

**DEPARTMENT OF TRANSPORTATION**  
DIVISION OF ENGINEERING SERVICES  
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April 28, 2010

04-SM,Ala-84-R28.8/R30.2,R0.0/R0.8  
04-1A5224

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN SAN MATEO AND ALAMEDA COUNTIES IN MENLO PARK AND FREMONT FROM 0.3 MILE WEST TO 0.5 MILE EAST OF THE DUMBARTON BRIDGE.

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, May 25, 2010, instead of the original date of May 27, 2010.

This addendum is being issued to set a new bid opening date as shown herein, revise the Project Plans, the Notice to Bidders and Special Provisions, the Bid book and provide a copy of the Information Handout.

Project Plan Sheets 36, 64, 65, 66, 67, 69, 72, 73, 74, 75, 97, 174, 175, 177, 179, 180, 182, 183, 185, 191, 192, 203, 212, 219, 236, 237, 240, 241, 244, 245, 246, 247, 248, 250, 251, 252, 259, 269, 271 through 276 and 376 through 380 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 252A and 290A are added. Copies of the added sheets are attached for addition to the project plans.

Project Plan Sheets 38, 178, 184, 204, 205 and 284 through 290 are deleted.

In the NOTICE TO BIDDERS, the eleventh, twelfth and thirteenth paragraphs are revised respectively as follows:

"Do not bid more than 600 working days.

The estimated cost of the project is \$ 73,000,000.

A mandatory prebid is scheduled for this project on May 6, 2010 from 9:00 am to 4:00 pm (Pacific Time) at the Newark Community Center, 35501 Cedar Blvd., Newark, CA 94560. The Department will not accept bids from bidders who do not attend the mandatory prebid meeting."

In the Special Provisions, Section 2-1.015, "MANDATORY PREBID MEETING," is added as attached.

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In the Special Provisions, Section 2-1.016, "SSPC QP CERTIFICATION PREAWARD QUALIFICATION," is added as follows:

**"2-1.016 SSPC QP CERTIFICATION PREAWARD QUALIFICATION**

Submit the SSPC QP certification required for cleaning and painting in these special provisions. Failure to submit the certification will result in a nonresponsive bid."

In the Special Provisions, Section 5-1.10, "PAYMENTS," in the first paragraph, the following item is added:

"N. Hinge Joint Seal Assembly (MR 7 ½")"

In the Special Provisions, Section 5-1.11, "SUPPLEMENTAL PROJECT INFORMATION," the "Supplemental Project Information" table is revised as attached.

In the Special Provisions, Section 5-1.15, "SPECIES PROTECTION," subsection "CONSTRUCTION," subsection, "Protection Measures," Item No. 3 is revised as follows:

- "3. For installation of in-water piles, marine access piles, and pumping plant piles, use of impact hammer is not allowed. Use "soft start" as described below to install these piles by vibratory methods:
  - 3.1. Vibrate a pile at low energy for 15 seconds.
  - 3.2. Stop for 1 minute.
  - 3.3. Repeat the procedure two more times.
  - 3.4. Vibrate a pile into place.

You may use impact hammer to these test piles. The number of piles tested with the impact hammer must not exceed one pile per day."

In the Special Provisions, Section 5-1.15, "SPECIES PROTECTION," subsection "CONSTRUCTION," subsection, "Protection Measures," Item No. 5 is revised as follows:

- "5. For installation of piles not specified above, use of impact hammer is not allowed from February 1 to September 30. If these piles are installed by non-impact methods, you may use impact hammer to test them."

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the following paragraph is added after fourth paragraph:

"Hinge joint seal assemblies shall be replaced after isolation bearings have been installed at the adjacent piers."

In the Special Provisions, Section 10-1.28, "CLOSURE REQUIREMENTS AND CONDITIONS," is revised as attached.

In the Special Provisions, Section 10-1.58, "SEISMIC JOINT," subsection "FABRICATION," the following paragraph is added after the seventh paragraph:

"Attention is directed to "Steel Structures" of these special provisions. The top chord assembly and seismic joint channel shall be preassembled in the shop to ensure proper fit and geometry as shown on the plans."

In the Special Provisions, Section 10-1.58, "SEISMIC JOINT," subsection "PAYMENT," in the first paragraph, "bar reinforcing steel," is deleted.

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In the Special Provisions, Section 10-1.59, "RAISE BRIDGE," is revised as attached.

In the Special Provisions, Section 10-1.595, "REPLACE HINGE JOINT SEAL ASSEMBLY (MOVEMENT RATING 7-1/2 INCHES)," is added as attached.

In the Special Provisions, Section 10-1.67, "CLEAN AND PAINT STRUCTURAL STEEL," subsection "GENERAL," third paragraph, Item 5.2 of Item 5 is deleted.

In the Special Provisions, Section 10-1.79, "CONCRETE BARRIER," the following paragraphs are added after the sixth paragraph:

"Concrete removal at the top of the existing south barrier shown on the plans shall conform to the provisions in "Bridge Removal" of these special provisions.

Full compensation for barrier concrete removal, concrete, reinforcement, and drill and bond dowel shall be included in the contract price paid per linear foot for concrete barrier of the types listed in the Engineer's Estimate and no separate payment will be made therefor."

