STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor
DEPARTMENT OF TRANSPORTATION
ESC/OE MS #43
1727 30TH Street, 2ND Floor
SACRAMENTO, CA 945816

May 16, 2000

04-CC,Mrn-580-6.1/7.8,0.0/2.6
04-0438U4

Addendum No. 7

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in CONTRA COSTA AND MARIN COUNTIES IN AND NEAR RICHMOND AND SAN RAFAEL FROM 1.7 MILES EAST TO 2.6 MILES WEST OF CONTRA COSTA/MARIN COUNTY LINE.

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.

The bid opening date for this project is still postponed until sometime late Spring 2000 by Addendum No. 5 dated February 8, 2000.

This addendum is being issued to revise the Project Plans, the Notice to Contractors and Special Provisions, and the Proposal and Contract.

Project Plan Sheets 140, 583, 587, 589, 777, 780, 781, and 875 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 777A, 777B, 777C and 777D are added. These sheets are to follow Project Plan Sheet 777. Half-sized copies of the added sheets are attached for addition to the project plans.

In the Special Provisions, Section 5-1.41, "DRAWINGS," is revised as attached.

In the Special Provisions, Section 5-1.44, "CONTAMINATED AND HAZARDOUS MATERIAL, GENERAL," is replaced with Section 5-1.44, "HAZARDOUS AND NON-HAZARDOUS MATERIAL, GENERAL," and is attached.

In the Special Provisions, Section 5-1.45, "ESTABLISH MARINE ACCESS," is revised as attached.

In the Special Provisions, Section 8-2.01, "PORTLAND CEMENT CONCRETE," the fourth through the eleventh paragraphs which read as follows are deleted:

> "Portland cement concrete that is produced using equipment where the cement and mineral admixture are proportioned in the same weigh hopper shall be sampled and tested by the Contractor, in the presence of the Engineer, for mix uniformity in conformance with the requirements of ASTM Designation: C˚94 Section 11, "Mixing and Delivery," and "Annex A1." The testing shall be performed on concrete produced using an approved project mix design and may be done at the project concrete placement site.
>
> The batch plant producing the portland cement concrete for the project shall have met the requirements of California Test˚109 within one year prior to producing concrete for the project. The delivery weight certificate accompanying each load to be tested shall meet the requirements of these special provisions and shall include the specific gravity of the coarse aggregate used in the load.

Sampling for mix uniformity tests shall be performed the first time portland cement concrete, of sufficient volume to perform these tests, is placed on the project. All test results shall be presented to the Engineer no later than 10 days after completion of sampling.

Test results from mixer uniformity testing will not be used for contract compliance, acceptance, or payment.

Prior to placing any concrete on the project, the Contractor shall supply a list of all portland cement concrete mixers to be used. When truck mixers are to be used, the list shall contain the truck identification number, mixer brand, mixer age and mixer condition.

When truck mixers are used, the mix uniformity testing shall be performed on 5 truck mixers per project. The truck mixers selected for testing shall be representative of the different mixer brands, ages, and conditions of the mixers on the list. Mixer selection shall be completed before mix uniformity testing is started. Sampling for the mix uniformity tests from each of the 5 mixers shall be completed within the same work shift, unless otherwise approved in writing by the Engineer. The Contractor shall notify the Engineer, in writing, a minimum of 24 hours prior to performing the sampling for these tests. The Contractor shall provide an adequate number of testers to successfully perform the testing with a minimum amount of impact to the Contractor's operations. All testers used shall meet the requirements of the Department s Quality Assurance Program. The Quality Assurance Program Manual is available from the Department's Central Publications Unit, 1900 Royal Oaks Drive, Sacramento, CA 95815-3800 or orders may be placed by phone at (916) 445-3520, by FAX at (916) 324-8997, or on the internet at "http://www.ns.net/caltrans/publicat.htm."

When concrete is completely mixed in stationary mixers, each mixer used for the project shall be tested one time.

Full compensation for the testing of mix uniformity as specified herein will be considered as included in the contract price paid for the concrete work involved and no additional compensation will be allowed therefor."

In the Special Provisions, Section 10-1.08, "TEMPORARY STOCKPILE COVER," the second paragraph is revised to read as follows:

"The temporary stockpile cover shall not be used for stockpiles containing hazardous material. Attention is directed to Sections, "Hazardous and Non-Hazardous Material, General," and "Earthwork," elsewhere in these special provisions."

In the Special Provisions, Section 10-1.10, "NON-STORM WATER DISCHARGES," in "Monitoring," of subsection "EFFLUENT TREATMENT SYSTEM," the ninth and tenth sentences are revised as follows:

"The detection limits for total metals and total petroleum hydrocarbons shall be consistent with those used for the site investigations described in "Hazardous and Non-Hazardous Material, General", elsewhere in these special provisions. Furthermore, the quality assurance and quality control measures employed by the laboratory and personnel conducting sampling shall be consistent with those used for the site investigation described in "Hazardous and Non-Hazardous Material, General," elsewhere in these special provisions."

In the Special Provisions, Section 10-1.13, "PROGRESS SCHEDULE (CRITICAL PATH)," is revised as attached.

In the Special Provisions, Section 10-1A.07, "TEST BORINGS," the fifth paragraph is revised as follows:

"The Contractor shall complete one test boring at each pier scheduled for the addition of micropiles as shown on the plans. Test borings for micropiles shall be located within 7 feet of the existing foundation bells or the existing diaphragm. Test borings shall be located to avoid interference with existing H-piles. Attention is directed to the contract plans for the location of the existing battered H-piles."

In the Special Provisions, Section 10-1A.08, "PILING," subsection, "STEEL PIPE PILING," the following paragraph is added after the eighth paragraph:

"Permanent steel casing for micropiles may be thread connected. The minimum wall thickness for threaded pipe shall be one-half inch. The Contractor shall increase wall thickness as needed to facilitate selected construction method and actual site conditions. The A252 Grade 3 steel specified for permanent steel casing for micropiles shall be seamless or electric resistance welded with straight longitudinal seams when used with threaded connections. Grades of steel that exceeds the minimum requirements for A252 Grade 3 steel may also be used when approved in writing by the Engineer."

In the Special Provisions, Section 10-1A.08, "PILING," subsection, "SLURRY," and Section 10-1B.05, "PILING," subsection, "SLURRY," the table listing the products and manufacturers of synthetic slurries is revised as follows:

PRODUCT	MANUFACTURER
SlurryPro CDP	KB Technologies Ltd. Suite 216 735 Broad Street Chattanooga, TN 37402 (800) 525-5237
Super Mud	PDS Company c/o Champion Equipment Company 8140 East Rosecrans Ave. Paramount, CA 90723 (562) 634-8180
Shore Pac GCV	CETCO Drilling Products Group 1350 West Shure Drive Arlington Heights, IL 60004 (847) 392-5800

In the Special Provisions, Section 10-1A.08, "PILING," subsection "MICROPILING," under "Working Drawings," the following requirement is added to the third paragraph:

"13. Details of equipment and operation for installing and connecting permanent steel casing using threaded connections."

