so that not more than 7 days shall elapse between the time when transverse joints are planed in the pavement at the conform lines and the permanent surfacing is placed at the conform lines.

The material planed from the roadway surface, including material deposited in existing gutters or on the adjacent traveled way, shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications. Removal operations of cold planed material shall be concurrent with planing operations and follow within 50 feet of the planer, unless otherwise directed by the Engineer.

Cold plane asphalt concrete pavement will be measured by the square yard. The quantity to be paid for will be the actual area of surface cold planed irrespective of the number of passes required to obtain the depth shown on the plans.

The contract price paid per square yard for cold plane asphalt concrete pavement shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in cold planing asphalt concrete surfacing and disposing of planed material, including furnishing the HMA for and constructing, maintaining, removing, and disposing of temporary HMA tapers, as specified in the Standard Specifications and these special provisions and as directed by the Engineer.

RETAINING WALL REMOVAL (PORTION)

Removing portions of retaining wall shall conform to the provisions in Section 15-4, "Bridge Removal," of the Standard Specifications and these special provisions.

Portions of retaining wall to be removed shall include existing brick facing, existing cellular concrete, and existing concrete barrier as shown on the plans.

Removed materials that are not to be salvaged or used in the reconstruction shall become the property of the Contractor and shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

The Contractor shall submit a complete retaining wall removal plan to the Engineer for each bridge listed above, detailing procedures, sequences, and all features required to perform the removal in a safe and controlled manner.
The retaining wall removal plan shall include, but not be limited to the following:

A. The removal sequence, including staging of removal operations.
B. Equipment locations on the structure during removal operations.
C. Temporary support shoring or temporary bracing.
D. Locations where work is to be performed over traffic, utilities, or railroad property.
E. Details, locations, and types of protective covers to be used.
F. Measures to assure that people, property, utilities, and improvements will not be endangered.
G. Details and measures for preventing material, equipment, and debris from falling onto public traffic, or railroad property.

The retaining wall removal plan shall conform to the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The number of sets of drawings, design calculations, and unless otherwise specified in the following table, the time for reviewing bridge removal plans shall be the same as specified for falsework working drawings in Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications.
The contract lump sum price for retaining wall removal (portion) shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in removing portions or retaining wall, including excavation, backfill, and salvaging materials not to be reused in the project when salvaging is specified and not otherwise paid for, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

REMOVE CONCRETE BARRIER

Concrete, where shown on the plans to be removed, shall be removed.
Removing concrete barrier will be measured by the linear foot, measured along the curb, barrier or sidewalk before removal operations.
Concrete barrier removed shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

DEMOLISH MINI TOLL PLAZA AND PEDESTRIAN WALKWAY FACILLITIES

This work shall consist of removing existing toll booth and pedestrian walkway facilities, at the locations shown on the plans, including removal of existing utilities, mechanical components, inspection for hazardous materials, removal and disposal of hazardous material, if any, removal

of concrete foundations, and disposal of demolition debris outside the project limits., in accordance with the details shown on the plans and these special provisions.

Prior to any demolition activity, the Contractor shall arrange for an inspection of the mini toll plaza and the pedestrian walkway to determine the presence of any hazardous material, such as asbestos. The Contractor shall notify the Engineer 72 hours prior to the inspection.

If asbestos or any other hazardous material is found to be present, the Contractor shall be responsible for the removal, and disposal of such materials outside the project limits prior to demolition. The removal and disposal of asbestos, or any other hazardous materials shall conform to the requirements of the current OSHA standards, and California Health and Safety Codes, and any local health and safety codes applicable to such removal and disposal.

Piping and conduits to be removed shall be capped as shown on the plans and as specified in the plans. Attention is directed to “Remove Utility Facilities” of these special provisions.

Attention is directed to “Project Information” of these special provisions. The toll booth and pedestrian walkway facilities to be removed are comprised of reinforced concrete, columns, steel roofing, steel members, gates, crash cushions and other miscellaneous features as specified on the plans.

Removal shall be to the limits shown on the plans. Concrete slab, footings, pile caps and reinforcement shall be removed at least 3 feet below surrounding surfaces, and the resulting hole shall be back filled with hot mix asphalt. Hot mix asphalt placement shall be in accordance with Section 39, "Hot Mix Asphalt," of these special provisions.

All materials resulting from the demolition shall become the property of the Contractor and shall be disposed of outside the project limits.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in removal of the mini toll plaza and pedestrian walkway facilities and various items of work shall be considered as included in the contract lump sum price paid for mini toll plaza and pedestrian walkway facilities as specified in these special provisions and as directed by the Engineer.

Full compensation for demolish mini toll plaza and pedestrian walkway facility shall be considered as included in the contract lump sum price paid for demolish mini toll plaza and pedestrian walkway facility and no additional compensation will be allowed therefor.

10-1.19 MATERIAL CONTAINING LEAD

This work shall consist of handling material containing lead in conformance with the Standard Specifications and these special provisions. Material within the project limits is not a hazardous waste, does not require disposal at a permitted landfill or solid waste disposal facility, and is suitable for use as fill within the project limits and on other sites outside the highway right of way; however, low levels of lead are present within the project limits.

Lead has been detected within the top 8 feet of material in unpaved areas within the highway right of way. Levels of lead found within the project limits range from less than 1.0 to 18 mg/kg total lead with an average concentration of 5 mg/kg total lead, as analyzed by EPA Test Method 6010 or EPA Test Method 7000 series. Levels of lead found within the project limits have an average soluble concentration of less than 1.0 mg/l as analyzed by the California Waste Extraction Test and based upon a 95% Upper Confidence Limit.

After the Contractor has completed handling materials containing lead, in conformance with the plans, Standard Specifications, and these special provisions, the Contractor shall have no responsibility for such materials in place and shall not be obligated for removal of such materials remaining within the highway right of way.

Handling material containing lead shall be in conformance with rules and regulations including, but not limited to, those of the following agencies:

California Division of Occupational Safety and Health Administration (Cal-OSHA)
California Regional Water Quality Control Board, Region 2 – San Francisco Bay Board

LEAD COMPLIANCE PLAN

The Contractor shall prepare a project specific Lead Compliance Plan to prevent or minimize worker exposure to lead while handling material containing lead. Attention is directed to Title 8, California Code of Regulations, Section 1532.1, "Lead," for specific Cal-OSHA requirements when working with lead.

The Lead Compliance Plan shall contain the elements listed in Title 8, California Code of Regulations, Section 1532.1(e)(2)(B). Before submission to the Engineer, the Lead Compliance Plan shall be approved by an Industrial Hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene. The Plan shall be submitted to the Engineer at least 7 days prior to beginning work in areas containing lead.

Prior to performing work in areas containing lead, personnel who have no prior training, including State personnel, shall complete a safety training program provided by the Contractor, that meets the requirements of Title 8, California Code of Regulations, Section 1532.1, "Lead," and the Contractor's Lead Compliance Program.

Personal protective equipment, training, and washing facilities, required by the Contractor's Lead Compliance Plan shall be supplied to State personnel by the Contractor. The number of State personnel will be 3.

If the Contractor chooses to dispose of the material at a commercial landfill, the Contractor shall transport it to a Class II or Class III landfill appropriately permitted to receive the material. The Contractor shall be responsible for identifying the appropriately permitted landfill to receive the material and for all associated disposal costs including any additional sampling and analysis required by the receiving landfill. If the Contractor chooses to use the material at a construction project outside the Caltrans right of way, the Contractor shall comply with the requirements specified in Section 7-1.13 of the Standard Specifications.

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

The contract lump sum price paid for Lead Compliance Plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing the Lead Compliance Plan, including paying the Certified Industrial Hygienist, and for providing personal protective equipment, training and medical surveillance, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

LEAD RELATED CONSTRUCTION WORK.

GENERAL

SUMMARY

The work shall consist of removal and disposal of lead related construction materials which are designated on the plans or specified in these special provisions to be removed and disposed of.

The Contractor shall take special precautions for that part of the work which involves the demolition and handling of materials which may contain lead, either during demolition or construction.

SITE CONDITIONS

The building areas to be removed are known to contain lead containing materials. A hazardous material survey report by URS Project Title Fast Track/Mini Toll Plaza San Francisco/Oakland Bay Bridge_dated May 20, 2009, is included as an Information Handout. The following items tested positive for Lead Based Paint material:

Lead based paint		
Location	**Description**	**Total Lead (ppm)**
Across from booth 20	White paint on concrete barrier	53
Inside canopy hatching	Paint on 24" I-beam	606
Southwest corner of canopy rooftop	Paint on drain pipe	78,800
Base of exterior concrete block	Yellow paint on asphalt	2,740
Metal handrail south of covered walkway	Black paint	150

Where existing lead based materials are to be removed during demolition, construction or alterations, such material may need to be treated as hazardous waste, and shall be removed, hauled and disposed of in accordance with all applicable Federal, State and local laws and ordinances.

SUBMITTALS

The Contractor shall submit to the Engineer a lead compliance plan, abatement procedure plan and debris containment and collection plan. No work shall be done on any portion of the work which contains or may contain lead based materials until the Engineer has reviewed and accepted the submittals. The Contractor shall allow 15 days for the review of the submittals.

These plans shall be submitted as specified in Section 2-1.04, "Shop Drawings, Descriptive Data, Samples, and Alternatives," of the General Conditions
These plans shall be submitted as specified in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications.

Lead Compliance Plan

The Contractor shall prepare a project specific lead compliance plan to prevent or minimize worker exposure to lead.
The lead compliance plan shall contain the elements listed in Title 8, California Code of Regulations, Section 1532.1(e)(2)(B). The lead compliance plan shall be prepared, signed and stamped by an Industrial Hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Abatement Procedure Plans

An abatement procedure plan prepared for locations where concentrations are greater than 1000 ppm, signed and stamped by a lead project monitor or lead project designer currently certified by the California Department of Health Services. The plan shall address but not be limited to the following abatement procedures:

1. Personal monitoring procedures.
2. Phasing of abatement work indicating daily roster of workers for each phase.
3. Security system warning sign locations.
4. Detailed plans for decontamination facilities, toilets, and systems providing anteroom and work area to outside communication showing connections to the existing building.
5. Standard procedures for protecting workers, visitors, and employees and protection of spaces outside work area from contamination.
6. Engineering systems exposure control indicating number, location, and capacity of supply and exhaust systems, the expected direction of flow, and the range of expected differential pressure in each area.
7. Safety precautions such as lockout, tagout, fall protection, confined space entry procedures and equipment and work procedures to be used in the encapsulation, removal and disposal of lead based paint..
8. Final clearance inspection criteria.

QUALITY ASSURANCE

Codes which govern removal and disposal of materials containing lead 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 17, Division 1, Chapter 11, "Occupational Lead Poisoning Prevention Program."

3. California Code of Regulations, Title 22, Division 4.5, Chapter 10, "Hazardous Waste Management System: General."

4. California Code of Regulations, Title 8, Division 1, Chapter 4, Subchapter 4, Article 4, "Lead."

5. Occupational Safety and Health Administration (OSHA), 29 Code of Federal Regulation (CFR) Part 1926.62, "Lead."

NOTIFICATION

The Contractor shall notify the Engineer 3 business days in advance of the start of removal operations of lead based material.

Prior to performing operations involving the removal of lead based material, the Contractor shall provide written notification to all Federal, State and local agencies that regulate the removal, handling, transporting and disposal of lead in construction.

The Contractor shall notify the Division of Occupational Safety and Health (CAL OSHA) 24 hours prior to performing removal operations of materials containing lead or lead based materials.

QUALITY ASSURANCE

The lead related construction work shall be supervised by a California Department of Health Services Certified Lead Supervisor. The supervisor shall be on-site during abatement work preparation and post-abatement clean-up and be readily available as required by Title 17 California Code of Regulations 36100 (A1). Personnel for lead related construction work shall be California Department of Health Services Lead Worker Certified.

REGULATORY REQUIREMENTS

If measures being taken by the Contractor are inadequate to provide for worker safety and the containment and collection of residue from existing paint systems, the Engineer will direct the Contractor to revise operations and the compliance plans. Such directions will be in writing and will specify the items of work for which the Contractor's compliance plans are inadequate. No further work shall be performed on said items until the compliance plans are adequate and, if required, a revised compliance plan has been approved.

SAFETY

Construction activities (including demolition) that disturb materials or paints containing any amount of lead are subject to requirements in Title 8, California Code of Regulations Section 1532.1.
Any work that disturbs the lead based paint will expose workers to health hazards and will:

1. Produce debris containing heavy metal in amounts that may exceed the thresholds established in Titles 8 and 22 of the California Code of Regulations.

2. Produce toxic fumes when heated.

The Contractor shall be responsible for verifying that all employees, who are involved in removal operations, wear the required protective devices during removal operations.

Personal protective equipment, training, and washing facilities, required by the Contractor's health and safety plan shall be supplied to State personnel by the Contractor. The number of State personnel will be 4.

State personnel shall complete a safety training program provided by the Contractor, that meets the requirements of Title 8, California Code of Regulations, Section 1532.1, "Lead," and the Contractor's lead compliance plan.

HANDLING

The Contractor shall comply with all Federal, State, and local regulations for the removal of material containing lead prior to demolition and place removed material in approved plastic containers (double ply, 0.15 mm minimum thickness, plastic bags) with caution labels affixed to said bags. Such caution labels shall have conspicuous, legible lettering which spells out the following, or equivalent warning:

CAUTION

CONTAINS LEAD

Temporary storage on the ground of material and residue produced when the existing paint system is disturbed will not be permitted. Material and residue shall be stored in leak proof containers and shall be handled in such a manner that no spillage will occur.

At the option of the Contractor, the removed lead based materials may be placed directly into a roll off or drop box which shall have the same caution label affixed on all sides.

TRANSPORTING

The debris shall be hauled by a transporter currently registered with the California Department of Toxic Substances Control using correct manifesting procedures and vehicles displaying current certification of compliance. The Contractor shall make all arrangements with the operator of the disposal facility and perform any testing of the debris required by the operator. All vehicles used to transport hazardous waste material shall have affixed to the vehicle a valid Certificate of Compliance issued by United States Department of Transportation. If a roll off or drop box is utilized, both the drop box and the transporting vehicle shall have a valid Certificate of Compliance issued by the United States Department of Transportation.

DISPOSAL

The Engineer will obtain the required EPA generator identification numbers, and will sign the hazardous waste manifests.

All material and residue produced during removal operations shall be tested and profiled to determine hazardous waste characteristics. Dispose of residue and waste at an approved disposal facility in accordance with the requirements of the disposal facility operator.

The Contractor shall notify the proper authorities at the disposal site in advance of delivery of hazardous waste containing lead to the disposal site.

FINAL CLEARANCE INSPECTION

Final clearance inspection wipe testing will be performed after clean-up activities are completed following Department of Health Services criteria in the California Code of Regulations Title 17.

DISPOSAL OF ELECTRICAL EQUIPMENT

Ballasts, Transformers with Polychlorinated Biphenyls (PCBs), Batteries, Thermostats, and Fluorescent and Mercury Lamps:
Ballasts and transformers containing PCBs shall be disposed of in conformance with California regulations set forth in Title 22, Division 4.5, Chapter 42, of the California Code of Regulations. Ballasts and transformers that contain polychlorinated biphenyls (PCBs) are designated as extremely hazardous wastes thermostats and fluorescent tubing and mercury lamps are designated as hazardous wastes under Title 22, Division 4.5, Chapter 11, Article 5 and Article 4.1, of the California Code of Regulations. All the fluorescent lamps and mercury lamps shall be treated as recyclable hazardous waste (covered electronic waste) and shall be recycled within the State of California by a California-approved recycler.
The recyclable hazardous waste shall be packaged and then shipped using a currently certified hauler. The Engineer shall be furnished with a statement noting which certified hauler and which certified recycler is proposed for utilization. The Engineer will sign the recycling manifest for shipment.

10-1.20 HOT MIX ASPHALT

GENERAL

Summary

This work includes producing and placing hot mix asphalt (HMA) Type A using the standard process.
Comply with Section 39, "Hot Mix Asphalt," of the Standard Specifications.

Submittals

Quality Control / Quality Assurance Projects

Data Cores

Three business days before starting coring, submit proposed methods and materials for backfilling data core holes.
Submit to the Engineer and electronically to Coring@dot.ca.gov:

1. A summary of data cores taken
2. A photograph of each data core

For each data core, the summary must include:

1. Project identification number
2. Date cored
3. Core identification number
4. Type of materials recovered
5. Type and approximate thickness of unstabilized material not recovered
6. Total core thickness
7. Thickness of each individual material to within:

    7.1 For recovered material, 1/2 inch
    7.2 For unstabilized material, 1.0 inch

8. Location including:

    8.1. County
    8.2. Route
    8.3. Post mile
    8.4. Lane number
    8.5. Lane direction
    8.6. Station

Each data core digital photograph must include a ruler laid next to the data core. Each photograph must include:

1. The core
2. Project identification number
3. Core identification number
4. Date cored
5. County
6. Route
7. Post mile
8. Lane number
9. Lane direction

After data core summary and photograph submittal, dispose of cores under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

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MATERIALS

Asphalt Binder

The grade of asphalt binder mixed with aggregate for HMA Type A must be Grade PG-64-10.