In the Special Provisions, Section 10-1.80, "STEEL BARRIER," the first paragraph is revised as follows:

"Steel barrier shall consist of steel barrier, hinge assemblies, hinge cover plate assemblies, utility covers, anchorages and miscellaneous items as shown on the plans."

In the Bid book, in the "Bid Item List," Items 62, 64, 66, 80, 81, 83, 85, 88, 89, 93, 99, 100, 102 and 103 are revised, Items 164 and 165 are added and Items 58, 82, 92 and 163 are deleted as attached.

To Bid book holders:

Replace pages 5, 6, 7, 8, 11 and 12 of the "Bid Item List" in the Bid book with the attached revised pages 5, 6, 7, 8, 11, and 12 of the Bid Item List. The revised Bid Item List is to be used in the bid.

Attached are copies of the Information Handout, "Purchase Agreement for the Supply of Friction Pendulum Bearings for Dumarton Bridge Retrofit Project (April 2, 2010)" and "Incidental Harassment Authorization (IHA) (National Marine Fisheries Service)."

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

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

**[http://www.dot.ca.gov/hq/esc/oe/project\\_ads\\_addenda/04/04-1A5224](http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/04/04-1A5224)**

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

IGNACIO SANCHEZ DEL REAL  
Acting Office Chief of Plans, Specifications & Estimates  
Office Engineer  
Division of Engineering Services

Attachments

## **2.1-015 MANDATORY PREBID MEETING**

The Department will conduct a mandatory prebid meeting for this contract. The purposes of the meeting are to:

1. conduct technical presentation followed by the question and answer session for prospective bidders.
2. provide small businesses the opportunity to meet and interact with prospective bidders and increase participation in the performance of contracts.
3. conduct site tour.

Prospective bidders must attend the mandatory prebid meeting. The bidder's representative must be a company officer, project superintendent, or project estimator. For a joint venture, one of the parties must attend the mandatory prebid meeting. The Department will not accept bids from bidders who do not attend the mandatory prebid meeting.

A sign-up sheet will be used to identify all prospective bidders including name and title of the company representative attending the mandatory prebid meeting. The Department may hold a single prebid meeting for more than one contract. Make sure you sign the sign-up sheet for the contract you intend to bid on. If bidding multiple contracts, sign each sign-up sheet for each contract you intend to bid on.

The successful bidder will be required to report small businesses hired to work on this contract as a result of the mandatory prebid meeting.

**Supplemental Project Information**

Means	Description
Included in the Information Handout	<ol style="list-style-type: none"> <li>1. "Water Quality Certification for the Dumbarton Bridge Structure Rehabilitation Project", California Regional Water Quality Control Board, San Francisco Bay Region, December 3, 2009</li> <li>2. Bay Conservation and Development Permit</li> <li>3. Environmental Certification</li> <li>4. Biological Opinion (NMFS)</li> <li>5. Encroachment Permits</li> <li>6. US Army Corps Permit 3</li> <li>7. US Army Corps Permit 14</li> <li>8. Biological Opinion (USFWS)</li> <li>9. Foundation Analysis Report, Dumbarton Bridge Seismic Retrofit Project, dated August 5, 2009</li> <li>10. Geotechnical Site Characterization Report, Dumbarton Bridge Seismic Retrofit Project, dated October 2, 2008</li> <li>11. Final Foundation Recommendations, Dumbarton Bridge Pump Plant</li> <li>12. Seepage Flow Rate Estimation for Pump Plant (Memorandum, dated June 18, 2009)</li> <li>13. Final Foundation Recommendations for the Belvedere Stairway near the West Trestle Bent W17 of Dumbarton Bridge</li> <li>14. Ground Motion Study Report, Dumbarton Bridge Seismic Retrofit Project, dated March 27, 2009</li> <li>15. "Asbestos and Lead-Containing Paint Survey, and Limited Site Investigation Report," Geocon, October 2009.</li> <li>16. "Sediment Sampling and Analysis Report," Geocon, October 2009.</li> <li>17. "Upland Site Investigation Report," Geocon, October 2009.</li> <li>18. Purchase Agreement for the Supply of Friction Pendulum Bearings for Dumbarton Bridge Retrofit Project (dated April 2, 2010)</li> <li>19. Storm Water Data Report dated July 13, 2009</li> <li>20. Non-Storm Water Information Package</li> <li>21. Best Management Practices for Pile Removal</li> <li>22. New Trestle Location (Bathymetric Survey)</li> <li>23. U.S. Coast Guard Typical Conditions Checklist</li> <li>24. Incidental Harassment Authorization (IHA)- (National Marine Fisheries Services)</li> </ol>
Available for inspection at the District Office	<p>Office of Biological Sciences and Permits Compliance Handbook                      As-Built Plans for Dumbarton Bridge                      Waste Generator Profile Sheet for Newby Island Sanitary Landfill                      Cross sections                      Soil and Rock Logging, Classification, and Presentation Manual (June 2007) with erratum</p>

### **10-1.28 CLOSURE REQUIREMENTS AND CONDITIONS**

Closures shall conform to the provisions in "Maintaining Traffic" of these special provisions and these special provisions.

