DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
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Flex your power!
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August 27, 2009

04-SF-80-12.7/13.2
04-0120S4

Addendum No. 6

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN THE CITY AND COUNTY OF SAN FRANCISCO FROM THE YERBA BUENA TUNNEL TO 0.6 KM EAST OF YERBA BUENA TUNNEL.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on December 15, 2009.

This addendum is being issued to revise the Project Plans, the Notice to Bidders and Special Provisions, the Bid book, and provide an additional Information Handout.

Project Plan Sheets 111 and 293 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 790A, 790B and 790C are added. Copies of the added sheets are attached for addition to the project plans.

In the Notice to Bidders, the seventh, eighth and ninth paragraph are revised as follows:

"Bids must be on a unit price basis.
Complete the work within 1200 working days.
The estimated cost of the project is $173,000,000."

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION, AND LIQUIDATED DAMAGES," is revised as attached.

In the Special Provisions, Section 5-1.07, "SUPPLEMENTAL PROJECT INFORMATION," subsection "INFORMATION HANDOUT," subsection "District Information Handout," Items "8" and "9" are added as follows:

"8. Plot Map titled, "Pier 7 – Area for Contractor's Use," Quitclaim Easement Deed, and Settlement Agreement.
9. USCG License No. HSCG-Z71111-09-RP-060L"

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In the Special Provisions, Section 5-1.11, "AREAS FOR CONTRACTOR'S USE," is revised as attached.

In the Special Provisions, Section 5-1.17, "FORCE ACCOUNT PAYMENT," subsection "NON-SUBCONTRACTED FORCE ACCOUNT PAYMENT," the last paragraph is revised as follows:

> "Full compensation for overhead costs for work performed on a force account basis, and for which no adjustment is made to the quantity for time-related overhead conforming to the provisions in "Time-Related Overhead" of these special provisions, shall be considered as included in the markups specified above, and no additional compensation will be allowed therefor."

In the Special Provisions, Section 5-1.18, "PAYMENTS," is revised as attached.

In the Special Provisions, Section 10-1.035, "WORKING DRAWING CAMPUS," is added as attached.

In the Special Provisions, Section 10-1.19, "TEMPORARY SHUTTLE VAN SERVICE," is revised as attached.

In the Special Provisions, Section 10-1.23, "TIME-RELATED OVERHEAD," is revised as attached.

In the Special Provisions, Section 10-1.41, "EXISTING HIGHWAY FACILITIES," subsection "MODIFY CONCRETE BARRIER," is added as attached.

In the Special Provisions, Section 10-1.57, "PILING," subsection "STEEL PIPE PILING," is revised as attached.

In the Special Provisions, Section 10-1.57, "PILING," subsection "NONDESTRUCTIVE TESTING FOR STEEL PIPE PILING," is deleted.

In the Special Provisions, Section 10-1.57, "PILING," subsection "NONDESTRUCTIVE TESTING OF CLASS N STEEL PIPE PILING," is added as attached.

In the Special Provisions, Section 10-1.57, "PILING," subsection "MEASUREMENT AND PAYMENT (PILING)," the second paragraph is revised as follows:

> "Full compensation for conforming to the provisions in "Steel Pipe Piling" and "Nondestructive Testing of Class N Steel Pipe Piling" of these special provisions 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."

In the Special Provisions, Section 10-1.59, "CONCRETE STRUCTURES," subsection "DECK CRACK TREATMENT," is added as follows:

> "**DECK SURFACE TEXTURE**
>
> In addition to the surface texture requirements of Section 51-1.17, "Finishing Bridge Decks," of the Standard Specifications, concrete deck surfaces shall be textured with a spring steel tine device and shall be operated within 130mm, but not closer than 75mm, of pavement edges
>
> Spring steel tines of the texturing device shall be rectangular in cross-section, 2 to 4 mm wide, on 19 mm to 24 mm centers, and of sufficient length, thickness and resilience to form grooves approximately 5 mm deep in the fresh concrete surface. Final texture shall be uniform in appearance with substantially all of the grooves having a depth between 2 mm and 8 mm."

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In the Special Provisions, Section 10-1.59, "CONCRETE STRUCTURES," subsection "MEASUREMENT AND PAYMENT," the following paragraph is added after the eighth paragraph:

> "Full compensation for conforming to the provisions in "Deck Surface Texture" of these special provisions shall be considered as included in the contract price paid per cubic meter for structural concrete (bridge) and no additional compensation will be allowed therefor."

In the Special Provisions, Section 10-1.69, "POLYESTER CONCRETE OVERLAY," is revised as attached.

In the Special Provisions, Section 10-1.70, "POLYESTER CONCRETE OVERLAY (50 mm)," is deleted.

In the Special Provisions, Section 10-1.70, "POLYESTER CONCRETE OVERLAY (19 MM, 50 MM)," is added as attached.

In the Special Provisions, Section 10-1.77, "LIGHT POLE FOUNDATION," is revised as attached.

In the Special Provisions, Section 10-3.275, "REMOVING, REINSTALLING OR SALVAGING ELECTRICAL EQUIPMENT," is added as attached.

In the Bid book, in the "Bid Item List," Item 6 is revised, Item 191 is deleted, and Items 192, 193, 194 and 195 are added as attached.

To Bid book holders:

> Replace pages 3 and 12 of the "Bid Item List" in the Bid book with the attached revised pages 3 and 12 of the Bid Item List. The revised Bid Item List is to be used in the bid.
>
> Attached is a copy of the Information Handout.
>
> Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.
>
> Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.
>
> Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.
>
> Inform subcontractors and suppliers as necessary.

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This addendum, and the attachments are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/04/04-0120S4

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL
Chief, Office of Plans, Specifications & Estimates
Office Engineer
Division of Engineering Services

Attachments

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

The 1st working day is the 15th day after contract approval.

The second through fourth paragraphs, inclusive, and the first sentence of the fifth paragraph of Section 8-1.06, "Time of Completion," of the Standard Specifications shall not apply. A working day is defined as any day, with no exceptions.

Do not start construction operations at the job site until Area PRA is made available to the Contractor as specified in "Areas for Contractor's Use," of these special provisions unless otherwise approved in writing by the Engineer.

The Department grants a time extension if a delay is beyond your control and prevents you from starting work at the job site should the areas for contractor's use not be available as specified in "Areas for Contractor's Use" of these special provisions.

Do not start work at the job site, except for measuring controlling field dimensions and locating utilities, until the Engineer approves your submittal for:

1. Baseline Progress Schedule (Critical Path Method)
2. Storm Water Pollution Prevention Plan (SWPPP)
3. Notification of Dispute Review Board (DRB) nominee and disclosure statement
4. Working Drawing Submittal as specified in "Working Drawing Submittal" of these special provisions:

    a. All falsework, shoring, and excavation plans
    b. All fabrication working drawings
    c. All concrete mix designs
    d. All integrated shop drawings
    e. All pile related submittals including fabrication working drawings

In addition to the above submittals, do not start work at the job site, except for measuring controlling field dimensions and locating utilities, until you submit:

1. Notice of Materials To Be Used.
2. Contingency plan for reopening closures to public traffic.
3. Written statement from the vendor that the order for the sign panels has been received and accepted by the vendor. The statement must show the dates that the materials will be shipped.
4. Written statement from the vendor that the order for electrical material has been received and accepted by the vendor. The statement must show the dates that the materials will be shipped.

Complete the work within 1200 working days, in accordance with the following designated portions of work as specified:

Designated Portion of Work 1: All structural, electrical, mechanical, underground work required to complete westbound and eastbound Route 80 structures to the construction joint shown on the plans.

The following items are excluded from the work required to complete designated portion of work 1:

a. Hinge W7LA
b. Hinge W6RB
c. Route 80 on-ramp spine extension, concrete barriers, lighting, roadside signs and overhead sign structures, and the bike path structure.

The designated portion of work 1 shall be diligently prosecuted to completion before the expiration of **780** days starting on the 15th day after contract approval.

Liquidated damages are $50,000 per day starting on the 1st day after exceeding the above specified number of working days for completion of the designated portion of work 1.

Designated Portion of Work 2: Ready for traffic on westbound Route 80, westbound on-ramp, and westbound off-ramp (Left) structures.

The work includes but is not limited to the required completion of the westbound Route 80, westbound on-ramp, and westbound off-ramp; structures and roadway, electrical and lighting system, roadside signs and overhead sign structures, call boxes, and mechanical system.

The designated work shall be diligently prosecuted to completion before the expiration of 180 working days after completion of the designated work portion 1.

Liquidated damages are $100,000 per day starting on the 1st day after exceeding the above specified number of working days for completion of the designated portion of work 2.

Designated Portion of Work 3: Ready for traffic on eastbound Route 80 and temporary eastbound on-ramp structure and roadway.

The work includes but is not limited to the required completion of the eastbound Route 80 and temporary eastbound on-ramp; structures and roadway, electrical and lighting system, roadside signs and overhead sign structures, call boxes, and mechanical system.