Aggregate

The aggregate for HMA Type A must comply with the 3/4-inch grading.

CONSTRUCTION

Rumble Strips

Vertical Joints

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 between 5 feet and 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 approved bond breaker under the conform tapers to facilitate the taper removal when paving operations resume.

Conform Tapers

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

Data Cores

Take data cores that include the completed HMA pavement, underlying base, and subbase material. Protect data cores and surrounding pavement from damage.
Take 4-inch or 6-inch diameter data cores:

1. At the beginning, end, and every 1/2 mile within the paving limits of each route on the project
2. After all paving is complete
3. From the center of the specified lane

On a 2-lane roadway, take data cores from either lane. On a 4-lane roadway, take data cores from each direction in the outermost lane. On a roadway with more than 4 lanes, take data cores from the median lane and the outermost lane in each direction.
Each core must include the stabilized materials encountered. You may choose not to recover unstabilized material but you must identify the material. Unstabilized material includes:

1. Granular material
2. Crumbled or cracked stabilized material
3. Sandy or clayey soil

PAYMENT

The contract lump sum price paid for data cores includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in data coring, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.21 PILING

GENERAL

Piling shall conform to the provisions in Section 49, "Piling," of the Standard Specifications, and these special provisions.

Unless otherwise specified, welding of any work performed in conformance with the provisions in Section 49, "Piling," of the Standard Specifications, shall be in conformance with the requirements in AWS D1.1.

Attention is directed to "Project Information," and "Welding" of these special provisions.

At the option of the Contractor, vibratory hammers, rotators, or oscillators may be used to install piles or permanent casings

Difficult pile installation is anticipated due to the presence of soft bay mud overlying dense soils and subsurface concrete debris.

CAST-IN-DRILLED-HOLE CONCRETE PILES

GENERAL

Summary

Cast-in-drilled-hole (CIDH) concrete piling shall conform to the provisions in Section 49-4, "Cast-In-Place Concrete Piles," of the Standard Specifications and these special provisions.

The provisions of "Welding" of these special provisions shall not apply to temporary steel casings.

SUBMITTALS

Pile Installation Plan

The Contractor shall submit a pile installation plan to the Engineer for approval for all CIDH concrete piling. The pile installation plan shall be submitted at least 15 days before constructing CIDH concrete piling and shall include complete descriptions, details, and supporting calculations for the following:

A. Concrete mix design, certified test data, and trial batch reports.
B. Drilling or coring methods and equipment.
C. Proposed method for casing installation and removal when necessary.
D. Plan view drawing of pile showing reinforcement. Include inspection pipes on the drawing, if inspection pipes are required.
E. Methods for placing, positioning, and supporting bar reinforcement.
F. Methods and equipment for determining the depth of concrete and actual and theoretical volume placed, including effects on volume of concrete when any casings are withdrawn.

G. Methods and equipment for verifying that the bottom of the drilled hole is clean before placing concrete.
H. Methods and equipment for preventing upward movement of reinforcement, including the Contractor's means of detecting and measuring upward movement during concrete placement operations.

For concrete placed under slurry, the pile installation plan shall also include complete descriptions, details, and supporting calculations for the following:

A. Concrete batching, delivery, and placing systems, including time schedules and capacities. Time schedules shall include the time required for each concrete placing operation at each pile.
B. Concrete placing rate calculations. When requested by the Engineer, calculations shall be based on the initial pump pressures or static head on the concrete and losses throughout the placing system, including anticipated head of slurry and concrete to be displaced.
C. Suppliers' test reports on the physical and chemical properties of the slurry and any proposed slurry chemical additives, including Material Safety Data Sheet.
D. Slurry testing equipment and procedures.
E. Methods of removal and disposal of excavation, slurry, and contaminated concrete, including removal rates.
F. Methods and equipment for slurry agitating, recirculating, and cleaning.

QUALITY ASSURANCE

Concrete Test Batch

Before concrete is deposited under slurry, a concrete test batch shall be produced and delivered to the project under conditions and in time periods similar to those expected during placement of concrete in the piles. Concrete shall be placed in an excavated hole or suitable container of adequate size to allow for testing as specified herein. Depositing of concrete under slurry will not be required. In addition to meeting the specified nominal slump, the concrete test batch shall meet the following requirements:

A. For piles where the time required for each concrete placing operation, as submitted in the placing plan, will be 2 hours or less, the concrete test batch shall demonstrate that the proposed concrete mix design achieves a slump of at least 7 inches after twice that time has elapsed.
B. For piles where the time required for each concrete placing operation, as submitted in the placing plan, will be more than 2 hours, the concrete test batch shall demonstrate that the proposed concrete mix design achieves a slump of at least 7 inches after that time plus 2 hours has elapsed.

The time period shall begin at the start of placement. Concrete shall not be vibrated or agitated during the test period. Slump tests will be performed in conformance with the requirements in California Test 556.

Upon completion of testing, concrete shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

MATERIALS

Concrete

Concrete deposited under slurry shall have a nominal slump equal to or greater than 7 inches, contain not less than 675 pounds of cementitious material per cubic yard, and be proportioned to prevent excessive bleed water and segregation. The nominal and maximum slump and penetration requirements in Section 90-6.06, "Amount of Water and Penetration," of the Standard Specifications shall not apply.

Concrete for portions of CIDH concrete piling to be formed shall contain not less than 675 pounds of cementitious material per cubic yard and shall contain 6.0±1.5 percent air entrainment in the freshly mixed concrete.

Aggregate Grading

The combined aggregate grading shall be either the one-inch maximum grading, the 1/2-inch maximum grading, or the 3/8-inch maximum grading and shall conform to the requirements in Section 90-3, "Aggregate Gradings," of the Standard Specifications.

When concrete is placed under slurry, the combined aggregate grading shall be either the 1/2-inch maximum grading or the 3/8-inch maximum grading and shall conform to the requirements in Section 90-3, "Aggregate Gradings," of the Standard Specifications.

Permanent Steel Casings

Permanent steel casings shall conform to the provisions of "Steel Pipe Piling" of these special provisions.

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Grout

Grout used to backfill casings shall conform to the provisions in Section 50-1.09, "Bonding and Grouting," of the Standard Specifications. Aggregate shall be used to extend the grout, but only to the extent that the cement content of the grout is not less than 845 pounds per cubic yard of grout. California Test 541 will not be required nor will the grout be required to pass through a sieve with a 0.07-inch maximum clear opening before being introduced into the grout pump. Aggregate shall consist of at least 70 percent fine aggregate and approximately 30 percent pea gravel, by weight. Fine aggregate shall conform to the provisions of Section 90-2, "Materials," of the Standard Specifications. The size of pea gravel shall be such that 100 percent passes the 1/2-inch sieve, a minimum 90 percent passes the 3/8-inch sieve, and not more than 5 percent passes the No. 8 sieve.

Slurry

Mineral Slurry

Mineral slurry shall be mixed and thoroughly hydrated in slurry tanks, and slurry shall be sampled from the slurry tanks and tested before placement in the drilled hole.

Slurry shall be recirculated or continuously agitated in the drilled hole to maintain the specified properties.

Recirculation shall include removal of drill cuttings from the slurry before discharging the slurry back into the drilled hole. When recirculation is used, the slurry shall be sampled and tested at least every 2 hours after beginning its use until tests show that the samples taken from the slurry tank and from near the bottom of the hole have consistent specified properties. Subsequently, slurry shall be sampled at least twice per shift as long as the specified properties remain consistent.

Slurry that is not recirculated in the drilled hole shall be sampled and tested at least every 2 hours after beginning its use. The slurry shall be sampled mid-height and near the bottom of the hole. Slurry shall be recirculated when tests show that the samples taken from mid-height and near the bottom of the hole do not have consistent specified properties.

Slurry shall also be sampled and tested before final cleaning of the bottom of the hole and again just before placing concrete. Samples shall be taken from mid-height and near the bottom of the hole. Cleaning of the bottom of the hole and placement of the concrete shall not start until tests show that the samples taken from mid-height and near the bottom of the hole have consistent specified properties.

Mineral slurry shall be tested for conformance to the requirements shown in the following table:

MINERAL SLURRY		
PROPERTY	REQUIREMENT	TEST
Density (pcf) - before placement in the drilled hole - during drilling - before final cleaning - immediately before placing concrete	64.3* to 69.1* 64.3* to 75.0*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/quart) bentonite attapulgite	28 to 50 28 to 40	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8 to 10.5	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - before final cleaning - immediately before placing concrete	less than or equal to 4.0	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 2 pcf. Slurry temperature shall be at least 40°F when tested.		

Any caked slurry on the sides or bottom of hole shall be removed before placing reinforcement. If concrete is not placed immediately after placing reinforcement, the reinforcement shall be removed and cleaned of slurry, the sides of the drilled hole cleaned of caked slurry, and the reinforcement again placed in the hole for concrete placement.

Synthetic Slurry

Synthetic slurries shall be used in conformance with the manufacturer's recommendations and these special provisions. The following synthetic slurries may be used:

PRODUCT	MANUFACTURER
SlurryPro CDP	KB Technologies Ltd. 3648 FM 1960 West Suite 107 Houston, TX 77068 (800) 525-5237
Super Mud	PDS Company c/o Champion Equipment Company 8140 East Rosecrans Ave. Paramount, CA 90723 (562) 634-8180
Shore Pac GCV	CETCO Drilling Products Group 1350 West Shure Drive Arlington Heights, IL 60004 (847) 392-5800
Novagel Polymer	Geo-Tech Drilling Fluids 220 N. Zapata Hwy, Suite 11A Laredo, TX 78043 (210) 587-4758

Inclusion of a synthetic slurry on the above list may be obtained by meeting the Department's requirements for synthetic slurries. The requirements can be obtained from the Offices of Structures Design, P.O. Box 168041, MS# 9-4/11G, Sacramento, CA 95816-8041.

Synthetic slurries listed may not be appropriate for a given site.

Synthetic slurries shall not be used in holes drilled in primarily soft or very soft cohesive soils as determined by the Engineer.

A manufacturer's representative, as approved by the Engineer, shall provide technical assistance for the use of their product, shall be at the site before introduction of the synthetic slurry into a drilled hole, and shall remain at the site until released by the Engineer.

Synthetic slurries shall be sampled and tested at both mid-height and near the bottom of the drilled hole. Samples shall be taken and tested during drilling as necessary to verify the control of the properties of the slurry. Samples shall be taken and tested when drilling is complete, but before final cleaning of the bottom of the hole. When samples are in conformance with the requirements shown in the following tables for each slurry product, the bottom of the hole shall be cleaned and any loose or settled material removed. Samples shall be obtained and tested after final cleaning and immediately before placing concrete.

SlurryPro CDP synthetic slurries shall be tested for conformance to the requirements shown in the following table:

SLURRYPRO CDP KB Technologies Ltd.		
PROPERTY	REQUIREMENT	TEST
Density (pcf) - during drilling - before final cleaning - just before placing concrete	 less than or equal to 67.0* less than or equal to 64.0*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/quart) - during drilling -before final cleaning - just before placing concrete	 50 to 120 less than or equal to 70	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	6 to 11.5	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - before final cleaning - just before placing concrete	 less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 2 pcf. Slurry temperature shall be at least 40°F when tested.		

Super Mud synthetic slurries shall be tested for conformance to the requirements shown in the following table:

SUPER MUD PDS Company		
PROPERTY	REQUIREMENT	TEST
Density (pcf) - before final cleaning - just before placing concrete	less than or equal to 64.0*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/quart) - during drilling - before final cleaning - just before placing concrete	32 to 60 less than or equal to 60	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8 to 10.0	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - before final cleaning -just before placing concrete	less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 2 pcf. Slurry temperature shall be at least 40°F when tested.		

Shore Pac GCV synthetic slurries shall be tested for conformance to the requirements shown in the following table:

Shore Pac GCV CETCO Drilling Products Group		
PROPERTY	REQUIREMENT	TEST
Density (pcf) - before final cleaning - just before placing concrete	less than or equal to 64.0*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/quart) - during drilling - before final cleaning - just before placing concrete	33 to 74 less than or equal to 57	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	8.0 to 11.0	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - before final cleaning -just before placing concrete	less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 2 pcf. Slurry temperature shall be at least 40°F when tested.		

Novagel Polymer synthetic slurries shall be tested for conformance to the requirements shown in the following table:

NOVAGEL POLYMER Geo-Tech Drilling Fluids		
PROPERTY	REQUIREMENT	TEST
Density (pcf) - during drilling - before final cleaning - just before placing concrete	 less than or equal to 67.0* less than or equal to 64.0*	Mud Weight (Density) API 13B-1 Section 1
Viscosity (seconds/quart) - during drilling - before final cleaning - just before placing concrete	 45 to 104 less than or equal to 104	Marsh Funnel and Cup API 13B-1 Section 2.2
pH	6.0 to 11.5	Glass Electrode pH Meter or pH Paper
Sand Content (percent) - before final cleaning -just before placing concrete	 less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, slurry may be used in salt water, and the allowable densities may be increased up to 2 pcf. Slurry temperature shall be at least 40°F when tested.		

Water Slurry

At the option of the Contractor, water may be used as slurry when casing is used for the entire length of the drilled hole.
Water slurry shall be tested for conformance to the requirements shown in the following table:

WATER SLURRY		
PROPERTY	REQUIREMENT	TEST
Density (pcf) - before final cleaning - just before placing concrete	63.5*	Mud Weight (Density) API 13B-1 Section 1
Sand Content (percent) - before final cleaning -just before placing concrete	less than or equal to 0.5	Sand API 13B-1 Section 5
*When approved by the Engineer, salt water slurry may be used and the allowable densities may be increased up to 2 pcf.		

CONSTRUCTION

General

CIDH concrete piling 24 inches in diameter or larger may be constructed by excavation and depositing concrete under slurry.
Portions of CIDH concrete piling shown on the plans to be formed shall be formed and finished in conformance with the provisions for concrete structures in Section 51, "Concrete Structures," of the Standard Specifications.
Reinforcement shall extend to 3 inches clear of the bottom of the drilled hole when the hole is drilled below the specified tip elevation.

Permanent Steel Casing Installation

Placing Concrete

Concrete deposited under slurry shall be carefully placed in a compact, monolithic mass and by a method that will prevent washing of the concrete. Concrete deposited under slurry need not be vibrated. Placing concrete shall be a continuous operation lasting not more than the time required for each concrete placing operation at each pile, as submitted in the placing plan, unless otherwise approved in writing by the Engineer. Concrete shall be placed with concrete pumps and delivery tube system of adequate number and size to complete the placing of concrete in the time specified. The delivery tube system shall consist of one of the following:

A. A tremie tube or tubes, each of which are at least 10 inches in diameter, fed by one or more concrete pumps.
B. One or more concrete pump tubes, each fed by a single concrete pump.

The delivery tube system shall consist of watertight tubes with sufficient rigidity to keep the ends always in the mass of concrete placed. If only one delivery tube is utilized to place the concrete, the tube shall be placed near the center of the drilled hole. Multiple tubes shall be uniformly spaced in the hole. Internal bracing for the steel reinforcing cage shall accommodate the delivery tube system. Tremies shall not be used for piles without space for a 10-inch tube.

Spillage of concrete into the slurry during concrete placing operations shall not be allowed. Delivery tubes shall be capped with a watertight cap, or plugged above the slurry level with a good quality, tight fitting, moving plug that will expel the slurry from the tube as the tube is charged with concrete. The cap or plug shall be designed to be released as the tube is charged. The pump discharge or tremie tube shall extend to the bottom of the hole before charging the tube with concrete. After charging the delivery tube system with concrete, the flow of concrete through a tube shall be induced by slightly raising the discharge end. During concrete placement, the tip of the delivery tube shall be maintained as follows to prevent reentry of the slurry into the tube. Until at least 10 feet of concrete has been placed, the tip of the delivery tube shall be within 6 inches of the bottom of the drilled hole, and then the embedment of the tip shall be maintained at least 10 feet below the top surface of the concrete. Rapid raising or lowering of the delivery tube shall not be permitted. If the seal is lost or the delivery tube becomes plugged and must be removed, the tube shall be withdrawn, the tube cleaned, the tip of the tube capped to prevent entrance of the slurry, and the operation restarted by pushing the capped tube 10 feet into the concrete and then reinitiating the flow of concrete.

When slurry is used, a fully operational standby concrete pump, adequate to complete the work in the time specified, shall be provided at the site during concrete placement. The slurry level shall be maintained 10 feet above the piezometric head or within 12 inches of the top of the drilled hole, whichever is higher.

