

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
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*Flex your power!
Be energy efficient!*

July 30, 2009

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

Addendum No. 5

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 Tuesday, 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 Information Handout.

Project Plan Sheets 18, 47, 120, 121, 133, 143, 147, 150, 152, 160, 163, 164, 169, 170, 174, 179, 183, 184, 185, 187, 189, 190, 192, 193, 194, 195, 196, 197, 200, 201, 203, 211, 216, 219, 223, 224, 225, 235, 238, 239, 244, 249, 253, 260, 261, 262, 265, 266, 289, 294, 302, 303, 304, 307, 309, 312, 313, 314, 316, 317, 318, 319, 320, 322, 324, 325, 327, 328, 332, 334, 336, 340, 342, 343, 345, 347, 349, 350, 354, 356, 357, 359, 361, 362, 363, 368, 369, 370, 374, 375, 377, 379, 386, 390, 391, 393, 397, 399, 401, 402, 407, 411, 412, 416, 430, 431, 432, 436, 439, 443, 447, 448, 449, 451, 452, 453, 457, 458, 460, 467, 468, 470, 473, 476, 480, 481, 483, 484, 487, 489, 490, 491, 494, 500, 501, 502, 503, 505, 510, 511, 512, 513, 514, 515, 550, 711, 712, 713, 714 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 196A, 244A, 291A, 363A, 363B, 363C, 363D, 363E, 363F, 363G, 363H, 363I, 363J, 403A, 403B, 403C, 403D, 403E, 403F, 413A, 413B, 447A, 477B, 477C, 457A, 457B, 466A, 516A, 516B, 516C, 516D, 516E, 516F, 516G, 516H, 516I are added. Half-sized copies of the added sheets are attached for addition to the project plans.

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

"Bid must be on a cost+time basis.

Complete the work within the number of working days bid. Do not bid more than 780 working days for the Designated Portion of Work 1.

The estimated cost of the project is \$170,000,000.00."

In the Special Provisions, Section 3, "AWARD AND EXECUTION OF CONTRACT," is revised as attached.

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

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In the Special Provisions, Section 5-1.07, "SUPPLEMENTAL PROJECT INFORMATION," subsection "INFORMATION HANDOUT," subsection "STRUCTURE INFORMATION HANDOUT," Item No. 9 is added as follows:

"9. Advanced structure work (portion) of "YBI Transition Structure" constructed under Contract 04-0120R4."

In the Special Provisions, Section 5-1.08, "INTEGRATED SHOP DRAWINGS," is revised as attached.

In the Special Provisions, Section 5-1.09, "COST REDUCTION INCENTIVE PROPOSALS," is revised as attached.

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

In the Special Provisions, Section 5-1.18, "PAYMENTS," Item F is revised as follows:

"F. Working Drawings Submittal \$5,000,000.00"

In the Special Provisions, Section 5-1.19, "SOUND CONTROL REQUIREMENTS," is revised as attached.

In the Special Provisions, Section 5-1.33, "OWNER CONTROLLED INSURANCE PROGRAM (OCIP)," subsection "GENERAL," the first sentence of the first paragraph is revised as follows:

"Section 7-1.12B, "Insurance," and Section 3-1.05, "Insurance Policies," of the Standard Specifications do not apply except as otherwise stated in these special provisions."

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

In the Special Provisions, Section 10-1.20, "COOPERATION," is revised as attached.

In the Special Provisions, Section 10-1.31, "MAINTAINING TRAFFIC," is revised as attached.

In the Special Provisions, Section 10-1.41, "EXISTING HIGHWAY FACILITIES," subsection "CLEAN BRIDGE DECK," is added after subsection "REMOVE EPOXY ASPHALT CONCRETE SURFACING," as attached.

In the Special Provisions, Section 10-1.43, "PHOTO SURVEY OF EXISTING FACILITIES," the first paragraph is revised as follows:

"The work shall consist of performing photo surveys, pre-construction and post-construction of the following existing facilities and other improvements, which might be damaged by the operations of the Contractor, during construction:

1. United States Coast Guard Base - Quarters 8, Building 9, 17, 18, 24, 25, 26, and 27
2. United States Navy - Building/Quarters 1 (Nimitz House), 2, 3, and 4
3. Navy Sundial Plaza/Planted Area inside the special construction area (SCA)"

In the Special Provisions, Section 10-1.435, "VIBRATION MONITORING," is added as attached.

In the Special Provisions, Section 10-1.695, "BRIDGE DECK METHACRYLATE RESIN TREATMENT," is added as attached.

In the Special Provisions, Section 10-3.21, "LIGHT POLE FOUNDATION," is deleted.

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In the Bid book, in the "Bid Item List," Items 173 and 178 are revised, Items 187, 188, 189, 190, and 191 are added and Items 186 are deleted as attached.

To Bid book holders:

Replace pages 11 and 12 of the "Bid Item List" in the Bid book with the attached revised pages 11 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 YBI TRANSITION STURCTURES.

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.

This office is sending this addendum by GSO overnight mail to Bid book holders to ensure that each receives it. A copy of this addendum is available for the Contractors' use on the Web site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addenda.php

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
Division of Engineering Services - Office Engineer

Attachments

SECTION 3. AWARD AND EXECUTION OF CONTRACT

If the Department awards the Contract, the award is made to the lowest responsible bidder within 60 days.

Comply with the provisions in Section 3, "Award and Execution of Contract," of the Standard Specifications and these special provisions for the requirements and conditions concerning award and execution of contract.

Comply with the provisions in "Owner Controlled Insurance Program (OCIP)," of these special provisions for additional documents to be submitted following contract award.

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

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 by the Engineer.

You may start work at the job site before the availability of Area PRA if the Engineer authorizes it in writing. 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 "Contractor's Area 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
 - C. All integrated shop drawings
 - E. All pile related submittals including fabrication working drawings

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 number of days bid starting on the 15th day after contract approval.

Bids in which the number of working days bid for completion of the designated portion of work 1 exceed **780 days** will be considered non-responsive and will be rejected.

Liquidated damages are \$50,000 per day starting on the 1st day after exceeding the above number of working days bid 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.

It is anticipated that water will be available in sufficient quantities for the prosecution of the work. However, water shortages may occur during the life of the contract. Arrangements or commitments obtained by the Department are not a part of the contract. It is expressly understood and agreed that the Department assumes no responsibility to the bidder or Contractor whatsoever in respect to the arrangements made with the source. The Contractor shall assume all risks in connection with the use of the source and the terms upon which the use shall be made. There is no warranty or guaranty, either expressed or implied, to the quantity of water that can be obtained from the source. If the Department has compiled "Materials Information", as referred to in "Watering" of these special provisions, the bidder or Contractor is cautioned to make independent investigations and obtain the commitments or allocations as the bidder or Contractor deems necessary to verify the quantity of water available. The Contractor shall make arrangements or obtain commitments or allocations necessary to provide water for the project.