The designated work shall be diligently prosecuted to completion before the expiration of 360 working days after completion of the designated portion of work 1.

Liquidated damages are $100,000 per day starting on the 1st day after exceeding the above specified number of working days for completion of the designated portion of work 3.

Designated Portion of Work 4: Complete all remaining work.

The designated work shall be diligently prosecuted to completion before the expiration of 420 working days after completion of the designated portion of work 1.

Liquidated damages are $13,400 per day starting on the 1st day after exceeding the above specified number of working days for completion of the designated portion of work 4.

Should two or more liquidated damages accrue concurrently, no more than $100,000 per day will be assessed.

5-1.11 AREAS FOR CONTRACTOR'S USE

Attention is directed to the requirements specified in Section 7-1.19, "Rights in Land and Improvements," of the Standard Specifications, plans and these special provisions.

The highway right of way shall be used only for purposes that are necessary to perform the required work. The Contractor shall not occupy the right of way, or allow others to occupy the right of way, for purposes which are not necessary to perform the required work.

The Contractor's attention is directed to "Cooperation," of these special provisions, and the Contractor shall use only the designated areas for Contractor's use as specified in this section, and as shown on the plans and as follows:

1. **Area PR:** is not available for the 04-0120S4 Contractor's use until December 13, 2010 unless otherwise approved by the Engineer. After said date, Contractor shall permit access by others if directed by the Engineer.
2. **Area FP:** is not available for the 04-0120S4 Contractor's use until March 17, 2012 unless otherwise approved by the Engineer. After said date, Contractor shall permit access by others if directed by the Engineer.
3. **Area PRA:** is not available for the 04-0120S4 Contractor's use until August 1, 2010 unless otherwise approved by the Engineer. After said date, Contractor shall permit access by others if directed by the Engineer.

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 Engineer, 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. The State shall not be held liable for damage to or loss of materials or equipment located within these areas.

Toll plaza parking lots shall not be used for the Contractor's employees private vehicles and the Contractor's equipment and vehicles.

The Contractor shall remove the equipment, materials, and rubbish from the work areas and other State-owned property which the Contractor occupies and shall leave the areas in a presentable condition, in conformance with the provisions in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

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

Port of Oakland Pier 7

The Department intends to occupy and make available to contractors portions of Port of Oakland Pier 7 for the duration of the contract.

Attention is directed to -"Working Drawing Campus" of these special provisions.

Attention is also directed to –"Supplemental Project Information," for reference to plot map titled, "Pier 7 – Area for Contractor's Use," "Settlement Agreement regarding Burma Road Easement and Pier 7 Temporary Construction Easement," and the "Quitclaim Easement Deed."

Portions of Pier 7 are currently occupied by others. Referring to the areas identified on the information handout "Pier 7 – Areas for Contractor's Use," space on the pier is expected to be made available to the Contractor at no rental cost, on or before the following schedule:

Area 7: At 04-0120S4 contract award

Areas not available to the 04-0120S4 Contractor or designated as "Caltrans" shall not be used by the Contractor except for access via Burma Road and as otherwise permitted by the Engineer in writing. The Contractor shall locate the Working Drawing Campus within area 7.

By using the area provided at Pier 7, the Contractor agrees to the following terms of usage:

1. The Contractor may only use the designated areas for work exclusive to the 04-0120S4 contract for the following purposes only:

   a. Administration offices and parking for employees of the Contractor
   b. Storage of material

2. The Contractor shall agree to accept the property on an "as is" basis. The Contractor shall not call on the Department to make any improvements or repairs on the property, but the Contractor hereby specifically covenants and agrees to keep the property including furnishings and equipment, in good order and condition
3. The Contractor shall comply with the terms of the contract as well as all State laws and local ordinances concerning said property and the use thereof.

4. The Department or its agents shall at all times have the right to enter the property for purposes of inspection of the property and to serve or to post thereon any notice required or permitted by law for protection of any right or interest of the Department.
5. The Contractor shall be responsible for coordinating with other contractors with regard to water access along the pier.
6. Prior to occupying an area of the pier, the Contractor shall conduct a survey of the property, including photos, describing the current condition of the property and submit the survey for the approval of the Engineer. Along with the survey, the Contractor shall submit for the information of the Engineer a site map identifying the planned uses of the property. Material storage sites shall be identified and shown on the site map and a listing of all materials used and stored on the property, or transported to and through the pier shall be included. Material Safety Data Sheets for the hazardous materials stored on the property shall be submitted to the Engineer.
7. The Contractor shall comply with the provisions in "Water Pollution Control," of these special provisions. The Contractor shall not commit, suffer, or permit the accumulation of waste on the property and shall provide an adequate number of garbage and trash receptacles in clean condition and good repair.
8. In no case shall the Contractor cause or allow the deposit or disposal of hazardous materials on the property. The Contractor shall be responsible for and bear the entire cost of removal and disposal of hazardous materials or waste introduced to the property during the Contractor's period of use and possession as owner, operator or occupier of the property. The Contractor shall also be responsible for any cleanup and decontamination on or off the property necessitated by such materials or waste.
9. There is limited additional utility capacity available at Pier 7, including but not limited to, power, telecommunications, and sewer capacity. The public water source on the pier is being used at its full capacity. The Contractor shall develop his own water source, and shall not use the public water source. The Contractor shall investigate the other utility capacity to support the needs of any use of the pier. The Contractor shall pay when due all water, electric, gas, and other lighting, heating, power, and charges accruing or payable in connection with said property, during the term of use.
10. At the expiration of the term, the Contractor shall quit and surrender possession of the property and its appurtenances to the Department in as good order and condition as the property was delivered to the Contractor, reasonable wear and tear and damage by the elements excepted.
11. The Contractor shall not encumber, assign, or sublet the pier 7 property in any manner whatsoever.
12. The Department will not keep the property insured against fire or any other insurable risk, and the Contractor will make no claim of any nature against the Department by reason of any damage to the Contractor's property in the event it is damaged or destroyed by fire or by any other cause.
13. Indemnification: The Contractor shall indemnify, defend and hold harmless the Department, its officers, agents and employees to the same extent as required by Section 7-1.12A of the Standard Specifications.
14. Liability and Property Damage Insurance: Insurance shall conform with the requirements in "OWNER CONTROLLED INSURANCE PROGRAM (OCIP)," of these special provisions.
15 Hazardous substances may be present on the property in the areas shown as Environmentally Sensitive Areas (ESAs) as shown on the plot map titled "Pier 7 – Area for Contractor's Use" and in all drainage inlets. The Contractor shall have no permanent anchorage or occupation on or near these potentially hazardous materials locations and shall vacate said areas within 48 hours notice of the Engineer. The Contractor shall cooperate and coordinate with the Department, or its agents or contractors or third parties, including, but not limited to the City of Oakland, the United States Department of the Army and the California Department of Toxic Substances Control in the remediation of said potentially hazardous materials locations. It is expected that any necessary hazardous material remediation of hazardous materials locations by others may occur during the duration of contract 04-0120S4 and that the Contractor may be required to vacate minor portions of the pier around the potentially hazardous materials locations to facilitate access.

The Department reserves the right to terminate the Contractor's use of pier 7 or take other appropriate action at no cost to the Department, if the terms of the above usage agreement are not complied with. Provided that the terms of the above usage agreement are complied with, should the Department order the Contractor to vacate significant portions of Pier 7 early, the additional relocation costs as directed by the Engineer will be paid for as extra work as provided in Section 4-1.03D, "Extra Work," of the Standard Specifications. The Contractor shall be responsible for all costs related to occupying and operating at Pier 7 including, but not limited to, compliance with the above usage agreement terms, utility connections, maintenance and operational cost of utilities, improvements needed for intended use including use of the crane, relocation of occupation or operations to facilitate hazardous material remediation, and cost related to vacate and restore property to original conditions at the termination of the occupancy agreement.

5-1.18 PAYMENTS

Attention is directed to Sections 9-1.06, "Partial Payments," and 9-1.07, "Payment After Acceptance," of the Standard Specifications and these special provisions.

For the purpose of making partial payments pursuant to Section 9-1.06, "Partial Payments," of the Standard Specifications, the amount set forth for the contract items of work hereinafter listed shall be deemed to be the maximum value of the contract item of work which will be recognized for progress payment purposes:

A.	Clearing and Grubbing	$ 32,300.00
B.	Progress Schedule (Critical Path Method)	$ 425,000.00
C.	Lead Compliance Plan.	$ 4,000.00
D.	Prepare Storm Water Pollution Prevention Plan	$ 11,900.00
E.	Document Management System	$ 581,600.00
F.	Working Drawing Submittal	$5,000,000.00
G.	Bridge Removal (Portion), Location A	$ 24,000.00
H.	Bridge Removal (Portion), Location B	$ 32,000.00
I.	Working Drawing Campus	$1,200,000.00

After acceptance of the contract pursuant to the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, the amount, if any, payable for a contract item of work in excess of the maximum value for progress payment purposes hereinabove listed for the item, will be included for payment in the first estimate made after acceptance of the contract.