#### **LANE CLOSURE SCHEDULE**

A written schedule of planned lane closures for the next week period, defined as Sunday noon through the following Sunday noon, shall be submitted by noon each Monday. A written schedule shall be submitted not less than 25 days and not more than 125 days before the anticipated start of any operation that will:

1. Reduce horizontal clearances, traveled way, including shoulders, to two lanes or less due to such operations as temporary barrier placement and paving
2. Reduce the vertical clearances available to the public due to such operations as pavement overlay, overhead sign installation, or falsework or girder erection

The Lane Closure Schedule shall show the locations and times of the proposed lane closures. The Lane Closure Schedule request forms furnished by the Engineer shall be used. Lane Closure Schedules submitted to the Engineer with incomplete or inaccurate information will be rejected and returned for correction and resubmittal. The Contractor will be notified of disapproved lane closures or closures that require coordination with other parties as a condition of approval.

Lane Closure Schedule amendments, including adding additional closures, shall be submitted by noon to the Engineer, in writing, at least 3 business days in advance of a planned closure. Approval of Lane Closure Schedule amendments will be at the discretion of the Engineer.

The Engineer shall be notified of cancelled lane closures 2 business days before the date of closure.

Lane closures that are cancelled due to unsuitable weather may be rescheduled at the discretion of the Engineer.

#### **BRIDGE CLOSURE ACTIVITY PLAN**

At least 60 days prior to closing the bridge to public traffic, the Contractor shall submit to the Engineer for approval a bridge closure activity plan in conformance with these special provisions.

The bridge closure activity plan shall demonstrate the work process that will facilitate the timely completion of the planned work and re-opening of the bridge to public traffic and shall include the following:

1. Identification of all pre-closure activities required to prepare the structure for closure and expedite the work during the closure.
2. All construction activities to be completed during the closure, as shown on the plans.
3. An hour-by-hour schedule in bar chart format of all activities to be completed during the closure, including the estimated float in the schedule of activities that may offset any unexpected delay.
4. Identification of all personnel, materials and equipment required for each activity to be completed in the scheduled time period.
5. Transportation management activities that provide for closing and reopening the bridge according to the approved schedule.
6. A list of key progress check points to be used to decide if work should continue or has been delayed to the point that the planned work cannot be completed within the allowed closure period.
7. A contingency plan for re-opening of the bridge should any delay or unanticipated event occur. The plan shall include:
  - 7.1. The interim conditions that will allow for safe work stoppage and re-opening of the bridge to public traffic.
  - 7.2. An additional feature needed to safely reopen the bridge to public traffic and time required for installation of such features.

The Contractor shall allow 4 weeks for the Engineer's review of the bridge closure activity plan.

Full compensation for the bridge closure activity plan shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefore.

## CONTINGENCY PLAN

A detailed contingency plan shall be prepared for reopening closures to public traffic. If required by "Beginning of Work, Time of Completion and Liquidated Damages" of these special provisions, the contingency plan shall be submitted to the Engineer before work at the job site begins. Otherwise, the contingency plan shall be submitted to the Engineer as follows:

1. For reopening of lane closures - within one business day of the Engineer's request
2. For reopening of the bridge - include with the Bridge Closure Activity Plan

## LATE REOPENING OF CLOSURES

If a closure is not reopened to public traffic by the specified time, work shall be suspended in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications. No further closures are to be made until the Engineer has accepted a work plan, submitted by the Contractor, that will insure that future closures will be reopened to public traffic at the specified time. The Engineer will have 2 business days to accept or reject the Contractor's proposed work plan. The Contractor will not be entitled to compensation for the suspension of work resulting from the late reopening of closures.

For each 10-minute interval, or fraction thereof past the time specified to reopen the closure, the Department will deduct the amount per interval shown below from moneys due or that may become due the Contractor under the contract. Damages are limited to 5 percent of project cost per occurrence and will not be assessed when the Engineer requests that the closure remain in place beyond the scheduled pickup time.

Type of Facility	Route or Segment	Period	Damages/interval (\$)
Mainline	Complete closure NB Rte 84	1st half hour	\$40,500 / 10 minutes
		2nd half hour	\$60,800 / 10 minutes
		2nd hour and beyond	\$81,000 / 10 minutes
Mainline	Complete closure SB Rte 84	1st half hour	\$40,900 / 10 minutes
		2nd half hour	\$61,600 / 10 minutes
		2nd hour and beyond	\$83,000 / 10 minutes
Mainline	Nightly partial closure NB Rte 84	1st half hour	\$1,000 / 10 minutes
		2nd half hour	\$1,200 / 10 minutes
		2nd hour and beyond	\$1,600 / 10 minutes
Mainline	Nightly partial closure SB Rte 84	1st half hour	\$1,600 / 10 minutes
		2nd half hour	\$2,200 / 10 minutes
		2nd hour and beyond	\$2,900 / 10 minutes

## COMPENSATION

The Engineer shall be notified of delays in the Contractor's operations due to the following conditions, and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of those conditions, and the Contractor's loss due to that delay could not have been avoided by rescheduling the affected closure or by judicious handling of forces, equipment and plant, the delay will be considered a right of way delay and will be compensated in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications:

1. The Contractor's proposed Closure Schedule is denied and his planned closures are within the time frame allowed for closures in "Maintaining Traffic" of these special provisions, except that the Contractor will not be entitled to compensation for amendments to the Closure Schedule that are not approved.
2. The Contractor is denied a confirmed closure.