During the progress of the work, if water becomes unavailable or unavailable in the quantities needed for prosecution of the work, the unavailability of water will be considered a "shortage of materials" in conformance with the provisions in Section 8-1.07, "Liquidated Damages," of the Standard Specifications except for compensation. The Contractor will be granted an extension of time and will not be assessed with liquidated damages for any portion of the delay in completion of the work beyond the time shown above for the completion of the work caused by the unavailability of water, provided the Contractor notifies the Engineer and furnishes proof of the "shortage of materials" as required in the third and fourth paragraphs in Section 8-1.07, "Liquidated Damages," of the Standard Specifications. If the Contractor sustains delay costs or damages which could not have been avoided by the judicious handling of forces, equipment and plant, there shall be paid to the Contractor the amount the Engineer may find to be a fair and reasonable compensation for the part of the Contractor's actual loss, as, in the opinion of the Engineer, was unavoidable, determined in the same manner as provided for right of way delays in Section 8-1.09, "Right of Way Delays," of the Standard Specifications. The Contractor shall be entitled to no other compensation for such delay. The provisions in Section 5-1.116, "Differing Site Conditions," of the Standard Specifications shall not apply to the unavailability of water.

5-1.08 INTEGRATED SHOP DRAWINGS

This work shall consist of developing three-dimensional integrated shop drawings (ISD's) for all locations on the Yerba Buena Island Transition Structures, Bridge No. 34-0006 L/R, in accordance with the details shown on the plans and the requirements of this section.

Difficult construction is anticipated locations that are highly congested with reinforcing steel, post-tensioning strand tendons, anchor bolts, and other concrete embedded items as shown on the plans. It is anticipated that various dimensional conflicts may be encountered between the planned locations of these embedded items.

ISD's shall conform to Section "Working Drawings" of these special provisions. ISD's shall be composite placing drawings to scale and in sufficient detail to show the relative positions of all items that are to be embedded in the concrete and their embedment depth as necessary to demonstrate compatibility of items within the concrete. ISD's shall be prepared under the supervision of an engineer who is registered as a Civil Engineer in the State of California.

The Contractor shall field measure locations of reinforcement at existing columns and seismic joint blockouts and utilize these measurements in the preparation of related bent cap ISD's.

Prior to commencing work on the ISD, the Contractor (including any sub-consultants hired to work on the ISD) shall attend a meeting with the Engineer to discuss the ISD work. ISD status meetings shall be held regularly, or as required by the Engineer, to discuss the progress of the ISD work.

The Contractor shall utilize commercially available software that checks for interference in three dimensions to identify any conflicts in the planned positions of embedded items in the ISD's. The software shall be compatible with the computer-aided drafting (CAD) software used to develop the ISD's. Prior to acquiring the software, the Contractor shall submit to the Engineer the product name and application features of the software for review and approval. Bar reinforcement shall be shown with deformed diameters. The Contractor shall develop CAD files using different layers for each type of embedded item such that the sequence of construction of the member or area being detailed can be shown.

Attention is directed to "Working Drawing Campus" of these special provisions for other equipment and software requirements.

Embedded items that are to be shown on the ISD's shall include but are not limited to, the following:

- A. Prestressing ducts and anchorages
- B. Bar reinforcing steel and splices including lap, welded, and mechanical splices
- C. Anchor bolts
- D. Anchor bolt plates
- E. Grout vents
- F. Seismic joints
- G. Drainage pipe
- H. Utility conduits and openings
- I. Inserts, bolt sleeves and studs
- J. Headed bars
- K. Epoxy coated bars
- L. Pipe shear keys
- M. Joint seal assemblies
- N. Other items, as shown on the plans or added by the Contractor

The Contractor shall use three-dimensional ISD's to identify and propose resolution of all conflicts and interference between the planned positions of embedded items and to satisfy the concrete cover shown on the plans.

If a conflict is identified, the Contractor shall document the conflict and propose changes to the embedded items in the ISD's to resolve the conflict. Proposed changes to the embedded items shall be made by a licensed engineer practicing Civil Engineering with extensive previous experience developing ISD.

The Contractor's proposed changes in the ISD's shall comply with the following sequence of item adjustments:

1. Non structural embedded items
2. Reinforcing steel including headed bar reinforcement and epoxy coated reinforcement
3. Transverse prestressing ducts

For conflicts involving bar reinforcing steel that cannot be resolved by adjusting nonstructural embedded items, the Contractor shall apply the following sequence of adjustments in order as necessary:

- A. Adjust reinforcement spacing
- B. Bundle bars
- C. Relocate splices
- D. Change reinforcement size and number. Reduction of the total reinforcement area will not be permitted unless otherwise permitted by the Engineer
- E. Change reinforcement shape
- F. Move embedded inserts
- G. Cut/trim reinforcement
- H. Combination of all the above

The Working Drawing Campus and ISD status meetings shall be used to facilitate discussion and resolution of conflicts identified in the ISD.

The ISD's to be submitted to the Engineer shall include the following:

- A. Baseline/Conflict Identification ISD: Three sets of the ISD's corresponding to the details as shown on the plans without any modifications. These ISD's shall indicate all conflicts including locations of the conflicts and items involved in the conflicts.
- B. Conflict List: Three complete lists of conflicts with descriptions and the Contractor's proposed modifications for each conflict.
- C. Proposed Modifications ISD: Three sets of the ISD's corresponding to the details as shown on the plans with incorporation of the Contractor's proposed modifications. These ISD's shall indicate that all previous identified conflicts have been resolved and concrete cover requirements as shown on the plans are met.
- D. ISD submittal shall be in two-dimensional format utilizing the three-dimensional layouts as input. ISD's shall be 260 mm x 432 mm in size and shall use colored ink to differentiate each type of embedded items.
- E. Three copies of the ISD's in electronic form on compact discs or tape for use by the Engineer.

An ISD submittal that complies with all of the above requirements, in the opinion of the Engineer, will be defined as a complete ISD submittal. Isometric drawings, if submitted, shall in no way relieve the Contractor from any other working drawing submittal required by these special provisions or the Standard Specifications.

CAD files of the contract drawings will not be made available to the Contractor.

After an ISD submittal is received by the Engineer, the Contractor shall allow the Engineer 7 days to review the ISD submittal for completeness. If determined to be complete, the Engineer shall have 28 days from the day of receipt to review and approve the ISD submittal. For proposed modifications that are not approved by the Engineer, the Engineer will propose alternative modifications to the Contractor. Modifications that result in changes to the plans or specifications, as determined by the Engineer, will be made in accordance with Section 4-1.03, "Changes," of the Standard Specifications. The Contractor shall submit revised ISD's incorporating the Engineer's alternative modifications as specified in this section. For each revised ISD submitted by the Contractor, the Contractor shall allow the Engineer an additional 2 weeks for review and approval. If more than one ISD is submitted at one time, the time to be allowed for the review of the ISD shall not be less than the review time specified above plus 14 days for each ISD submittal still under review and the Contractor shall designate the sequence in which the submittals are to be reviewed.

Construction of the items at locations listed above and adjacent areas shall not begin until the Engineer reviews and approves the complete ISD submittal with all conflicts resolved.

No extension of time will be permitted for the Contractor's failure to identify all conflicts or to complete the ISD's as required by these special provisions.

Full compensation for preparing ISD's, including ISD status meetings, computer software as described in this section, and all revisions necessary due to conflict resolution measures described in this section, shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

5-1.09 COST REDUCTION INCENTIVE PROPOSALS

Cost Reduction Incentive Proposals (CRIP) shall conform to the provisions in Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications and these special provisions.