In the Special Provisions, Section 10-1A.24, "STEEL STRUCTURES," subsection, "BEARINGS AND ANCHORAGES," the following product is added to the third paragraph:

PRODUCT	MANUFACTURER
Belleville spring washer FL-24206 Or equal	Fan Disc Corporation 8127 Clybourn Avenue Sun Valley, CA 91352 (818) 767-1886

In the Special Provisions, Section 10-1A.26, "REINFORCED, RECYCLED PLASTIC AND COMPOSITE PLASTIC LUMBER," the third paragraph is revised to read as follows:

"The cross-sectional dimensions of the lumber shall not vary more than –1/2-inch nor shall the length vary more than –1 inch from the dimensions shown on the plans."

In the Special Provisions, Section 10-1B.04, "TEST BORINGS," the sixth paragraph is revised as follows:

"The Contractor shall complete one test boring at each pier 62 through 77, and 71R through 77R, scheduled for the addition of micropiles as shown on the plans. Test borings for micropiles shall be located within 8 feet from edge of the existing footing but no greater than 5 feet outside the edge of deck. Test borings shall be located to avoid interference with existing H-piles. Attention is directed to the contract plans for the location of the existing battered H-piles."

In the following sections of the Special Provisions, Sections, 10-1A.08, "PILING," 10-1A.10, "PRESTRESSING CONCRETE," 10-1A.25, "PTFE BEARING ASSEMBLY," 10-1A.26, "REINFORCED, RECYCLED PLASTIC ANDCOMPOSITE PLASTIC LUMBER," 10-1B.04, "TEST BORINGS," 10-1B.05, "PILING," 10-1B.06, "PRESTRESSING CONCRETE," 10-1B.21, "JOINT SEAL ASSEMBLIES (MAXIMUM MOVEMENT RATING, 4 INCHES)," 10-1B.22, "SEISMIC ISOLATION JOINT AND EXPANSION JOINT ASSEMBLIES," and Section 12. "BUILDING WORK," the location where working drawings and submittals will be delivered to is changed to:

"Office of the Resident Engineer, Department of Transportation, 995 Western Drive, Richmond, CA 94801."

In the Proposal and Contract, the Engineer s Estimate Items 190 and 203 are revised as attached.

To Proposal and Contract book holders:

REPLACE PAGES 12 AND 13 OF THE ENGINEER'S ESTIMATE IN THE PROPOSAL WITH THE ATTACHED REVISED PAGES 12 AND 13 OF THE ENGINEER'S ESTIMATE. THE REVISED ENGINEER'S ESTIMATE IS TO BE USED IN THE BID.

INDICATE RECEIPT OF THIS ADDENDUM BY FILLING IN THE NUMBER OF THIS ADDENDUM IN THE SPACE PROVIDED ON THE SIGNATURE PAGE OF THE PROPOSAL.

SUBMIT BIDS IN THE PROPOSAL AND CONTRACT 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.

04-CC,Mrn-580-6.1/7.8,0.0/2.6
04-0438U4

This office is sending this addendum by UPS overnight mail to Proposal and Contract book holders to ensure that each receives it.

If you are not a Proposal and Contract 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

NICK YAMBAO, Chief
Office of Plans, Specifications &
Estimates
Division of Office Engineer

Attachments

5-1.41°°DRAWINGS

Attention is directed to Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and these special provisions.

When working drawings are required by the Standard Specifications or these special provisions, the drawings shall be submitted in accordance with the provisions in Section 55-1.02, "Drawings," of the Standard Specifications and the following:

1. Working drawings shall be submitted to the Engineer at Office of the Resident Engineer, Department of Transportation, 995 Western Drive, Richmond, CA 94801.
2. Working drawings shall not exceed 22" x 34" in size.
3. Microfilms are required of all approved shop drawings and shall be only a 24x reduction.
4. All working drawing submittals, including re-submittals, shall include electronic versions of the working drawings in Microstation 95 or a more current design file format. All other information accompanying the working drawings shall be submitted in Adobe Acrobat Version 3.0 or later file format. This information shall be submitted on a compact disk media compatible with the Microsoft Windows Operating System. The diskette shall include both as a file and cover jacket a list of the files on the disk and for what they are being submitted.

Attention is directed to the Engineer s review time of working drawings, as specified elsewhere in these special provisions. The time to be provided for the Engineer s review of Structural Steel working drawings shall be 6 weeks. The time to be provided for the Engineer s review of all other working drawings shall be 4 weeks unless otherwise specified in the Standard Specifications or these special provisions.

Said Engineer s review time is for the initial working drawing submittal. The Contractor shall allow additional time as specified herein for the Engineer s review of working drawing re-submittal and simultaneous submittals.

The Contractor shall incorporate two activities for each submittal within the CPM schedule - the initial working drawing submittal preparation, and the Engineer s review. Re-submittals shall be added to the schedule as they occur and shall include the two activities required above. Each path of submittals shall have a successor relationship to a procurement activity, a fabrication activity, and/or a construction activity. Each submittal activity should be coded with the corresponding Alpha Numeric Work Breakdown Structure Code identifying the location where the work is to be performed. An additional activity code field shall be added to identify the approximate number of sheets to be included in each submittal.

The Contractor shall allow the review time specified herein, after complete working drawings and all supporting data are submitted to the Engineer. Working drawings shall show complete details of the method and materials the Contractor proposes to use in the work. Attention is directed to the section entitled "Existing Highway Facilities," elsewhere in these special provisions for the Contractor’s certification, which shall indicate that field dimensions have been verified for a working drawing submittal. Working drawings not including the Contractor’s certification will be returned by the Engineer as incomplete.

The review time for a set of working drawings will be considered as starting when the Engineer has received the complete set of working drawings and all supporting data.

If at any time during the review process the working drawings are determined to be incomplete or if the working drawings are stamped “Return for Corrections”, then the drawings will be rejected and returned to the Contractor for correction. The review time on a set of returned drawings will be considered stopped on the date the drawings are date stamped by the Engineer for return. The Contractor shall submit a notice of re-submittal to the Engineer within 7 days after receipt of the rejected set. The notice shall contain the submittal number, revision number, and date the revised set will be returned for review. The revised set shall contain the same work as was originally submitted.

After a revised set of drawings has been received by the Engineer, the new review time for that set of revised drawings will be the same as the original review time.

The review time for a set of working drawings will be considered as completed on the date the working drawings have been reviewed, approved, and mailed to the Contractor with a date stamp by the Engineer.