In determining the partial payments to be made to the Contractor, only the following listed materials will be considered for inclusion in the payment as materials furnished but not incorporated in the work:

A. Steel Piling
B. Prestressing steel for cast-in-place members (sealed packages only)
C. Prestress anchorages and ducts
D. Precast concrete members
E. PTFE spherical bearings
F. Seismic joints
G. Bar reinforcing steel, including epoxy coated bars
H. Headed bar reinforcement
I. Structural steel
J. Column isolation sleeve
K. Miscellaneous metal
L. Bridge deck drainage system
M. Bike path railing
N. Metal decking for service platforms
O. Service platform railing
P. Pipe shear key assemblies
Q. Bike path grating and grating attachment assemblies
R. Deck access manhole frames and covers
S. Deck utility access opening frames and covers
T. Lighting fixtures
U. Luminaires
V. Camera assemblies
W. Fiber optic cable
X. Fiber optic splice closure

Plate steel for fabrication of structural steel and fabricated elements for structural steel fabricated and stored within the United States will be eligible for partial payment if the Contractor furnishes evidence satisfactory to the Engineer that its storage is subject to or under the control of the Department and that it has been designated or fabricated specifically for this project and is of such character that is not adaptable to any other use.

10-1.035 WORKING DRAWING CAMPUS

Attention is directed to the requirements of "Areas for Contractor's Use," subsection "Port of Oakland Pier 7", of these special provisions.

The objective of the working drawing campus is to prepare, submit, review and process working drawings, including but not limited to integrated shop drawings (ISD), in the shortest and most efficient manner possible. After approval of the contract, the Department will make its Design engineers available for consultation on site with the Contractor's engineers and detailers who are preparing working drawings. The effort will focus on the most critical and time dependent working drawings first to prevent delay to the project schedule. It is the Contractor's responsibility to submit working drawings sufficiently in advance of the start of the affected work, in accordance with "Working Drawings" of these special provisions. The working drawing campus shall be available for the duration of the contract, or until no longer required as approved by the Engineer

The Contractor shall provide the following within 60 days of contract award to facilitate early resolution of construction working drawings:

1. Suitable office facility located within the area described on plot map titled "Pier 7 – Area for Contractor's Use". The facilities shall include workspace for the Contractor's staff as determined by the Contractor plus a minimum of 8 vacant, separate office cubicles or rooms intended for the use as workspaces by the Department or its representatives, and a common meeting room with meeting table to seat a minimum of 6 people. The facilities shall also include access to a copier, and a fax machine. Each workspace shall include a minimum of a desk, office chair, bookshelf, phone, and T1 computer cabling. The Contractor is responsible for providing local phone service, internet access and building utility services.
2. On-site Coordination Engineer. The Coordination Engineer shall be a registered Civil Engineer in the State of California, and shall be available full time on site to coordinate, manage, and process shop/working drawings and ISD's for the project.
3. Full time, on-site staff, including necessary joint venture partners, subcontractors, suppliers or other parties associated with the Contractor, authorized by the Contractor to be capable of producing and revising working drawings and ISD's, and in conjunction with such work, generating and assisting in resolution of requests for information and potentially resultant change orders. It is not required that all the Contractor's design staff be located on-site.
4. Regularly scheduled submittal status meetings (daily if required) to discuss the status and resolve shop and working drawing issues, attended by representatives of the Engineer and the Contractor's coordinator and staff as appropriate.
5. Regular updates of the working drawing submittal schedule specified in "Working Drawing Submittal Schedule," of these special provisions.

If the Contractor elects to centralize their field office to the designated area on Pier 7, the Working Drawing Campus facility may be co-located within the same facility provided that the Department or its representatives have access to the Working Drawing Campus portion of the office at all times.

The Contractor shall provide a submittal for the Working Drawing Campus within 30 days after award of contract. The submittal shall show the location of the office, layout of the office space and meeting room, and list of the furnishings, including office computers, telephones, desks and chairs to be supplied. The Engineer will review the submittal within 7 days.

Conformance with these special provisions does not relieve the Contractor of the responsibility for furnishing complete shop and working drawings or producing finished work of the quality specified in the Standard Specifications, these special provisions and as shown on the plans.

The Contractor shall submit, for approval by the Engineer, a schedule of costs detailing the breakdown of the contract lump sum item. The schedule of costs shall be proportionate to the work involved and shall detail the costs and payment schedule for each cost item associated with the process entailed in obtaining approval on all approved working drawing as specified hereunder. When requested by the Engineer, the Contractor shall furnish any cost data or supporting documentation which might assist the Engineer in verifying one-time partial payments and the schedule of costs.

The schedule of costs will be used to determine progress payments for "Working Drawing Campus" during the progress of the work. The schedule of costs shall be submitted to the Engineer for approval within 10 days of contract award. The Engineer shall be allowed 10 days for approval or return for correction of the submittal.

EQUIPMENT AND SOFTWARE

Attention is directed to "Integrated Shop Drawings" elsewhere in these special provisions.

The Contractor shall provide, for the State's exclusive possession and use, one complete computer system specifically capable of creating, storing, updating and checking Integrated Shop Drawings utilizing the latest hardware technology. The software shall be identical to that used by the Contractor in generating the ISD's. The software and plug-ins used to navigate, collaborate, and coordinate the checking and identification of the interferences shall also be provided along with original instruction manuals and other documentation normally provided with the software. Before delivery and setup of the computer system, the Contractor shall submit to the Engineer for approval a detailed list of all computer hardware and software the Contractor proposes to furnish. The computer system to be furnished shall be compatible with that used by the Contractor to develop ISD's and, at a minimum, shall include the following:

A. Complete computer system, including keyboard, mouse with scroll wheel, video card with one hundred twenty eight (128) megabyte on board memory and dual ports, two 530-mm color SVGA monitors (1,024 x 768 pixels), current Core Duo microprocessor chip, or equivalent or later;
B. Computer operating system software, compatible with the selected processing unit and CAD software, Windows XP, or equivalent;
C. Minimum four (4) gigabytes of random access memory (RAM);
D. A 500 gigabyte minimum hard disk drive, DVD-DLR RW drive, 10/100/1000 Ethernet card, two USB ports;
E. CAD and other software identical to those used by the Contractor to generate ISD's and to check for conflicts,
F. Microsoft Office software, the latest version for Windows XP, or later, and McAfee Virus software or equivalent;
G. A color laser printer with a minimum of eight (8) megabytes of RAM, capable of 1200 dots per inch in color, 600 dots per inch in monochrome or equivalent. Capable of printing fully legible plots in color with a minimum size of 279-mm by 432-mm. LaserJet toner and paper to be provided throughout the contract. HP LaserJet 5500 or later, or equivalent.

The Contractor shall furnish, install, set up, maintain and repair the computer hardware and software ready for use at the Working Drawing Campus. The hardware and software shall be installed and ready for use at least 30 days prior to submittal of the first ISD's. The Contractor shall provide 16 hours of formal training for the Engineer, and three other agents of the Department designated by the Engineer, in the use of the hardware and software including generating 3-D drawings, merging files, checking for conflicts in three dimensions and manipulating drawing elements. An authorized vendor of the software products shall perform the training.

All computer hardware and software furnished shall remain the property of the Contractor and shall be removed by the Contractor upon acceptance of the contract.

PAYMENT

Attention is directed to "Payments," of these special provisions.

The contract lump sum price paid for working drawing campus shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in facilitating early resolution of construction working drawings and ISD's, including but not limited to utility connection costs, maintenance costs, purchasing of office equipment and furniture, and set up and removal of the office facility as specified in these special provisions and as directed by the Engineer.

10-1.19 TEMPORARY SHUTTLE VAN SERVICE

The Contractor shall provide a temporary shuttle van service for transporting general public and passengers on Yerba Buena Island (YBI) to reduce number of personal vehicles and to facilitate the construction of the bridge, as directed by the Engineer. The service will operate as follows:

A. The Contractor shall provide 16-passenger ADA compliant/lift-equipped vans and qualified and experienced operators. The shuttle van service shall maintain the required insurances and a current Charter Party permit or Passenger Stage permit issued by the State of California Public Utilities Commission applicable to operate as required, and provide a copy to the Engineer.
B. The shuttle route and the planned stops shall be along Macalla Road and Treasure Island Road, as shown on the plans and as approved by the Engineer. The shuttle will service passengers on YBI and depart from the Treasure Island (TI) Main Gate, proceeding along Macalla Road, with proposed turnaround point noted as the U.S. Coast Guard Station Gate at the end of Macalla Road. A round trip is approximately 2.3 miles long and takes approximately 16 minutes.
C. The shuttle route and the schedule shall connect and conform to the existing San Francisco Municipal Railway (Muni) Route 108 motor coach service, which operates a bus service on YBI and TI from the Transbay Terminal in downtown San Francisco. Based on the existing Muni Route 108 schedule, it is estimated that two vans will be needed when 15 minute service is provided on Muni Route 108 and one van would be needed at all other times. The Contractor shall coordinate with San Francisco MUNI's Service Planning Department at (415) 934-3999, at 15 working days prior to commencing service.
D. Any schedule changes in the SF Muni Route 108 Motor Coach Service shall be incorporated in the Temporary Shuttle Van Service provided by the Contractor.
E. The shuttle shall provide a timed transfer with Muni Route 108 at the TI Main Gate.
F. The service shall operate 24 hours a day, seven days a week, once Southgate Road is closed to general public traffic simultaneously with the closure of eastbound 80 off-ramp, or at the discretion of the Engineer.
G. The service shall be free to the public/passengers.