Attention is directed to "Description of Bridge Work" of these special provisions for the description of basic design of the bridge.

The sixth paragraph of Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications shall not apply.

The Contractor shall reimburse the Department's costs for investigating and reviewing a CRIP including the preliminary concept of a CRIP regardless whether it is approved or rejected. The Contractor shall indicate acceptance thereof in writing, and that acceptance shall constitute full authority for the Department to deduct amounts payable to the Department from any moneys due or that may become due to the Contractor under the contract.

No proposals will be permitted in the following:

- A. Structure Type
- B. Number and Location of Hinges
- C. Span Lengths
- D. Slope of Exterior Girder
- E. Box Girder Exterior Dimensions
- F. Bent Cross-Sections
- G. Pile Dimensions and Layout
- H. Footing Type and Dimensions
- I. Specified Pile Tip Elevations
- J. Minimum Hammer Energy
- K. Welding Requirements and Procedures
- L. Bikepath Structure

The Contractor shall submit the preliminary concept of proposed CRIP in writing to the Engineer for approval prior to proceeding with the complete CRIP. After submitting the preliminary concept of proposed CRIP, the Contractor shall request a meeting with the Engineer to discuss the proposal in concept and to determine whether the cost reduction proposal will be considered by the Department. Items of discussion will include permit issues, impact on other projects, impact on the project schedule, traffic considerations, safety and health issues, design criteria, and review times required by the Department and other agencies. Determination by the Engineer that a cost reduction proposal will not be considered further will be deemed rejection of the proposal. The Contractor shall allow 15 working days after the meeting for the Engineer to review the conceptual submittal. Acceptance of a conceptual submittal in no way constitutes approval nor guarantees future approval of the Contractor's CRIP.

Attention is directed to "Working Drawing Campus" of the special provisions. By mutual agreement, the Contractor and the Engineer may elect to utilize the Working Drawing Campus to facilitate development, submittal, investigation, review and approval of CRIPs in the shortest and most efficient manner possible.

If, as provided in these special provisions, the Contractor and the Engineer elect to utilize the working drawing campus to facilitate development, submittal, investigation, review and approval of CRIPs, compensation shall be made in accordance with the sixth paragraph of Section 5-1.14, "Cost Reduction Incentive," of the Standard Specifications.

If the proposed CRIP affects the seismic performance of the structure, as determined by the Engineer, the Contractor shall present the CRIP proposal to the Seismic Safety Peer Review Panel (SSPRP). It is anticipated that this presentation to the SSPRP will require a 2-month notice and 6 meetings (occurring once a month). The meeting location(s) will be in California, and the meeting location and schedule will be determined by the SSPRP. The Engineer will not further consider said CRIP unless it is approved by the SSPRP. The Contractor's cost of preparing the SSPRP presentation and attending the SSPRP meetings and the Department's costs of investigating said proposal, presentation, meeting attendance, and compensation to the SSPRP, including any portion thereof paid by the Contractor, shall be excluded from consideration in determining the estimated new savings in construction costs.

No extension of time and no delay will be granted for the development, submittal, investigation, and review of CRIPs.

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.

5-1.19 SOUND CONTROL REQUIREMENTS

Sound control shall conform to these special provisions.

Attention is directed to "Supplemental Project Information" of these special provisions for reference to the USCG License DTTCG-Z71111-03RP-002L, Amendment No. 1, Maintenance and Logistic Command Pacific.

The noise level from the Contractor's operations, between the hours of 7:00 p.m. and 7:00 a.m., shall not exceed 78 dBA at a distance of 15 m from the source. Impact-type mechanical operations such as jack-hammering shall not be conducted between the hours of 7:00 p.m. and 7:00 a.m. In addition, pile-driving shall not be conducted between the hours of 7:00 p.m. and 12:00 p.m. At all times, the Contractor shall be responsible for complying with local ordinances regulating noise levels as well as the sound requirements of this section.

Noise monitoring activities will be conducted by the Department. The Contractor shall coordinate with the Department monitors and allow them access to noise monitoring locations.

The Contractor shall provide one "Type 1" sound level meter and one acoustic calibrator, which will be used by the Department during the life of the contract, at least 30 days prior to the construction start. The Contractor shall provide training by a person trained in noise monitoring to one Department employee designated by the Engineer. The sound level meter shall be calibrated and certified by the manufacturer or other independent acoustical laboratory prior to delivery to the Department. The Contractor shall provide annual recalibration by the manufacturer or other independent acoustical laboratory. All equipment shall be capable of taking measurements using the A-weighting network and the "slow" response of the sound level meter. The measurement microphone shall be fitted with an appropriate windscreen. All equipment shall be returned to the Contractor at the acceptance of the contract. Equipment damaged by actions of the Department or the public shall be paid for as extra work as provided in Section 4-1.03D for the Standard Specifications.

Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without the muffler.

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

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 involved and no additional compensation will be allowed therefor.

10-1.035 WORKING DRAWING SUBMITTAL SCHEDULE

Attention is directed to "Working Drawings" in these special provisions.

The Contractor shall submit the working drawing submittal schedule in accordance with the requirements of these special provisions.

The Contractor's attention is directed to the section "Progress Schedule (Critical Path Method)" of these special provisions for the definitions of Baseline Schedule and Controlling Operation.

Within 6 weeks after approval of the contract, the Contractor shall submit to the Engineer for acceptance the working drawing submittal schedule in conjunction with the Baseline Schedule. The working drawing submittal schedule shall include the following:

- A. Name and brief description of all working drawings and supplement including all subsections required by the Standard Specifications and these special provisions.
- B. Reference section of the Standard Specifications or these special provisions for each working drawing submittal.
- C. Allowable time for review of the working drawings by the Engineer as specified in the Standard Specifications and these special provisions.
- D. A time-scaled logic diagram which shows all working drawing submittals, working drawing activities, and demonstrates any interdependency between separate working drawing submittals or partial submittals.
- E. A listing of all working drawing submittals affecting the Controlling/critical path Operation.
- F. Identification of the first occurrence of any Controlling/critical path Operation affected by each working drawing submittal.
- G. A time-scaled diagram showing the estimated number of working drawing submittal sheets to be submitted for the Engineer's review.
- H. In the event that several related working drawing submittals with review times on the controlling/critical path are submitted simultaneously, or an additional working drawing submittal is submitted for review before the review of a previous submittal has been completed, the Contractor shall designate the sequence in which the submittals are to be reviewed.

The Contractor's proposed working drawing submittal schedule shall be in the order of the activities listed in the Baseline Schedule. Working drawing submittal schedules in contradiction with the Baseline Schedule will not be accepted. Items D through H, above, of the working drawing submittal schedule, shall be updated and submitted to the Engineer on a monthly basis in conjunction with the monthly updates provided for under Progress Schedule (Critical Path Method). The working drawing submittal schedule updates shall reflect actual durations and proposed revisions in durations, resources, and logic.

No compensation will be allowed for any costs incurred or for delay in completing the work resulting from rejected working drawing submittal. Pursuant to Item H, above, of the working drawing submittal schedule, should the Contractor submit several related working drawing submittals with review times on the controlling/critical path, or an additional working drawing submittal for review before the review of a previous submittal has been completed, the time to be provided for the review of any submittal in the sequence shall be not less than the review time specified for that submittal, plus 7 days for each submittal of higher priority which is still under review, unless specified otherwise in these special provisions.