Should the Engineer direct the Contractor to remove a closure before the time designated in the approved Closure Schedule, delay to the Contractor's schedule due to removal of the closure will be considered a right of way delay and compensation for the delay will be determined in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

### **10-1.59 RAISE BRIDGE**

Raise bridge consists of raising and supporting the superstructure for Dumbarton Bridge (Bridge Number 35-0038) as required to perform bearing replacement work and associated bridge removal work, and lowering the superstructure onto new supports as shown on the plans. Raise bridge shall conform to the provisions in Section 15, "Existing Highway Facilities," and Section 51-1.06, "Falsework," of the Standard Specifications and these special provisions.

The superstructure shall be raised by jacking performed from existing piers as shown on the plans.

Construction sequence and application of jacking loads shall be as shown on the plans. Proposed changes to the construction sequence and application of jacking loads shall be subject to the Engineer's approval.

### **GENERAL**

Attention is directed to the sections "Order of Work" and "Maintaining Traffic" of these special provisions regarding the construction sequences. During jacking operations at Piers 23 and 24, the right (No. 3) and left (No. 1) lanes in each direction shall be closed to public traffic and only the center (No. 2) lane shall be open in each direction. During jacking operations at the remaining piers, the right (No. 3) lane in each direction shall be closed to public traffic.

Removing portions of the existing bridge, including existing bearing, shall conform to the requirements in "Bridge Removal" of these special provisions.

Jacking system shall be synchronized to lift the span within the relative displacement limits shown on the plans. The Contractor shall determine the methods and equipment for raising the superstructure and shall design, furnish, maintain and remove the jacking system in conformance with the details shown on the plans and the requirements in these special provisions.

The Contractor shall design and construct safe, stable and adequate jacking systems which provide the necessary rigidity and support the loads imposed.

### **Trial Lift**

At least 7 days prior to beginning bridge jacking operations, the Contractor shall perform a test lift of the superstructure at a single pier to verify uniform lifting at all jacking points. The superstructure shall be raised enough to lift the bridge off the supports but shall not be raised more than 1/8". The pier location shall be selected by the Contractor with the Engineer's approval. The jacking locations on the pier cap shall be as shown on the plans. The superstructure shall be free of vertical restraint prior to jacking. The allowable differential displacements shall be as shown on the plans. Vertical and horizontal displacements of the superstructure shall be monitored continuously during jacking and shall be accurately measured and recorded. The records of vertical and horizontal displacement shall be signed by an engineer who is registered as a Civil Engineer in the State of California and available to the Engineer at the jobsite, and a copy of the record shall be delivered to the Engineer at the completion of the work. All requirements for jacking specified in these special provisions shall apply to the trial lift.

### **DESIGN AND DRAWINGS**

The Contractor shall submit a complete bridge raising plan to the Engineer detailing procedures, sequences, and all features required to perform bridge raising in a safe and controlled manner. The bridge raising plan shall include working drawings and design calculations and shall be signed by an engineer who is registered as a Civil Engineer in the State of California. The working drawings and design calculations shall conform to the requirements in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The number of sets of drawings and design calculations shall be the same as specified for falsework working drawings in Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications. The time to be provided for the Engineer's review shall be 5 weeks.

In addition to the requirements in Section 51-1.06A, "Falsework Design and Drawings," of the Standard Specifications, working drawings shall include the following for each location to be raised and supported:

- A. Description, location, and value of all loads including construction equipment loads
  1. Distribution of vertical design loads on the supports.
  2. Proportionate shares of lateral loads on supports.
- B. Plan view and Elevation view showing locations and types of temporary jacking brackets and jacks with manifolds, including:
  1. Minimum bearing areas of supports.
  2. Jack capacity.
  3. Certified calibration chart for each jack.

- C. Methods, equipment and details for synchronous jacking system with pressure gage, pressure cell or load cell; hoses and manifold; hydraulics and appurtenant items including a copy of the manufacturer's technical specifications.
- D. Design calculations for stresses due to jacking operations in the existing structure.
- E. Verification that all work to be performed at each jacking location does not interfere with shimming or jacking of the superstructure.

A redundant system of supports shall be provided during the entire jacking operation for backup should any of the jacks fail. The redundant system shall include stacks of steel plates added as necessary to maintain the redundant supports at each jack location as shown on the plans.

### **DESIGN LOADS**

The jacking design load shall consist of the loads shown on the plans plus construction equipment loads and additional loads imposed by the Contractor's operations.

The actual force required for jacking is that which achieves the displacement needed to replace bearing assemblies. The actual jacking forces and jacking capacities shall be determined by the Contractor.

### **Manufactured Assemblies**

Manufactured assemblies shall conform to the provisions in Section 51-1.06A(2), "Design Stresses, Loadings, and Deflections," of the Standard Specifications and these special provisions.