The contract lump sum price paid for temporary shuttle van service shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in providing temporary shuttle van service, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.23 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 an accepted VECP under Section 4-1.035B, "Value Engineering Change Proposal," 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 verified Bid Item List, 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 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 verified Bid Item List, 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 verified Bid Item List 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.

A delay to the controlling operation may be concurrent and any of the following:

1. Nonexcusable: A nonexcusable delay is caused by the fault, nonperformance, or deficiency of the Contractor, subcontractors of any tier, or suppliers. No extension of contract time or additional compensation of loss is allowed.
2. Excusable: An excusable delay is caused by factors beyond the control and without the fault of the State or the Contractor. Only an extension of contract time is allowed.
3. Compensable: A compensable delay is caused solely by the fault, deficiency, error, or omission of the State. An extension of contract time and compensation for the actual cost without markup or profit are allowed.

A concurrent delay occurs when 2 separate delays overlap partially or entirely. A nonexcusable delay concurrent with either an excusable or a compensable delay is a nonexcusable delay. An excusable delay concurrent with a compensable delay is an excusable delay.

The quantity of time-related overhead is only adjusted as a result of a compensable delay and is not adjusted as a result of either a nonexcusable or an excusable delay.

An approved time impact analysis submitted as specified in "Progress Schedule (Critical Path Method)" of these special provisions is used to determine the type and duration of a delay.

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 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.

MODIFY CONCRETE BARRIER

Modify concrete barrier Type 732 (Mod) shall consist of removing existing concrete parapet, concrete curb and metal railing and constructing concrete barrier Type 732 (Mod) at existing original viaduct structures as shown on the plans and as specified in these special provisions.

Modify concrete barriers Type 732 (Mod) shall conform to Section 83-2, "Barriers," of the Standard Specifications and these special provisions.

Bar reinforcing steel for use in concrete barriers shall conform to the provisions in "Epoxy-Coated Prefabricated Reinforcement," of these special provisions.

Grout topping shall conform to the requirements in Section 51-1.13, "Bonding," of the Standard Specifications.

Removal of concrete parapet, concrete curb and metal railing shall conform with the provisions in Section 15-4, "Bridge Removal," of the Standard Specifications and these special provisions.

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 bridge removal plan to the Engineer detailing procedures, sequences, and all features required to perform the removal in a safe and controlled manner.

The bridge 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. Measures to assure that people, property, utilities, and improvements will not be endangered.

The bridge 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 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.

Drilling and bonding dowels shall conform to the details shown on the plans, the provisions in Section 83-2.02D(1), "General," of the Standard Specifications, and these special provisions.

Dowels shall conform to the provisions for epoxy-coated prefabricated reinforcement in "Epoxy Coated Prefabricated Reinforcement" of these special provisions.

If reinforcement is encountered during drilling before the specified depth is attained, the Engineer shall be notified. Unless the Engineer approves coring through the reinforcement, the hole will be rejected and a new hole, in which reinforcement is not encountered, shall be drilled adjacent to the rejected hole to the depth shown on the plans.

Modify concrete barrier Type 732 (Mod) will be measured by the meter with no deductions for gaps in barrier for light pole foundations.

The contract price paid per meter for modify concrete barrier Type 732 (Mod) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in modifying existing concrete barrier, including removing and disposing of the existing concrete parapet, concrete curb, and metal railing, and constructing the modify concrete barrier Type 732 (Mod), complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for epoxy-coated prefabricated reinforcement and grout topping shall be considered as included in the contract price paid per meter for modify concrete barrier Type 732 (Mod) and no separate payment will be made therefor.

Full compensation for drilling holes, including coring through reinforcement when approved by the Engineer, and bonding dowels shall be considered as included in the contract price paid per meter for modify concrete barrier Type 732 (Mod) and no separate payment will be made therefor.

STEEL PIPE PILING

GENERAL

Summary

Steel pipe piling shall consist of unfilled steel pipe piling. Steel pipe piling shall conform to the provisions in Section 49-5, "Steel Piles," of the Standard Specifications and these special provisions.

Steel pipe piling listed in the following table shall be designated as Class N steel pipe piling:

Bridge Name or Number	Abutment Number	Bent Number
Temporary East Bound On-Ramp Structure		Bent 2

Steel pipe piling not listed above as Class N steel pipe piling shall be designated as Class R steel pipe piling.

Submittals

Steel pipe piling qualification audits shall be submitted in conformance with the provisions in "Steel Pipe Piling Qualification Audit" of these special provisions.

A Certificate of Compliance demonstrating material traceability shall be furnished in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications, and shall be signed by the facility's authorized Quality Control Representative. The Quality Control Representative shall be on record with the Department's Office of Structural Materials. The Certificate of Compliance shall include:

1. A statement that all 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 and these special provisions.
2. An attached certified mill test report (MTR) for each heat number of steel pipe piles being furnished.
3. The carbon equivalency (CE) calculated as CE=C + (Mn+Si)/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15. The CE shall be 0.45% maximum and may be shown on the MTR.

The Contractor shall submit a TL-38 Inspection Request form at least:

1. 48 hours before performing any field welding of steel pipe piling.
2. 10 days before performing any welding of Class N steel pipe piling.

The TL-38 Inspection Request form is available at:

http://www.dot.ca.gov/hq/esc/Translab/OSM/smbforms.htm

Working drawings shall be submitted to the Engineer before attaching handling devices to steel pipe piling. Working drawings shall include locations, handling and fitting device details, and connection details. Attachments shall not be made to steel pipe piling until the working drawings are approved in writing by the Engineer. The Contractor shall allow the Engineer 7 days for review.

MATERIALS

General

The provisions of "Welding Quality Control" of these special provisions shall not apply to longitudinal, skelp end, or spiral seam welds in steel pipe piling.

Circumferential welds shall conform to "Welding Quality Control" of these special provisions and the following:

1. Circumferential welds shall be complete joint penetration welds conforming to AWS D1.1.
2. Welds shall be located at least 300 mm away from a skelp end weld.
3. Backing rings shall conform to the following:

    3.1. The minimum thickness shall be 6 mm and the backing ring shall be continuous.
    3.2. Splices in the backing ring shall be made by complete joint penetration welds. These welds shall be completed and inspected, including any required nondestructive testing, before final insertion into a pipe end.
    3.3. The attachment of backing rings to pipe ends shall be done using the minimum size and spacing of tack welds that will securely hold the backing ring in place. Tack welding shall be done in the root area of the weld splice. Cracked tack welds shall be removed and replaced before subsequent weld passes.
    3.4. The gap between the backing ring and the steel pipe piling wall shall not be greater than 2 mm. One localized portion of the backing ring fit-up, that is equal to or less than a length that is 20 percent of the outside circumference of the pipe, as determined by the Engineer, may be offset by a gap equal to or less than 6 mm, provided that this localized portion is first seal welded using shielded metal arc E7016 or E7018 electrodes. This localized portion shall be marked so that it can be referenced during any required NDT.
    3.5. Backing rings shall have sufficient width so that the backing ring will not interfere with the interpretation of the NDT.

4. For steel pipe with an outside diameter greater than 1.1 m and with a wall thickness greater than 25.4 mm, the root opening tolerances may be increased to a maximum of 5 mm.
5. For welding limited to fit-up and attaching backing rings and handling devices, the preheat and interpass temperature shall be in conformance with the requirements in AWS D1.1, Section 3.5, "Minimum Preheat and Interpass Temperature Requirements," and with Table 3.2, Category C.

All steel pipe piling shall be capable of meeting the fit-up requirements of AWS D1.1, Section 5.22.3.1, "Girth Weld Alignment (Tubular)," when the material is spliced utilizing a girth weld.

For the purposes of welding and prequalification of base metal, steel pipe piling designated as ASTM A 252 shall be treated as ASTM A 572/A 572M, Grade 50, or ASTM A 709/A 709M, Grade 50, in conformance with the requirements in AWS D1.1, Table 3.1.