The initial working drawing schedule submittal, as specified herein, shall be considered a component of the Baseline Schedule provisions of Progress Schedule (Critical Path Method), and the monthly working drawing schedule update provisions, as specified herein, shall be considered a component of the provisions of Progress Schedule (Critical Path Method), and the deduction and retention provisions of Progress Schedule (Critical Path Method) shall apply.

Full compensation for preparing and submitting the working drawing submittal schedule including all revisions shall be considered as included in the contract lump sum price paid for Progress Schedule (Critical Path Method), and no additional compensation will be allowed therefor.

10-1.20 COOPERATION

It is anticipated that work by another contractor may be in progress adjacent to or within the limits of this project during progress of the work on this contract. The following table lists contracts anticipated to be in progress during this contract.

Contract No.	Co-Rte-KP	Location	Type of Work
04-0120F4	04-SF-80-KP 13.2/KP 13.9	Yerba Buena Island	Construct Self-Anchored Suspension Bridge Superstructure
04-0120L4	04-Ala-80- KP 1.6 and KP 2.7	San Francisco-Oakland Bay Bridge Toll Plaza, in Oakland,	Construct Oakland Touchdown westbound roadway and eastbound structures and roadway
04-0120M4	04-Ala-80- KP 1.6/ KP 2.7	San Francisco-Oakland Bay Bridge Toll Plaza, in Oakland,	Construct Oakland Touchdown westbound roadway and eastbound structures and roadway
04-0120N4	04-SF-80-SF/Ala-KP 12.6/ KP 2.7	Yerba Buena Island	Install electrical systems
04-0120R4	04-SF-80- KP 12.6/ KP 13.2	Yerba Buena Island	Construct Temporary Bypass Structure
04-0120T4	04-SF-80-KP 12.9/KP 13.2	Yerba Buena Island	Constructing Yerba Buena Island Structures (portion), and reconstruct ramps and roadways
04-014034	04-Ala-80-KP 12.9/KP 13.2	Maintenance Yard	Construct Substation in Maintenance
USCG Contract	---	United States Coast Guard Facility	Construction of the Coast Guard Sector Command Center Facility

Comply with Section 7-1.14, "Cooperation," of the Standard Specifications.

10-1.31 MAINTAINING TRAFFIC

Maintaining traffic shall conform to the provisions in Section 7-1.08, "Public Convenience," Section 7-1.09, "Public Safety," and Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, "Public Safety" of these special provisions and these special provisions.

Closure is defined as the closure of a traffic lane or lanes, including shoulder, ramp or connector lanes, within a single traffic control system.

Closures shall conform to the provisions in "Traffic Control System for Lane Closure" of these special provisions.

In addition to the provisions set forth in "Public Safety" of these special provisions, whenever work, including the work of installing, maintaining, and removing temporary railing (Type K) or concrete barrier (Type K) is to be performed on the freeway within 1.8 m of the adjacent traffic lane, the adjacent traffic lane shall be closed.

At locations where falsework pavement lighting is designated, falsework lighting shall be installed in conformance with the provisions in Section 86-6.11, "Falsework Lighting," of the Standard Specifications.

Openings shall be provided through bridge falsework for the use of public traffic at each location where falsework is constructed over the streets or routes listed in the following table. The type, minimum width, height, and number of openings at each location, and the location and maximum spacing of falsework lighting, if required for each opening, shall conform to the requirements in the table. The width of vehicular openings shall be the clear width between temporary railings or other protective work. The spacing shown for falsework pavement lighting is the maximum distance center to center in meters between fixtures.

Buena Island Yerba Westbound and Eastbound Transition Structures
(Bridge No. 34-0006L/R)
Over USCG Access Road

	Number	Width	Height
Vehicle Openings	2	9.6	4.6
	Location	Spacing	
Falsework Pavement Lighting	R and L	7 Staggered 1/2 Space	

(Width and Height in meters)

(R = Right side of traffic. L = Left side of traffic)

(C = Centered overhead)

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

Closures are only allowed during the hours shown in the lane requirement charts included in this section "Maintaining Traffic," except for work required under Section 7-1.08, "Public Convenience," and Section 7-1.09, "Public Safety."

The full width of the traveled way shall be open for use by public traffic when construction operations are not actively in progress.

The Contractor shall notify the United States of Coast Guard Officer, at (415) 399-3504, at least 5 business days before work begins. The Contractor shall cooperate with United States of Coast Guard to handle traffic on Wendy Way, Torpedo Factory Rd. and Macalla Rd., which lead to USCG Access Rd., through the work area and shall make arrangements to keep the work area clear of parked vehicles.

Attention is directed to "Bridge Tolls" of these special provisions. The access of the contractor's trucks hauling material and surplus materials to and from the project site, from westbound Route 80, westbound and eastbound on and off-ramps to and from Treasure Island/Yerba Buena Island, shall not be allowed, during the peak periods from 5:00 a.m. to 10:00 a.m., and 3:00 p.m. to 7:00 p.m., on weekdays. Furthermore, the access of the contractor's trucks hauling materials to the project site from westbound Route 80 through the bus and carpool lanes, at San Francisco-Oakland Bay Bridge toll plaza, shall not be allowed, during the peak periods from 5:00 a.m. to 10:00 a.m., and 3:00 p.m. to 7:00 p.m., on weekdays.

The Contractor is encouraged to organize carpool, vanpool, boat, or other modes of mass transit for transport of manpower, materials and equipment to the maximum extent, practical, from San Francisco/Oakland to and from the project site.

Attention is directed to "Cooperation" of these special provisions.

The Contractor shall provide access and maintain Macalla Rd., Wendy Way, and Torpedo Factory Rd., which are the primary access to United States Coast Guard (USCG), United States Navy facilities, University of California-Berkeley (UCB) Seismographic Stations, and other contractors to various project sites on Yerba Buena Island, in the vicinity of the contract, at all times.

The Contractor shall not create any traffic delays during United States Coast Guard (USCG) Facility peak commute times, defined as Monday through Friday from 6:30 a.m. to 8:30 a.m. and from 1:30 p.m. to 3:30 p.m. or during special events declared by the USCG. The time periods for special events shall be coordinated between the Engineer and the representatives of the USCG. In addition, the Contractor shall provide one-way traffic control on the portion of Macalla Road (lower portion) between Southgate Road and the USCG Facility. Traffic control shall consist of the use of flaggers at each end of this portion of Macalla Road. This traffic control shall be in operation Monday through Friday, 8:30 a.m. to 1:30 p.m., and on weekends and during special events when otherwise necessary. At no time between the hours of 8:30 a.m. and 1:30 p.m. shall the one-way traffic control result in more than 15 minutes of cumulative delay for all contracts listed in section "Cooperation" in these special provisions.

The Contractor shall inform USCG and Engineer in writing 5 days in advance if the Contractor is to bring a wide load or a permit load to the Yerba Buena Island.

The Contractor shall provide and maintain a 3.6 m lane access road to Sanitary Sewer Lift Pump Station, at all time. The Contractor shall submit a written request for an approval from San Francisco Public Utilities Commission through the Engineer at least 96 hours in advance for any construction operation that may block the access road to the sanitary sewer lift pump station.