After review and approval of the working drawings, between 6 and 12 sets, or otherwise specified elsewhere in these special provisions, as requested by the Engineer, and in addition to the number of sets required by the Contractor, shall be submitted to the Engineer for final approval. These sets will be the only sets stamped "Approved" and will be distributed for use during construction.

Working drawings will be required for, but shall not be limited to the following items:

Bridge removal plans
Protection shields plans
Debris containment and collection program
Temporary bracing systems
Fendering
Temporary supports
Prestressing existing steel truss members for temporary supports
Temporary structure
Falsework
Steel railing reconstruction
Shoring systems and cofferdam systems
Temporary trestles
Dredging plans Excavation, pile and cofferdam discharge plans
Test borings
Test boring and drilling fluids working schematic diagrams
Micropiling
Micropiling test frame assemblies and access platform
Cast-in-drilled hole concrete pile placing plan
Pile handling plan
Precast concrete assemblies
Precast assembly erection frames
Precast concrete girders
Precast concrete decks
Precast bent cap shells
Precast concrete panel
Precast concrete panel erection frames and temporary support bracing.
Prestressing and anchorage assemblies
Prestressing cast-in-place concrete
Prestressing at pier 19 for the viscous damping devices
Expansion joint assemblies
Seismic isolation joint assemblies
Joint seal assembly (MR=4)
Seismic isolation bearings
Viscous damping devices
Column restrainer brackets
Steel casings
Structural steel
Miscellaneous metal
Paint residue containment and collection program
Construction Procedure Demonstration
Short circuit study.
Protective Device Coordination Study

Working drawings shall be submitted in sets according to the Work Breakdown Structure (WBS) Code detailed in the section entitled "Progress Schedule (Critical Path)," elsewhere in these special provisions. Each set of working drawings shall be limited to and represent no more area than what is defined by one (WBS) Code as determined by the Engineer. Each set shall be identified with a unique and sequential number. Working drawings shall be grouped in accordance with the item numbers in the Engineer's Estimate.

In the event several sets of working drawings within an item are submitted simultaneously, or additional sets of drawings within an item are submitted for review before the review of the previously submitted sets of drawings has been completed, the Contractor shall designate the sequence in which all of the sets of drawings for that item, which have been submitted, are to be reviewed. In such event, the time to be provided for the review of any set of working drawings in the sequence shall be not less than the review time specified for that set of working drawings, plus one-half of each of the original time for each set of working drawings of higher priority of the same item which is still under review. The Contractor shall incorporate the

designated review sequence into the progress schedule required in the section entitled "Progress Schedule (Critical Path)," elsewhere in these special provisions by designating predecessor and successor relationships between sequential submittal sets and ensure submittals have the correct construction activity successor relationship. The Contractor shall submit a detailed predecessor/successor report of submittal and submittal review activities generated from said schedule including activity start and finish dates and activity total float. The Contractor may change the sequence of review for any item by submitting a written notification outlining their proposal for reprioritization of working drawing submittal review in conformance with the following requirements:

1. All sets of working drawings, within an item, under review shall be reprioritized by the Contractor.
2. The proposed reprioritization, including review time for each submittal, shall be agreed upon by the Engineer and the Contractor before it is approved and implemented. The reprioritization shall be included in the CPM schedule. The Engineer and the Contractor shall agree upon the impact to the CPM schedule before the reprioritization is approved and implemented.
3. The review time for the new top priority set will restart and will not exceed the original review time starting from the time that the Contractor's reprioritization proposal has been approved, unless the set is returned for revisions.
4. The review time for each submittal will be adjusted based on the Contractor's reprioritization and the total number of working drawings under review at the time of the written notification.

Should the Engineer fail to review the complete working drawing submittal within the time specified and the delay can not be mitigated within the procurement/fabrication, and/or the construction time, and if, in the opinion of the Engineer, the completion of the Contractor's successor construction activity is delayed and a delay in completion of the contract ensues, an extension of time commensurate with the delay in completion of the work thus caused will be granted in accordance with Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

Approval by the Engineer of the working drawings or field inspection performed by the Engineer will in no way relieve the Contractor of full responsibility for verifying field dimensions.

At the completion of the contract, one set of all approved final working drawings in electronic form, including any revisions required after approval, shall be furnished to the Engineer. This is in addition to the microfilm requirements listed above.

Electronic files of working drawings shall be Microstation Version 95 or a more current design file format and shall be submitted on compact disk media.

An index prepared specifically for the working drawings for each portion of the work which requires working drawings, containing sheet numbers and titles shall be included on the compact disk media. Electronic files for working drawings shall be arranged in the order of drawing numbers shown in the index.

The Contractor shall submit to the Engineer 3 copies of manufacturer's catalog sheets, maintenance and operation booklets or instructions for joint seal assembly (MR=4"), seismic isolation bearings, viscous damping devices, anti-washout admixtures, concrete coatings, and T-headed reinforcement. In addition, the Contractor shall submit 2 copies of steel lists and shop drawings for bar reinforcing steel in conformance with Section 52-1.03, "Steel Lists," of the Standard Specifications.

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

5-1.44°°HAZARDOUS AND NON-HAZARDOUS MATERIAL, GENERAL

Attention is directed to "Earthwork" of these special provisions regarding the removal and disposal of hazardous and non-hazardous material.

Hazardous and non-hazardous material have been discovered through testing within the project limits. Portions of the test results are included in the "Materials Information Handout". The complete reports entitled "Upland Soil and Ground Water Characterization, Richmond-San Rafael Bridge Seismic Retrofit Project," "Preliminary Site Investigation Report," and "Sediment Sampling and Analysis Report" are available for inspection at the Department of Transportation, Toll Bridge Duty Senior, 111 Grand Avenue, Oakland, California, (510) 286-5549. Requests to review the reports must be made with the duty senior at least 24 hours in advance.

The designation "hazardous" shall apply to soil material with contaminant levels that meet or exceed the contaminant levels specified in the California Code of Regulations (CCR) Title 22. The designation "non-hazardous" shall apply to all soil material with either contaminant levels below the levels specified in CCR Title 22 or with non-detect contaminant levels.

Hazardous materials shall be transferred directly from the excavation to a registered transport vehicle, a storage container approved for transport of hazardous waste by the United States Department of Transportation, or a stockpile location approved by the Engineer. Non-hazardous material shall be transferred directly from the excavation to a registered transport vehicle, an acceptable storage container, or a stockpile location approved by the Engineer. Stockpile locations shall be maintained in accordance with the following requirements:

The material shall not contain free liquids that separate readily from the material. The presence or absence of free liquids shall be demonstrated by United States Environmental Protection Agency Method 9095 as modified by Section 66264.314 of Title 22 of the California Code of Regulations (CCR).