A log of concrete placement for each drilled hole shall be maintained by the Contractor when concrete is deposited under slurry. The log shall show the pile location, tip elevation, dates of excavation and concrete placement, total quantity of concrete deposited, length and tip elevation of any casing, and details of any hole stabilization method and materials used. The log shall include a 8-1/2" x 11" sized graph of the concrete placed versus depth of hole filled. The graph shall be plotted continuously throughout placing of concrete. The depth of drilled hole filled shall be plotted vertically with the pile tip oriented at the bottom and the quantity of concrete shall be plotted horizontally. Readings shall be made at least at each 5 feet of pile depth, and the time of the reading shall be indicated. The graph shall be labeled with the pile location, tip elevation, cutoff elevation, and the dates of excavation and concrete placement. The log shall be delivered to the Engineer within one working day of completion of placing concrete in the pile.

After placing reinforcement and before placing concrete in the drilled hole, if drill cuttings settle out of the slurry, the bottom of the drilled hole shall be cleaned. The Contractor shall verify that the bottom of the drilled hole is clean.

If a temporary casing is used, concrete placed under slurry shall be maintained at a level at least 5 feet above the bottom of the casing. The withdrawal of the casing shall not cause contamination of the concrete with slurry. If slurry is not used, the temporary casing shall not be withdrawn until the concrete head in the casing is greater than the groundwater outside of the casing. This positive concrete head shall be maintained during the withdrawal of the casing.

Material resulting from using slurry shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Acceptance Testing and Mitigation

Vertical inspection pipes for acceptance testing shall be provided in all CIDH concrete piling 24 inches in diameter or larger, except when the holes are dry or when the holes are dewatered without the use of temporary casing in a manner that controls ground water.
The furnishing and placing of inspection pipes shall conform to the following:

A. Inspection pipes shall be Schedule 40 PVC pipe with a nominal inside diameter of 2 inches. Watertight PVC couplers are permitted to facilitate pipe lengths in excess of those which are commercially available. The Contractor shall log the location of the inspection pipe couplers with respect to the plane of pile cut off, and these logs shall be delivered to the Engineer upon completion of the placement of concrete in the drilled hole.
B. Each inspection pipe shall be capped at the bottom and shall extend from 3 feet above the pile cutoff down to the bottom of the reinforcing cage. A temporary top cap or similar means shall be provided to keep the pipes clean before testing. If pile cutoff is below the ground surface or working platform, inspection pipes shall be extended to 3 feet above the ground surface or working platform. Approved covers or railings shall be provided and inspection pipes shall be located as necessary to minimize exposure of testing personnel to potential falling hazards.
C. Inspection pipes shall be completely clean, dry, and unobstructed at the time of testing providing a 2-inch diameter clear opening.
D. The inspection pipes shall be installed in straight alignment, parallel to the main reinforcement, and securely fastened in place to prevent misalignment during installation of the reinforcement and placing of concrete in the hole. The CIDH concrete piling shall be constructed so that the relative distance of inspection pipes to vertical steel reinforcement shall remain constant.
E. When any changes are made to the tip of CIDH concrete piling, the Contractor shall also extend the inspection pipes to the bottom of the reinforcing cage.

The following additional requirements apply if inspection pipes are not shown on the plans:

A. Inspection pipes shall be placed radially around the pile, inside the outermost spiral or hoop reinforcement and no more than 1 inch clear of the outermost spiral or hoop reinforcement.
B. Inspection pipes shall be placed around the pile at a uniform spacing not exceeding 33 inches measured along the circle passing through the centers of inspection pipes. A minimum of 2 inspection pipes per pile shall be used. Inspection pipes shall be placed to provide the maximum diameter circle that passes through the centers of the inspection pipes while maintaining the spacing required herein.
C. Inspection pipes shall be placed a minimum of 3 inches clear of the vertical reinforcement. When the vertical reinforcement configuration does not permit this clearance while achieving radial location requirements, distance to vertical rebar shall be maximized while still maintaining the requirement for radial location.
D. Where the dimensions of the pile reinforcement do not permit inspection pipes to be placed per these requirements, a plan for tube placement shall be submitted to the

Engineer for approval in the Pile Placement Plan with a request for deviation before fabricating pile reinforcement.

After placing concrete and before requesting acceptance tests, each inspection pipe shall be tested by the Contractor in the presence of the Engineer by passing a 1 1/4-inch diameter rigid cylinder 4.5 feet long through the length of pipe. If an inspection pipe fails to pass the 1-1/4-inch-diameter cylinder, the Contractor shall immediately fill all inspection pipes in the pile with water.

For each inspection pipe that does not pass the 1 1/4-inch diameter cylinder, the Contractor shall core a nominal 2-inch diameter hole through the concrete for the entire length of the pile. Cored holes shall be located as close as possible to the inspection pipes they are replacing and shall be no more than 5 inches clear from the reinforcement.

Coring shall not damage the pile reinforcement. Cored holes shall be made with a double wall core barrel system utilizing a split tube type inner barrel. Coring with a solid type inner barrel will not be allowed. Coring methods and equipment shall provide intact cores for the entire length of the pile. The coring operation shall be logged by an Engineering Geologist or Civil Engineer licensed in the State of California and experienced in core logging. Coring logs shall be in conformance with the Department's "Soil and Rock Logging, Classification, and Presentation Manual." Coring logs shall include Core Recovery (REC), Rock Quality Designation (RQD), locations of breaks, and complete descriptions of inclusions and voids encountered during coring, and shall be delivered to the Engineer upon completion. Concrete cores shall be preserved, identified with the exact location the core was recovered from within the pile, and delivered to the Engineer upon completion. The Engineer will evaluate the portion of the pile represented by the cored hole based on the submitted core logs.

Acceptance tests of the concrete will be made by the Engineer, without cost to the Contractor. Acceptance tests will evaluate the homogeneity of the placed concrete. Tests will include gamma-gamma logging conducted in conformance with California Test 233. The Contractor shall not conduct operations within 25 feet of the gamma-gamma logging operations. The Contractor shall separate reinforcing steel as necessary to allow the Engineer access to the inspection pipes to perform gamma-gamma logging or other acceptance testing. After requesting acceptance tests and providing access to the piles, the Contractor shall allow 20 days for the Engineer to conduct these tests and make determination of acceptance. Should the Engineer fail to complete these tests within the time allowance, and if in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in inspection, the delay will be considered a right of way delay as specified in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The Engineer may elect to perform additional tests to further evaluate a pile. These tests may include crosshole sonic logging and other means of inspection selected by the Engineer. When the Engineer elects to perform additional tests to further evaluate anomalies for a rejected pile, no time requirement exists for performing these tests. The Contractor may progress with the mitigation plan process without waiting for these supplemental results.

Inspection pipes and cored holes shall be dewatered and filled with grout after notification by the Engineer that the pile is acceptable. Grout shall conform to the provisions in Section 50-1.09, "Bonding and Grouting," of the Standard Specifications. Inspection pipes and holes shall be filled using grout tubes that extend to the bottom of the pipe or hole or into the grout already placed.

If acceptance testing performed by the Engineer determines that a pile does not meet the requirements of the specifications and California Test 233, Part 5C, then that pile will be rejected and all depositing of concrete under slurry or concrete placed using temporary casing for the purpose of controlling groundwater shall be suspended until written changes to the methods of pile construction are approved in writing by the Engineer.

The Engineer will determine whether the rejected pile requires mitigation due to structural, geotechnical, or corrosion concerns. The Engineer will consider the estimated size and location of the anomaly and potential effects upon the design. The Engineer will provide the conclusions of this analysis to the Contractor for development of a mitigation plan, if required. The Contractor shall allow 35 days for the Engineer to determine whether the pile requires mitigation and provide information to the Contractor. Day 1 of the 35 days shall be the first day after access has been provided to the Engineer to perform acceptance testing. If additional information is submitted to the Engineer that modifies the size, shape, or nature of the anomaly, the Contractor shall allow 15 additional days for the subsequent analysis.

If the Engineer determines that a rejected pile does not require mitigation, the Contractor may elect to 1) repair the pile per the approved mitigation plan, or 2) not repair anomalies found during acceptance testing of that pile. For such unrepaired piles, the Contractor shall pay to the State, $300 per cubic yard for the portion of the pile affected by the anomalies. The volume, in cubic yards, of the portion of the pile affected by the anomalies, shall be calculated as the area of the cross section of the pile affected by each anomaly, in square yards, as determined by the Engineer, multiplied by the distance, in yards, from the top of each anomaly to the specified tip of the pile. If the volume calculated for one anomaly overlaps the volume calculated for additional anomalies within the pile, the calculated volume for the overlap shall only be counted once. In no case shall the amount of the payment to the State for any such pile be less than $300. The Department may deduct the amount from any moneys due, or that may become due the Contractor under the contract.

If the Engineer determines that a rejected pile requires mitigation, the Contractor shall submit to the Engineer for approval a mitigation plan for repair, supplementation, or replacement for each rejected CIDH concrete pile conforming to the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. If the Engineer determines that it is not feasible to repair the rejected pile, the Contractor shall not include repair as a means of mitigation and shall proceed with the submittal of a mitigation plan for replacement or supplementation of the rejected pile.

Pile mitigation plans shall include the following:

A. The designation and location of the pile addressed by the mitigation plan.
B. A review of the structural, geotechnical, and corrosion design requirements of the rejected pile.
C. A step by step description of the mitigation work to be performed, including drawings if necessary.
D. An assessment of how the proposed mitigation work will address the structural, geotechnical, and corrosion design requirements of the rejected pile.
E. Methods for preservation or restoration of existing earthen materials.
F. A list of affected facilities, if any, with methods and equipment for protection of these facilities during mitigation.

G. The State assigned contract number, bridge number, full name of the structure as shown on the contract plans, District-County-Route-Post Mile, and the Contractor's (and Subcontractor's if applicable) name on each sheet.
H. A list of materials, with quantity estimates, and personnel, with qualifications, to be used to perform the mitigation work.
I. The seal and signature of an engineer who is licensed as a Civil Engineer by the State of California. This requirement is waived for approved mitigation plans when either of the following conditions are present:

    1. The proposed mitigation will be performed in conformance with the most recent Department approved version of "ADSC Standard Mitigation Plan 'A' - Basic Repair" without exception or modification.
    2. The Engineer has determined that the rejected pile does not require mitigation due to structural, geotechnical, or corrosion concerns, and the Contractor elects to repair the pile using most recent Department approved version of "ADSC Standard Mitigation Plan 'B' - Grouting Repair" without exception or modification.

The most recent Department approved version of the "ADSC Standard Mitigation Plan" is available at:

http://www.dot.ca.gov/hq/esc/geotech/ft/adscmitplan.htm

For rejected piles to be repaired, the Contractor shall submit a pile mitigation plan that contains the following additional information:

A. An assessment of the nature and size of the anomalies in the rejected pile.
B. Provisions for access for additional pile testing if required by the Engineer.

For rejected piles to be replaced or supplemented, the Contractor shall submit a pile mitigation plan that contains the following additional information:

A. The proposed location and size of additional piles.
B. Structural details and calculations for any modification to the structure to accommodate the replacement or supplemental piles.

All provisions for CIDH concrete piling shall apply to replacement piles.
The Contractor shall allow the Engineer 20 days to review the mitigation plan after a complete submittal has been received.
Should the Engineer fail to review the complete pile mitigation submittal within the time specified, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the pile mitigation plan, an extension of time commensurate with the delay in completion of the work thus caused will be granted in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

When repairs are performed, the Contractor shall submit a mitigation report to the Engineer within 10 days of completion of the repair. This report shall state exactly what repair work was performed and quantify the success of the repairs relative to the submitted mitigation plan. The mitigation report shall be stamped and signed by an engineer that is licensed as a Civil Engineer by the State of California. The mitigation report shall show the State assigned contract number, bridge number, full name of the structure as shown on the contract plans, District-County-Route-Post Mile, and the Contractor (and subcontractor if applicable) name on each sheet. The Engineer will be the sole judge as to whether a mitigation proposal is acceptable, the mitigation efforts are successful, and to whether additional repairs, removal and replacement, or construction of a supplemental foundation is required.

10-1.22 REINFORCEMENT

Reinforcement shall conform to the provisions in Section 52, "Reinforcement," of the Standard Specifications and these special provisions.
The Department's mechanical splices prequalified list can be found at:

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

The provisions in "Welding Quality Control" of these special provisions shall not apply to resistance butt welding.
At the option of the Contractor, any splices at the locations listed below may be encased in concrete prior to having the Quality Control Manager (QCM) review, approve, and forward each Production Test Report to the Engineer. Should the Contractor exercise this option, it is expressly understood that the Contractor will not be relieved of the Contractor's responsibility for incorporating material in the work that conforms to the requirements of the plans and specifications. Material not conforming to these requirements will be subject to rejection.

A. CIDH Piles.

Reinforcement shown on the plans to be galvanized shall be galvanized in conformance with the provisions in Section 75-1.05,"Galvanizing," of the Standard Specifications.

10-1.23 GANTRY STRUCTURE FOUNDATIONS

Foundations for gantry structures shall conform to the provisions in Section 56-1, "Overhead Sign Structures," of the Standard Specifications and these special provisions.

Steel bolts not designated on the plans as high strength (HS) or stainless steel shall be for general applications and shall conform to the requirements in ASTM Designation: A 307.
A permanent steel template shall be used to maintain the proper anchor bolt spacing.
One top nut, one leveling nut, and 2 washers shall be provided for the upper threaded portion of each anchor bolt.
Full compensation for furnishing and installing anchor bolts and associated hardware, and anchor bolt templates shall be considered as included in the contract price paid per linear foot for cast-in-drilled-hole concrete pile (sign foundation) and no separate payment will be made therefore.

10-1.24 PRE-HUNG CHAIN LINK SWING GATE

Pre-Hung Chain Link Swing Gate shall be furnished and installed as shown on the plans and in conformance with these special provisions.

The allowable Pre-Hung Chain Link Swing Gate shall be manufactured by Master Halco or as approved equal by the engineer. Pre-Hung Chain Link Swing Gate shall include all the items detailed on the manufacturer's plans unless otherwise shown on the plans or as specified by the engineer. Pre-Hung Chain Link Swing Gate shall be installed in conformance with the manufacturer's recommendations and shall include hardware as approved by the engineer.

The successful bidder can obtain the Pre-Hung Chain Link Swing Gate from the manufacturer, Master Halco, 4000 W. Metropolitan Drive, Suite 400, Orange, CA 92868, Telephone 800-229-5615, Fax: 714-385-0107.

The contract unit price paid per each for Pre-Hung Chain Link Swing Gate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing the Pre-Hung Chain Link Swing Gate, complete in place, as specified by the manufacturer, as shown on the plans, and these special provisions, and as directed by the Engineer.

10-1.25 DELINEATOR CURB

Delineator curb shall be furnished and installed as shown on the plans and in conformance with these special provisions.

The allowable delineator curb shall be manufactured by Qwick Kurb, Inc. or as approved equal by the engineer.

Delineator Curb (Type BIG BOLLARD, Model number L125) – Big Bollard(L125) shall be manufactured by Qwick Kurb, Inc. and shall include all the items detailed for Big Bollard (L125) shown on the manufacturer's plans and installation instructions. The successful bidder can obtain the Big Bollard (L125) from the manufacturer, Qwick Kurb, Inc., 9219 Blue Wood Lane NE, Albuquerque, NM, 87122, Telephone 863-660-4445, Fax: 505-821-1654.

Delineator curb shall be installed in conformance with the manufacturer's recommendations.

Delineator curb will be measured by the linear foot as specified in plans.

The contract price paid for linear foot for delineator curb shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and installing the delineator curb, complete in place. as shown on the plans, as specified in the manufacturer's plans and installation instruction and these special provisions, and as directed by the Engineer.

10-1.26 CONCRETE BARRIER

Concrete barriers shall conform to the provisions in Section 83-2, "Barriers," of the Standard Specifications and these special provisions.

The provisions of the third paragraph in Section 83-2.02D(4), "Finishing," of the Standard Specifications shall not apply.

Concrete barrier markers shall conform to the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions. At those locations shown on the plans,

concrete barrier markers shall be cemented to the barrier in conformance with the manufacturer's recommendations.

10-1.27 THERMOPLASTIC TRAFFIC STRIPE AND PAVEMENT MARKING

Thermoplastic traffic stripes (traffic lines) and pavement markings shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these special provisions.

Thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in State Specification PTH-02ALKYD.

Retroreflectivity of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 250 mcd m^{-2} lx^{-1}. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 150 mcd m^{-2} lx^{-1}.

Where striping joins existing striping, as shown on the plans, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.

Thermoplastic traffic stripes shall be applied at the minimum thickness and application rate as specified below. The minimum application rate is based on a solid stripe of 4 inches in width.

Minimum Stripe Thickness (inch)	Minimum Application Rate (lb/ft)
0.098	0.34

Thermoplastic traffic stripes and pavement markings shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

At the option of the Contractor, permanent traffic striping and pavement marking tape conforming to the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions may be placed instead of the thermoplastic traffic stripes and pavement markings specified herein. Permanent tape, if used, shall be installed in conformance with the manufacturer's specifications.