Each jack shall be equipped with either a pressure gage, pressure cell, or a load cell for determining the jacking force. Pressure gages shall have an accurately reading dial at least 6 inches in diameter. Each jack shall be calibrated by a private laboratory approved by the Transportation Laboratory within 6 months prior to use and after each repair. Each jack and its gage shall be calibrated as a unit with the cylinder extension in the approximate position that it will be at final jacking force and shall be accompanied by a certified calibration chart. Load cells and pressure cells shall be calibrated and provided with an indicator by which the jacking force is determined.

A copy of the calibration chart from the jack and gage unit certified by a private laboratory and approved by the Transportation Laboratory shall be submitted to the Engineer before use, and a copy shall be maintained at the job site during equipment use. A copy of the indicator to determine jacking force of load gage, pressure cells or load cells shall be certified by a private laboratory and approved by the Transportation Laboratory and shall be submitted with the jack calibration, and a copy shall be maintained at the job site.

### **CONSTRUCTION**

Welding, welder qualification, and inspection of welding for all steel members shall conform to the requirements of AWS D1.1. Prior to proceeding with raising the bridge span, an engineer for the Contractor who is registered as a Civil Engineer in the State of California shall inspect the jacking systems and ensure they conform with the working drawings.

The Contractor's registered engineer shall be present at the bridge site at all times when jacking operations or adjustments are in progress.

The Contractor shall perform an initial survey as part of the displacement monitoring system to record the location of the existing structure prior to the commencement of any work. Two copies of the survey shall be signed by an engineer, who is registered as a Civil Engineer in the State of California, and submitted to the Engineer.

Displacement monitoring equipment shall be provided and maintained. Vertical and horizontal displacements of the existing structure shall be monitored continuously during jacking operations and shall be accurately measured and recorded during reconstruction work. As a minimum, elevations shall be taken prior to the start of jacking operations, at the end of each intermediate stage of jacking, immediately after jacking is complete and after bridge is lowered onto new supports. As a minimum, the existing structure shall be monitored at the bent and at mid span of spans being raised. Control points at each pier location shall be located at the bottom of each jacking plate near the center and at both edges of the superstructure. The records of vertical and horizontal displacement shall be signed by an engineer who is registered as a Civil Engineer in the State of California and available to the Engineer at the jobsite during normal working hours, and a copy of the record shall be delivered to the Engineer at the completion of reconstructing each bent.

During jacking operations at a given pier the following conditions shall be met:

- A. Jacking operations shall be carefully controlled and monitored to ensure that the jacking loads are applied simultaneously and uniformly to prevent distortion and excessive stresses that would damage the structure.
- B. If multiple lifts are used the vertical displacement at all associated monitored control points shall be equal at the end of each lift.
- C. There shall be no horizontal displacement of the superstructure, including steel jacking plates and the deck.

Should unanticipated displacements, cracking or other damage occur, or an unplanned event occur, raise bridge operations shall be stopped and the structure stabilized. The Contractor's registered engineer shall submit immediately to the Engineer for approval, the procedure or proposed operation to correct or remedy the occurrence. Raise bridge operations shall be discontinued until corrective measures satisfactory to the Engineer are performed. Damage to the structure as a result of the Contractor's operations shall be repaired by the Contractor in conformance with the provisions in Section 7-1.11, "Preservation of Property," of the Standard Specifications.

When raising operations have been completed all attachments shall be removed from the existing structure and concrete surfaces restored to original conditions except where permanent alterations are shown on the plans.

#### **MEASUREMENT AND PAYMENT**

Raise bridge will be paid for on the basis of a contract lump sum price.

The contract lump sum price paid for raise bridge shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in raising and supporting the bridge as required to perform bearing replacement and associated work, including jacking the existing structure, monitoring displacements, and setting the superstructure on new supports, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **10-1.595 REPLACE HINGE JOINT SEAL ASSEMBLY(MOVEMENT RATING 7-1/2 INCHES)**

Replace hinge joint seal assembly (MR 7-1/2") shall consist of removing existing transflex elastomeric joint assembly, cleaning and preparing portions of the existing galvanized steel plate support system for welding threaded studs; furnishing, cleaning and welding threaded studs to the plate support system; furnishing and installing a new molded steel reinforced elastomeric joint onto the existing galvanized steel plate support system; cleaning and preparing portions of the elastomeric joint for splicing, splicing the elastomeric joint, bolting the elastomeric joint to the galvanized steel plate support system on both sides of the expansion joint, and furnishing and installing hole plugs, and shall conform to the details shown on the plans, the provisions in Section 15-2.05, "Reconstruction," and Section 51, "Concrete Structures," of the Standard Specifications, and these special provisions.

Attention is directed to the sections "Order of Work" and "Maintaining Traffic" of these special provisions regarding the construction sequences.

Removal shall conform to the provisions in section "Bridge Removal (Portion)" of these special provisions.

Prior to submitting complete working drawings, the Contractor shall field measure each existing hinge joint seal assembly to determine the exact length to be replaced and splicing locations.

The hinge joint seal assembly shall be either Transflex Model 650 or Wabo®TransFlex Model 650 or equal. The installation of the assembly shall be in conformance with the manufacturer's recommendations. The hinge joint seal assembly and anchorage components shall be preassembled before installation to verify the geometry of the completed seal.

A qualified representative of the manufacturer shall be present during installation of the first assembly and shall be available for advice during any remaining installations.