The material shall be stored on undamaged 60-mil high density polyethylene or an equivalent impermeable barrier unless the stockpiling location is on a paved surface. If the location is on a paved surface the thickness of the barrier can be reduced to 20-mil high density polyethylene or its equivalent. The dimensions of the barrier shall exceed the dimensions of the stockpile at all times. Any seams in the barrier shall be sealed to prevent leakage.

At the end of each day and during storm events the material shall be covered with undamaged 12-mil polyethylene or an equivalent impermeable barrier to prevent windblown dispersion and contact with precipitation run-off and run-on. When more than one sheet is required to cover the material, the sheets shall be overlapped a minimum of 1.5 feet in a manner that prevents water from flowing onto the material. The cover shall be secured in a manner that keeps it in place at all times. Driven anchors shall not be used except at the perimeter of the stockpile. The cover shall be inspected and maintained in accordance with the requirements of "Water Pollution Control" of these special provisions.

These stockpiling requirements apply to all temporary storage of hazardous and non-hazardous material outside of an excavation or a transport container including, but not limited to, staging of excavated material next to the excavation prior to pick up by loading equipment, accumulating material for full transport loads, and awaiting test results required by a disposal facility. The removal of stockpiles shall begin within 30 days of accumulating 220 pounds of hazardous material. After final removal has occurred the Contractor shall be responsible for any cleanup deemed necessary by the Engineer.

All hazardous and non-hazardous material on exteriors of transport vehicles shall be removed and placed either into the current transport vehicle or the excavation prior to the vehicle leaving the exclusion zone. No hazardous or non-hazardous material shall be deposited on public roads. The Contractor shall indemnify the State from any costs due to spillage during the transport of any hazardous or non-hazardous material to the disposal facility.

The Contractor shall monitor the air quality continuously during excavation operations at all locations containing hazardous material.

Excavation operations outside structure excavation pay limits will be at the Contractor s expense. This resultant material shall be treated as hazardous material if the test results for the location indicate that the material being excavated is hazardous.

APPLICABLE RULES AND REGULATIONS.--Excavation, transport and disposal of hazardous and non-hazardous material shall be in accordance with the rules and regulations of the following agencies:

United States Department of Transportation (USDOT)
United States Environmental Protection Agency (USEPA)
California Environmental Protection Agency (CAL-EPA)

1. Department of Toxic Substance Control (DTSC)
2. Integrated Waste Management Board

3. Regional Water Quality Control Board, Region 2 (RWQCB)
4. State Air Resources Board

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

PERMITS AND LICENSES.--The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the hazardous material. The California Environmental Quality Act (CEQA) of 1970 (Chapter 1433, Stats. 1970), as amended may be applicable to permits, licenses and authorizations which the Contractor shall obtain from all agencies in connection with performing the work of the contract. The Contractor shall comply with the provisions of said statutes in obtaining such permits, licenses and other authorizations.

The Engineer will obtain the Environmental Protection Agency Generator Identification No. and Board of Equalization Identification Number as the State is the Generator.

HEALTH, SAFETY AND WORK PLAN.--The Contractor shall prepare a detailed Health, Safety and Work Plan for all site personnel in accordance with the DTSC and CAL-OSHA regulations. The Health, Safety and Work Plan shall include a plot plan indicating the exclusion zones, contaminant reduction (decontamination zones) and support zones in accordance with California Code of Regulations (CCR), Title 8, an air monitoring plan, site clean up procedures, and physical barrier; and shall be submitted at least 15 working days prior to beginning any work for review and acceptance by the Engineer. Prior to submittal, the Contractor shall have the Health, Safety and Work Plan approved by a Civil Engineer, registered in the State of California and by a Certified Industrial Hygienist.

SAFETY.--Prior to performing any work at the locations containing material classified as hazardous, all personnel, including State Personnel, shall complete a 40 hour safety training program which meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified. The training shall be provided by the Contractor. The Contractor shall provide a certification of completion of the Safety Training Program to all personnel. Any personal protective equipment required by the Contractor s Health, Safety and Work Plan for personnel working within the exclusion zone will be supplied to State personnel by the Contractor. The number of State personnel requiring the above mentioned safety training program and personal protective equipment will be 10.

The decontamination area shall be located outside of the exclusion zone. Water from decontamination procedures shall be collected and disposed of at an appropriate disposal site by the Contractor. Non-reusable protective equipment, once used by any personnel, including State personnel, shall be collected and disposed of at an appropriate disposal site by the Contractor. Temporary 6-foot chain link security fence shall be installed to surround and secure the exclusion zone.

SAMPLING AND ANALYSIS.--The Contractor shall test the material to be excavated at his own expense for any additional acceptance requirements put forth by the disposal facility. Sampling and analysis shall be performed using the sampling and analysis procedure required by the disposal facility.

The Contractor may perform additional tests on the material to be excavated at his option and expense for confirmation of the material classification as hazardous or non-hazardous. Sampling and analysis shall be the same or equivalent tests specified in the Materials Information Handout. The Contractor shall submit for approval by the Engineer, his sampling and analysis procedure and the name and address of the laboratory to be used fifteen working days prior to beginning any sampling or analysis. The laboratory used shall be certified by the California Department of Health Services. The Contractor shall submit a copy of the test results to the Engineer prior to the disposal of the material.

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

5-1.45°°ESTABLISH MARINE ACCESS

This work shall consist of the preparatory work and operations necessary to provide marine access to the job site for personnel, equipment, supplies and incidentals, including furnishing, erecting, maintaining and removing barges, trestles and other facilities. This work shall be separate from and in addition to the work specified in Section 11, "Mobilization," of the Standard Specifications.

The Contractor shall submit, for approval by the Engineer, a schedule of values detailing the cost breakdown of the contract lump sum item for establish marine access. The schedule of values shall reflect the items, work, quantities and costs required to establish marine access to the jobsite. The Contractor shall be responsible for the accuracy of the quantities and costs used in the schedule of values submitted for approval.

The sum of the amounts for the items and work listed in the schedule of values shall be equal to the contract lump sum price for establish marine access. Changes in the schedule of values, due to changes by the Contractor in the items and work listed, shall not result in a change in the contract lump sum price for establish marine access.

The schedule of values for establish marine access shall be submitted to the Engineer within the time required for submittal of the Interim Baseline Schedule, as specified in "Progress Schedule (Critical Path)" of these special provisions. The items and work listed in the schedule of values shall be designated in the resource loading required in the Baseline Schedule required in "Progress Schedule (Critical Path)" of these special provisions.

The schedule of values will be used only to determine progress payments for establish marine access during the progress of the work. No partial payment for establish marine access will be made until the schedule of values is approved in writing by the Engineer.