Butt welded seams subsequently formed, including skelp end welds, shall be 100 percent ultrasonically tested in the final formed and welded condition. The acceptance criteria for UT shall conform to API 5L for API-licensed facilities or AWS D1.1 for cyclically loaded nontubular connections for welds subject to tensile stress.

Except for tack welding, gas metal arc welding (GMAW) shall not be used for the welding of steel pipe piling. When GMAW is used for tack welding, the filler metal shall not be deposited by short circuiting transfer.

The dimensional tolerances of steel pipe piling shall conform to the following:

1. Outside diameter: ± 0.75% of the specified outside diameter
2. Wall thickness: -5%, +10% of the specified nominal wall thickness
3. Straightness: ± 1.0% over the length of the pipe

Except for steel pipe piling marked with the API monogram, each length of steel pipe piling shall be marked as follows:

1. Name and location of the piling manufacturer
2. State Contract number
3. Heat number
4. Welding process
5. Outer diameter, nominal wall thickness, minimum wall thickness, and length
6. Year piling was produced
7. Marked as specified below for each class of steel pipe piling. Only Caltrans audited facilities are approved to mark piling for use on this project.

Class N Steel Pipe Piling

Class N steel pipe piling shall conform to one of the following:

1. Manufactured, welded, tested, and inspected in conformance with the requirements in API 5L, minimum Grade X52, PSL1, and the following:

    1.1. Manufactured by a facility licensed to apply the API monogram.
    1.2. Each length of steel pipe piling shall be marked with the API monogram in conformance with API 5L.

2. Manufactured in conformance with ASTM A 252, Grade 3, and welded in conformance with AWS D1.1, and the following:

    2.1. Groove welds using submerged arc welding from both sides without backgouging will require a procedure qualification record witnessed by the Engineer.
    2.2. At the beginning of fabrication, 3 macroetch cross-section test specimens, prepared in conformance with AWS D1.1, Section 4.8.4, shall be furnished for each thickness of piling. Specimens shall be removed at locations selected by the Engineer and in the presence of the Engineer. Test specimens shall indicate that the weld is free of cracks and has thorough fusion between adjacent layers of weld metal and between weld metal and base metal. Undercut shall not exceed 0.76 mm.
    2.3. Material properties shall conform to ASTM A 252, Grade 3 unless otherwise shown in the plans or specified in these special provisions.
    2.4. The weighing of individual pipe will not be required as specified in ASTM A 252.
    2.5. Each length shall be marked "Caltrans Class N - A252."

Class R Steel Pipe Piling

Class R steel pipe piling shall conform to one of the following:

1. Manufactured, welded, tested, and inspected in conformance with API 5L, minimum Grade X52, PSL1, and the following:

    1.1. Steel pipe piling shall be manufactured by a facility licensed to apply the API monogram.
    1.2. Hydrostatic testing, flattening tests, and the API monogram will not be required.
    1.3. Each length shall be marked "Caltrans Class R - API."

2. Manufactured in conformance with ASTM A 252, Grade 3, and the following:

    2.1. Arc welding processes shall conform to AWS D1.1.
    2.2. Groove welds using submerged arc welding from both sides without backgouging will require a procedure qualification record witnessed by the Engineer.
    2.3. Underfill will not be allowed.
    2.4. For electric resistance welded pipe, the outer diameter flash shall be removed to a maximum of 0.76 mm.
    2.5. The weld reinforcement shall not exceed 3 mm.
    2.6. The weighing of individual pipe will not be required as specified in ASTM A 252.
    2.7. Each length shall be marked "Caltrans Class R - A 252."

CONSTRUCTION

General

Steel pipe piling may be re-tapped to prevent pile set-up provided the field welded splice remains at least 1 meter above the work platform until that splice is approved in writing by the Engineer.

Welds used to attach handling devices to steel pipe piling shall be aligned parallel to the axis of the pile and shall conform to the requirements for field welding specified herein. Permanent bolted connections shall be corrosion resistant.

Field Welding

Field welding of steel pipe piling is defined as welding performed after the material has been transported from an audited facility.

Field welding shall conform to the requirements for circumferential welds as specified in "Materials" of this section and the following:

1. Welds made in the horizontal position where the longitudinal pipe axis is vertical shall be single-bevel groove welds.
2. The minimum preheat and interpass temperature for splice welding and for making repairs shall be 66°C, regardless of the pipe pile wall thickness or steel grade. In the event welding is disrupted, preheating to 66°C shall occur before welding is resumed.
3. Welds shall not be water quenched. Welds shall be allowed to cool unassisted to ambient temperature.

NONDESTRUCTIVE TESTING OF CLASS N STEEL PIPE PILING

Nondestructive testing (NDT) shall be performed on Class N steel pipe piling in conformance with these special provisions.

Backing ring welds shall be inspected by either RT or UT for a material thickness equal to or greater than 8 mm or by RT for a material thickness less than 8 mm. The acceptance criteria for RT or UT shall conform to AWS D1.1 for cyclically loaded nontubular connections for welds subject to tensile stress.

Nondestructive Testing of Welds made at a Permanent Fabrication Facility

For welding performed in conformance with API 5L:

1. The manufacturer shall submit to the Engineer a DVD or VHS videocassette recording of the actual product testing when radiological testing is utilized or the actual radiographic film when film radiography is utilized. This recording or film submittal shall be provided to the Engineer for review before shipment of the product from the manufacturing facility.
2. When film radiography is utilized to inspect pipe ends or repairs, the transmitted film density shall be 2.0 to 4.0 in the area of interest (weld, base metal, and IQI).
3. Repaired defects shall be re-inspected utilizing the NDT method that originally detected the defect, except that film radiography may be utilized for inspection of repairs when the defect was originally detected utilizing radiological testing.

For welding performed in conformance with AWS D1.1:

1. NDT shall be performed on 25 percent of each longitudinal, circumferential, or spiral weld by either radiographic testing (RT) or ultrasonic testing (UT).
2. The acceptance criteria for RT or UT shall conform to AWS D1.1 for cyclically loaded nontubular connections for welds subject to tensile stress.
3. If repairs are required in a portion of the tested weld:

    1.1. NDT shall be performed on the repaired portion.

    1.2. Additional NDT shall be performed on untested areas on each side of the repaired portion. The length of additional NDT on each side of the repaired portion shall equal 10 percent of the length of the pipe's outside circumference.

    1.3. After this additional 20 percent of NDT is performed, and if additional repairs are required, the total cumulative repair lengths from all NDT shall be determined and documented. If the cumulative weld repair length is determined to be equal to or more than 10 percent of the length of the pipe's outside circumference, then the entire weld shall receive NDT.

Nondestructive Testing of Field Welds

For field welding, including welds made on a portion of the steel pipe piling that has already been installed:

1. NDT shall be performed on 25 percent of the field weld by either RT or UT. Testing shall be done at locations selected by the Engineer. The Engineer may select several locations on a given splice for NDT. The cover pass shall be ground smooth at the locations to be tested.
2. Personnel performing UT for field welds will be required to verify their qualifications before performing NDT, by both written and practical exams. Information regarding the Department's Ultrasonic Testing (UT) Qualification Program is available at:

   http://www.dot.ca.gov/hq/esc/Translab/OSM/smbresources.htm

3. The acceptance criteria for RT or UT shall conform to AWS D1.1 for cyclically loaded nontubular connections for welds subject to tensile stress.
4. If repairs are required in a portion of the tested weld:

   4.1. NDT shall be performed on the repaired portion.
   4.2. Additional NDT shall be performed on untested areas on each side of the repaired portion. The length of additional NDT on each side of the repaired portion shall equal 10 percent of the length of the pipe's outside circumference.
   4.3. After this additional 20 percent of NDT is performed, and if additional repairs are required, the total cumulative repair lengths from all NDT shall be determined and documented. If the cumulative weld repair length is determined to be equal to or more than 10 percent of the length of the pipe's outside circumference, then the entire weld shall receive NDT.

10-1.69 POLYESTER CONCRETE OVERLAY

GENERAL

Summary

This work includes placing a polyester concrete overlay with a high molecular weight methacrylate (HMWM) resin prime coat to pavement surfaces as shown on the plans.

Submittals

Submit an overlay placement plan and a public safety plan under "Working Drawings," of these special provisions.
The overlay placement plan must include:

1. Schedule of overlay work and testing for each bridge
2. Description of equipment for applying HMWM resin
3. Description of equipment for measuring, mixing, placing, and finishing polyester concrete overlay
4. Method for isolating expansion joints
5. Cure time for polyester concrete
6. Description of equipment for applying sand
7. Storage and handling of HMWM resin and polyester concrete components
8. Disposal of excess HMWM resin, polyester concrete, and containers

The public safety plan must include details for:

1. A public notification letter with a list of delivery and posting addresses. The letter must state overlay work locations, dates, times, and what to expect. Deliver the letter to residences and businesses within 30 meters of overlay work and to local fire and police officials at least 7 days before starting work. Post the letter at the job site.
2. An airborne emissions monitoring plan prepared and executed by a certified industrial hygienist (CIH) certified in comprehensive practice by the American Board of Industrial Hygiene. The plan must have at least 4 monitoring points including the mixing point, application point, and point of nearest public contact. Monitor airborne emissions during overlay work and submit emissions monitoring results after completing the work.
3. An action plan for protection of the public when airborne emissions levels exceed permissible levels.
4. A copy of the CIH's certification.