The Contractor shall submit complete working drawings for each hinge joint seal assembly to the Offices of Structure Design (OSD) in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The working drawings shall show complete details of the new molded steel reinforced elastomeric joints with welded threaded studs fitting into the existing galvanized steel plate support system for the hinge joint seal assembly and the method of installation to be followed, including the actual measured length of the new elastomeric joint for each pier; actual measured depth of recess; actual measured widths of the joint openings including the galvanized steel plates supports widths on each side of the joint and expansion joint width noting date, time, temperature and location of these measurements; plan view layout of these measurements; threaded stud welding details, threaded stud spacing, plan view layout of threaded studs on the existing plate support system, and written manufacturer's installation instructions and specifications for attaching the molded steel reinforced elastomeric joint and threaded studs to the existing plate support system and of elastomeric joint splicing details. For initial review, 5 sets of drawings shall be submitted. After review, between 6 and 12 sets, as requested by the Engineer, shall be submitted to OSD for final approval and use during construction.

The working drawings shall be supplemented with complete calculations for the particular hinge joint seal assembly, when requested by the Engineer. Working drawings shall be either 11" x 17" in size and each drawing and calculation sheet shall include the State assigned designations for the contract number, bridge number, full name of the structure as shown on the contract plans, and District-County-Route-Post mile. The design firm's name, address, and phone number shall be shown on the working drawings. Each sheet shall be numbered in the lower right hand corner and shall contain a blank space in the upper right hand corner for future contract sheet numbers.

Calculations, when requested, and working drawings shall be stamped and signed by an engineer who is registered as a Civil Engineer. The Contractor shall allow the Engineer 4 weeks to review the drawings after a complete set has been received.

Within 3 weeks after final approval, one set of corrected 11" x 17" prints on 20-pound (minimum) bond paper of all working drawings prepared by the Contractor for each hinge joint seal assembly shall be furnished to the Engineer.

The existing hinge joint seal assemblies were placed in approximately 1975. Remove existing transflex elastomeric joint. Remove existing threaded studs and grind welds flush with galvanized steel plate surface. Collect, contain and dispose of all debris generated from stud removal in a safe, controlled and proper manner.

Removing existing studs with flame or air-arc types of cutting equipment will not be permitted.

Upon removal of the transflex elastomeric joint, the existing galvanized steel plate and angle support system shall remain in place. Remove, collect, contain and dispose of all debris, loose material, deleterious material and corrosion products from the galvanized steel plate support system in a safe and proper manner.

Clean abraded or damaged galvanized surfaces. Remove galvanizing from surfaces to remove studs and grind flush stud welds. Remove galvanizing from surfaces to weld new studs to the steel plate support system. Collect, contain and dispose of all debris generated from cleaning galvanized surfaces and galvanizing removal from surfaces in a safe, controlled and proper manner. Cleaning such areas shall be in conformance with the organic zinc-rich primer's manufacturer's written recommendations. The cleaned areas shall be painted with one application of unthinned zinc-rich primer (organic vehicle type) conforming to the provisions in Section 91, "Paint," of the Standard Specifications. Aerosol cans shall not be used. Clean and coat exposed steel surfaces after the stud welding process.

The Contractor shall remove, retain and reinstall the removable steel cover plates located on the north and south barriers, median barrier and bicycle barrier as many times as required to complete joint reconstruction work and other work as required. New hardware shall be furnished and installed during the final reinstallation of the removable steel cover plates and shall conform to Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications.

Field splices per joint may be made at locations and by methods approved by the Engineer. The molded steel reinforced elastomeric joints are to be manufactured full length for the intended joint, then cut at the approved splice section and matched before splicing, unless otherwise determined by the Engineer. The Contractor shall submit splicing details as part of the working drawings, prepared by the molded steel reinforced elastomeric joint manufacturer, to the Engineer for approval prior to beginning splicing work.

Each shipment of hinge joint seal assembly materials shall be accompanied by a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The certificate shall state that the materials and fabrication involved comply in all respects to the manufacturer's current published specifications and data submitted in obtaining approval.

Except for threaded studs, all metal parts of the joint seal assembly shall conform to the provisions in Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications. Threaded studs shall conform to the provisions for stud connectors in Section 55, "Steel Structures," of the Standard Specifications and these special provisions.

Attention is directed to "Welding" of these special provisions. The requirements in subsection "Welding Quality Control" shall apply.

Cleaning and preparing the galvanized steel plate shall be performed in heat affected areas before welding threaded studs.

Stud connectors shall be Type B as defined in AWS D1.5, Section 7.

Each component in contact with the tires shall support a minimum of 80 percent of the AASHTO HS20-44 loading with 100 percent impact. The tire contact area used to distribute the tire loads shall be 9.6 inches, measured normal to the longitudinal axis of the assembly, by 20 inches wide. The assembly shall provide a smooth riding joint without slapping of components or wheel tire rumble.

The movement rating of the assembly shall be measured normal to the longitudinal axis of the assembly. The dimensions for positioning the assembly within the movement rating during installation shall be measured normal to the longitudinal axis, disregarding any skew of the deck expansion joint. The assembly shall be capable of adjustment to the "a" dimension shown on the plans.