Full compensation for providing and maintaining the above access shall be considered as included in the contract price paid for various items of work involved and no additional compensation will be allowed therefor.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders including sections closed to public traffic.

Personal vehicles of the Contractor's employees shall not be parked within the right of way, on the traveled way or shoulders including any section closed to public traffic, except in the area proposed by the Contractor and approved by the Engineer. Vehicles outside areas designated as Temporary Construction Easements will be ticketed by local parking authorities.

When work vehicles or equipment are parked on the shoulder within 1.8 m of a traffic lane, the shoulder area shall be closed as shown on the plans.

If minor deviations from the lane requirement charts are required, a written request shall be submitted to the Engineer at least 15 days before the proposed date of the closure. The Engineer may approve the deviations if there is no significant increase in the cost to the State and if the work can be expedited and better serve the public traffic.

Designated legal holidays are: January 1st, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, November 11th, Thanksgiving Day, and December 25th. When a designated legal holiday falls on a Sunday, the following Monday shall be a designated legal holiday.

Special Days are: the third Monday in January, February 12th, March 31st, the second Monday in October, and any day on which a major event, as determined by the Engineer, is scheduled at Monster (Candlestick) Park, AT&T Park, downtown San Francisco, Treasure Island, Networks Associates Coliseum, or downtown Oakland.

Full compensation for furnishing, erecting, maintaining, and removing and disposing of the C43(CA), SC6-3(CA), SC6-4(CA), W20-1, W21-5b, and C24(CA) signs shall be considered as included in the contract lump sum price paid for construction area signs and no additional compensation will be allowed therefor.

Lane Closure Restriction for Designated Legal Holidays and Special Days										
Thu	Fri	Sat	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Sun
x	H xx	xx	xx							
	SD xx									
x	xx	H xx	xx							
		SD xx								
	x	xx	H xx	xx						
			SD xx							
	x	xx	xx	H xx						
	x	xx	xx	SD xx						
				x	H xx					
				x	SD xx					
					x	H xx				
						SD xx				
						x	H xx	xx		xx
							SD xx			

Legends:

	Refer to lane closure charts
x	The full width of the traveled way shall be open for use by public traffic after 4:30 a.m.
xx	The full width of the traveled way shall be open for use by public traffic.
H	Designated Legal Holiday
SD	Special Day

Chart No. 1																									
Freeway/Expressway Lane Requirements																									
County: San Francisco/Alameda					Route/Direction: 80 Westbound										KP: 12.7/13.2										
Closure Limits: Between east end of SFOBB and Treasure Island on-ramp (KP 12.3)																									
FROM HOUR TO HOUR																									
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	2	1	1	1	2																	4	4	4	3
Fridays	2	1	1	1	2																		4	4	3
Saturdays	2	2	1	1	1	2	3	4																	4
Sundays	2	2	1	1	1	2	2	3	3														4	4	3

Legend:

1	Provide at least one through freeway lane open in direction of travel
2	Provide at least two adjacent through freeway lanes open in direction of travel
3	Provide at least three adjacent through freeway lanes open in direction of travel
4	Provide at least four adjacent through freeway lanes open in direction of travel
	Work permitted within project right of way where shoulder or lane closure is not required

REMARKS:

- See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions.
- All lane closures shall be coordinated in advance with the Toll Collection Lieutenant at the San Francisco/Oakland Bay Bridge.
- All lanes that merge into any open lanes on the SFOBB shall remain open to traffic.

Chart No. 2																									
Freeway/Expressway Lane Requirements																									
County: San Francisco/Alameda					Route/Direction: 80 Westbound										KP: 12.7/13.2										
Closure Limits: Between east end of SFOBB and Treasure Island on-ramp																									
FROM HOUR TO HOUR																									
	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	S	S	S	S	S																	S	S	S	S
Fridays	S	S	S	S	S																		S	S	S
Saturdays	S	S	S	S	S	S	S	S																	S
Sundays	S	S	S	S	S	S	S	S	S														S	S	S

Legend:

S	Shoulder closure permitted
	Work permitted within project right of way where shoulder or lane closure is not required

Chart No. 3																										
Freeway/Expressway Lane Requirements																										
County: San Francisco/Alameda					Route/Direction: 80 Eastbound										KP: 12.4/13.2											
Closure Limits: Between Treasure Island and left off-ramp (KP 12.4) and SFOBB Toll Plaza																										
FROM HOUR TO HOUR		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		2	2	1	1	1	2	4																		3
Fridays		3	2	2	1	1	2	4																		
Saturdays		4	4	3	3	1	2	2	3	3																
Sundays		4	3	3	2	1	1	2	2	3	4													4	3	

Legend:

1	Provide at least one through freeway lane open in direction of travel
2	Provide at least two adjacent through freeway lanes open in direction of travel
3	Provide at least three adjacent through freeway lanes open in direction of travel
4	Provide at least four adjacent through freeway lanes open in direction of travel
	Work permitted within project right of way where shoulder or lane closure is not required

REMARKS:

- See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions.

Chart No. 4																										
Freeway/Expressway Lane Requirements																										
County: San Francisco/Alameda					Route/Direction: 80 Eastbound										KP: 12.7/13.2											
Closure Limits: Between the Yerba Buena Island on-ramp and the SFOBB Toll Plaza																										
FROM HOUR TO HOUR		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		S	S	S	S	S	S	S																		S
Fridays		S	S	S	S	S	S	S																		
Saturdays		S	S	S	S	S	S	S	S	S																
Sundays		S	S	S	S	S	S	S	S	S	S															

Legend:

S	Shoulder closure permitted
	Work permitted within project right of way where shoulder or lane closure is not required

REMARKS:

See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions.

Chart No. 5 Complete Ramp Closure Hours/Ramp Lane Requirements																										
County: San Francisco					Route/Direction: 80 Westbound										KP: 12.7											
Closure Limits: Bay Bridge Westbound off-ramp to Treasure Island																										
FROM HOUR TO HOUR		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	C																				
Fridays		C	C	C	C	C																				
Saturdays		C	C	C	C	C	C	C	C																	
Sundays		C	C	C	C	C	C	C	C	C																
Legend:																										
<input type="checkbox"/> C		Ramp may be closed completely																								
<input type="checkbox"/>		Work permitted within project right of way where shoulder or lane closure is not required																								
REMARKS:																										
<ol style="list-style-type: none"> See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions. Simultaneous closure of two consecutive on-ramps or two consecutive off-ramps shall not be permitted Closure of this ramp shall not be permitted during the same periods that any lane or roadway closures are scheduled to occur along the route onto which traffic from this closed ramp will be detoured. For detour, see Construction Area Signs plans. 																										

Chart No. 6 Complete Ramp Closure Hours/Ramp Lane Requirements																										
County: San Francisco					Route/Direction: 80 Westbound										KP: 12.7											
Closure Limits: Bay Bridge Westbound on-ramp from Treasure Island																										
FROM HOUR TO HOUR		24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays		C	C	C	C	C																				
Fridays		C	C	C	C	C																				
Saturdays		C	C	C	C	C	C	C	C																	
Sundays		C	C	C	C	C	C	C	C	C																
Legend:																										
<input type="checkbox"/> C		Ramp may be closed completely																								
<input type="checkbox"/>		Work permitted within project right of way where shoulder or lane closure is not required																								
REMARKS:																										
<ol style="list-style-type: none"> See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions. Simultaneous closure of two consecutive on-ramps or two consecutive off-ramps shall not be permitted Closure of this ramp shall not be permitted during the same periods that any lane or roadway closures are scheduled to occur along the route onto which traffic from this closed ramp will be detoured. For detour, see Construction Area Signs plans. 																										