Submit a material safety data sheet for each shipment of HMWM and polyester resin components before use.

Quality Control and Assurance

Submit samples of HMWM and polyester resins 15 days before use under Section 6-3, "Testing," of the Standard Specifications. Notify the Engineer 15 days before delivery of resin in containers over 209 liters to the job site.

Complete a trial overlay before starting work. Results from airborne emissions monitoring of the trial overlay must be submitted to the Engineer before starting production work.

The trial overlay must:

1. Be at least 3.6 meters wide by 1.8 meters long and the same thickness as the project overlay
2. Be constructed on a prepared concrete base
3. Be placed within the project limits at an approved location
4. Be constructed using the same equipment as the production work
5. Replicate field conditions for the production work
6. Determine the initial polyester concrete set time
7. Demonstrate suitability of the proposed means and methods
8. Demonstrate suitability of the airborne emissions monitoring plan
9. Be disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications

MATERIALS

Polyester concrete consists of polyester resin binder and aggregate.
Polyester resin binder must:

1. Be an unsaturated isophthalic polyester-styrene co-polymer.
2. Contain at least 1 percent by weight gamma-methacryloxypropyltrimethoxysilane, an organosilane ester silane coupler.
3. Be used with a promoter compatible with suitable methyl ethyl ketone peroxide and cumene hydroperoxide initiators.
4. Comply with the following:

Polyester Resin Binder

Property	Requirement	Test Method
Viscosity *	0.075 to 0.200 Pa·s (RVT, No. 1 Spindle, 20 RPM at 77°F)	ASTM D 2196
Specific Gravity *	1.05 to 1.10 at 25°C	ASTM D 1475
Elongation	35 percent, minimum Type I at 11.5 mm/min. Thickness = 6.5±1 mm	ASTM D 638
	Sample Conditioning: 18/25/50 + 5/70	ASTM D 618
Tensile Strength	17.5 MPa, minimum Type I at 11.5 mm/min. Thickness = 6.5±1 mm	ASTM D 638
	Sample Conditioning: 18/25/50 + 5/70	ASTM D 618
Styrene Content *	40 percent to 50 percent by weight	ASTM D 2369
PCC Saturated Surface-Dry Bond Strength	3.5 MPa, minimum, at 24 hours and 21° ± 1°C	California Test 551
Static Volatile Emission *	60 gram per square meter, loss, maximum	SCAQMD Method 309-91

*Test must be performed before adding initiator.

Aggregate for polyester concrete must:

1. Comply with Section 90-2.02, "Aggregates," of the Standard Specifications
2. Have at most 45 percent crushed particles retained on the 2.36-mm sieve when tested under California Test 205
3. Have fine aggregate consisting of natural sand
4. Have a weighted average aggregate absorption of at most 1 percent when tested under California Tests 206 and 207
5. At the time of mixing with resin, have a moisture content of at most one half of the weighted average aggregate absorption when tested under California Test 226
6. Comply with one of the following aggregate gradings:

Combined Aggregate Grading

Sieve Size	Percentage Passing	
	3/8 inch Maximum	No. 4 Maximum
12.5-mm	100	100
9.5-mm	83 - 100	100
4.75-mm	65 - 82	62 - 85
2.36-mm	45 - 64	45 - 67
1.18-mm	27 - 48	29 - 50
600-µm	12 - 30	16 - 36
300-µm	6 - 17	5 - 20
150-µm	0 - 7	0 - 7
75-µm	0 - 3	0 - 3

HMWM resin prime coat consists of a resin, promoter, and initiator. HMWM resin must:

1. Be low odor and wax-free
2. Comply with the following:

Methacrylate Resin

Property	Requirement	Test Method
Volatile Content *	30 percent, maximum	ASTM D 2369
Viscosity *	0.025 Pa·s, maximum, (Brookfield RVT with UL adaptor, 50 RPM at 25°C)	ASTM D 2196
Specific Gravity *	0.90 minimum, at 25°C	ASTM D 1475
Flash Point *	180°F, minimum	ASTM D 3278
Vapor Pressure *	1.0 mm Hg, maximum, at 25°C	ASTM D 323
PCC Saturated Surface-Dry Bond Strength	3.5 MPa, minimum at 24 hours and 21 ± 1°C	California Test 551

* Test must be performed before adding initiator.

Sand for abrasive sand finish must:

1. Be commercial quality blast sand
2. Have at least 95 percent pass the 2.36-mm sieve and at least 95 percent retained on the 0.85-mm sieve when tested under California Test 205
3. Have an average absorption of at most 1 percent when tested under California Test 207

CONSTRUCTION

Use a continuous mixer to mix polyester concrete. The continuous mixer must:

1. Employ an auger screw/chute device.
2. Be equipped with an automatic metering device that measures and records aggregate and resin volumes. Record volumes at least every 5 minutes, including time and date. Submit recorded volumes at the end of the work shift.
3. Have a visible readout gage that displays volumes of aggregate and resin being recorded.
4. Be certified under California Test 109 before use.
5. Produce a satisfactory mix consistently during a demonstration.

Polyester concrete may be mixed in mechanical mixers of at most 0.25-cubic meter capacity.
Finishing equipment for polyester concrete must:

1. Have grade control capabilities
2. Be used to consolidate the polyester concrete

The Engineer will provide final grade and cross slope before the start of overlay work.

Prepare the pavement under "Prepare Concrete Pavement Surface," of these special provisions.

The pavement must be dry before placing the HMWM prime coat. The concrete surface must be at least 10 degrees C and at most 38 degrees C. Relative humidity must be at most 85 percent.

Sweep the pavement. Blow the pavement clean with compressed air.

Thoroughly mix all components of HMWM resin prime coat. Apply the HMWM resin to the pavement surface:

1. Within 5 minutes of mixing
2. At a rate of approximately 2.2 square meters per liter
3. Uniformly and spread to completely cover surfaces to be overlaid

Place the HMWM prime coat on magnesium phosphate concrete no sooner than 72 hours after final set or on modified high alumina based concrete no sooner than 30 minutes after final set.

Initiate the polyester resin binder and blend completely. Add aggregate and mix for at least 2 minutes.

Place the polyester concrete:

1. Immediately after applying the HMWM prime coat
2. Before gelling
3. Within 15 minutes of adding initiator

The resin binder must weigh approximately 12 percent of the weight of the aggregate. The Engineer will determine the exact percentage. Polyester concrete must have an initial set time of at least 30 minutes and at most 120 minutes when tested using an initial-setting time Gillmore needle under ASTM C 266.

Consolidate and finish the overlay to the required grade and cross section using finishing equipment. Polyester concrete must be consolidated to a relative compaction of at least 97 percent when tested under California Test 552.

Apply a sand finish of at least 0.4-kg per square meter before gelling occurs.

Protect the overlay from moisture for at least 4 hours after finishing. Allow traffic or equipment on the overlay no sooner than 4 hours after final finishing.

Completed polyester concrete surfaces must comply with Section 51-1.17, "Finishing Bridge Decks," of the Standard Specifications and these special provisions.

Polyester concrete surfaces shall be textured with a spring steel tine device which will produce grooves parallel with centerline. The spring steel tine device shall be operated within 130 mm, but not closer than 75 mm, of pavement edges.

Spring steel tines of the texturing device shall be rectangular in cross-section, 2 to 4 mm wide, on 19 mm to 24 mm centers, and of sufficient length, thickness and resilience to form grooves approximately 5 mm deep in the fresh concrete surface. Final texture shall be uniform in appearance with substantially all of the grooves having a depth between 2 mm and 8 mm.

Surface smoothness must vary at most 6 mm from the lower edge of a 3.6 meter ± 0.06 meter long straightedge placed in any direction.

Taper polyester concrete overlay edges if the overlay is not completed within the allowable lane closure time and is more than 12 mm higher in elevation than the adjacent pavement. Taper edges transverse to the direction of traffic at a 20:1 (horizontal:vertical) slope. Taper edges longitudinal to the direction of traffic at a 4:1 (horizontal:vertical) slope. Tapers may remain and be overlaid with polyester concrete overlay.

MEASUREMENT AND PAYMENT

Furnish polyester concrete overlay will be measured and paid for by the cubic meter. The volume to be paid for will be determined based on the quantity of resin binder used, the percent by weight of resin binder in the polyester concrete, and a unit weight of 2160 kig per cubic meter. The payment quantity shall be the calculated quantity of polyester concrete overlay used in the work, except material used in trial overlays and wasted or unused material. When the plans show that unsound concrete patching material is polyester overlay, the payment quantity will include the patches.