If permanent tape is placed instead of thermoplastic traffic stripes and pavement markings, the tape will be measured and paid for by the linear foot as thermoplastic traffic stripe and by the square foot as thermoplastic pavement marking.

10-1.28 PAVEMENT MARKERS

Pavement markers shall be placed in conformance with the provisions in Section 85, "Pavement Markers," of the Standard Specifications and these special provisions.

The Contractor shall furnish the Engineer certificates of compliance for the pavement markers in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.

Retroreflective pavement markers shall be marked as abrasion resistant on the body of the markers.

SECTION 10-2. BLANK

SECTION 10-3. SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS

10-3.01 PROJECT DESCRIPTION AND SCOPE OF WORK

This section describes the requirements for providing communications and electrical system infrastructure expansion and modifications to support the conversion of existing HOV lanes to Open Road Tolling (ORT) lanes at the San Francisco Oakland Bay Bridge (SFOBB) Toll Plaza facility. The project will provide support for the installation of ORT and Changeable Message Sign (CMS) system equipment in Lanes 18, 21 and 22 at the SFOBB Plaza.

This project includes the procurement, installation, integration, testing and documentation of conduit, junction boxes, toll loops in Lanes 21 and 22, fiber optic cabling (12-strand drop cable), CMS Plaza cabinet, CMS controllers, cabinet UPS, fiber optic patch panels, surge protection, new electrical panel in the Pedestrian Tunnel, two (2) ORT gantry structures for mounting of ORT tolling and CMS equipment, three (3) CMS panels mounted on one of the ORT gantries, CMS communications network (Ethernet switch) equipment, and other components and materials as specified herein. Project also includes the integration of the new ORT CMS panels with the existing SFOBB CMS network

All components and associated work shall conform to the provisions and requirements in Section 86, "Signals, Lighting and Electrical Systems," of the 2006 Standard Specifications, the Plans; the 2006 Standard Plans; and these Special Provisions including all modifications, revisions and additions.

Temporary tolling equipment was installed in a previous contract for Lane 18 to provide for tolling while the Mini-Toll Plaza facilities is removed (demolition) as part of this contract. Once removal is completed and the new ORT Gantries and toll equipment are installed, the Temporary Lane 18 tolling infrastructure and devices (including temporary antenna frame and camera mount, supporting conduit and cabling, etc., within the Lane 17/18 Toll Island as shown on the Plans) shall also be removed under this contract. Removal of all Temporary ORT toll equipment (AVI antenna, front camera, light sensor, etc.) shall be coordinated closely with the ORT Toll Systems Integrator.

Also installed under the previous Temporary contract were Lane 18 loops, conduit, pull boxes, loop splice boxes, ORT cabinets and cable wire-way in the Pedestrian Tunnel and other components as shown in the Plans to support this project.

All ORT tolling equipment (AVI antenna, front/rear VES cameras with flashers, light sensors, etc.) along with associated communications and electrical cabling will be installed by the ORT Toll Systems Integrator.

Where reference is made to the Contractor, it shall mean the Contractor responsible for performing all of the work as defined in these Special Provisions and Plans. The Contractor shall provide all work as indicated in the following Scope of Work. All work will be within existing State right-of-way.

Where reference is made to the CMS Manufacturer, it shall mean the entity responsible for manufacturing the CMS sign panels. The CMS Manufacturer contract is not a part of this amendment. The CMS Manufacturer will provide under another contract the CMS panels, associated controllers and CMS communications cable (that will run from the CMS panels to the controllers in the CMS Plaza cabinet) to the Contractor to install and integrate. The Contractor shall pick-up, transport, and install the CMS panels, controllers and CMS communications cabling at each location as shown on the Plans and these Special Provisions.

Where reference is made to the ORT Gantry Structure Contractor, it shall mean the entity responsible for manufacturing the two (2) gantry cantilever structures as noted herein. The ORT Gantry Structure Contractor contract is not a part of this amendment.

Where reference is made to the ORT Tolls Systems Integrator, it shall mean the entity responsible for providing, installing, integrating and testing all ORT tolling equipment, components and software for ORT operations in Lanes 18, 21 and 22 as shown on the Plans. All ORT tolling equipment, components and associated communications cabling will be provided and installed by the ORT Toll Systems Integrator. All electrical work and cabling for the ORT toll equipment will also be provided by the ORT Toll Systems Integrator.

The Contractor is required to work closely with the CMS Manufacturer for the ORT CMS System commissioning, the ORT Gantry Structure Contractor in the installation of the gantry structures and with the ORT Toll Systems Integrator in the installation and mounting of ORT tolling equipment on gantry structures and for loop installation.

The Contractor shall provide all equipment/devices, materials, incidentals, test equipment, software, labor, and services necessary to deploy and commission the system equipment, infrastructure, components and materials that fully comply with these minimum Special Provisions and as shown in the Plans.

It is the Contractor's responsibility to provide in their bid proposal notification of any components, subsystems or design assumptions outlined in these Special Provisions and/or Plans that would prohibit the Contractor from being able to successfully provide, install, integrate and test the ORT system infrastructure and CMS System as shown on the Plans and specified herein.

Minimum Qualifications for Contractor

To be considered for this project, the Contractor submitting a proposal for this project must demonstrate that they or their sub-contractor(s) meet the minimum qualifications described below.

The Contractor shall submit previous project information and references. References shall include project owner's current name, address, and, telephone number of an individual from the organization who can be contacted to verify system type, performance, and operations, as well as date of system installation. Failure to furnish the references and information will be sufficient reason for rejection of the Contractor's proposal.

1. **CMS System Contracting and Integration Experience** – Have been licensed and actively engaged in the business of installing, integrating and testing CMS/VMS/DMS systems and/or other ITS roadway devices and applications, preferably Toll Road authorities, State DOTs and/or other public agencies, successfully operating a multi-unit, permanently-mounted toll lane/roadway/highway LED changeable/variable signs over a communications network, installed, integrated and tested by this Contractor or sub-contractor under the current corporate name, which otherwise meets this specification, for a period of no less than two (2) years including the following work categories:
    a. Installation, integration, testing, training, and maintenance of CMS systems and communications networks;
    b. Traffic Signal Control and/or Intelligent Transportation Systems design, installation, integration and testing;
    c. Fiber optic outside and inside plant design, installation, conduit installation and routing, pull boxes, splicing, connectorization/termination, and testing; and
    d. Ethernet-based network control systems.

2. **References** -- The Contractor shall submit a minimum of three (3) project references for installing, integrating, and testing CMS/VMS/DMS systems and Ethernet-based fiber communications for a roadside application, preferably Toll Road authorities, State DOT's and/or other public agencies successfully operating an ITS with multiple CMS systems over a communications network, installed, integrated and tested by this Contractor/Integrator under the current corporate name.

3. **Qualifications of Proposed Key Staff –** The Contractor shall have a minimum of three (3) regular staff with direct experience in installing, integrating, and testing CMS systems and Ethernet-based fiber communications systems for a roadside application. In addition, the Contractor shall submit a list of equipment to successfully complete this project within the specified schedule within 10 working days of Notice-to-Proceed (NTP) for this Contract.

<u>Scope of Work for Contractor</u>

The Contractor shall provide, but not limited to, the following scope of work:

1. Furnishing and installation of all conduit with all necessary components and materials including clamps, channel struts, straps, etc., as shown on the Plans;
2. Furnishing and installation of all required junction boxes, enclosures, mounting hardware and materials, etc. as shown on the Plans;
3. Furnishing and installation of one (1) CMS Plaza Cabinet in the Pedestrian Tunnel as shown on the Plans;
4. Furnishing, installation, integration and testing of CMS Plaza Cabinet equipment and components including; CMS controllers, communications network equipment (Ethernet switch), fiber optic 12-port patch panel, cabinet electrical panel, surge protection, UPS, device power supplies as required, and other ancillary components and materials as required and as shown on the Plans;
5. Furnishing, installation and testing of fiber optic 12-port patch panel in existing CMS Plaza cabinet #3 in the Utility Tunnel (at Lanes 2/3) along with fiber jump/patch cables and other ancillary components and materials as required as shown on the Plans;
6. Furnishing, installation and testing of one (1) new MPE1 Electrical Panel (which will provide power for CMS panels and the new CMS Plaza cabinet) in the Pedestrian Tunnel as shown on the Plans;
7. Furnishing, installation, splicing and testing of a Loop System in Lanes 21 and 22 using existing Loop Splice Boxes B and C and Loop lead-in cables as shown on the Plans;
8. Pick-up and safely transport to the project locations for installation, CMS panels and all other CMS materials and equipment provided by the CMS Manufacturer located at a secured local storage facility as specified herein.
9. Installation and integration of three (3) CMS panels working closely with the CMS Manufacturer and ORT Gantry Structure Contractor for mounting of the CMS panels and other ORT Toll equipment to the gantry cantilever structures;
10. Installation, termination and testing of all CMS communications cables and associated communications interface equipment provided by the CMS Manufacturer for providing communications between the CMS Plaza cabinet and the CMS panels mounted on the gantry structure as specified herein.
11. Furnishing, installation, splicing, termination, integration and testing of all fiber optic cable, fiber patch panels, connectors, etc. for the ORT CMS System;
12. Integrate and test the new CMS communications network equipment with the existing SFOBB CMS network as shown on the Plans;
13. Provide complete support and work closely with the CMS Manufacturer in the installation and testing of CMS controllers, power supplies (as required), and integration into the existing SFOBB CMS workstation and control software;
14. Furnishing, installation and testing all electrical service equipment including panel and electrical cabling required for the CMS system. The Contractor shall coordinate and work closely with Caltrans electrical and resident engineer and with the appropriate electrical/power utility for electrical services as required for this project.

15. Provide complete support to, as required, and work with the ORT System Integrator during the installation and testing of ORT lane level and electrical modifications (AVI antenna, front/rear cameras with flashers, light sensors, cabinet equipment, power supplies, etc.);
16. Provide all Utility Coordination as required or necessary along the Maintenance (Radio) Road and the SFOBB Plaza facilities;
17. Removal disposal of all temporary Lane 18 ORT toll infrastructure (conduit, junction boxes, etc.) and temporary mounting structures/frames (temporary AVI antenna frame, temporary camera and light sensor mount) located in Lane 17/18 Toll Island installed in a previous contract as shown on the Plans. The Contractor shall work closely with the ORT Toll Systems Integrator in the removal of the temporary ORT toll equipment in Lane 18 including the AVI Antenna, Front Camera and Light Sensor. Also remove and dispose of existing sign cantilever with sign and signals in the Toll Island as directed by the Engineer
18. Disconnect all electrical feeders and communications lines to the existing Mini-Toll Plaza at the beginning of demolition stage or when directed by the Engineer. All demolition work shall be coordinated closely with the Engineer.
19. Conduct comprehensive testing for all system components as specified herein;
20. Prepare complete Project Documentation including As-Built Plans of work completed;
21. Provide standard warranties on all parts, materials and installation work.

Examination of Project Plans, Special Provisions, and Sites: Bidders shall satisfy themselves as to the type, character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of the proposed Contract.

A mandatory walk through of the project will be required by all bidders. A date will be set by BATA. This walk-through will provide the bidders the opportunity to become familiar with project conditions, existing system infrastructure and equipment, and to gather the necessary information and ask the questions necessary to provide a complete and final bid.

The submission of a bid shall be prima facie evidence that the Bidder has made such examination and is satisfied as to the site conditions to be encountered in performing the work and as to the requirements of the proposed Contract, Plans and Special Provisions and that the bid price includes all necessary work and equipment to complete the work.

The **CMS Manufacturer** selected under another contract will provide for this project: the manufacturing/fabrication and testing of all CMS panels, controllers, any power supplies for the CMS; selection and furnishing of CMS communications cables and associated communications interface equipment for providing communications between the CMS Plaza cabinet and the CMS panels on the ORT gantry structure; delivery, shipping, unloading and storing of CMS panels and all other CMS materials and equipment to a secured storage site within 50 miles of the project site.

The CMS panels and controllers will be of the same make, model and size as the existing CMS panels at the SFOBB Plaza to allow for seamless integration into the existing SFOBB CMS control software.

The **ORT Gantry Structure Contractor** selected under another contract will provide for this project: the fabrication, manufacturing and installation of the two (2) ORT Gantry structures and foundations for this project. The Contractor shall work closely with the CMS Manufacturer and the ORT Gantry Structure Contractor for the complete installation, integration, and testing of all ORT infrastructure (i.e., conduit, junction boxes, mounting hardware, etc.) and CMS panels and equipment.

10-3.02 CODES AND STANDARDS

All work performed on this project shall conform to Section 86-1.02 "Regulations and Code" and the following codes, standards and guidelines as applicable:

1. California Administrative Code, Title 24, Part 3, "Basic Electrical Regulations."
2. Caltrans TEES
3. National Fire Protection Association (NFPA) standards
4. Insulated Power Cable Engineering Association No. A-61-402, NEMA WC-5, “Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy,” shall apply to high voltage cable and 600V class conductors.
5. National Electrical Code (NEC)
6. National Electrical Safety Code (NESC)
7. BISCI – Building Industry Consulting Service International Telecommunications Distribution Methods Manual and Appendices
8. National Electrical Manufacturers Association (NEMA)
9. Underwriters' Laboratories (UL) installation requirements for Lightning Protection Systems and components, the Electrical Testing Laboratories (ETL)
10. National Electrical Testing Association (NETA)
11. American National Standards Institute (ANSI)
12. American Society for Testing and Materials (ASTM)
13. Institute of Electrical and Electronics Engineers (IEEE)
14. Electronic Industries Alliance (EIA) / Telecommunications Industry Association (TIA) including, but not limited to the following;
15. All applicable codes of governing jurisdictions

Unless specified, all standards used for this project shall be the latest edition available effective on the start of this work.

10-3.03 COST BREAKDOWN (LUMP SUM)

All work and materials indicated on the Plans and as specified herein including, but not limited to; conduit, junction boxes, CMS Plaza cabinet, new electrical panel and upgrades, Lanes 21 and 22 loops, CMS panels and controllers, CMS communications network equipment, fiber optic cabling and patch panels, CMS communications cabling, CMS electrical cabling, removal of temporary equipment mounting structures (frames) and infrastructure within the Lane 17/18 Toll Island, and all associated materials, mounting hardware and parts, etc. to provide a completed system will be measured on a Lump Sum basis.

The price bid shall include furnishing, project management, installing, termination, utility coordination as required, shop drawings, testing, and documentation including as-built drawings in accordance with applicable Caltrans Standards, Specifications, and requirements.

10-3.04 WARRANTIES AND GUARANTEES

All installed equipment, materials and parts furnished shall be new, of the latest model, and fabricated under high quality standards.

Manufacturers' warranties and guaranties furnished for materials used in the work, and instruction sheets and parts lists supplied with materials, shall be delivered to the Engineer prior to acceptance of the project.

The Engineer shall be furnished with a certification stating that all installed equipment, parts, and material are covered by a warranty. Company contact information and warranty dates shall be clearly shown.

The warranty period shall begin upon Final Acceptance of the project as specified herein.

10-3.05 CONDUIT SYSTEM

General

1. Conduit provision and installation shall conform to the requirements of Section 86 of the Standard Specifications except as noted in these Special Provisions.
2. As required and as shown in the Plans, conduit to be installed underground for communications and in the Utility and Pedestrian tunnels shall be Type 1 (rigid steel) unless otherwise specified. Type 2 conduit (rigid steel, PVC coated) shall be used for all above ground or exposed locations. Type 3 conduit (rigid non-metallic conduit) conforming to the requirements in the UL Standard for Rigid Non-Metallic Conduit (Publication UL 651) shall be installed for any underground power (electrical) required on this project. Type 4 (flexible) conduit shall be used for transition locations as shown on the Plans.
3. Conduit sizes shown on the Plans and specified in the Standard Specifications and these Special Provisions are referenced to metallic type conduit. No deviation from the

conduit size shown on the Plans will be permitted without written permission from the Engineer.