**Chart No. 7
Complete Ramp Closure Hours/Ramp Lane Requirements**

County: San Francisco	Route/Direction: 80 Eastbound	KP: 12.7
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Closure Limits: Bay Bridge Eastbound on-ramp from Treasure Island

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	C	C	C	C	C	C	C																		C
Fridays	C	C	C	C	C	C	C																		
Saturdays	C	C	C	C	C	C	C	C	C																
Sundays	C	C	C	C	C	C	C	C	C	C														C	C

Legend:

- C Ramp may be closed completely
- Work permitted within project right of way where shoulder or lane closure is not required

REMARKS:

1. See Lane Closure Restriction for Designated Legal Holidays and Special Days table in Maintain Traffic of these special provisions for additional closure restrictions.
2. Simultaneous closure of two consecutive on-ramps or two consecutive off-ramps shall not be permitted.
3. Closure of this ramp shall not be permitted during the same periods that any lane or roadway closures are scheduled to occur along the route onto which traffic from this closed ramp will be detoured. For detour, see Construction Area Signs plans.

Precast concrete members shall not be cast within the right of way of Route 80.

During steel girder erection for the temporary eastbound on-ramp, public traffic in the lanes over which girders are being placed shall be detoured or stopped as specified in this section, "Maintaining Traffic."

Erection and removal of falsework at locations where falsework openings are required shall be undertaken one location at a time. During falsework erection and removal, public traffic in the lanes over which falsework is being erected or removed shall be detoured or stopped as specified in this section, "Maintaining Traffic." Falsework erection shall include adjustments or removal of components that contribute to the horizontal stability of the falsework system. Falsework removal shall include lowering falsework, blowing sand from sand jacks, turning screws on screw jacks, and removing wedges.

The Contractor shall have necessary materials and equipment on the site to erect or remove the girders and falsework in any one span or over any one opening before detouring or stopping public traffic.

CLEAN BRIDGE DECK

This work shall consist of cleaning the portland cement concrete bridge deck surface in areas to receive methacrylate resin treatment as shown on the plans and as specified in these special provisions.

The deck surface shall be cleaned by abrasive blasting and shall be dry when blast cleaning is performed.

After abrasive cleaning, the entire deck surface shall be cleaned by manual or power sweeping and loose material shall be blown from visible cracks using high pressure air.

Equipment shall be fitted with suitable traps, filters, drip pans, or other devices as necessary to prevent oil or other deleterious material from being deposited on the deck.

If the surface becomes contaminated at any time prior to placing the penetrating sealer, the affected surface shall be cleaned by abrasive blasting followed by manual or power sweeping.

Except as otherwise provided, removed materials 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.

Cleaning bridge deck surface will be measured by the square meter of surface that is cleaned, based on field measurement of the completed work.

The contract price paid per square meter for clean bridge deck shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in cleaning the bridge deck, including removing contrast treatment except slurry or chip seal contrast treatment, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.435 VIBRATION MONITORING

This work shall consist of furnishing, installing and maintaining vibration-monitoring instrumentation; collecting vibration data; and interpreting and reporting the results of vibration monitoring as specified herein. This work shall include the implementation by the Contractor of any required remedial and precautionary measures, using the vibration monitoring data, to protect the following facilities, which are specified in "Environmentally Sensitive Areas (General)" of these special provisions, from excess vibration during construction activities:

1. United States Coast Guard Base – Quarters 8, Buildings 9, 17, 18, 24, 25, 26, and 27
2. United States Navy – Buildings/Quarters 1 (Nimitz House), 2, 3, and 4
3. Navy Sundial Plaza/Planted Area inside the special construction area (SCA)

GENERAL

The Contractor shall be responsible for the following, including but not limited to:

1. Furnish and install vibration-monitoring instrumentation.
2. Protect from damage and maintain instruments installed by the Contractor and repair or replace damaged or inoperative instruments.
3. Collect, interpret and report data from instrumentation specified herein.
4. Implement response actions.

The Department is not responsible for the safety of the work based on vibration-monitoring data, and compliance with this Section does not relieve the Contractor of full responsibility for damage caused by the Contractor's operations.

VIBRATION MONITORING PERSONNEL

The Contractor's vibration-monitoring personnel shall have the qualifications specified herein. Vibration monitoring may be on the staff of the Contractor. However, they shall not be employed nor compensated by subcontractors, or by persons or entities hired by subcontractors, who will provide other services or material for the project.

The Contractor's vibration-monitoring personnel shall include a qualified Vibration Instrumentation Engineer who is a registered Professional Engineer in the State of California, and who has at least 4 years of experience in the installation and use of vibration-monitoring instrumentation and in interpreting instrumentation data. The Vibration Instrumentation Engineer shall:

1. Be on site and supervise the initial installation of each vibration-monitoring instrument.
2. Supervise interpretations of vibration-monitoring data.

The Contractor's vibration-monitoring personnel shall be subject to the Engineer's approval.

SUBMITTALS

Prior to any significant impact work and prior to performing any vibration monitoring, the Contractor shall submit to the Engineer a written vibration monitoring plan, vibration monitoring equipment manufacturer's product data and the resumes of the Vibration Instrumentation Engineer and any vibration monitoring technical support personnel.

The vibration monitoring equipment manufacturer's data shall describe in detail all vibration-monitoring instruments. Requests for consideration of substitutions, if any, together with product data and instruction manuals for requested substitutions.

The resumes of the Vibration Instrumentation Engineer and any vibration monitoring technical support personnel shall be sufficient to define details of relevant experience.

The written vibration monitoring plan shall detail the procedures for vibration monitoring. Such details shall include, but not limited to:

1. The name of the Firm providing the vibration monitoring services.
2. Description of the instrumentation and equipment to be used.
3. Measurement locations and methods for mounting the vibration sensors.
4. Procedures for data collection and analysis.
5. Means and methods of providing warning when the particle velocity equals or exceeds specified limits.
6. Generalized plans of action to be implemented in the event the particle velocity equals or exceeds specified limits. The generalized plans of action shall be positive measures by the Contractor to control vibrations (e.g. using alternative construction methods).
7. Name of the "responsible person" designated by the Contractor. The responsible person designated by the Contractor shall have the authority to stop the work causing the vibration.

Within 5 days of receipt of each instrument at the site, the Contractor shall submit to the Engineer a copy of the instruction manual and the laboratory calibration and test equipment certification.

In addition, the Contractor shall submit data and reports as specified in "Data Reduction, Processing, Plotting and Reporting" in these special provisions.

The review period shall be the same as those set forth in Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications.