Place polyester concrete overlay will be measured and paid for by the square meter. The area to be paid for will be based on the plan dimensions.

The contract price paid per cubic meter for furnish polyester concrete overlay shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing polyester concrete, including furnishing HMWM resin prime coat and materials for trial overlays, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as ordered by the Engineer.

The contract price paid per square meter for place polyester concrete overlay shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the polyester concrete overlay, complete in place, including application of HMWM prime coat and constructing and disposing of trial overlays and base, but excluding airborne emissions monitoring work done by the certified industrial hygienist and notification of the public, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as ordered by the Engineer.

Full compensation for producing surface texture shall be considered as included in the contract price paid per square meter for place polyester concrete overlay and no additional compensation will be allowed therefor.

Full compensation for execution of the public safety plan, but excluding the airborne emissions monitoring work done by the certified industrial hygienist and notification of the public, shall be considered as included in the contract prices paid for the items of work involving polyester concrete overlay, and no additional compensation will be allowed therefor.

For polyester concrete overlay, airborne emissions monitoring with reporting done by the certified industrial hygienist and notification of the public will be paid for as extra work as provided in Section 4-l.03D, "Extra Work," of the Standard Specifications.

10-1.70 POLYESTER CONCRETE OVERLAY (19 MM, 50 MM)

GENERAL

Summary

This work includes placing a polyester concrete overlay with a high molecular weight methacrylate (HMWM) resin prime coat to bridge decks on portions of the Self Anchored Suspension (SAS) structures and on a portion of the existing viaduct replacement structure adjacent to the westbound transition structure as shown on the plans.

Submittals

Submit an overlay placement plan under "Working Drawings" of these special provisions.
The overlay placement plan must include:

1. Schedule of overlay work and testing for each bridge
2. Description of equipment for applying HMWM resin
3. Description of equipment for measuring, mixing, placing, and finishing polyester concrete overlay
4. Method for isolating seismic joints
5. Cure time for polyester concrete
6. Description of equipment for applying sand
7. Storage and handling of HMWM resin and polyester concrete components
8. Disposal of excess HMWM resin, polyester concrete, and containers

Submit a material safety data sheet for each shipment of HMWM and polyester resin components before use.

Quality Control and Assurance

Submit samples of HMWM and polyester resins 15 days before use under Section 6-3, "Testing," of the Standard Specifications. Notify the Engineer 15 days before delivery of resin in containers over 209 liters to the job site.

Complete a trial overlay before starting work. Results from airborne emissions monitoring of the trial overlay must be submitted to the Engineer before starting production work.

The trial overlay must:

1. Be at least 3.6 meters wide by 1.8 meters long and the same thickness as the project overlay
2. Be constructed on a prepared concrete base
3. Be placed within the project limits at an approved location
4. Be constructed using the same equipment as the production work
5. Replicate field conditions for the production work
6. Determine the initial polyester concrete set time
7. Demonstrate suitability of the proposed means and methods
8. Demonstrate suitability of the airborne emissions monitoring plan
9. Be disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications

MATERIALS

Polyester concrete consists of polyester resin binder and aggregate.
Polyester resin binder must:

1. Be an unsaturated isophthalic polyester-styrene co-polymer.
2. Contain at least 1 percent by weight gamma-methacryloxypropyltrimethoxysilane, an organosilane ester silane coupler.
3. Be used with a promoter compatible with suitable methyl ethyl ketone peroxide and cumene hydroperoxide initiators.
4. Comply with the following:

Polyester Resin Binder

Property	Requirement	Test Method
Viscosity *	0.075 to 0.200 Pa·s (RVT, No. 1 Spindle, 20 RPM at 77°F)	ASTM D 2196
Specific Gravity *	1.05 to 1.10 at 25°C	ASTM D 1475
Elongation	35 percent, minimum Type I at 11.5 mm/min. Thickness = 6.5±1 mm	ASTM D 638
	Sample Conditioning: 18/25/50 + 5/70	ASTM D 618
Tensile Strength	17.5 MPa, minimum Type I at 11.5 mm/min. Thickness = 6.5±1 mm	ASTM D 638
	Sample Conditioning: 18/25/50 + 5/70	ASTM D 618
Styrene Content *	40 percent to 50 percent by weight	ASTM D 2369
PCC Saturated Surface-Dry Bond Strength	3.5 MPa, minimum, at 24 hours and 21° ± 1°C	California Test 551
Static Volatile Emission *	60 gram per square meter, loss, maximum	SCAQMD Method 309-91

*Test must be performed before adding initiator.

Aggregate for polyester concrete must:

1. Comply with Section 90-2.02, "Aggregates," of the Standard Specifications
2. Have at most 45 percent crushed particles retained on the 2.36-mm sieve when tested under California Test 205
3. Have fine aggregate consisting of natural sand
4. Have a weighted average aggregate absorption of at most 1 percent when tested under California Tests 206 and 207
5. At the time of mixing with resin, have a moisture content of at most one half of the weighted average aggregate absorption when tested under California Test 226
6. Comply with one of the following aggregate gradings:

Combined Aggregate Grading

Sieve Size	Percentage Passing	
	3/8 inch Maximum	No. 4 Maximum
12.5-mm	100	100
9.5-mm	83 - 100	100
4.75-mm	65 - 82	62 - 85
2.36-mm	45 - 64	45 - 67
1.18-mm	27 - 48	29 - 50
600-µm	12 - 30	16 - 36
300-µm	6 - 17	5 - 20
150-µm	0 - 7	0 - 7
75-µm	0 - 3	0 - 3

HMWM resin prime coat consists of a resin, promoter, and initiator. HMWM resin must:

1. Be low odor and wax-free
2. Comply with the following:

Methacrylate Resin

Property	Requirement	Test Method
Volatile Content *	30 percent, maximum	ASTM D 2369
Viscosity *	0.025 Pa·s, maximum, (Brookfield RVT with UL adaptor, 50 RPM at 25°C)	ASTM D 2196
Specific Gravity *	0.90 minimum, at 25°C	ASTM D 1475
Flash Point *	180°F, minimum	ASTM D 3278
Vapor Pressure *	1.0 mm Hg, maximum, at 25°C	ASTM D 323
PCC Saturated Surface-Dry Bond Strength	3.5 MPa, minimum at 24 hours and 21 ± 1°C	California Test 551

* Test must be performed before adding initiator.

Sand for abrasive sand finish must:

1. Be commercial quality blast sand
2. Have at least 95 percent pass the 2.36-mm sieve and at least 95 percent retained on the 0.85-mm sieve when tested under California Test 205
3. Have an average absorption of at most 1 percent when tested under California Test 207

CONSTRUCTION

Use a continuous mixer to mix polyester concrete. The continuous mixer must:

1. Employ an auger screw/chute device.
2. Be equipped with an automatic metering device that measures and records aggregate and resin volumes. Record volumes at least every 5 minutes, including time and date. Submit recorded volumes at the end of the work shift.
3. Have a visible readout gage that displays volumes of aggregate and resin being recorded.
4. Be certified under California Test 109 before use.
5. Produce a satisfactory mix consistently during a demonstration.

Finishing equipment for polyester concrete must:

1. Have grade control capabilities
2. Be used to consolidate the polyester concrete

The Engineer will provide final grade and cross slope before the start of overlay work.

New concrete deck surfaces must comply with Section 51-1.17, "Finishing Bridge Decks," of the Standard Specifications before starting overlay work.

Prepare the deck under "Prepare Concrete Bridge Deck Surface," of these special provisions.

The deck must be dry before placing the HMWM prime coat. The concrete surface must be at least 10 degrees C and at most 38 degrees C. Relative humidity must be at most 85 percent.

Sweep the deck. Blow the deck clean with compressed air.

Thoroughly mix all components of HMWM resin prime coat. Apply the HMWM resin to the deck surface:

1. Within 5 minutes of mixing
2. At a rate of approximately 2.2 square meters per liter
3. Uniformly and spread to completely cover surfaces to be overlaid

Place the HMWM prime coat on magnesium phosphate concrete no sooner than 72 hours after final set or on modified high alumina based concrete no sooner than 30 minutes after final set.

Place the polyester concrete:

1. Immediately after applying the HMWM prime coat
2. Before gelling
3. Within 15 minutes of adding initiator

The resin binder must weigh approximately 12 percent of the weight of the aggregate. The Engineer will determine the exact percentage. Polyester concrete must have an initial set time of at least 30 minutes and at most 120 minutes when tested using an initial-setting time Gillmore needle under ASTM C 266.

Consolidate and finish the overlay to the required grade and cross section using finishing equipment. Polyester concrete must be consolidated to a relative compaction of at least 97 percent when tested under California Test 552.

Apply a sand finish of at least 0.4-kg per square meter before gelling occurs.

Protect the overlay from moisture for at least 4 hours after finishing. Allow traffic or equipment on the overlay no sooner than 4 hours after final finishing.