4. When a standard coupling cannot be used for joining conduit, a UL listed threaded union coupling conforming to the provisions in Section 86-2.05C, "Installation," of the Standard Specifications, or a concrete-tight split coupling, or concrete-tight set screw coupling shall be used.
5. Conduit routing shall be as shown on the Plans. Where underground conduit is shown on the Plans to be installed parallel and adjacent to another conduit, the conduits shall be installed in a common trench.
6. The conduit routing as shown on the Plans is approximate and the Contractor shall be responsible for all required field review and utility coordination to determine final and exact conduit routing as approved by the Engineer.
7. No reducing couplings shall be permitted in any run. All conduit bends and sweeps, except factory bends, shall have a radius of not less than six (6) times the inside diameter of the conduit.
8. Exposed conduits shall be installed parallel or at right angle to the center of line of column or beams.
9. All conduits entering panel boards and junction boxes shall be secured by lock nuts and insulated bushing at the end of conduit.
10. Any conduit ends terminating (stubbed) in pull boxes and/or installed through Tunnel walls shall be sealed with a slip on weather-tight cap until cable is installed. When caps are removed, conduit ends shall be provided with approved conduit bushings.
11. Conduit stubs, caps, exposed threads and all standard screw joints shall be painted with zinc rich paint or an equal rust preventative paint.
12. Any conduit installed under pavement conduit shall be laid to a depth of not less than eighteen inches (18") below grade or as required by Caltrans standards whichever is more stringent. In all other areas conduit shall be laid to a depth of not less than thirty inches (30") below the finished grade or as required by Caltrans standards whichever is more stringent.
13. Any conduit runs to be located under existing roadway shall be installed by using the "Trenching in Pavement Method" in conformance with the provisions in Section 86-2.05C, "Installation," of the Standard Specifications, and these Special Provisions.
14. The trenching machine shall be shielded to prevent loose material from being thrown away from the machine. Loose material deposited on the pavement behind the cutting machine shall be removed from the pavement immediately and the pavement cleared to allow the passage of maintenance traffic. Contractor shall coordinate with Caltrans in regards to MOT along the roadway occupied by the cutting machine and the cleanup operation.
15. The conduit shall be placed in the bottom of the trench and the trench shall be backfilled with commercial quality concrete per Caltrans standards. The top 0.10 foot

or as required by Caltrans shall be backfilled with asphalt concrete produced from commercial quality paving asphalt and aggregates, and approved by Caltrans.

16. Excavation, installation of conduit and concrete backfill shall be completed within the same working day. Asphalt concrete backfill shall be completed within twenty-four (24) hours after excavation off trench.
17. Upon completion of all contract work, the trenches cut through existing pavement will be inspected and, if found necessary by Caltrans, they will be brought to grade with an appropriate asphaltic concrete mix.
18. Conduit shall be routed to avoid any existing obstruction / utility whenever possible, as shown on the Plans, the standard specifications, these Special Provisions, and as directed by the Engineer.
19. All conduit work required in the Maintenance (Radio) Road area shall require careful hand digging and trenching work to avoid and/or protect exiting utilities as shown in the Plans.
20. In the event a utility is damaged by the Contractor’s work, the repair shall be at the Contractor's expense.
21. Pull ropes for use when installing cables in conduit shall be provided in all installed conduit and shall consist of a flat woven, lubricated, soft-fiber polyester tape with a minimum tensile strength of 1800 lbf and shall have printed sequential measurement markings at least every meter.
22. Where applicable, conduits shall be installed in groups in parallel, vertical or horizontal runs and at elevations that avoid unnecessary offsets.
23. Single conduit runs shall be supported by using one hole pipe clamps. Where conduits run horizontally on walls in damp or wet locations, conduit shall be installed with "clamp backs" to space conduit off the surface.
24. Multiple conduit runs shall be supported with construction conduit channel (channel struts) as required secured to the structure and/or wall as shown on the Plans. Conduits shall be fastened to the construction conduit channel with compatible pipe clamps.
25. Type 1, Type 2, and/or Type 3 conduits shall be securely fastened to ORT cabinets and pull boxes using 2 locknuts and specified insulating metallic bushing. All conduit entries into the cabinets shall be completely sealed and weather-tight. Conduit terminations at exposed weatherproof enclosures and boxes shall be made watertight using specified hubs.
26. Conduit penetrations through walls shall be non-shrinking water-tight sealed using materials and procedures compliant with Caltrans standards, NEC and local fire code requirements.

Communications Conduit (Underground)

1. Conduit shall enter communication pull boxes through side knockouts and/or sweep from the bottom as shown on the Plans. Conduit ends shall not extend beyond the

interior wall face of communication pull boxes. The space around conduits through walls of communication pull boxes shall be filled with Portland cement mortar conforming to the provisions in Section 51-1.135, "Mortar," of the Standard Specifications.

2. No bends shall be placed in a section of conduit in excess of those indicated in the Plans without the approval of the Engineer. The total degrees of bending in a section of conduit between communication pull boxes shall not exceed a total of 180 degrees, except where specified otherwise.
3. Changes in indicated conduit bends may be made in order to suit field conditions, as long as the change reduces the degree of the bend or increases the radius of the bend. In no case shall the angle of the bend be increased without the approval of the Engineer.

Communications Conduit (Above Ground

: Walls, Gantry / Cantilever Uprights)

1. At the location shown on the Plans, where communication conduits are exposed to the elements, Type 2 conduit shall be used and shall conform to the details shown on the Plans, and to these Special Provisions.
2. Communication conduit (walls, structural uprights, etc.) shall include any required excavation, installation of the conduit with any required conduit hangers, channel struts, cradles, straps, and miscellaneous iron and steel, and placing sand and slurry cement backfill.
3. The Contractor must insure minimum bending radius as recommended by the conduit manufacturer and coordinate with the ORT Tolls System Integrator in regards to planned cable types to be installed and insure that the bending radius of the cables is maintained.
4. Conduit components shall include compatible fittings, adapters, expansion joints, and factory bends at nominal radii for the conduit size installed as recommended by the conduit manufacturer.
5. Conduit hanger assemblies shall consist of a concrete clevis plate or embedded steel welded linked eye rods, an adjustable steel yoke, a cast iron conduit roller, a steel roller rod, anchor bolts, conduit clamps, and hex nuts. Parts shall be galvanized. The conduit hanger assembly shall be suitable for the type and size of conduit installed and shall conform to the provisions in Section 75-1.03, “Miscellaneous Bridge Metal,” of the Standard Specifications.
6. All Type 1 and 2 conduit mounted on interior and exterior walls shall use conduit struts and clamps. All conduit mounted on structures shall use stainless steel straps as shown on the Plans.
7. Mechanical wedge anchors for mounting conduits to concrete walls or structures shall have a 1.25-inch embedding maximum. The drilled holes for embedding shall be a maximum of 1.4-inch deep. The only exception to these drilled hole and embedding depths will be as approved by the Engineer.

8. Type 4 Flexible conduit shall be used for transitioning from the existing sign structure upright to the horizontal chord/member and other locations as shown in the Plans.
9. Anchorage devices shall be corrosion resistant including; toggle bolts, screws, bolts, machine screws, expansion shields, and expansion anchors and inserts.

Conduit Sealing Plugs

1. Unless otherwise noted, all conduits shall have their ends sealed with commercial preformed plugs which prevent the passage of gas, dust and water into these conduits. Sealing plugs shall be installed within a pull box, cabinet and/or tunnel entry as installed.
2. Sealing plugs shall be removable and reusable. Plugs sealing conduit, conductor or cable shall be the split type that permits installation or removal without removing conductors or cables.
3. To provide suitable sealing between the varying size cables and the plugs, split neoprene or silicone adapting sleeves, used singularly or in multiples, shall be inserted within the body of the plugs.
4. Sealing plugs used to seal fiber optic conduit shall be capable of withstanding a pressure of 5 PSI.
5. A sealing plug that seals an empty conduit shall have an eye or other type of capturing device (on the side of the plug that enters the conduit) to attach onto the pull rope, so the pull rope will be easily accessible when the plug is removed.

Channel Struts and Fittings

1. Channel struts shall support all conduits and junction boxes.
2. Conduit shall be supported at every 5 feet interval or as required by the NEC and the Standard Specifications for the given conduit size whichever is more stringent.
3. These channel struts shall be fixed on the wall by use of embedded anchor and bolt as shown in the Plans.
4. Channel struts shall also be installed along the Pedestrian Tunnel, outside retaining wall and other locations as shown on the Plans.
5. All channel struts and fittings shall be made with hot-dipped galvanized steel and conform to provisions in Section 751.03, "Miscellaneous Bridge Metal."

10-3.06 PULL BOXES

The Contractor shall use existing pull boxes as shown on the Plans. Any new pull boxes required or needed on this project shall conform to the provisions in Section 86, “Signals, Lighting and Electrical Systems,” of the Standard Specifications and meeting the following minimum requirements:

General Specifications

1. Communication conduit shall be installed with 15-degree (maximum) sweeps.

2. Full compensation for replacing and/or repaving pavement shall be considered as included in the Contract lump sum price for tolling system and no separate payment will be made.

Communications Pull Boxes

1. No. 5 (T) pull boxes shall be used for electrical/power circuits. No. 6(T) pull boxes shall be used for all communications as shown on the Plans. The Contractor may install larger pull boxes for communications as necessary and approved by Caltrans.
2. Pull boxes and covers shall be rated for full traffic loading and have a vertical proof-load strength of 25K PSI. The 25K PSI load shall be distributed through a 9-inch x 9-inch x 2-inch steel plate according to Federal Specification RR-F-621e. This load shall be placed anywhere on the box and cover for a period of one minute without causing any cracks or permanent deformations.
3. Grout shall not be placed in the bottom of pull boxes.
4. The pull boxes shall be reinforced with a galvanized Z-bar welded frame and cover as shown on the Plans. Frames shall be anchored to the boxes by means of 0.24-inch x 2.25-inch long concrete anchors. Six (6) concrete anchors shall be provided for each pull box, one placed in each corner and one placed near the middle of each of the longer sides.
5. Hold down screws shall be 0.35-inch hex flange cap screws of Type 316 stainless steel. The nut shall be zinc plated carbon steel and shall be made vibration resistant with a wedge ramp at the root of the thread. The nut shall be spot welded to the underside of, or fabricated with, the galvanized Z-bar pull box frame.
6. Steel covers shall be countersunk approximately 0.24-inch to accommodate the bolt head. The bolt head shall not extend more than 0.12-inch above the top of the cover when tightened down. A 0.24-inch tapped hole and brass-bonding screw shall be provided.
7. Since the communications pull boxes will be used for both ORT tolling and CMS system, all new communication pull boxes shall have "CALTRANS COMMUNICATION" marking on the steel cover. All electrical pull boxes shall have “CALTRANS ELECTRICAL” marking on the cover.
8. After the installation of pull boxes, the steel covers shall be installed and kept bolted down during periods when work is not actively in progress at the pull box. When placing the steel cover for the final time, the cover and the Z-bar frame shall be cleaned of all debris and securely tightened down.
9. Electrical and communication pull boxes shown on the Plans are shown for general location only. Final locations shall be approved by the Engineer. Pull boxes in paved areas including the Maintenance Road shall be as approved and directed by the Engineer.
10. Each pull box shall have one 15.75-inch (typical) extension.

10-3.07 JUNCTION BOXES

Junction boxes locations and sizes are shown on the Plans. All junction boxes provided on this project shall meet the following minimum requirements, as required:

NEMA Type 4X Continuous Hinge Junction Box

1. NEMA Type 4X continuous hinge junction box shall conform to the following:
   a. Junction box size shall be as shown in the Plans.
   b. Junction boxes shall be constructed from Type 5052 H-32 aluminum minimum 0.08-inch thick.
   c. Junction boxes seams shall be continuously welded and grounded smooth, no holes or knockouts.
   d. Door and body stiffeners shall be provided in larger enclosure.
   e. Rolled lip around three sides of door and all sides of enclosure opening shall exclude liquids and contaminants.
   f. Stainless steel door clamp assembly shall assure watertight seal.
   g. Door shall be easily removed by pulling stainless steel continuous hinge pin.
   h. Data pocket shall be high impact thermoplastic.
   i. The door shall be equipped with a Corbin #2 lock or as required by Engineer. Two (2) keys shall be provided for each field cabinet. The doors shall also be pad-lockable.
   j. Panel screws shall be stainless steel.
   k. Tapped pads shall be provided for mounting optional panels.
   l. Oil-resistant gasket and adhesive shall be used.

NEMA Type 4X Screw Cover Junction Box

1. NEMA Type 4X screw cover junction box shall conform to the following:
   a. Junction box size shall be as shown in the Plans.
   b. Junction boxes shall be constructed from cast aluminum with no welded seams or sharp corners.
   c. Captivated cover screws shall be stainless steel.
   d. Cover screws shall be placed outside sealed area.
   e. Two to four grounding screws shall be located on the enclosure back-wall.
   f. Oil-resistant and O-ring gasket shall have tongue and groove construction.
   g. Threaded internal bosses shall be provided for mounting optional panels, rails and other components.
   h. Mounting holes shall be provided in corners outside of gasketed area.
   i. Finish shall be ANSI 61 (RAL 7042) gray paint inside and out.
   j. Panel shall be unpainted zinc-plated steel.

10-3.08 CONDUCTORS AND WIRING

The Contractor shall furnish, install, terminate and test all CMS communications and electrical cabling for this project. The Contractor shall also provide Lanes 21 and 22 loop system installation with associated wiring as specified herein and shown on the Plans. All ORT

electrical and communication conductors and wiring will be provided, installed and tested by others.

Conductors and Wiring shall conform to Section 86-2.08, “Conductors,” Section 86-2.09, “Wiring,” in the Standard Specifications and these Special Provisions.

Splices shall be insulated by "Method B". Heat shrinkable tubing will not be allowed. The minimum insulation thickness, at any point for Type USE, RHH or RHW wire shall be 1.0 mm for conductor sizes No. 14 to No. 10, inclusive, and 1.3 mm for No. 8 to No. 2, inclusive. The minimum insulation thickness, at any point, for Type THW and TW wires shall be 0.69 mm for conductor sizes No. 14 to No. 10, inclusive, 1.02 mm for No. 8, and 1.37 mm for No. 6 to No. 2, inclusive. Signal cable shall not be used.

Fiber optic, CMS serial control communications and jumper/patch cables are provided for elsewhere in these Special Provisions.

10-3.09 ELECTRICAL SERVICE

All power conductors shall be copper and rated 600 volt, Type THHN, 90 degree C.

Contractor shall provide new circuit breakers in TB-3 Electrical Panel in the Pedestrian Tunnel as shown on the Plans.

Contractor shall provide new circuit breaker in MPE Electrical Panel in the Utility Tunnel as shown on the Plans.

Contractor shall furnish, install and test a new MPE1 Electrical Panel in the Pedestrian Tunnel as shown in the Plans.

Contractor shall remove breakers / disconnect electrical feed from the MTP Electrical Panel in the Utility Tunnel to the MPTR Electrical Panel in the Mini-Toll Plaza as well the feed from the MPE Electrical Panel to the MTPE Electrical Panel in the Mini-Toll Plaza as shown in the Plans. The Contractor shall closely coordinate this work with the demolition of the Mini-Toll Plaza.

Circuit breakers shall be the cable-in/cable-out type, mounted on non-energized clips. All circuit breakers shall be mounted vertically with the up position of the handle being the "ON" position.

Circuit breakers used as service disconnect shall have a minimum interrupting capacity of 42,000A, RMS, for 120/240VAC services.

New electrical panel shall meet all Caltrans standards and requirements as well as the NEC and meet the following requirements:

1. Panel spaces shall be equipped with provision for future circuit breakers.
2. Enclosure shall be provided with stretcher-leveled steel door and trim of code thickness, complete with concealed butt hinges’
3. Provide combination spring catch and lock on inside edge of door trim.
4. Hard drawn copper bus bars, minimum 98% conductivity silver or tin plated joints.
5. Metal frame holder with clear plastic, transparent cover for schedule

6. Provide 40 degree C ambient compensated circuit breakers.
7. Finish inside and out with two coats of manufacturer's standard paint.

10-3.10 NUMBERING ELECTRICAL EQUIPMENT

The placement of numbers on electrical equipment will be done by others.

10-3.11 BONDING, GROUNDING AND SURGE PROTECTION

Bonding and grounding shall conform to the provisions in Section 86-2.10, "Bonding and Grounding," of the Standard Specifications and these Special Provisions.

Bonding jumpers in standards with hand-holes and pull box lid covers shall be attached by a UL listed lug using 3/16-inch diameter or larger brass or bronze bolts and shall run to the conduit or bonding wire in the adjacent pull box. The grounding jumper shall be visible after the pole has been installed and the mortar pad and cap have been placed on the foundation.

Standards without hand-holes shall have bonding accomplished by jumpers attached to UL listed ground clamps on each anchor bolt.

For slip base standards or slip base inserts, bonding shall be accomplished by jumpers attached to UL listed ground clamps on each anchor bolt, or a UL listed lug attached to the bottom slip base plate with a 3/16-inch diameter or larger brass or bronze bolt.

Equipment bonding and grounding conductors are required in conduits, except when the conduits contain combinations of loop lead-in cable, or fiber optic cable. Unless otherwise noted on Plans, a No. 8 minimum, bare copper wire shall run continuously in circuits. The bonding wire size shall be increased to match the circuit breaker size in conformance with the Code, or shall be as shown on the Plans.

As required, bonding of Type 1 metallic conduits in metal pull boxes shall be by means of bonding bushings and bonding jumpers connected to the bonding wire running in the conduit system.

Provide grounding bushings at all conduit terminations at electrical panels and ground with insulted stranded copper conductor to electrical panel ground bus.