The contract lump sum price paid for establish marine access shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in establishing marine access to the job site, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The adjustment provisions in Section 4-1.03C, "Changes," of the Standard Specifications shall not apply to the contract lump sum price for establish marine access. Full compensation for damages due to delays shall be considered as included in the payments made in accordance with "Overhead" of these special provisions and Section 8-1.09, "Right of Way Delays," of the Standard Specifications and additional compensation will be allowed therefor.

When other contract items are adjusted as provided in Section 4-1.03, "Changes," of the Standard Specifications, the costs of establishing marine access to the job site will be deemed to have been recovered by the Contractor through the payments made for establish marine access, and will be excluded from consideration in determining compensation for the adjustments.

10-1.13°°PROGRESS SCHEDULE (CRITICAL PATH)

Progress schedules will be required for this contract. Progress schedules shall utilize the Critical Path Method (CPM).

Definitions - The following definitions apply to this section "Progress Schedule (Critical Path)":

1) Activity: Any task, or portion of a project, which takes time to complete.
2) Baseline Schedule: The initial CPM schedule representing the Contractor's original work plan, as accepted by the Engineer.
3) Controlling Operation: The activity considered at the time by the Engineer, within that series of activities defined as the critical path, which if delayed or prolonged, will delay the time of completion of the contract.
4) Critical Path: The series of activities, which determines the earliest completion of the contract (Forecast Completion Date).
5) Critical Path Method: A mathematical calculation to determine the earliest completion of the contract represented by a graphic representation of the sequence of activities that shows the interrelationships and interdependencies of the elements composing a project.
6) Current Contract Completion Date: The extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer in accordance with Section 8-1.06, "Time of Completion," of the Standard Specifications.
7) Early Completion Time: The difference in time between the current contract completion date and the Contractor's scheduled early forecast completion date as shown on the accepted baseline schedule, or schedule updates and revisions.
8) Float: The amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any activity or group of activities in the network.
9) Forecast Completion Date: The completion date of the last scheduled work activity identified on the critical path.
10) Fragnet: A section or fragment of the network diagram comprised of a group of activities.
11) Free Float: The amount of time an activity can be delayed before affecting a subsequent activity.
12) Hammock Activity: An activity added to the network to span an existing group of activities for summarizing purposes.
13) Milestone: A marker in a network, which is typically used to mark a point in time or denote the beginning or end of a sequence of activities. A milestone has zero duration, but will otherwise function in the network as if it were an activity.
14) Revision: A change in the future portion of the schedule that modifies logic, adds or deletes activities, or alters activities, sequences, or durations.
15) Tabular Listing: A report showing schedule activities, their relationships, durations, scheduled and actual dates, and float.
16) Total Float: The amount of time that an activity may be delayed without affecting the total project duration of the critical path.
17) Update: The modification of the CPM progress schedule through a regular review to incorporate actual progress to date by activity, approved time adjustments, and projected completion dates.
18) Time Scaled Logic Diagram: A schematic display of the logical relationships of project activities, drawn from left to right to reflect project chronology with the positioning and length of the activity representing its duration.
19) Bar Chart (Gantt Chart): A graphic display of scheduled-related information, activities or other project elements are listed down the left side of the chart, date are shown across the top, and activity durations are shown as date-placed horizontal bars.

Pre-construction Scheduling Conference - The Engineer shall schedule and conduct a Preconstruction Scheduling Conference with the Contractor's Project Manager and Construction Scheduler within seven days after the bidder has received the contract for execution. At this meeting, the requirements of this section of the special provisions will be reviewed with the Contractor. The Contractor shall be prepared to discuss its schedule methodology, proposed sequence of operations, the activity identification system for labeling all work activities, the schedule file numbering system, and any deviations it proposes to make from the Stage Construction Plans. The Engineer shall submit a diskette of a scheduling shell project, displaying an activity code dictionary consisting of fields populated with the Caltrans Scope Breakdown Structure Code. The Contractor shall utilize these codes, and may add other codes as necessary, to group and organize the work activities. Periodically the Engineer may request the Contractor to utilize additional filters, layouts or activity codes to be able to further group or summarize work activities.

Also, the Engineer and the Contractor shall review the requirements for all submittals applicable to the contract and discuss their respective preparation and review durations. All submittals and reviews are to be reflected on the Interim Baseline Schedule and the Baseline Schedule.

Interim Baseline Schedule - Within 15 days after approval of the contract, the Contractor shall submit to the Engineer an Interim Baseline Project Schedule which will serve as the progress schedule for the first 120 days of the project, or until the Baseline Schedule is accepted, whichever is sooner. The Interim Baseline Schedule shall utilize the critical path method. The Interim Baseline Schedule shall depict how the Contractor plans to perform the work for the first 120 days of the contract. Additionally, the Interim Baseline Schedule shall show all submittals required early in the project, and shall provide for all permits, and other non-work activities necessary to begin the work. The Interim Baseline Schedule submittal shall include a 3 l/2 inch floppy diskette which contains the data files used to generate the schedule.

The Engineer shall be allowed 10 days to review the schedule and to provide comments, including the Contractor s application of the supplied scope breakdown structure. The Interim Baseline Schedule does not require Caltrans approval but all comments are to be implemented into the Baseline Schedule. Re-submittal of the Interim Baseline Schedule is not required. Late review of the Interim Baseline Schedule shall not restrain the submittal of the Baseline Schedule.

Baseline Schedule - Within 30 days, after approval of the contract, the Contractor shall submit to the Engineer a Baseline Project Schedule including the incorporation of all comments provided to the Interim Baseline Schedule. The Baseline Schedule shall have a data date of the day prior to the first working day of the contract. The schedule shall not include any actual start dates, actual finish dates, or constraint dates. The Baseline Progress Schedule shall meet interim milestone dates, contract milestone dates, stage construction requirements, internal time constraints, show logical sequence of activities, and must not extend beyond the number of days originally provided for in the contract.

All task activities shall be assigned to a project calendar. Each calendar shall identify a workweek, and holidays. Use different calendars for work activities that occur on different work schedules.

The Contractor shall not add job inefficiencies or weather days to a project calendar without prior approval by the Engineer.

The Baseline CPM Schedule submitted by the Contractor shall have a sufficient number of activities to assure adequate planning of the project and to permit monitoring and evaluation of progress and the analysis of time impacts. The Baseline Schedule shall depict how the Contractor plans to complete the whole work involved, and shall show all activities that defines the critical path. Each construction activity shall have durations of not more than 20 working days, and not less than one working day unless permitted otherwise by the Engineer. All activities in the schedule, with the exception of the first and last activities, shall have a minimum of one predecessor and a minimum of one successor.

The Baseline Schedule shall not attribute negative float to any activity. Float shall not be considered as time for the exclusive use of or benefit of either the State or the Contractor but shall be considered as a jointly owned, expiring resource available to the project and shall not be used to the financial detriment of either party. Any accepted schedule, revision or update having an early completion date shall show the time between the early completion date and the current Contract Completion Date as "total float".