The assembly shall make a watertight, continuous return 6 inches up into the barrier at the low side of the deck joint.

In case of a conflict between the manufacturer's recommendations and these special provisions, the manufacturer's recommendations shall prevail.

Replacing hinge joint seal assemblies will be measured by the linear foot from end to end along the centerline of the completed hinge joint seal assembly.

The contract price paid per linear foot for replace hinge joint seal assembly (MR 7 ½") shall include full compensation for furnishing all labor, materials (including threaded studs and hardware, and hole plugs), tools, equipment, and incidentals, and for doing all the work involved in furnishing and installing the molded steel reinforced elastomeric joint onto the existing galvanized steel plate support system at the site meeting actual field conditions (length, width and depth), including cleaning and preparing portions of the existing galvanized steel plate support system for welding threaded studs to the plates; cleaning, and welding threaded studs to the plates; cleaning and preparing portions of the elastomeric joint for splicing, and splicing the elastomeric joint, bolting the elastomeric joint to the galvanized steel plate support on both sides of the expansion joint, and installing hole plugs, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for field verifying the actual length, width and depth and splicing locations of each hinge joint seal assembly at each location shall be considered as included in the contract price paid per linear foot for replace hinge joint seal assembly (MR 7 1/2") and no additional compensation will be allowed therefor.

Full compensation for removing, retaining, and reinstalling steel cover plates, as many times as is required to complete the work, including furnishing and installing hardware, shall be considered as included in the contract price paid per linear foot for replace hinge joint seal assembly (MR 7 1/2") and no additional compensation will be allowed therefor.

Full compensation for removing existing threaded studs and grinding welds flush with galvanized steel plate support surface and for collecting, containing and disposing of all debris generated from the threaded stud removal shall be considered as included in the contract price paid per linear foot for replace hinge joint seal assembly (MR 7 1/2") and no additional compensation will be allowed therefor.

Full compensation for removing, collecting, containing and disposing of all debris, loose material, deleterious material and corrosion products from the galvanized steel support system in a safe and proper manner shall be considered as included in contract price paid per linear foot for replace hinge joint seal assembly (MR 7 1/2") and no additional compensation will be allowed therefor.

Full compensation for cleaning abraded or damaged galvanized surfaces; for removing galvanizing from surfaces to remove studs and from surfaces to weld studs; for collecting, containing and disposing of all debris generated from cleaning galvanized surfaces and removing galvanizing from surfaces in a safe, controlled and proper manner; and for furnishing and applying unthinned zinc-rich primer (organic vehicle type) to cleaned surfaces, and steel surfaces exposed after the stud welding process shall be considered as included in the contract price paid per linear foot for replace hinge joint seal assembly (MR 7 1/2") and no additional compensation will be allowed therefor.

**BID ITEM LIST**  
**04-1A5224**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	24,700		
42	153214	REMOVE CONCRETE CURB	LF	500		
43	018567	REMOVE CONCRETE (GUTTER)	CY	53		
44	153221	REMOVE CONCRETE BARRIER	LF	15		
45	153225	PREPARE CONCRETE BRIDGE DECK SURFACE	SQFT	14,710		
46	153530	ACCESS OPENING, DECK	EA	64		
47	157561	BRIDGE REMOVAL (PORTION), LOCATION A	LS	LUMP SUM	LUMP SUM	
48	157562	BRIDGE REMOVAL (PORTION), LOCATION B	LS	LUMP SUM	LUMP SUM	
49	157563	BRIDGE REMOVAL (PORTION), LOCATION C	LS	LUMP SUM	LUMP SUM	
50	157564	BRIDGE REMOVAL (PORTION), LOCATION D	LS	LUMP SUM	LUMP SUM	
51	042638	REMOVE AND REINSTALL PRECAST PANEL	EA	56		
52	159021	RECONSTRUCT FENDER	LS	LUMP SUM	LUMP SUM	
53	159101	RAISE BRIDGE	LS	LUMP SUM	LUMP SUM	
54	160101	CLEARING AND GRUBBING	LS	LUMP SUM	LUMP SUM	
55	190101	ROADWAY EXCAVATION	CY	1,860		
56	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
57 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	CY	23		
58	BLANK					
59 (F)	042639	STRUCTURE EXCAVATION (TYPE D) (PUMPING PLANT)	CY	810		
60 (F)	192027	STRUCTURE BACKFILL (PUMPING PLANT)	CY	310		