Except as otherwise specified, the complete electrical installation including the neutral conductor, metallic conduits, raceways, boxes, cabinets and equipment shall be permanently and effectively grounded in accordance with all code requirements, whether or not such connection are specifically shown or specified.

The Contractor shall provide complete CMS system grounding and transient voltage surge suppression (TVSS) protection for all equipment and infrastructure as specified herein. The minimum grounding and TVSS requirements are as follows:

1. The Contractor shall thoroughly review the existing toll plaza building system and electrical ground system and TVSS for all communications and electrical feeds to be used on this project. It is the Contractor's responsibility to ensure that all CMS system equipment and subsystems are adequately protected.
2. All grounding shall as required by the National Electrical Code (NEC) and according to the Caltrans Standard Specifications.
3. The Contractor shall ground each CMS panel to an earth ground system using an earth ground lug that is electrically bonded to the CMS panel enclosure/housing near the power entrance location. The Contractor shall provide the materials and services needed to properly earth ground the CMS panel to an earth ground system (either existing or to be installed under this Contract). The Contractor shall submit details on how CMS panels and equipment will be grounded for review and approval by the Engineer.
4. All metallic conductors of any type leaving/entering the cabinet or building shall be provided with TVSS prior to terminating on any equipment in the cabinet or building.
5. All equipment for this project shall be protected from surges and spikes with TVSS devices. All copper cables shall be terminated in a primary surge protector block. All cable pairs, as applicable, shall be terminated on surge protector block(s). The grounding lug of all surge projector blocks shall be bonded to a single point ground bus bar.
6. Minimum TVSS requirements for CMS system electrical and communications lines shall include the following:
    a. Data: RS-422/485 Horizontal Station Cable and CMS Control Cable: 10kA @8/20 microseconds, response time (<1 nanosecond), maximum voltage clamp of 8 volts, L-L and L-G protection, low capacitance.
    b. Power: provide TVSS at the cabinets and CMS panel electrical panel for 120/240V, single phase, 3 wire plus ground that meets the following minimum requirements:
        - Acceptable TVSS products include; Liebert Corporation and AC Data Systems. Others may be proposed for review and approval by the Engineer.
        - Rated for a service entrance or electrical panel
        - Internal over-current protection 200kAIC
        - Protection modes L-N, L-G, N-G
        - Maximum UL pass trough voltage, L-N, L-G, N-G 400 V
        - Surge energy capability, 10/1000 µs, total 5000 joules
        - Component response time 1 nanosecond (ns)
        - Operating temperature: -25°F to 170°F
5. Data TVSS devices shall be of hybrid, multi-staged design with maximum let-through voltage per the ANSI/IEEE C62.41-1991, C62.45-1992 Category B3/C1 Impulse

(6000V, 3000A) Waveform Test of 350V L-L and L-G for both data and signal circuit (i.e., center pin-to-shield, L-L, and L-G, and Shield-G where appropriate).

6. Install a TVSS that has an operating voltage matching the characteristics of the device.
7. All TVSS devices shall be U.L. listed (UL 1449, UL 497, 497A, 497B, etc., as appropriate) and bonded to the same single-point ground point. All TVSS shall be Deutsche Institute von Normen (DIN) rail mounted.
8. The CMS Plaza cabinet ground bus bar shall be bonded with a minimum of a #6 AWG, green insulated ground wire from the ground bus bar to the cabinet ground system.
9. All grounding and bonding shall be in accordance with NEC, NESC and ANSI/TIA/EIA-607 as applicable and/or required. The Contractor shall label grounding and bonding equipment and connections per ANSI/TIA/EIA-606A.
10. Coordinate with proposed equipment manufacturers and the power service provider for recommended TVSS devices and lightning protection measures. Submit all equipment and TVSS devices to the Engineer for review and approval prior to procurement and installation.
11. The more stringent surge and lightning protection requirement when comparing these Special Provisions with those recommended by the equipment manufacturers and service provider shall be implemented.

10-3.12 CMS PLAZA CABINET

This section specifies the minimum requirements for the CMS Plaza Cabinet furnished and installed on this project as shown in the Plans. The cabinet will provide housing for CMS controllers and communications equipment required for this project.

The CMS Plaza Cabinet provided on this project shall be of similar type/make/model that currently is being used at SFOBB in the Utility Tunnel.

Major elements of the cabinet include the cabinet housing and equipment mounting hardware, interior wiring and cable termination facilities, power supplies, ventilation system as required, electrical accessories, and field installation.

The cabinet furnished shall be new and shall conform to the applicable requirements of the latest issues and addenda, in effect on the date of advertisement, relative to manufacture, conforming to current industry codes and standards.

The cabinet described herein shall be used as component housing for CMS controllers, communications network equipment (Ethernet Switch), fiber patch panel, equipment power supplies, 120VAC electrical panel with main and sub breakers, service outlets, ventilation system, door lock, cabling with cable management, surge protection devices, other ancillary materials as required, and all necessary mounting hardware as shown in the Plans.

The CMS Plaza Cabinet shall be installed in the Pedestrian Tunnel as shown on the Plans. The cabinet shall conform to the provisions in Section 86, "Signals, Lighting and Electrical Systems," of the Standard Specifications and meeting the following minimum requirements:

1. Shall have dimensions of 48" high x 24" wide x 15" deep (typical) mounted to the Pedestrian Tunnel wall as shown on the Plans.
2. The cabinet shall be mounted to the concrete Pedestrian Tunnel wall using 3/8-inch diameter expansion anchors (total of 4). The Contractor may propose alternative mounting method for review and approval by the Engineer.
3. Shall be compliant with NEMA 3R rated (IP 24 equivalent) standards, as described in NEMA Standards Publication 250-1997, Enclosures for Electrical Equipment (1000 Volts Maximum).
4. Cabinet shall have appropriate conduit knockouts, mounted on the Pedestrian Tunnel wall as shown on the Plans. Knockouts shall be on enclosure sides as shown on the Plans. Contractor may propose an alternative mounting configuration for review and approval by the Engineer.
5. All mounting hardware and brackets suitable for method of installation shall be provided with the cabinet.
6. The cabinet shall be weatherproofed to prevent the entry of water. All exterior seams shall be continuous welded. All exterior welds shall be smooth.
7. Internal component hardware (nuts, bolts, screws, standoffs, fasteners, etc.) shall be fabricated from hot dipped galvanized steel, stainless steel, aluminum, nylon or other durable corrosion-resistant materials suitable for roadway signage applications.
8. The cabinet shall be constructed using 0.125-inch thick aluminum alloy 5052-H32. The exterior of the cabinet shall be natural mill-finish aluminum.
9. The cabinet shall be constructed using 14-gauge steel.
10. Hinged door(s) that are key-lock for easy equipment access.
11. Vented to improve heat dissipation.
12. Rack angles movable for increased equipment mounting versatility.
13. All cabinet equipment as well as the fiber patch panel shall be rack mounted. Equipment mounted on a rack mounted shelf shall be secured as approved by the Engineer. Equipment mounting and cabling inside shall be neat and organized – no equipment shall be laying loose in the bottom of the cabinet;
14. All components (surge protectors, breakers, etc.) and equipment shall be utilized and active.
15. Self-grounding rack angles shall meet ANSI, NEC, and BISCI grounding requirements. The Contractor shall ensure that the cabinet is grounded according to code and industry practice and as specified herein.
16. Cable tie down slots within cabinet to facilitate cable management.

15. The cabinet shall contain a electrical panel and circuit breakers that meet the following minimum requirements and as shown in the Plans:
    a. Service entrance-rated installed at the bottom of the equipment rack in accordance with the Plans.
    b. Minimum of 4 circuit breaker mounting positions (DIN type)
    c. Short circuit ratings of 22,000 amps and 10,000 amps for the main and branch (sub) circuits, respectively
    d. UL listed
16. The cabinet shall contain a utility GFI outlet circuit consisting of a minimum of two (2) 15-A NEMA 15-R, 120VAC duplex outlets, with ground-fault circuit interrupters.\
17. The electrical panel shall protect the electronic equipment powered by the panel from power transients. Over voltage protection shall be provided for the electrical panel and shall contain a TVSS device as specified herein, which shall reduce the effect of power line voltage transients and be rated as follows:

Recurrent peak voltage	212 V
Energy rating (maximum)	50 J
Power dissipation, average	0.85 W
Peak current for pulses less than 6 µs	2,000 A
Standby current for 60 Hz sinusoidal	1mA or less

18. The cabinet shall include one (1) earth ground lug that is electrically bonded to the cabinet. The lug shall be installed near the power entrance. The Contractor shall provide the balance of materials and services needed to properly earth ground the CMS panel to an earth ground system as shown on the Plans. All grounding shall conform to the NEC and Caltrans requirements.
19. Provide a cabinet Uninterruptible Power Supply (UPS) above the electrical panel as shown on the Plans and meeting the following minimum requirements:
    a. The Contractor shall provide a UL listed rack mount one (1) Uninterruptible Power Supply (UPS) as the back-up electrical power source for the CMS controllers and network equipment located in the cabinet.
    b. The UPS shall be rated at a minimum 500VA.
    c. The UPS shall work over a voltage range of 82-144VAC.
    d. UPS shall incorporate a minimum of four (4) NEMA 5-15R output connections or as required.
    e. UPS shall be FCC Class B certified.
    f. If the UPS is a switching type (not 100 percent on-line), transfer time shall be 4 millisecond or less.
    g. Batteries shall be sealed, non-outgassing type.

20. The Contractor shall furnish and install one rack-mount eight (8) outlet or as required surge power strip with a switch in the cabinet.

10-3.13 LOOP SYSTEM SPECIFICATIONS

This section specifies the ORT Loop System to be installed on Lanes 21 and 22 meeting the following minimum requirements:

1. The Contractor shall furnish and install Loops for Lanes 21 and 22 as shown on the Plans and coordinate with the ORT System Integrator on materials and loop installation details.
2. The Contractor shall use the existing Loop Lead-in cables installed in the existing Loop Splice Boxes. There are 7 Loop Lead-in cables currently coiled in each Loop Splice Box that run through conduit to the wire-way above the ZEC cabinet in the Pedestrian Tunnel as shown on the Plans.
3. The Contractor shall use Loop Splice Box B for Lane 21 loop splicing and Splice Box C for Lane 22 loop splicing as shown on the Plans.
4. The Contractor shall splice new Loop wires with the existing Loop Lead-ins (Belden 8720, #14AWG cables) in each Loop Splice Box as shown on the Plans.
5. Roadway loop wire shall be Anixter #6M-1401-03-500 cable or approved equivalent meeting the following minimum requirements:
    - XHHW # 14AWG, Red
    - 1-Conductor
    - Stranded bare copper, 600V
    - XLP X-linked polyethylene,
    - Unshielded
6. Loop cut depths are critical to maintain. Saw blade width shall be 3/8-inch. Wrap loops right and push down into saw cut. Use a drill to twist home run cable. Homerun cuts are at least 2-inch deep as shown on the Plans.
7. Loop wire saw cuts shall maintain a minimum 10-inch spacing from each other to prevent cross-talk interference and enter into the Splice Box through existing 1¼-inch conduit stubs as shown in the Plans.
8. The Contractor shall pay close attention to the loop wire run spacing and routing to the Loop Splice Box as shown on the Plans.
9. After Loop wire is pulled through Loop Splice Box conduit seal end with weather-proof duct seal.
10. Splices shall be sealed with 3M Scotchlok 3570 Connector Sealing Pack or approved equivalent as shown on the Plans.

10-3.14 PEDESTRIAN TUNNEL WIREWAY

The Contractor shall use an existing enclosed, lay-in wire-way system in the Pedestrian Tunnel as shown in the Plans to route all CMS communications cabling to/from the CMS Plaza cabinet. All CMS related cable shall be separated from ORT toll communications cabling through the use of the wire-way divider. The Contractor shall coordinate with the ORT Toll Systems Integrator on the placement of ORT and CMS cables in the wire-way.

10-3.15 REMOVING AND SALVAGING EQUIPMENT

As part of this Contract, the Contractor shall remove (demolition) the Mini-Toll Plaza and all associated infrastructure and components as shown on the Plans.

The Contractor shall coordinate closely with the Engineer on the removal and disposal of all materials and equipment as indicated in the Plans.

All Caltrans salvaged electrical materials and equipment shall be hauled to Caltrans Maintenance Station at 30 Richard Street, San Francisco, CA 94134, (415) 330-6509 and stockpiled. The Contractor shall provide the equipment, as necessary, to safely unload and stockpile the material. A minimum of three (3) working days' notice shall be given prior to delivery.

All salvaged Toll equipment and materials shall be coordinated with the ORT Toll Systems Integrator.

10-3.16 FIBER OPTIC CABLE AND EQUIPMENT

The fiber optic cable and supporting equipment provided on this Contract shall conform to the details on the Plans and meeting the following minimum requirements:
General Specifications

1. The fiber optic cable for this project shall consist of a 12 single-mode fiber optic drop cable for connecting the new CMS Plaza cabinet Ethernet Switch with the existing SFOBB CMS network as shown in the Plans. The new CMS Panels to be installed on the ORT Gantry shall be integrated into the existing SFOBB CMS network and be controlled through existing CMS System control software from the SFOBB Plaza building.
2. The fiber optic cable shall be all dielectric, gel filled or water-blocking material, duct type, with loose buffer tubes and shall conform to these Special Provisions. Cables with single-mode fibers shall contain single-mode (SM) dual-window (1310 nm and 1550 nm) fibers with the numbers described below and as shown on the Plans.
3. The optical fibers shall be contained within loose buffer tubes. The loose buffer tubes shall be stranded around an all dielectric central member. Aramid yarn or fiberglass shall be used as a primary strength member, and a polyethylene outside jacket shall provide for overall protection.

4. The fiber optic cable on this project shall be from the same manufacturer, who is regularly engaged in the production of this material.
5. The cable shall be qualified as compliant with RUS Federal Rule 7NTR1755.900.

Cable	Description
Type D	12 SM Fibers

Fiber Characteristics

1. Each optical fiber shall be glass and consist of a doped silica core surrounded by concentric silica cladding. All fibers in the buffer tube shall be usable fibers, and shall be sufficiently free of surface imperfections and occlusions to meet the optical, mechanical, and environmental requirements of these Special Provisions. The required fiber grade shall reflect the maximum individual fiber attenuation, to guarantee the required performance of each and every fiber in the cable.
2. The coating shall be a dual layered, UV cured acrylate. The coating shall be mechanically or chemically strippable without damaging the fiber.
3. The cable shall comply with the optical and mechanical requirements over an operating temperature range of -40°F to +158°F. The cable shall be tested in accordance with EIA-455-3A (FOTP-3), "Procedure to Measure Temperature Cycling Effects on Optical Fiber, Optical Cable, and Other Passive Fiber Optic Components." The change in attenuation at extreme operational temperatures (-40°F to +158°F) for single-mode fiber shall not be greater than 0.20 dB/km, with 80 percent of the measured values no greater than 0.10dB/km. The single-mode fiber measurement is made at 1550 nm.
4. For all fibers the attenuation specification shall be a maximum attenuation for each fiber over the entire operating temperature range of the cable.
5. Single-mode fibers within the finished cable shall meet the requirements in the following table:

Fiber Characteristics Table	
Parameter	**Characteristic**
Type	Step Index
Core diameter	8.3 µm (nominal)
Cladding diameter	125 µm ±1.0 µm
Core to Cladding Offset	≤0.8 µm
Coating Diameter	250 µm ±15 µm
Cladding Non-circularity defined as: [1-(min. cladding dia ÷max. cladding dia.)] x 100	≤1.0%
Proof/Tensile Test	345 Mpa, min.
Attenuation: (-40(C to +70(C) @850 nm @1300 nm (MM)/1310 nm (SM) @1550 nm	 N/A ≤0.4 dB/km ≤0.3 dB/km
Attenuation at the Water Peak	≤2.1 dB/km @ 1383 ±3 nm
Bandwidth:	
@ 850 nm	N/A
@1,300 nm (MM)/1310 nm (SM)	N/A
Chromatic Dispersion: Zero Dispersion Wavelength Zero Dispersion Slope	 1301.5 to 1321.5 nm ≤0.092 ps/(nm2*km)
Maximum Dispersion:	≤3.3 ps/(nm*km) for 1285 – 1330 nm <18 ps/(nm*km) for 1550 nm
Cut-Off Wavelength	<1250 nm
Numerical Aperture (measured in Accordance with EIA-455-47)	N/A
Mode Field Diameter (Petermann II)	9.3 ±0.5 µm at 1310 nm 10.5 ±1.0 µm at 1550 nm

Color Coding

1. In buffer tubes containing multiple fibers, each fiber shall be distinguishable from others in the same tube by means of color-coding according to the following:

    1. Blue (BL)
    2. Orange (OR)
    3. Green (GR)
    4. Brown (BR)
    5. Slate (SL)
    6. White (WT)
    7. Red (RD)
    8. Black (BK)
    9. Yellow (YL)
    10. Violet (VL)
    11. Rose (RS)
    12. Aqua (AQ)

2. Buffer tubes containing fibers shall also be color-coded with distinct and recognizable colors according to the same table listed above for fibers.