The Contractor shall be responsible for assuring that all work sequences are logical and the network shows a coordinated plan for complete performance of the work. Failure of the Contractor to include any element of work required for the performance of the contract in the network shall not relieve the Contractor from completing all work within the time limit specified for completion of the contract. If the Contractor fails to define any element of work, activity or logic, the Contractor in the next monthly update or revision of the schedule shall correct it.

The Baseline Progress Schedule shall be supplemented with resource allocations for every task activity to a level of detail that facilitates report generation based on labor craft and equipment class for the Contractor and subcontractors. The Contractor shall use average composite crews to display the labor loading of on-site construction activities. The Contractor shall optimize and level labor to reflect a reasonable plan for accomplishing the work of the contract and to assure that resources are not duplicated in concurrent activities. Along with the baseline progress schedule, the Contractor shall also submit to the Engineer time-scaled resource histograms of the labor crafts and equipment classes to be utilized on the contract.

The Contractor shall not create hammock activities for the purpose of resources loading.

The Contractor shall require each subcontractor to submit in writing a statement certifying that the subcontractor has concurred with the Contractor’s CPM, including major updates, and that the subcontractor’s related schedule has been incorporated accurately, including the duration of activities, labor and equipment loading. Should the Baseline Schedule or schedule update, submitted for acceptance, show variances from the requirements of the contract, the Contractor shall make

specific mention of the variations in the letter of transmittal, in order that, if accepted, proper adjustments to the project schedule can be made. The Contractor will not be relieved of the responsibility for executing the work in strict accordance with the requirements of the contract documents. In the event of a conflict between the requirements of the contract documents and the information provided or shown on an accepted schedule, the requirements of the contract documents shall take precedence.

Each schedule submitted to the Engineer shall comply with all limits imposed by the contract, with all specified intermediate milestone and contract completion dates, and with all constraints, restraints or sequences included in the contract. The degree of detail shall include factors including, but not limited to:

3. Physical breakdown of the project;
4. Contract milestones and completion dates, substantial completion dates, constraints, restraints, sequences of work shown in the contract, the planned substantial completion date, and the final completion date;
3) Type of work to be performed, the sequences, and the major subcontractors involved;
4) All purchases, submittals, submittal reviews, manufacture, fabrication, tests, delivery, and installation activities for all major materials and equipment, including submittal of requests for audits of manufacturers and fabricators in conformance with "Manufacturing and Fabrication Qualification Audit for Materials" of these special provisions;
5) Preparation, submittal and approval of shop and working drawings and material samples, showing time, as specified elsewhere, for the Engineer's review. The same time frame shall be allowed for at least one resubmittal on all major submittals so identified in the contract documents;
6) Identification of interfaces and dependencies with preceding, concurrent and follow-on contractors, railroads, and utilities as shown on the plans or specified in the specifications;
7) Identification of each and every utility relocation and interface as a separate activity, including activity description and responsibility coding that identifies the type of utility and the name of the utility company involved.
8) Actual tests, submission of test reports, and approval of test results;
9) All start-up, testing, training, and assistance required under the Contract;
10) Punchlist and final clean-up;
11) Identification of any manpower, material, or equipment restrictions, as well as any activity requiring unusual shift work, such as double shifts, 6-day weeks, specified overtime, or work at times other than regular days or hours; and
12) Identification of each and every ramp closing and opening event as a separate one-day activity, including designation by activity coding and description that it is a north-bound, south-bound, east-bound, west-bound, and entry or exit ramp activity.

The Baseline Schedule submittal shall include a 3 l/2 inch floppy diskette which contains the data files used to generate the schedule, a schedule narrative describing the critical path, and all schedule reports.

The Engineer shall be allowed 15 days to review and accept or reject the baseline project schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 days, at which time a new 15 day review period by the Engineer will begin.

Project Schedule Reports - Schedules submitted to the Engineer including Interim Baseline, Baseline, and update schedules shall include time scaled network diagrams in a layout format requested by the Engineer. The network diagrams submitted to the Engineer shall also be accompanied by four computer-generated mathematical analysis tabular reports for each activity included in the project schedule. The reports (8 1/2" x 11" size) shall include a network diagram report showing the activity columns only, a predecessor and successor report, a resource report (Interim Baseline and Baseline Schedules), and a scheduling and leveling calculation report. The network diagram reports shall include, at a minimum, the following for each activity:

1) Activity number and description;
2) Activity codes;
3) Original, actual and remaining durations;
6) Early start date (by calendar date);
7) Early finish date (by calendar date);
8) Actual start date (by calendar date);
9) Actual finish date (by calendar date);

10) Late start date (by calendar date);
11) Late finish date (by calendar date);
12) Identify activity calendar ID;
13) Total Float and Free Float, in work days and;
14) Percentage complete.

Network diagrams shall be sorted and grouped in a format requested by the Engineer reflecting the project breakdown per the Caltrans scope breakdown structure codes. They shall show a continuous flow of information from left to right per the project sorting and grouping codes. E.g., project milestones, submittals sub-grouped by description, and the construction activities sub-grouped by the scope breakdown structure. The primary paths of criticality shall be clearly and graphically identified on the networks. The network diagram shall be prepared on E-size sheets (36" x 48"), shall have a title block in the lower right-hand corner, and a timeline on each page. Exceptions to the size of the network sheets and the use of computer graphics to generate the networks shall be subject to the approval of the Engineer.

Schedule network diagrams the tabular reports shall be submitted to the Engineer for acceptance in the following quantities:

a) 2 sets of the Network Diagrams;
b) 2 copies of the tabular reports (8 1/2" x 11" size); and
c) 3 computer diskettes.

Weekly Schedule Meetings - The Engineer and the Contractor shall hold weekly scheduling meetings to discuss the near term schedule activities, to address any long-term schedule issues, and to discuss any relevant technical issues. The Contractor shall develop a rolling 4-week schedule identifying the previous week worked and a 3-week look ahead. It shall provide sufficient detail to address all activities to be performed and to identify issues requiring engineering action or input.

Monthly Update Schedules - The Contractor shall submit a Monthly Update Schedule to the Engineer once in each month within 5 days of the data date. The proposed update schedule prepared by the Contractor shall include all information available as of the 20th calendar day of the month, or other data date as established by the Engineer. A detailed list of all proposed schedule changes such as logic, duration, lead/lag, forecast completion date, additions and deletions shall be submitted with the update.

The monthly update of the schedule shall focus on the period from the last update to the current cut-off data date. Changes to activities or logic beyond the data date are classified as revisions and need to be addressed per the schedule revision section of this specification. Activities that have either started or finished shall be reported as they actually occurred and designated as complete, if actually completed. For activities in progress that are forecasted to complete longer than planned, the remaining durations shall be revised, not the original durations. All out of sequence activities are to be reviewed and their relationships either verified or changed.