**BID ITEM LIST****04-1A5224**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	018568	CONTROLLED LOW STRENGTH MATERIAL (STRUCTURE BACKFILL)	CY	1,400		
62 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	CY	14		
63	042640	WATER AND AIR SUPPLY LINE (BRIDGE)	LS	LUMP SUM	LUMP SUM	
64	203025	COMPOST, INCORPORATE	SQYD	3,950		
65	203026	MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	3		
66	203031	EROSION CONTROL (HYDROSEED) (SQFT)	SQFT	34,600		
67	260301	CLASS 3 AGGREGATE BASE	CY	290		
68	390132	HOT MIX ASPHALT (TYPE A)	TON	4,830		
69	390135	HOT MIX ASPHALT (LEVELING)	TON	460		
70	394073	PLACE HOT MIX ASPHALT DIKE (TYPE A)	LF	265		
71	397005	TACK COAT	TON	12		
72	042641	FURNISH 48" STEEL PIPE PILING	LF	1,975		
73	042642	DRIVE 48" STEEL PIPE PILE	EA	28		
74	490738	FURNISH PILING (CLASS 140)	LF	600		
75	490739	DRIVE PILE (CLASS 140)	EA	8		
76	042643	FURNISH PILING (CLASS 90)(ALTERNATIVE X)	LF	699		
77	042644	DRIVE PILE (CLASS 90)(ALTERNATIVE X)	EA	16		
78	490801	STEEL SHEET PILING	SQFT	35,900		
79	018569	TEMPORARY STEEL SHEET PILING	SQFT	19,000		
80 (F)	042645	STRUCTURAL CONCRETE, FOOTING OVERLAY	CY	900		

## BID ITEM LIST

04-1A5224

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	CY	515		
82	BLANK					
83 (F)	042647	STRUCTURAL CONCRETE, PIER CAP RETROFIT	CY	1,880		
84 (F)	510069	STRUCTURE CONCRETE (PUMPING PLANT)	CY	300		
85 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	CY	51		
86	510526	MINOR CONCRETE (BACKFILL)	CY	120		
87	042648	ARCHITECTURAL TREATMENT, FLUTED FIN	SQFT	290		
88 (F)	511106	DRILL AND BOND DOWEL	LF	41,550		
89 (F)	511110	DRILL AND BOND DOWEL (CHEMICAL ADHESIVE)	EA	1,460		
90	515041	FURNISH POLYESTER CONCRETE OVERLAY	CF	3,000		
91	515042	PLACE POLYESTER CONCRETE OVERLAY	SQFT	14,710		
92	BLANK					
93	042650	CORE CONCRETE (3") AND PRESSURE GROUT DOWEL	LF	7,270		
94	515064	CORE CONCRETE (5")	LF	60		
95	042651	FURNISH SEISMIC ISOLATION BEARING	EA	96		
96	042652	INSTALL SEISMIC ISOLATION BEARING	EA	96		
97	042653	SEISMIC JOINT (PIER 16)	LS	LUMP SUM	LUMP SUM	
98	042654	SEISMIC JOINT (PIER 31)	LS	LUMP SUM	LUMP SUM	
99 (F)	520102	BAR REINFORCING STEEL (BRIDGE)	LB	785,000		
100 (F)	520110	BAR REINFORCING STEEL (EPOXY COATED) (BRIDGE)	LB	266,000		

**BID ITEM LIST**  
**04-1A5224**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101 (F)	042655	BAR REINFORCING STEEL (EPOXY COATED) (PUMPING PLANT)	LB	82,000		
102 (F)	550203	FURNISH STRUCTURAL STEEL (BRIDGE)	LB	700,000		
103 (F)	550204	ERECT STRUCTURAL STEEL (BRIDGE)	LB	700,000		
104	568001	INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	2		
105	018570	PEDESTRIAN STAIRWAY	LS	LUMP SUM	LUMP SUM	
106 (F)	590115	CLEAN AND PAINT STRUCTURAL STEEL	LS	LUMP SUM	LUMP SUM	
107 (F)	590135	SPOT BLAST CLEAN AND PAINT UNDERCOAT	SQFT	6,200		
108 (F)	590301	WORK AREA MONITORING	LS	LUMP SUM	LUMP SUM	
109	641107	18" PLASTIC PIPE	LF	100		
110	641125	36" PLASTIC PIPE	LF	1,880		
111	018571	18" PLASTIC FLARED END SECTION	EA	1		
112	018572	36" PLASTIC FLARED END SECTION	EA	1		
113	018573	WIRE MESH SCREEN	EA	1		
114	720117	ROCK SLOPE PROTECTION (4T, METHOD A)	CY	25		
115	721010	ROCK SLOPE PROTECTION (BACKING NO. 1, METHOD B)	CY	25		
116	721023	ROCK SLOPE PROTECTION (1/2T, METHOD B)	CY	25		
117	729010	ROCK SLOPE PROTECTION FABRIC	SQFT	550		
118	731501	MINOR CONCRETE (CURB)	CY	20		
119	731502	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	CY	53		
120	740500	DRAINAGE PUMPING EQUIPMENT	LS	LUMP SUM	LUMP SUM	

**BID ITEM LIST**  
**04-1A5224**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161	018591	RELOCATE CONTROL CENTRE 1 IN SUBSTATION 1	LS	LUMP SUM	LUMP SUM	
162	018592	RELOCATE CONTROL CENTER 44 IN SUBSTATION 44	LS	LUMP SUM	LUMP SUM	
163	BLANK					
164	042724	REPLACE HINGE JOINT SEAL ASSEMBLY (MR 7 1/2")	LF	170		
165	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

**TOTAL BID  
FOR ITEMS:**

\$ \_\_\_\_\_

**TOTAL BID  
FOR TIME:**

$$\frac{\text{WORKING DAYS BID}}{\text{Not to exceed 600 Days}} \times \frac{\$10,500.00}{\text{COST PER DAY}} = \$ \underline{\hspace{2cm}}$$

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

\$ \_\_\_\_\_