VIBRATION MONITORING EQUIPMENT

The Contractor shall provide portable seismographs for monitoring the velocities of ground vibrations resulting from construction activities. Seismographs shall be Model DS-477 Blastmate II as manufactured by InstanTel Inc., Kanata (Ottawa), Ontario, Canada, Model VMS-500 as manufactured by Thomas Instruments, Inc., Spofford, NH, or Model NC5310/D, as manufactured by Nomis Inc., Birmingham, AL, or acceptable equivalent. The seismograph shall have the following minimum features:

1. Seismic range: 0.25 to 102 mm per second with an accuracy of +5 percent of the measured peak particle velocity or better at frequencies between 10 Hertz and 100 Hertz, and with a resolution of 0.25 mm per second or less.
2. Frequency response (+3 dB points): 2 to 200 Hertz.
3. Three channels for simultaneous time-domain monitoring of vibration velocities in digital format on three perpendicular axes.
4. Two power sources: internal rechargeable battery and charger and 115 V(ac). Battery must be capable of supplying power to monitor vibrations continuously for up to 24 hours.
5. Capable of internal, dynamic calibration.
6. Direct writing to printer and capability to transfer data from memory to 90-mm magnetic disk. Instruments must be capable of producing strip chart recordings of readings on site within one hour of obtaining the readings. Provide computer software to perform analysis and produce reports of continuous monitoring.
7. Continuous monitoring mode must be capable of recording single-component peak particle velocities, and frequency of peaks with an interval of one minute or less.

Whenever any product is specified by brand name and model number, such specifications shall be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the product desired. The term "acceptable equivalent" shall be understood to indicate a product that is the same or better than the product named in the specifications in function, quality, performance, reliability, and general configuration. This procedure is not to be construed as eliminating other manufacturers' suitable products of equal quality.

The Contractor may request to substitute an "acceptable equivalent" vibration monitoring equipment and shall submit complete comparative data to the Engineer for consideration of another product. Any request from the Contractor for consideration of a substitution shall clearly state the nature of the deviation from the product specified. Substitute products shall not be used in the work unless accepted by the Engineer in writing. The Engineer will be the sole judge of the suitability and equivalency of the proposed substitution.

The Contractor's instrumentation personnel shall conduct regular maintenance of seismograph installations.

All seismographs shall have been calibrated by the manufacturer or certified calibration laboratory within one year of their use on site. A current certificate of calibration shall be submitted to the Engineer with the Contractor's data.

A record of laboratory calibration shall be provided for all vibration-monitoring instruments to be used on site. Certification shall be provided to indicate that the instruments are calibrated and maintained in accordance with the equipment manufacturer's calibration requirements and that calibrations are traceable to the U.S. National Institute of Standards and Technology (NIST).

VIBRATION MONITORING

The Contractor shall furnish all installation tools, materials, and miscellaneous instrumentation components for vibration monitoring. At the above listed locations, vibration monitoring and recording shall be performed during the course of all significant impact work, when that activity occurs within 26 meters of the said facility. The 26 meters shall be measured from the edge of the construction activity.

The Contractor shall notify the Engineer at least 24 hours prior to starting a new vibration-producing construction task, and shall have the seismographs in place and functioning properly prior to any work within 26 meter as defined above. No work occurring within this zone shall occur unless monitoring equipment is functioning properly.

The equipment shall be set up in a manner such that an immediate warning is given when particle velocity equal to or exceeding 5 millimeter per second is produced. The warning emitted by the vibration-monitoring equipment shall be instantaneously transmitted to the responsible person designated by the Contractor by means of warning lights, audible sounds or electronic transmission.

Monitoring equipment shall be stationed within 0.9 meter of the exterior of designated buildings on the side facing the Contractor's work site. For buildings whose frontage exceeds 60 meter, at least 2 monitors shall be utilized at that location.

When any reading on monitoring equipment equals or exceeds 5 millimeter per second, work shall immediately cease and the Contractor shall immediately notify the Engineer. If directed by the Engineer, the Contractor shall submit within 24 hours a detailed specific plan of action so that the vibration limits are not violated. The Contractor shall take whatever action is necessary to reduce and maintain the monitoring equipment reading below a particle velocity of 5 millimeter per second.

The seismograph vibration sensors shall be firmly mounted on the surface slab of concrete or asphalt, or firmly set in undisturbed soil.

DATA COLLECTION

Prior to any vibration-producing construction activity, the Contractor shall collect seismograph data to document background vibrations at each monitoring location. This monitoring shall consist of a continuous recording of the maximum single-component peak particle velocities for one-minute intervals, which shall be printed on a strip chart. The background monitoring shall be performed for a minimum of two non-consecutive workdays, spanning the hours during which construction activities will take place.

The Contractor shall monitor vibration during significant vibration-producing construction activities. This monitoring shall consist of a continuous recording of the maximum single-component peak particle velocities for one-minute intervals, which shall be printed on a strip chart. During the monitoring, the Contractor shall document all events that are responsible for the measured vibration levels, and submit the documentation to the Engineer with the data as specified in section "Data Reduction, Processing, Plotting and Reporting" in these special provisions.

All vibration monitoring data shall be recorded contemporaneously and plotted continuously on a graph by the data acquisition equipment. Each graph shall show time-domain wave traces (particle velocity versus time) for each transducer with the same vertical and horizontal axes scale.

DATA REDUCTION, PROCESSING, PLOTTING AND REPORTING

Within 10 working days after the completion of the background vibration monitoring, the Contractor shall submit to the Engineer a hard copy report documenting the results at each of the monitoring locations.

During bridge construction, the Contractor shall provide weekly, hard copy reports summarizing any vibration monitoring data collected at the specified vibration-monitoring locations. The reports for each week shall be submitted on or before the end of the following week.

All reports shall be signed by the approved Vibration Instrumentation Engineer, and shall include the following:

1. Project identification, including District, County, Route, Post Mile, Project Name and Bridge number as shown on the project plans.
2. Location of the monitoring equipment.
3. Location of vibration sources (e.g. traffic, demolition equipment, etc.).
4. Summary tables indicating the date, time and magnitude and frequency of maximum single-component peak particle velocity measured during each one-hour interval of the monitoring period.
5. Field data forms (construction vibration monitoring only).
6. Appendix graphs of the strip charts printed during the monitoring periods.

In addition to the hard copy data specified herein, the Contractor shall provide data on 90-mm diskettes with each report. Electronic data files for all instrument data shall be provided in dBASE IV (.DBF) format.

The Contractor shall not disclose any instrumentation data to third parties and shall not publish data without prior written consent of the State.

PAYMENT

The contract lump sum price paid for vibration monitoring shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all work involving vibration monitoring, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.695 BRIDGE DECK METHACRYLATE RESIN TREATMENT

GENERAL

Summary

This work includes applying a high molecular weight methacrylate (HMWM) resin system with sand and absorbent material to bridge decks of the Yerba Buena Island (YBI) Transition Structures (Bridge No. 34-0006 L/R)

Submittals

Submit a HMWM resin system placement plan in conformance with the provisions in "Working Drawings" of these special provisions. The plan review time is 15 days.

The HMWM resin system placement plan must include:

1. Schedule of work and testing for each bridge
2. Description of equipment for applying HMWM resin
3. Range of gel time and final cure time for HMWM resin
4. Absorbent material to be used
5. Description of equipment for applying and removing excess sand and absorbent material
6. Procedure for removing HMWM resin from the deck, including equipment
7. Storage and handling of HMWM resin components and absorbent material
8. Disposal of excess HMWM resin and containers

Submit a material safety data sheet for each HMWM resin system component and diatomaceous earth shipment before use.