The Monthly Update Schedule submitted to the Engineer shall be accompanied by a Schedule Narrative Report. The report shall describe the physical progress during the report period, plans for continuing the work during the forthcoming report period, actions planned to correct any negative float, and an explanation of potential delays or problems and their estimated impact on performance, milestone completion dates, forecast completion date, and the overall project completion date. In addition, alternatives for possible schedule recovery to mitigate any potential delay or cost increases shall be included for consideration by the Engineer. The report shall follow the outline set forth below:

Contractor's Schedule Narrative Report Outline:

1) Contractor's Transmittal Letter
2) Work completed during the period
3) Description of the current critical path
4) Description of problem areas
5) Current and anticipated delays
    a) Cause of the delay
    b) Corrective action and schedule adjustments to correct the delay
    c) Impact of the delay on other activities, milestones, and completion dates
6) Changes in construction sequences

7) Pending items and status thereof
   a) Permits
   b) Change Orders
   c) Time Extensions
   d) Non-Compliance Notices
8) Contract completion date(s) status
   a) Ahead of schedule and number of days
   b) Behind schedule and number of days
9) Include updated Network Diagram and Reports

The Contractor shall provide to the Engineer a 3 1/2" electronic disk of the schedule, together with printed copies of the network diagrams and tabular reports described under "Project Schedule Reports", and the Schedule Narrative Report.

Portions of the network diagram on which all activities are complete need not be reprinted and submitted in subsequent updates. However, the electronic disk file of the submitted schedule and the related reports shall constitute a clear record of progress of the work from award of contract to final completion.

On a date determined by the Engineer, the Contractor shall meet with the Engineer to review the monthly schedule update. At the monthly progress meeting, the Contractor and the Engineer shall review the updated schedule and shall discuss the content of the Narrative Report. The Engineer shall be allowed 10 days after the meeting to review and accept or reject the update schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 days, at which time a new 5 day review period by the Engineer will begin. All efforts shall be made between the Engineer and the Contractor to complete the review and the approval process prior to the next update schedule cutoff date. To expedite the process a second meeting between the Engineer and the Contractor shall be held.

Schedule Revisions - If the Contractor desires to make a change to the accepted schedule, the Contractor shall request permission from the Engineer in writing, stating the reasons for the change, and proposed revisions to activities, logic and duration. The Contractor shall submit for acceptance an analysis showing the effect of the revisions on the entire project. The analysis shall include:

1. An updated schedule not including the revisions. The schedule shall have a data date just prior to implementing the proposed revisions and include a project completion date;
2. A revised schedule that includes the proposed revisions. The schedule will have the same data date as the updated schedule and include a project completion date;
3. A narrative explanation of the revisions and their impact to the schedule; and
4. Computer files of the updated schedule and the revised schedule sequentially numbered or renamed for archive (record) purposes.

The Engineer will provide a response within 10 days. No revision to the accepted baseline schedule or the schedule updates shall be made without the prior written approval of the Engineer.

The Engineer will request the Contractor to submit a proposed revised schedule within 15 days when:

a) there is a significant change in the Contractor's operations that will affect the critical path;
b) the current updated schedule indicates that the contract progress is 30 days or more behind the planned schedule, as determined by the Engineer; or
c) the Engineer determines that an approved or anticipated change will impact the critical path, milestone or completion dates, contract progress, or work by other contractors.

The Engineer shall be allowed 10 days to review and accept or reject a schedule revision. Rejected schedule revisions shall be revised and resubmitted to the Engineer within 10 days, at which time a new 10 day review period by the Engineer will begin. Only upon approval of a change by the Engineer shall it be reflected in the next schedule update submitted by the Contractor.

Schedule Time Extension Requests - When the Contractor requests a time extension due to contract change orders or delays, the Contractor shall submit to the Engineer a written Time Impact Analysis illustrating the influence of each change or delay on the current contract completion date or milestone completion date, utilizing the current accepted schedule. Each Time Impact Analysis shall include a schedule revision demonstrating how the Contractor proposes to incorporate the

Change Order or delay into the current schedule. The schedule shall include the sequence of activities and any revisions to the existing activities to demonstrate the influence of the delay, the proposed method for incorporating the delay, and its impact into the schedule.

Each Time Impact Analysis shall demonstrate the estimated time impact based on the events of delay, the anticipated or actual date of the contract change order work performance, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest update of the current schedule in effect at the time the change or delay was encountered.

Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining float along the critical path of activities at the time of actual delay, or at the time the contract change order work is performed. Float time is not for the exclusive use or benefit of the Engineer or the Contractor, but is an expiring resource available to all parties as needed to meet contract milestones and the contract completion date. Time extensions will not be granted nor will delay damages be paid unless:

a) the delay is beyond the control and without the fault or negligence of the Contractor and its subcontractors or suppliers, at any tier; and,
b) the delay extends the actual performance of the work beyond the applicable current contract completion date and the most recent date predicted for completion of the project on the accepted schedule update current as of the time of the delay or as of the time of issuance of the contract change order.

Time Impact Analyses shall be submitted in triplicate within 15 days after the delay occurs or after issuance of the contract change order. A schedule file diskette is also to be submitted.

Acceptance or rejection of each Time Impact Analysis by the Engineer will be made within 15 days after receipt of the Time Impact Analysis, unless subsequent meetings and negotiations delay the review. A copy of the Time Impact Analysis accepted by the Engineer shall be returned to the Contractor and the accepted schedule revisions illustrating the influence of the contract change orders or delays shall be incorporated into the project schedule during the first update after acceptance.

Final Schedule Update - Within 15 days after the acceptance of the contract by the Director, the Contractor shall submit a final update of the schedule with actual start and actual finish dates for all activities. This schedule submission shall be accompanied by a certification, signed by an officer of the company and the Contractor's Project Manager stating "To the best of my knowledge, the enclosed final update of the project schedule reflects the actual start and completion dates of the activities contained herein."