3. These colors shall be targeted in accordance with the Munsell color shades and shall meet EIA/TIA-598 "Color Coding of Fiber Optic Cables."
4. The color formulation shall be compatible with the fiber coating and the buffer tube filling compound, and be heat stable. It shall not fade or smear or be susceptible to migration and it shall not affect the transmission characteristics of the optical fibers and shall not cause fibers to stick together.

Cable Construction

1. The fiber optic cable shall consist of, but not be limited to, the following components:
   a. Buffer tubes
   b. Central member
   c. Filler rods
   d. Stranding
   e. Core and cable flooding
   f. Tensile strength member
   g. Ripcord
   h. Outer jacket
2. Buffer Tubes shall meet the following requirements:
   a. Clearance shall be provided in the loose buffer tubes between the fibers and the inside of the tube to allow for expansion without constraining the fiber. The fibers shall be loose or suspended within the tubes. The fibers shall not adhere to the inside of the buffer tube.
   b. For a 12-strand cable, each buffer tube shall contain a maximum of 6 fibers.
   c. The loose buffer tubes shall be extruded from a material having a coefficient of friction sufficiently low to allow free movement of the fibers. The material shall be tough and abrasion resistant to provide mechanical and environmental protection of the fibers, yet designed to permit safe intentional "scoring" and breakout, without damaging or degrading the internal fibers.
   d. Buffer tube filling compound shall be a homogeneous hydrocarbon-based gel with anti-oxidant additives and used to prevent water intrusion and migration. The filling compound shall be non-toxic and dermatologically safe to exposed skin. It shall be chemically and mechanically compatible with all cable components, non-nutritive to fungus, non-hygroscopic and electrically non-conductive. The filling compound shall be free from dirt and foreign matter and shall be readily removable with conventional nontoxic solvents.
3. Central Member shall meet the following requirements:
   a. Buffer tubes shall be stranded around a central member by a method, such as the reverse oscillation stranding process that will prevent stress on the fibers when the cable jacket is placed under strain.
   b. The central member which functions as an anti-buckling element shall be a glass reinforced plastic rod with similar expansion and contraction characteristics as the

optical fibers and buffer tubes. To ensure the proper spacing between buffer tubes during stranding, a symmetrical linear overcoat of polyethylene may be applied to the central member to achieve the optimum diameter.

4. Filler Rods shall meet the following requirements:

   a. Fillers may be included in the cable to maintain the symmetry of the cable cross-section. Filler rods shall be solid medium or high-density polyethylene. The diameter of filler rods shall be the same as the outer diameter of the buffer tubes.

5. Stranding shall meet the following requirements:

   a. Completed buffer tubes shall be stranded around the over-coated central member using stranding methods, lay lengths and positioning such that the cable shall meet mechanical, environmental and performance specifications. A polyester binding shall be applied over the stranded buffer tubes to hold them in place. Binders shall be applied with sufficient tension to secure the buffer tubes to the central member without crushing the buffer tubes. The binders shall be non-hygroscopic, non-wicking (or rendered so by the flooding compound), and dielectric with low shrinkage.

6. Core and Cable Flooding shall meet the following requirements:

   a. The cable core interstices shall contain a water blocking material, to prevent water ingress and migration. The water blocking material shall be either a polyolefin based compound which fills the cable core interstices, or an absorbent polymer, which fills voids and swells to block the ingress of water. The flooding compound or material shall be homogeneous, non-hygroscopic, electrically non-conductive, and non-nutritive to fungus. The compound or material shall also be nontoxic, dermatologically safe, and compatible with all other cable components.

7. Tensile Strength Member shall meet the following requirements:

   a. Tensile strength shall be provided by high tensile strength aramid yarns and fiberglass which shall be helically stranded evenly around the cable core and shall not adhere to other cable components.

8. Ripcord shall meet the following requirements:

   a. The cable shall contain at least one ripcord under the jacket for easy sheath removal.

9. Outer Jacket shall meet the following requirements:

   a. The jacket shall be free of holes, splits, and blisters and shall be medium or high-density polyethylene (PE), or medium density cross-linked polyethylene with minimum nominal jacket thickness of 1 mm ± 0.076 mm. Jacketing material shall be applied directly over the tensile strength members and water blocking material and shall not adhere to the aramid strength material. The polyethylene shall contain

carbon black to provide ultraviolet light protection and shall not promote the growth of fungus.

b. The jacket or sheath shall be marked with the manufacturer's name, the words "Optical Cable", the number of fibers, "SM", as applicable, year of manufacture, and sequential measurement markings every meter. The actual length of the cable shall be within -0/+1 percent of the length marking. The marking shall be in a contrasting color to the cable jacket. The height of the marking shall be 2.5 mm ±0.2 mm.

General Cable Performance Specifications

1. Acceptable fiber optic vendors include Corning Cable Systems (Siecor), Alcatel and Lucent. The Contractor shall submit to the Engineer the original documents for fiber optic cable test compliance, the fiber optic manufacture catalog, and samples and test results.

2. The fiber optic cable shall withstand water penetration when tested with a one meter static head or equivalent continuous pressure applied at one end of a one meter length of filled cable for one hour. No water shall leak through the open cable end. Testing shall be done in accordance with EIA-455-82 (FOTP-82), "Fluid Penetration Test for Fluid-Blocked Fiber Optic Cable."

3. A representative sample of cable shall be tested in accordance with EIA/TIA-455-81 (FOTP-81), "Compound Flow (Drip) Test for Filled Fiber Optic Cable". No preconditioning period shall be conducted. The cable shall exhibit no flow (drip or leak) as defined in the test method.

4. Crush resistance of the finished fiber optic cables shall be 220 N/mm applied uniformly over the length of the cable without showing evidence of cracking or splitting when tested in accordance with EIA-455-41 (FOTP-41), "Compressive Loading Resistance of Fiber Optic Cables". The average increase in attenuation for the fibers shall be ≤0.10 dB at 1550 nm (single-mode) for a cable subjected to this load. The cable shall not exhibit any measurable increase in attenuation after removal of load. Testing shall be in accordance with EIA-455-41 (FOTP-41).

5. The cable shall withstand 25 cycles of mechanical flexing at a rate of 30 ±1 cycles/minute. The average increase in attenuation for the fibers shall be ≤0.20 dB at 1550 nm (single-mode) at the completion of the test. Outer cable jacket cracking or splitting observed under 10X magnification shall constitute failure. The test shall be conducted in accordance with EIA-455-104 (FOTP-104), "Fiber Optic Cable Cyclic Flexing Test," with the sheave diameter a maximum of 20 times the outside diameter of the cable. The cable shall be tested in accordance with Test Conditions I and II of (FOTP-104).

6. Impact testing shall be conducted in accordance with TIA/EIA-455-25B (FOTP-25) "Impact Testing of Fiber Optic Cables and Cable Assemblies." The average increase in

attenuation for the fibers shall be <0.20 dB at 1550 nm for single-mode fiber. The cable shall not exhibit evidence of cracking or splitting.

7. The finished cable shall withstand a tensile load of 600 lbf without exhibiting an average increase in attenuation of greater than 0.20 dB (single-mode). The test shall be conducted in accordance with EIA-455-33 (FOTP-33), "Fiber Optic Cable Tensile Loading and Bending Test." The load shall be applied for one-half hour in Test Condition II of the EIA-455-33 (FOTP-33) procedure.

Labeling

1. The Contractor shall label all fiber optic cabling in a permanent consistent manner in accordance with the Caltrans *Fiber Optic Communications System Design Guidelines*, latest version.

2. Label identification, format and location of labels shall be as directed by the Engineer.

Cable Installation

1. There shall be no re-use fiber optic cable for the installation.

2. Installation procedures shall be in conformance with the procedures specified by the cable manufacturer for the specific cable and distance being installed. The Contractor shall submit the manufacturer's recommended procedures for pulling fiber optic cable at least 20 working days prior to installing cable.

3. Mechanical aids may be used provided that a tension measuring device and a break-away swivel are placed in tension to the end of the cable. The tension in the cable shall not exceed 500 lbf, or the manufacturer's recommended pulling tension, whichever is less.

4. During cable installation, the bend radius shall be maintained at a minimum of twenty (20) times the outside diameter. The cable grips for installing the fiber optic cable shall have a ball bearing swivel to prevent the cable from twisting during installation.

5. A minimum of 25-feet of slack shall be provided for the fiber optic cable. Slack shall be neatly coiled in the wire-way above the CMS Plaza cabinet in the Pedestrian Tunnel as shown on the Plans.

Passive Cable Assemblies and Components

1. The fiber optic assemblies and components shall be compatible components, designed for the purpose intended, and manufactured by a company regularly engaged in the production of material for the fiber optic industry. All components or assemblies shall be best quality, non-corroding, with a design life of at least 20 years.

2. The cable assemblies and components manufacturer shall be ISO-9001 registered.

Fiber Patch Panel

1. The Contractor shall furnish and install all components to terminate the incoming fiber optic communication cables inside the CMS Plaza cabinet as shown on the Plans.

2. The Contractor shall furnish and install a 12 port fiber patch panel as shown on Plans for terminating 12 single-mode fibers in the proposed CMS Plaza Cabinet in the Pedestrian Tunnel and existing CMS Plaza Cabinet located in the Utility Tunnel (Lanes 2/3) as shown on the Plans.

3. The fiber patch panel shall be 1 RU rack mountable and provide capability to terminate the appropriate number of single-mode fibers with SC type connector or as required feed through couplers as shown in the Plans.

4. Strain relief shall be provided for the incoming fiber optic cable. Cable accesses shall have rubber grommets or similar material to prevent the cable from coming in contact with bear metal. All fibers shall be terminated and individually identified in on the fiber patch panel.

Fiber Optic Cable Termination and Jumpers

1. All fiber optic cable shall be installed inside conduit as shown on the Plans.
2. All fiber jumper cables shall meet the fiber optical and performance requirements in these Special Provisions.
3. Jumpers -- duplex design as required in the Plans. Duplex jumpers shall be of duplex round cable construction, and shall not have zipcord (siamese) construction. All jumpers shall be a length as required in the Plans with a minimum of 3 feet of spare cable coiled and secured as directed by the Engineer. All fiber cables shall be installed and secured to avoid stress and allow orderly routing.
4. The outer jacket of duplex jumpers shall be colored according to the single-mode color (yellow) specified above.
5. Connectors -- Shall be of the ceramic ferrule SC type for Single Mode Fiber Optic (SMFO). Indoor SC connector body housings shall be either nickel-plated zinc or glass reinforced polymer construction.

    a. The associated coupler shall be of the same material as the connector housing.

    b. All fiber optic connectors shall be the 2.5-mm connector ferrule type with Zirconia Ceramic material with a PC (Physical Contact) pre-radiused tip.

    c. The SC connector operating temperature range shall be -40°F to +158°F. Insertion loss shall not exceed 0.4 dB for single-mode, and the return reflection loss on single-mode connectors shall be at least -35 dB. Connection durability shall be less than a 0.2 dB change per 500 mating cycles per EIA-455-21A (FOTP-21). All terminations shall provide a minimum 222 N pull out strength. Factory test results shall be documented and submitted to the Engineer prior to installing any of the connectors. Single-mode connectors shall have a yellow color on the body or boot that renders them easily identifiable.

    d. All connectors shall be factory-installed and tested. There shall be no installation of connectors in the field.

    e. All unmated connectors shall have protective caps installed.

Fiber Optic Testing

The Contractor shall provide complete fiber optic cable testing which is in accordance with the Caltrans *Fiber Optic Communications System Design Guidelines*, latest version.

The Contractor shall test each strand of the installed fiber optic cable for this project per the requirements in the Guidelines. All test results shall be documented for review and approval by the Engineer.

10-3.17 CMS COMMUNICATIONS NETWORK EQUIPMENT

The Contractor shall install CMS communications network equipment consisting of a hardened Ethernet Switch installed in the CMS Plaza cabinet in the Pedestrian Tunnel. The CMS panels and controllers shall be single-point controlled from the SFOBB Toll Plaza Building. The CMS System communications shall consist of Ethernet from the Toll Plaza Building to the CMS Plaza Cabinet. The switch shall be integrated into the existing SFOBB CMS communications network.

The Ethernet Switch shall be fully compatible and operational with existing CMS hardened Ethernet Switches at SFOBB meeting the following minimum requirements:

1. The Ethernet Switch shall transport data from and provide control of the CMS panels on the CMS Gantry. This transmission shall facilitate the use, access and control of the CMS panels and information.
2. Furnish and install the equipment consisting of but not limited to a hardened Layer-2 Ethernet switch, AC Power Adapter, cabling, and all other accessories and incidentals.
3. Ethernet shall meet the following minimum requirements:
    a. Minimum of six (6) 10/100 Base-T/TX ports. Each port shall connect via RJ-45 connector.
    b. Minimum of two (2) 100 Base FX fiber ports with the following optical requirements:
        - The minimum optical budget between transmit and received ports shall be 20dB.
        - Optical receiver maximum input power level shall not be exceeded. Optical attenuators shall be added as needed. It is the Contractor's responsibility to determine where attenuators are needed and shall be included in the cost of the switch.
        - Each port shall connect via duplex SC single mode connectors.
    d. Operate between -30 to +165 degree F, including the power supply.
    e. Operate from 5% to 95% non-condensing humidity
    f. Switch shall be shelf or rack-mountable and fit within one (1) standard rack space (1.75" H). If shelf, the Contractor shall provide rack mounted shelf and all mounting hardware.

g. Switch PCB (Printed Circuit Board) shall be conformal coated for moisture protection.

h. Compliance with FFC47 CFR Part 15, Subpart B: 1999 Class A

i. Meet the IEEE 802.1D (Spanning Tree Protocol) and IEEE 802.1w (Rapid Spanning Tree Protocol) standards.

j. Support IP unicast and multicast (IGMP v2) and IGMP snooping

k. Support Communications Interfaces in accordance with IEEE 802.3 Ethernet Standards, IEEE 802.3x and u, and IEEE 802.1X, Port Based Access Control.

l. Include fault tolerant design with built-in test and failure reporting.

m. Support IPv4, DiffServ (Quality of Service), and SNMP v1 and v2 (network management).

n. Provide management capabilities via a serial maintenance/console serial port (local), and Telnet (remote).

o. The Switch shall accept an input voltage of 100-240VAC 50/60Hz.

p. A hardened AC power adapter shall be included if necessary to convert the voltage to DC.

Category 5e Patch Cords

The following are the minimum Cat-5e Patch Cords requirements:

1. The Cat-5e Patch Cords shall be furnished and installed as needed and/or required.
2. All patch cords, patch panels and jacks shall be from the same manufacture and shall be Category compliant with ANSI/ANSI/TIA/EIA 568B.2 Category-5e as required.
3. Shall be factory made; Contractor or vendor assembled patch cords are not permitted
4. Be round, and consist of eight insulated 22 to 24 AWG, stranded copper conductors, arranged in four color-coded twisted-pairs within a flame-retardant jacket.
5. Impedance: 100 ohms +14% @ 0.772 to 100 MHz
6. The mutual capacitance shall be 13.65 pF/ft nominal.
7. Attenuation @ 1 MHz – 2dB /1000 ft; @ 10 MHz – 6.4 dB/1000ft; @ 100 MHz – 20.1 dB/1000ft
8. Be equipped with modular 8-position plugs on both ends, wired straight through with standards compliant wiring.
9. Use modular plugs, which exceed FCC CFR 47 part 68 subpart F and IEC 60603-7 specifications, and have 50 micro-inches minimum of gold plating over nickel contacts.
10. Be available with or without color strain relief boots providing snag proof design. Must meet the flex test requirements of 1000 cycles with boots and 100 cycles without boots.
11. Manufacturer shall guarantee cords are compatible with Cat-5e links and standard performance requirements.

12. Shall utilize cable that is UL Verified.

Installation Requirements

1. The Ethernet switch shall be configured by the Contractor.
2. Contractor shall integrate with the existing CMS network and fully test and document the test results. Contractor shall coordinate closely with BATA on re-configuration of CMS Ethernet switches and network operations as shown in the Plans.
3. Tests shall demonstrate control and monitoring of all CMS signs at the SFOBB Plaza and upstream from the Plaza.
4. All Ethernet switches shall be installed in accordance with manufacturer's guidelines and requirements.
5. Provide, as needed, the necessary Cat-5e jumpers and other cabling as needed for a complete and functional installation.

10-3.18 CMS PANELS AND COMMUNICATIONS CABLING

The Contractor shall install, integrate and test the CMS panels and associated CMS controllers and CMS communications (serial control) cables working closely with the CMS Manufacturer. The CMS Manufacturer will furnish under another contract the CMS panels, controllers and CMS communications cables to the Contractor.