Quality Control and Assurance

Submit samples of HMWM resin components 15 days before use under Section 6-3, "Testing," of the Standard Specifications. Notify the Engineer 15 days before delivery of HMWM resin components in containers over 55 gallons to the job site.

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

The test area must:

1. Be approximately 50 square meters
2. Be placed within the project limits outside the traveled way at an approved location
3. Be constructed using the same equipment as the production work
4. Replicate field conditions for the production work
5. Demonstrate proposed means and methods meet the acceptance criteria
6. Demonstrate production work will be completed within the time allowed
7. Demonstrate suitability of the airborne emissions monitoring plan

The test area will be acceptable if:

1. The treated deck surface is tack free and non-oily
2. The sand cover adheres and resists brushing by hand
3. Excess sand and absorbent material has been removed
4. The coefficient of friction is at least 0.35 when tested under California Test 342

MATERIALS

HMWM resin system consists of a resin, promoter, and initiator. HMWM resin must be low odor and comply with the following:

HMWM 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*	82 °C , minimum	ASTM D 3278
Vapor Pressure*	1.0 mm Hg, maximum, at 25 °C	ASTM D 323
Tack-free Time	400 minutes, maximum, at 25 °C	Specimens prepared per California Test 551
PCC Saturated Surface-Dry Bond Strength	3.5 MPa, minimum at 24 hours and 21 ± 1 °C	California Test 551

*Test must be performed before adding initiator.

Sand for abrasive sand finish must:

1. Be commercial quality dry blast sand
2. Have at least 95 percent pass the 2.36-mm sieve and at least 95 percent retained on the 850-µm sieve when tested under California Test 205

Absorbent material must be diatomaceous earth, abrasive blast dust, or substitute recommended by the HMWM resin supplier and approved by the Engineer.

CONSTRUCTION

HMWM resin system applied by machine must be:

1. Combined in volumetric streams of promoted resin to initiated resin by static in-line mixers
2. Applied without atomization

HMWM resin system may be applied manually. Limit the quantity of resin mixed for manual application to 20 L at a time.

Prepare the deck under "Clean Bridge Deck" of these special provisions.

The deck must be dry before applying HMWM resin. The concrete surface must be at least 10 °C and at most 38 °C. Relative humidity must be expected to be at most 85 percent during the work shift.

Thoroughly mix all components of HMWM resin. Apply HMWM resin to the deck surface within 5 minutes of mixing at approximately 2.2 square meters per liter. The Engineer determines the exact application rate. The resin gel time must be between 40 and 90 minutes. HMWM resin that thickens during application is rejected.

Spread the HMWM resin uniformly. Completely cover surfaces to be treated and fill all cracks. Redistribute excess resin using squeegees or brooms within 10 minutes of application. For textured or grooved deck surfaces, excess resin must be removed from the texture indentations.

Apply the abrasive sand finish of at least one kilogram per square meter or until saturation as determined by the Engineer no sooner than 20 minutes after applying resin. Apply absorbent material before opening lane to traffic. Remove excess sand and absorbent material by vacuuming or power sweeping.

Traffic or equipment will be allowed on the overlay after the Engineer has determined:

1. The treated deck surface is tack free and non-oily
2. The sand cover adheres and resists brushing by hand
3. Excess sand and absorbent material has been removed
4. No material will be tracked beyond limits of treatment by traffic

Remove the HMWM resin from the deck surface if the Engineer determines (1) the above listed conditions have not been met and (2) the allowable lane closure time will be exceeded.

The Engineer performs California Test 342 on treated deck surfaces. The Engineer provides at least a 15-day notice for the Contractor to provide traffic control for each bridge location. The coefficient of friction of the treated deck must be at least 0.35.

MEASUREMENT AND PAYMENT

Bridge deck methacrylate resin treatment will be measured by the square meter based on the dimensions shown on the plans and will be paid for as treat bridge deck. Furnish bridge deck treatment material will be measured by the liter of mixed HMWM resin actually placed and will be paid for as furnish bridge deck treatment material. No payment will be made for materials wasted or not incorporated in the work.

The contract price paid per square meter for treat bridge deck shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in preparing and applying bridge deck HMWM resin treatment, including sand and absorbent material, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The contract price paid per liter for furnish bridge deck treatment material shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to furnish the bridge deck treatment material to the site of the work ready for application, as specified in the Standard Specifications and these special provisions and as directed by the Engineer.

Full compensation for providing traffic control for the Engineer to perform inspections and testing shall be considered as included in the contract prices paid for the items of work involving bridge deck methacrylate resin treatment and no additional compensation will be allowed therefor.

**BID ITEM LIST
04-0120S4**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161 (S)	014855	YBI TRANSITION STRUCTURES ROADWAY WESTBOUND	LS	LUMP SUM	LUMP SUM	
162 (S)	014856	YBI TRANSITION STRUCTURES GIRDER WESTBOUND	LS	LUMP SUM	LUMP SUM	
163 (S)	014857	YBI TRANSITION STRUCTURES ROADWAY EASTBOUND	LS	LUMP SUM	LUMP SUM	
164 (S)	014858	YBI TRANSITION STRUCTURES GIRDER EASTBOUND	LS	LUMP SUM	LUMP SUM	
165 (S)	014859	SCADA REMOTE TERMINAL UNIT SYSTEM	LS	LUMP SUM	LUMP SUM	
166 (S)	014860	INSTALL STRONG MOTION DETECTION SYSTEM	LS	LUMP SUM	LUMP SUM	
167 (S)	014861	INSTALL CALL BOX SYSTEM	LS	LUMP SUM	LUMP SUM	
168 (S)	860461	LIGHTING (LOCATION 1)	LS	LUMP SUM	LUMP SUM	
169 (S)	014862	CAMERA UNIT WITH HOUSING	EA	1		
170 (S)	014863	PAN AND TILT UNIT	EA	1		
171 (S)	014864	CAMERA CONTROL UNIT	EA	1		
172 (S)	014865	VIDEO TRANSMITTER DUPLEX DATA	EA	1		
173 (S)	014866	PREFORMED LOOP DETECTOR STATION (10 LOOP S PER STATION)	EA	5		
174 (S)	014867	FIBER OPTIC DATA MODEMS	EA	7		
175 (S-F)	014868	FIBER OPTIC CABLE (12-FIBER INDOOR/OUTDOOR)	M	350		
176 (S-F)	014869	FIBER OPTIC CABLE (72-FIBER INDOOR/OUTDOOR)	M	2090		
177 (S)	867130	FIBER OPTIC SPLICE CLOSURE	EA	8		
178 (S)	014946	INSTALL LIGHT POLE AND FIXTURE	LS	LUMP SUM	LUMP SUM	
179	014870	50 MM GAS PE PIPE	M	60		
180	014871	100 MM GAS PE PIPE	M	30		

**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	M2	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	999990	MOBILIZATION	LS	LUMP SUM		

TOTAL BID FOR COST: _____

TOTAL BID FOR TIME= _____

**WORKING DAYS
BID**

(Not to exceed 780 Days on
Designated Portion of Work 1)

\$50,000.00 :
COST PER DAY _____

TOTAL BID FOR BID COMPARISON (COST PLUS TIME): _____