Equipment and Software - The Contractor shall provide for the State's exclusive possession and use a complete computer system specifically capable of creating, storing, updating and producing CPM schedules. 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 minimum computer system to be furnished shall include the following:

1) Complete computer system, including keyboard, mouse, 21 inch color SVGA monitor (1,024x768 pixels), latest available Intel Pentium III micro processor chip, or equivalent, or better;
2) Computer operating system software, compatible with the selected processing unit, for Windows 95 or later, or equivalent;
3) Minimum one hundred nine two (192) megabytes of random access memory (RAM);
4) A 40 gigabyte minimum hard disk drive, a 1.44 megabyte 3 l/2 inch floppy disk drive, DVD/CD-ROM drive 10/100 Ethernet card and 56k modem, Tape backup device with a minimum capacity 5 GB per tape and backup tapes for 3 complete backup sets;
5) A color-ink-jet plotter with a minimum 36Megabytes RAM, capable of 300 dots per inch color, 600 dots per inch monochrome, or equivalent. Capable of printing fully legible, timescaled charts, and network diagrams, in four colors, with a minimum size of 36 inches by 48 inches (E size) and is compatible with the selected system. Capable of plotting 3 E sized sheets within one hour. Plotter paper and ink cartridges throughout the contract. Plotter stand, roll paper assembly and automatic paper cutter;
6) CPM software shall be Primavera Project Planner, the latest version for Windows 95, or later;
7) Scheduler Analyzer Pro or equivalent — a suite of programs to assist in schedule analysis, the latest version for Windows 95, Windows NT or later and,
8) Microsoft Office software, the latest version for Windows 95, Windows NT or later, and McAfee Virus software or equivalent.

The computer hardware and software furnished shall be compatible with that used by the Contractor for the production of the CPM progress schedule required by the Contract, and shall include original instruction manuals and other documentation normally provided with the software.

The Contractor shall furnish, install, set up, maintain and repair the computer hardware and software ready for use at a location determined by the Engineer. The hardware and software shall be installed and ready for use by the first submission of the baseline schedule. The Contractor shall provide 24 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 to include schedule analysis, reporting, and resource and cost allocations. An authorized vendor of Project Primavera 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 when no claims involving contract progress are pending. When claims involving contract progress are pending, computer hardware or software shall not be removed until the final estimate has been submitted to the Contractor.

Payment - Progress schedule (critical path) will be paid for at a lump sum price. The contract lump sum price paid for progress schedule (critical path) shall include full compensation for furnishing all labor, materials (including computer hardware and software), tools, equipment, and incidentals; and for doing all the work involved in preparing, furnishing, updating and revising CPM progress schedules. Also for maintaining and repairing the computer hardware and training the Engineer in the use of the computer hardware and software as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payments for progress schedule (critical path) will be made as follows:

Interim baseline schedule accepted, then 10 percent payment for progress schedule (critical path) will be made.

Baseline schedule accepted, then 10 percent payment for progress schedule (critical path) will be made.

Monthly update schedules accepted, then 75 percent payment for progress schedule (critical path) will be made equally for each update.

Final schedule update accepted, then 5 percent payment for progress schedule (critical path) will be made.

The Department will retain an amount equal to 25 percent of the estimated value of the work performed during the first estimate period in which the Contractor fails to submit an interim baseline, baseline, revised or updated CPM schedule conforming to the requirements of this section, as determined by the Engineer. Thereafter, on subsequent successive estimate periods the percentage the Department will retain will be increased at the rate of 25 percent per estimate period in which acceptable CPM progress schedules have not been submitted to the Engineer. Retention s for failure to submit acceptable CPM progress schedules shall be additional to all other retention s provided for in the contract. The retention for failure to submit acceptable CPM progress schedules will be released for payment on the next monthly estimate for partial payment following the date that acceptable CPM progress schedules are submitted to the Engineer.

The adjustment provisions in Section 4-1.03, "Changes," of the Standard Specifications, shall not apply to the item of progress schedule (critical path). Adjustments in compensation for the project schedule will not be made for any increased or decreased work ordered by the Engineer in furnishing project schedules.

ENGINEER'S ESTIMATE
04-0438U4

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
181 (S)	047981	EXPANSION JOINT ASSEMBLY (SUPERSTRUCTURE)	LF	360		
182 (S-F)	047982	SEISMIC ISOLATION JOINT ASSEMBLY (SUPERSTRUCTURE)	LF	144		
183 (S-F)	047983	BAR REINFORCING STEEL (BRIDGE) (SUPERSTRUCTURE)	LB	3,023,000		
184 (S-F)	047984	BAR REINFORCING STEEL (EPOXY COATED) (BRIDGE) (SUPERSTRUCTURE)	LB	3,494,000		
185 (S-F)	047985	ASPHALT MEMBRANE WATERPROOFING (SUPERSTRUCTURE)	SQFT	1,600		
186 (S-F)	047986	COLUMN CASING (SUPERSTRUCTURE)	LB	784,000		
187 (S-F)	047987	SHAFT CASING (SUPERSTRUCTURE)	LB	177,400		
188 (F)	047988	FURNISH STRUCTURAL STEEL (BRIDGE) (SUPERSTRUCTURE)	LB	10,441,200		
189 (S-F)	047989	ERECT STRUCTURAL STEEL (BRIDGE) (SUPERSTRUCTURE)	LB	10,441,200		
190 (S)	047990	RIVET REMOVAL AND HOLE REAMING (SUPERSTRUCTURE)	EA	245,400		
191	047991	TRAVELING MAINTENANCE SCAFFOLD (SUPERSTRUCTURE)	EA	7		
192 (F)	047992	FURNISH STRUCTURAL STEEL (RAIL LOWERING) (SUPERSTRUCTURE)	LB	21,420		
193 (S-F)	047993	ERECT STRUCTURAL STEEL (RAIL LOWERING) (SUPERSTRUCTURE)	LB	21,420		
194	047994	REMOVE EXISTING TRUSS SHOE PIN (SUPERSTRUCTURE)	EA	122		
195 (S-F)	047995	INSTALL STUD CONNECTORS (SUPERSTRUCTURE)	EA	1,256		
196 (S)	047996	VISCOUS DAMPING DEVICE (225 KIPS) (SUPERSTRUCTURE)	EA	20		
197 (S)	047997	VISCOUS DAMPING DEVICE (PIER 19) (SUPERSTRUCTURE)	EA	8		
198 (S)	047998	CLEAN AND PAINT STRUCTURAL STEEL (SUPERSTRUCTURE)	LS	LUMP SUM	LUMP SUM	
199 (S-F)	047999	SPOT BLAST CLEAN AND PAINT UNDERCOAT (SUPERSTRUCTURE)	SQFT	282,600		
200	048000	WORK AREA MONITORING (SUPERSTRUCTURE)	LS	LUMP SUM	LUMP SUM	

ENGINEER'S ESTIMATE
04-0438U4

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
201 (S-F)	048001	MISCELLANEOUS METAL (RESTRAINER-CABLE TYPE) (SUPERSTRUCTURE)	LB	460,700		
202 (S-F)	048002	MISCELLANEOUS METAL (RESTRAINER - ROD TYPE) (SUPERSTRUCTURE)	LB	108,000		
203 (S-F)	048003	MISCELLANEOUS METAL (BRIDGE) (SUPERSTRUCTURE)	LB	544,000		
204 (F)	048004	CONCRETE BARRIER (TYPE 27 MODIFIED) (SUPERSTRUCTURE)	LF	12,958		
205	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID: _____