The CMS panels shall be mounted on the ORT East Gantry centered over each travel lane, the CMS controllers shall be housed in the CMS Plaza Cabinet in the Pedestrian Tunnel and the CMS serial communications cable will run from the CMS panels to the controllers in the CMS Plaza cabinet as shown in the Plans.

CMS Panels

The CMS Panels to be used on this project will be the same signs that are currently installed at the SFOBB Toll Plaza providing seamless integration with the existing CMS control center software. The existing CMS panels and software were provided by Ver-Mac and consisted of 96" x 48" LED sign panels capable of displaying one (1) to two (2) rows of 9-inch high characters with up to twelve (12) characters on a single line. Each sign panel weighs approximately 400lbs or less and draws less than 200 watts power.

CMS Communications Cable

The CMS Comm. Cable shall connect each CMS controller located in the plaza cabinet to each CMS panel as shown in the Plans. This RS-422/485 serial communications cable will be provided to the Contractor by the CMS Manufacturer as specified herein. It is expected that a standard configuration will be provided consisting of a minimum of one 4-twisted pair cable for each CMS panel.

The cable shall be similar to Belden cable No. 9844 or equivalent meeting the following requirements:

1. Consisting of 4-pair, individually dual shielded pairs under single jacket
2. Low capacitance (< 15pF/ft)
3. The Contractor may use Category 5e cable meeting the UTP network patch cord specifications in these Special Provisions to provide these required serial connections.
4. Color Code shall conform to the following:
    a. 1st pair—White/Blue Stripe, Blue/White Stripe;
    b. 2nd pair—White/Orange Stripe, Orange/White Stripe;
    c. 3rd pair—White/Green Stripe, Green/White Stripe,
    d. 4th pair—White/Brown Stripe, Brown/White Stripe.
5. Serial cable shall be United Wire and Cable Co., Inc.; Consolidated Wire and Cable; or equivalent.
6. Cable spools shall be of sufficient length to allow cables to be installed without splices.

10-3.19 SYSTEM TESTING

The Contractor shall work closely with the CMS Manufacturer and the ORT Gantry Structure Contractor to provide complete CMS System testing to meet these specifications.

Test Plan and Procedures -- The Contractor shall develop and submit to the Engineer within 20 working days after NTP, a test plan for review and approval, which details all testing for all new material, cables, equipment, cabinet, CMS panels, etc. based on the Plans and these Special Provisions, the manufacturer's recommended test procedures, and industry standard practices.

The test plan shall include procedures and data forms for the Engineer's review and approval prior to the day the tests are to begin. The test plan shall include the sequence in which the tests will be conducted. The test plan shall have the Engineer's approval prior to any tests.

Three (3) copies of the test plan shall be submitted to the Engineer for approval. The Engineer will review then approves, or disapproves, the test plan within 10 working days. If the Engineer rejects the test plan the Contractor shall submit a revised test plan within 10 working days for review and approval by the Engineer. No testing shall be performed until the Engineer has approved the Contractor's test plan. The tests shall demonstrate that the design and production of new material and cables meet the requirements of these Special Provisions and Plans.

All test results, including results of failed test or re-tests, shall be submitted, and delivered to the Engineer and a copy placed with the equipment at the site. The data forms shall contain all of the data taken, as well as quantitative results for all tests. The data forms shall be signed by an authorized representative (company official) of the Contractor. At least one copy of the data forms shall be sent to the Engineer within 10 working days of the test's conclusion.

The Engineer reserves the right to have representative witness all tests. The results of each test shall be compared with the requirements specified herein. Failure to conform to the requirements of any test shall be counted as a defect, and the equipment shall be subject to rejection by the Engineer. Rejected equipment may be offered again for a retest, provided that all non-compliances have been corrected and retested and evidence thereof submitted to the Engineer. Any delays in performing all these tests may result in the Contractor paying the additional costs of providing the Engineer's representatives for the additional testing time.

The Contractor shall be responsible for providing the test fixtures and test instruments for all the system and fiber optic related tests.

Consequences of Test Failures: If any unit fails to pass its test, the unit shall be corrected or another unit substituted in its place and the test repeated. If a unit has been modified as a result of a test failure, a report shall be prepared and delivered to the Engineer prior to shipment of the unit. The report shall describe the nature of the failure and the corrective action taken. If a failure pattern develops for any given unit, The Engineer reserves the right to reject the unit(s) and the Contractor shall be responsible to furnish new re-designed unit(s) as applicable. At the discretion of State, new re-design or modified unit(s) will be required to undergo all testing and submittal requirements. The re-design and/or modification of any unit(s), and testing shall be made without additional cost to the Contracting Authority or extension of the Amendment period.

Four (4) tests shall be included in the Test Plan including; 1) Pre-installation Tests, 2) Stand-Alone Tests, 3) Conditional Acceptance Tests and 4) 90-Day Test/Burn-in tests. The Contractor shall also fully support the ORT Toll Systems Integrator during the testing of the ORT tolling system in regards to the system infrastructure installed under this contract to support the ORT tolling system equipment.

***Pre-Installation Tests (PIT)* --** Pre-Installation Tests (PIT) will include testing by the CMS Manufacturer of the three (3) CMS panels, controllers and associated materials, equipment, and cables at the CMS Manufacturer storage facility located within 50 miles of the project site provided under another contract. The PIT will ensure the equipment will power up, operate, and was not damaged during shipment. The Engineer reserves the right to attend any PIT as desired; however, the Contractor shall observe the test and shall submit documentation of the PITs whether the Engineer’s representative is present or not.

All active equipment shall be connected to normal operating power, energized and subjected to normal operating conditions for a continuous period of time in the laboratory of not less than 48 hours.

Any material, which fails to meet the requirements of the contract, shall be repaired or replaced and the test shall be repeated until satisfactory. All test results, including results of failed tests or re-tests, shall be submitted and delivered with all material delivered to the site.

***Stand Alone Tests (SAT)* --** After the CMS system components have passed the PIT and has been installed and made functional, the Contractor working closely with the CMS Manufacturer shall conduct an approved stand-alone test of the equipment installation at the SFOBB field site.

The tests shall, as a minimum, exercise all stand-alone (non-networked) functional operations of the field equipment with all of the equipment and CMS Plaza cabinet installed. Tests shall include: control of CMS panels via local control from a CMS controller in the CMS Plaza cabinet, cabinet subsystems and component tests, diagnostic testing, and visual inspection for damaged or incorrect installation, adjustments, configuration, and measurement of parameters and operating conditions.

Fiber Optic Cable Testing -- Attention is directed to "Fiber Optic Testing" in these Special Provisions.

Conditional System Acceptance Tests (CAT) -- After the successful completion of the Stand-Alone tests and the three (3) CMS panels are connected and integrated to the existing SFOBB CMS communication network, the signs will be controlled using the existing CMS control center software and CMS workstation from the SFOBB Toll Plaza Building over the network.

The CMS Manufacturer will work with the Contractor to test the CMS panels simultaneously from the existing SFOBB Toll Plaza Building CMS Workstation in a manner equivalent to the normal day-to-day operation of the system. The Contractor shall fully support the CMS Manufacturer during these tests and provide comprehensive tests for the communications network and integration of the various system component and devices as required.

The Conditional System Acceptance Test shall demonstrate that all equipment and materials in the network are in full compliance with all project requirements and fully functional as installed and in final configuration, communicating with and being controlled through the SFOBB Toll Plaza Building.

CMS data link testing demonstrating complete control of the CMS panels and controllers from the existing CMS Workstation shall be conducted as part of these tests. The activities shall include verification of each CMS data circuit in the low speed data links, and in the integrated data network. The Contractor shall optimize network configuration parameters for the data system to operate.

As part of these tests, the Contractor working with the CMS Manufacturer shall test communications and control of existing CMS panels at SFOBB on the network to ensure that network integration and re-configuration work on this project did not affect existing communications to other CMS panels. These tests shall be included as part of the Test Plan.

Burn-In Period -- After the installation of the SFOBB ORT CMS system is completed and the successful completion of the Conditional System Acceptance tests, the Contractor working with the CMS Manufacturer shall coordinate and conduct a 90-calendar day test / burn-in period with the assistance of the Engineer. The CMS system shall operate for 90-calendar days under normal operational conditions. The Engineer will monitor the system during the bun-in period and document any failures.

Final Inspection -- Upon successful completion of the overall Burn-in Period, the entire project shall be eligible for Final Inspection. The Final Inspection will be conducted provided the burn-

in period has demonstrated the entire system is operating successfully. The Final Inspection shall include but is not limited to;

- All installed infrastructure (conduit, junction boxes, cabinet, loop splicing, etc. in support of the ORT Toll equipment and CMS System shall be field inspected and a final field punch list generated
- Monitoring of all CMS System functions including other SFOBB CMSs on the network at the SFOBB Toll Plaza Building to demonstrate the overall CMS System is operational
- All ORT CMS System components are in their correct final configuration
- Verification that all burn-in punch list items have been completed
- Verification that all final cleanup requirements have been completed
- Approval of final ORT infrastructure and CMS System as-built documentation

***Final Acceptance* --** Upon successful completion of the Final Inspection including resolving any final punch list items, Final Acceptance will be defined as when all work and materials provided have been furnished and completely installed and tested by the Contractor with the CMS Manufacturer, and all parts of the work have been approved and accepted by the Engineer and the CMS System has been operated continuously and successfully for 90 calendar days with no more than 5 calendar days downtime due to mechanical, electrical and/or other malfunctions.

10-3.20 PROJECT DOCUMENTATION

The Contractor shall submit to the Engineer material submittals for review and approval prior to any installation.

Within 20 calendar days of NTP the Contractor shall submit the following:

1. **Catalog Cut-sheets:** Submit to the Engineer for approval catalog cut sheets for all proposed materials, equipment and components to be installed. The catalog cut sheets shall include all necessary information to clearly demonstrate that the proposed equipment meets the requirements of these Special Provisions and the Plans. In addition, the equipment cut sheets shall include manufacturer's name, model number, and any other descriptive data as necessary to clearly evaluate the item.

   Materials shall not be ordered or released for fabrication without the approval of submittals by the Engineer.

   The review and approval of submittals by the Engineer is based on the information provided in the submittal and the conformance with the design concept of the project. Submittal reviews do not relieve the Contractor of the responsibility for making the overall system conform to the requirements of the contract. Approvals at the submittal stage are always conditional upon demonstration that the equipment is fully compliant with the Contract including compatibility with all other equipment in the system.

Within 45 calendar days of NTP the Contractor shall submit the following:

1. **Shop Drawings:** Working closely with the CMS Manufacturer and the ORT Gantry Structure Contractor submit to the Engineer shop drawings and design calculations for the attachment of the CMS panels to the ORT Gantry as shown on the Plans.
2. Also include any other shop drawings including the CMS Plaza cabinet mounting, riser conduit installation and attachment details, and the Light Sensor mounting on the Gantries and details of other structural elements required for mounting of ORT and/or CMS related equipment.

The Contractor shall submit prior to the end of the project the following:

1. **As-Built Plans**: As-built drawings shall at a minimum include; detailed conduit routing, junction box locations, loop splice boxes, cabinet location, details of cabinet and equipment installation and assemblies, grounding details, electrical panel location and modifications, CMS system and communications network, a list of all materials, components and cabling installed.
2. The Contractor shall submit As-built Plans per Caltrans procedures and standards. The As-built plans shall be in the same format as the construction plans (Plans) and shall be prepared and delivered to the BATA concurrently with construction in an on-going manner.

10-3.21 MAINTAINING EXISTING ITS AND TOLL SYSTEM ELEMENTS DURING CONSTRUCTION

Existing electrical elements (BATA CMS system, Caltrans CCTV cameras, FasTrak ETC system, etc.) located within the project limits shall remain in place, and be protected from damage during construction of this project.

Before work is performed, the Engineer, the Contractor, and the Department's Traffic Operations Electrical representatives shall jointly conduct a pre-construction operational status check of all existing CMS, CCTV and Toll elements and each element's communication status with the Caltrans Traffic Management Center (TMC) and the respective BATA Plaza Building, including existing ITS/Toll elements that are not shown on the Plans and elements that may be impacted by the Contractor's activities.

The Department's Traffic Operations Electrical representatives will certify the ITS elements' location and status, and provide a copy of the certified list of the existing ITS 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 shall obtain written approval from the Engineer, at least 72 hours before interrupting existing ITS elements' communication with the TMC and BATA that will result in the elements being nonoperational or off line.

The Contractor shall notify the Engineer at least 72 hours before starting excavation activities.

If existing ITS/Toll elements shown on the Plans or identified during the pre-construction operational status check are damaged or fail due to the Contractor's activity, where the elements are not fully functional, the Engineer shall be notified immediately.

If the Contractor is notified by the Engineer that existing ITS/Toll elements have been damaged, have failed or are not fully functional due to the Contractor's activity, the damaged or failed ITS/Toll elements, excluding Structure-related elements, shall be repaired or replaced, at the Contractor's expense, within 24 hours.

For a Structure-related element, the Contractor shall install temporary or portable ITS elements within 24 hours. For non-structure-related ITS elements, the Engineer may approve temporary or portable ITS elements for use during the construction activities.

If fiber optic cables are damaged due to the Contractor's activities, the Contractor shall install new fiber optic cables from an original splice point or termination to an original splice point or termination, unless otherwise authorized in writing by the Engineer. Fusion splicing will be required.

The Contractor shall demonstrate that repaired or replaced elements operate in a manner equal to or better than the replaced equipment or as directed by the Engineer. If the Contractor fails to perform required repairs or replacement work, as determined by the Engineer, the State may perform the repair or replacement work and the cost will be deducted from monies due to the Contractor.

An ITS/Toll element shall be considered nonoperational or off line for the duration of time that active communications with the TMC and/or BATA is disrupted, resulting in messages and commands not transmitted from or to the ITS/Toll element.

The Contractor shall provide provisions for replacing existing ITS / Toll elements within the project limits, that were not identified on the Plans or during the pre-construction operational status check that became damaged due to Contractor's activities.

If the pre-construction operational status check identified existing ITS/Toll elements, then the Contractor, the Engineer, and the Department's Traffic Operations Electrical representatives shall jointly conduct a post construction operational status check of all existing ITS/Toll elements and each element's communication status with the TMC and/or BATA.

The Department's Traffic Operations Electrical representatives will certify the ITS elements' status and provide a copy of the certified list of the existing ITS elements within the project limits to the Contractor. The status list will include the operational, defined as having full functionality, and the nonoperational components. ITS / Toll elements that cease to be functional between pre and post construction status checks shall be repaired at the Contractor's expense and as directed by the Engineer.

The Engineer will approve, in writing, 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 ITS / Toll elements shall be new and of equal or better quality than the existing ITS/Toll elements.

10-3.22 PAYMENT

Full compensation for signal, lighting, and electrical systems shall be considered as included in the contract lump sum price paid for the tolling system and no additional compensation will be allowed therefore.

Standard Plans List

The Standard Plan sheets applicable to this contract include, but are not limited to those indicated below. Applicable Revised Standard Plans (RSP) and New Standard Plans (NSP) indicated below are included in the project plans as Standard Plan sheets.

	ACRONYMS, ABBREVIATIONS AND SYMBOLS
A10A	**Acronyms and Abbreviations (Sheet 1 of 2)**
A10B	**Acronyms and Abbreviations (Sheet 2 of 2)**
A10C	**Symbols (Sheet 1 of 2)**
A10D	**Symbols (Sheet 2 of 2)**
	PAVEMENT MARKERS, TRAFFIC LINES, AND PAVEMENT MARKINGS
A20B	**Pavement Markers and Traffic Lines, Typical Details**
A20D	**Pavement Markers and Traffic Lines, Typical Details**
RSP A24C	**Pavement Markings – Symbols and Numerals**
	CONCRETE BARRIER TYPE 60 SERIES
RSP A76A	**Concrete Barrier Type 60**
A76B	**Concrete Barrier Type 60**
A76C	**Concrete Barrier Type 60E**
	TEMPORARY CRASH CUSHIONS, RAILING AND TRAFFIC SCREEN
RSP T1A	**Temporary Crash Cushion, Sand Filled (Unidirectional)**
RSP T1B	**Temporary Crash Cushion, Sand Filled (Bidirectional)**
RSP T2	**Temporary Crash Cushion, Sand Filled (Shoulder Installations)**
T3	**Temporary Railing (Type K)**
	TEMPORARY TRAFFIC CONTROL SYSTEMS
T10	**Traffic Control System for Lane Closure On Freeways and Expressways**
T14	**Traffic Control System for Ramp Closure**
	TEMPORARY WATER POLLUTION CONTROL
NSP T62	**Temporary Water Pollution Control Details (Temporary Drainage Inlet Protection)**

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**

Appendix B

CONTRACT DRAWINGS / PLANS

DRAWINGS / PLANS ARE SEPARATE FROM THIS DOCUMENT