Completed polyester concrete deck surfaces must comply with Section 51-1.17, "Finishing Bridge Decks," of the Standard Specifications and these special provisions.

Polyester concrete deck surfaces shall be textured with a spring steel tine device which will produce grooves parallel with centerline. The spring steel tine device shall be operated within 130 mm, but not closer than 75 mm, of pavement edges.

Spring steel tines of the texturing device shall be rectangular in cross-section, 2 to 4 mm wide, on 19 mm to 24 mm centers, and of sufficient length, thickness and resilience to form grooves approximately 5 mm deep in the fresh concrete surface. Final texture shall be uniform in appearance with substantially all of the grooves having a depth between 2 mm and 8 mm.

Taper polyester concrete overlay edges if the overlay is not completed within the allowable lane closure time and is more than 12 mm higher in elevation than the adjacent pavement. Taper edges transverse to the direction of traffic at a 20:1 (horizontal:vertical) slope. Taper edges longitudinal to the direction of traffic at a 4:1 (horizontal:vertical) slope. Tapers may remain and be overlaid with polyester concrete overlay.

A tapered extension of asphalt concrete shall be constructed in conformance with "Asphalt Concrete" of these special provisions at the western edge of the polyester concrete overlay at the existing viaduct replacement structure adjacent to the westbound transition structure. The extension shall be tapered at a 1:30 (vertical:horizontal) slope.

MEASUREMENT AND PAYMENT

Furnish polyester concrete overlays of the thicknesses listed in the Engineer's Estimate, will be measured and paid for by the cubic meter. The volume to be paid for will be determined based on the quantity of resin binder used, the percent by weight of resin binder in the polyester concrete, and a unit weight of 2160 kig per cubic meter. The payment quantity shall be the calculated quantity of polyester concrete overlay used in the work, except material used in trial overlays and wasted or unused material. When the plans show that unsound concrete patching material is polyester overlay, the payment quantity will include the patches.

Place polyester concrete overlays of the thicknesses listed in the Engineer's Estimate will be measured and paid for by the square meter. The area to be paid for will be based on the plan dimensions.

The contract price paid per cubic meter for furnish polyester concrete overlays of the thicknesses listed in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing polyester concrete, including furnishing HMWM resin prime coat and materials for trial overlays, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as ordered by the Engineer.

The contract price paid per square meter for place polyester concrete overlays of the thicknesses listed in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the polyester concrete overlay, complete in place, including application of HMWM prime coat and constructing and disposing of trial overlays and base, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as ordered by the Engineer.

Full compensation for producing deck surface texture and asphalt concrete tapered extension shall be considered as included in the contract prices paid for the items of work involving polyester concrete overlay and no additional compensation will be allowed therefor.

10-1.77 LIGHT POLE FOUNDATION

This work shall consist of constructing light pole foundations for light poles and fixtures on YBI transition structures constructed as part of this contract and on portions of existing original viaduct structures as shown on the plans and as specified in these special provisions.

Concrete and reinforcement for light pole foundations shall conform to "Concrete Structures" and "Reinforcement," of these special provisions.

Anchor and transfer plate for light pole foundations shall conform to "Steel Structures" of these special provisions.

Anchor bolts not designated on the plans as high strength (HS) or stainless steel shall conform to the requirements in ASTM Designation: F 1554, Grade 36. High strength anchor bolts shall conform to the requirements in ASTM Designation: F 1554, Grade 105

Anchor bolts shall be placed in proper position and to proper height and alignment, and shall be held in place by means of a temporary steel template.

One double heavy hex nut, one leveling nut, and 2 washers shall be provided for the upper threaded portion of each anchor bolt. The Contractor shall provide temporary protection, as determined by the Engineer, of exposed bolt threads for each bolt.

All ferrous metal parts shall be galvanized and shall not be painted.

Coring concrete shall consist of coring holes through reinforced concrete bridge members as shown on the plans and in conformance with these special provisions.

The holes shall be cored by methods that will not shatter or damage the concrete adjacent to the holes.

Water for core drilling operations shall be from the local domestic water supply or shall not contain more than 1000 parts per million of chlorides as Cl, nor more than 1300 parts per million of sulfates as SO_4, nor shall the water contain any impurities in a sufficient amount that would cause discoloration of the concrete or produce etching of the surface.

Water from core drilling operations shall not be permitted to fall on public traffic, to flow across shoulders or lanes occupied by public traffic, or to flow into gutters or other drainage facilities.

Full compensation for light pole foundation, including furnishing and placing concrete, reinforcement, steel plate, anchor bolts, leveling nuts, double heavy hex nuts, washers and temporary template, and coring and pressure grouting through existing original viaduct structure, shall be considered as included in the contract price paid per cubic meter for structural concrete (bridge) and no separate payment will be made therefor.

10-3.275 REMOVING, REINSTALLING OR SALVAGING ELECTRICAL EQUIPMENT

Existing Type 21 light standard at the viaduct replacement structure, where shown on the plans to be removed, shall be removed, including cutting the existing 25-mm anchor bolts for the modified existing light pole foundation, and disposed of in conformance with the provisions in Section 15, "Existing Highway Facilities" of the Standard specifications and these special provisions.

Existing Type 21 light standards, at the original viaduct structure, where shown on the plans to be removed, shall be removed and disposed of in conformance with the provisions in Section 15, "Existing Highway Facilities" of the Standard specifications and these special provisions.

Install the lighting system at the modified existing light pole foundation of the viaduct replacement structure and at the original viaduct structure within 4 working days, after the removal of the existing Type 21 light standards.

Full compensation for removing and disposing of existing Type 21 light standards, and cutting existing 25-mm anchor bolts for the modified existing light pole foundations at the viaduct replacement structure shall be considered as included in the contract lump sum price paid for install light pole and fixture and no separate payment will be made therefor.

Full compensation for removing and disposing of existing Type 21 light standards at the original viaduct structure shall be considered as included in the contract lump sum price paid for install light pole and fixture and no separate payment will be made therefor.

BID ITEM LIST
04-0120S4

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	014828	PHOTO SURVEY OF EXISTING FACILITY	LS	LUMP SUM	LUMP SUM	
2	070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM	LUMP SUM	
3	014829	DOCUMENT MANAGEMENT SYSTEM	LS	LUMP SUM	LUMP SUM	
4	014830	ELECTRONIC MOBILE DAILY DIARY SYSTEM DATA DELIVERY	LS	LUMP SUM	LUMP SUM	
5	014831	WORKING DRAWING SUBMITTAL	LS	LUMP SUM	LUMP SUM	
6	070018	TIME-RELATED OVERHEAD	WDAY	1200	LUMP SUM	
7	071325	TEMPORARY FENCE (TYPE ESA)	M	530		
8	074016	CONSTRUCTION SITE MANAGEMENT	LS	LUMP SUM	LUMP SUM	
9 (S)	074018	HEALTH AND SAFETY PLAN	LS	LUMP SUM	LUMP SUM	
10 (S)	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
11	074029	TEMPORARY SILT FENCE	M	410		
12	074031	TEMPORARY GRAVEL BAG BERM	M	200		
13	074033	TEMPORARY CONSTRUCTION ENTRANCE	EA	5		
14	074034	TEMPORARY COVER	M2	1130		
15	074035	TEMPORARY CHECK DAM	M	39		
16 (S)	074037	MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	4		
17	074038	TEMPORARY DRAINAGE INLET PROTECTION	EA	13		
18 (S)	074040	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	M2	4500		
19	074041	STREET SWEEPING	LS	LUMP SUM	LUMP SUM	
20	074043	TEMPORARY CONCRETE WASHOUT BIN	EA	200		

REVISED PER ADDENDUM NO. 6 DATED AUGUST 27, 2009

BID ITEM LIST
04-0120S4

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
181	014872	150 MM COMPRESSED AIR PIPE	M	290		
182 (S-F)	014873	SERVICE PLATFORM	EA	6		
183		BLANK				
184	015897	FURNISH POLYESTER CONCRETE OVERLAY (19mm)	M3	5		
185	015898	PLACE POLYESTER CONCRETE OVERLAY (19mm)	M2	257		
186	BLANK					
187	153235	CLEAN BRIDGE DECK	MS	22,800		
188	017257	VIBRATION MONITORING	LS	LUMP SUM		
189	540102	TREAT BRIDGE DECK	M2	22,800		
190	540108	FURNISH BRIDGE DECK TREATMENT MATERIAL	L	10,400		
191		BLANK				
192	070003A	WORKING DRAWING CAMPUS	LS	LUMP SUM		
193	128661A	TEMPORARY SHUTTLE VAN SERVICE	LS	LUMP SUM		
194	159111A	MODIFY CONCRETE BARRIER TYPE 732 (MOD)	M	67		
195	999990	MOBILIZATION	LS	LUMP SUM		

TOTAL BID: _____

REVISED/ADDED PER ADDENDUM NO. 6 DATED AUGUST 27, 2009