

DEPARTMENT OF TRANSPORTATION

ES-OE MS #43
1727 30TH Street, 2ND Floor
Sacramento, CA 95816



June 1, 2001

04-CC,Sol-680-40.1/41.4 - L0.0/L1.0
04-006034
ACIM-680-1(054)56N

Addendum No. 4

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SOLANO AND CONTRA COSTA COUNTIES IN BENICIA AND MARTINEZ FROM 1.0 km NORTH OF SOLANO AND CONTRA COSTA COUNTY LINE TO 1.1 km NORTH OF MOCOCO OVERHEAD.

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 July 17, 2001.

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

Project Plan Sheets 2, 25, 47, 48, 49, 50, 51, 52, 53, 56, 65, 66, 123, 124, 125, 126, 127, 131, 176, 176B, 179, 217, 218, 221, 290, 291, 310, 328, 331, 334, 340, 341, 345, 346, 352, 353, 357, 387, 391, 407, 408, 413, 414, 419, 420, 421, 430, 433, 479, 486, and 488 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

In the Notice to Contractors and Special Provisions and in the Proposal and Contract, the date for the pre-award qualifications review meeting is revised to July 19, 2001 instead of the date of May 18, 2001.

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES," the liquidated damages cost of \$50,000 per day in the seventh and eighth paragraphs are revised to \$35,000 per day.

In the Special Provisions, Section 5-1.26, "PERMITS AND LICENSES," the second paragraph, item "D. National Marine Fisheries Service" and item "G. U.S. Fish and Wildlife Service - File No. 1-1-96-F-40" are deleted.

In the Special Provisions, Section 5-1.26, "PERMITS AND LICENSES," the following paragraph is added after the second paragraph:

"The BCDC permit No. 17-99(M), RWQCB file No. 2128.03 and U.S. Fish and Wild Service-file No. 1-1-96-F-40 will be available to the contractor on the Caltrans web site. Caltrans obtained a biological opinion and is not required to obtain permit from these two agencies. The opinion letter will be available on Caltrans web site at <http://www.dot.ca.gov/hq/esc/tollbridge/index.html>."

In the Special Provisions, Section 5-1.36, "CONTAMINATED AND HAZARDOUS MATERIAL, GENERAL," the tables are added after table "AREA B EXCAVATION," as attached.

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In the Special Provisions, Section 8-2.01, "PORTLAND CEMENT CONCRETE," Subsection 90-1.01, "DESCRIPTION," the table after the ninth paragraph is revised as follows:

Use	Cementitious Material Content (kg/m ³)
Concrete which is designated by compressive strength: Deck slabs and slab spans of bridges	400 min., 475 max.. (except lightweight concrete 600 max.)
Roof sections of exposed top box culverts	400 min., 475 max.
Other portions of structures	350 min., 475 max., (except lightweight concrete 600 max.)
Concrete not designated by compressive strength: Deck slabs and slab spans of bridges	400 min.
Roof sections of exposed top box culverts	400 min.
Prestressed members	400 min.
Seal courses	400 min.
Other portions of structures	350 min.
Concrete for precast members	350 min., 550 max.

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the thirteenth paragraph is revised as follows:

"Prior to constructing any production piles on this project the Contractor shall successfully complete the pile load test as detailed on the plans and as specified in these special provisions. After a successful pile load test, a first order of work shall be the construction of the middle pile of the southern side of the Pier 9 pile group. This pile shall successfully pass all acceptance tests, with concrete placed to the bottom of footing elevation, prior to proceeding with any other 2.5 m or 2.6 m cast-in-drilled-hole concrete piling on the project, excluding permanent steel casing installation."

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

"At Piers 5, 6, 16 and 17, no work shall be started on the cast-in-drilled-hole piling until the Engineer has performed additional geotechnical test borings. The Contractor shall provide access for the Engineer's 3-axle truck mounted drilling rig to do additional borings at Piers 6, 16 and 17. Access shall be such that the drill rig can drill a bore hole at the edge of but within the footprint of the pier pilecap. A 6 meter wide work platform of at least 6 m in length shall be provided behind the drill rig for additional equipment used by the drillers. The work platform shall be designed for a 4.79kPa loading over the entire surface. Additional borings shall also be performed by the Engineer at Pier 5. The Engineer will require 4 days at each additional boring location to perform the drilling and logging of the additional holes. The information gathered by the Engineer at additional boring locations will be made available to the Contractor in the form of a Log of Test Boring sheet within 2 weeks of completion of each hole. For the land based drilling at Pier 5, the Engineer will drill within 2 weeks of the Contractor's having provided an access road for the Engineer's drilling rig to reach the footing location. For water based drilling, the Engineer will drill within 2 weeks of the Contractor having provided safe access for the Engineer's drill rig to reach the pier locations as noted above. The Contractor shall notify the Engineer in writing when access to each location is ready. Should the Engineer fail to complete the borings within the noted time allowances and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in doing the drilling, the delay will be considered a right of way delay in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications."

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In the Special Provisions, Section 10-1.04, "MODIFY MONITORING WELLS," the first sentence of the first paragraph is revised as follows:

"Modify monitoring wells shall consist of extending existing monitoring well 31 to an elevation at or above finished grade, as shown on the plans."

In the Special Provisions, Section 10-1.04, "MODIFY MONITORING WELLS," Subsection "ABANDON MONITORING WELLS," is added as follows:

"ABANDON MONITORING WELLS

Abandoning monitoring wells shall consist of removing obstructions from the well, removing or perforating the casing, and placing approved sealing material in monitoring wells NA and 42, as shown on the plans. The Contractor shall submit a well destruction permit application, plot plan, and permit fee to the Contra Costa County Environmental Health Division and perform all work in conformance with Contra Costa County Well Destruction Guidelines. Descriptions of the wells are included in the information provided to the bidders at <http://www.dot.ca.gov/hq/esc/tollbridge/index.html>. The Contractor shall prepare and submit the required Well Completion Report (Department of Water Resources form DWR 188) to the County after placement of sealing material for final destruction approval.

The contract unit price paid for abandon monitoring wells shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in abandoning the existing monitoring wells, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer."

In the Special Provisions, Section 10-1.06, "WATER POLLUTION CONTROL," the fourth paragraph is revised as follows:

"The Storm Water Discharge (NPDES)-permits - CAS000002 and CAS000003 will be available to the Contractor on the Caltrans web site at <http://www.dot.ca.gov/hq/esc/tollbridge/index.html>."

In the Special Provisions, Section 10-1.17, "OBSTRUCTIONS," in the eighth paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.18, "MOBILIZATION," Subsection "MARINE ACCESS", in the sixth paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.27, "IMPORTED BORROW (LIGHTWEIGHT AGGREGATE)," Subsection "CONTAMINATED AND HAZARDOUS MATERIAL EXCAVATION," is revised as attached.

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In the Special Provisions, Section 10-1.28, "DREDGING," the fourth paragraph is revised as follows:

"Sloping back of excavations beyond pay limits shown on the plans will be allowed. The maximum amount of dredged material allowed for In-Bay (aquatic) disposal, as described elsewhere in these special provisions, will be 12,230 cubic meters (16,000 cubic yards). All material from excavations specified as approved for In-Bay (aquatic) disposal, but in excess of 12,230 cubic meters (16,000 cubic yards), shall be disposed upland as specified in these special provisions. Over-excavation beyond the pay limits shown on the plans may be allowed if deemed necessary to complete the work, however no additional compensation shall be allowed therefore and these additional quantities are included in the maximum amount of dredging allowed. Lateral displacement of bay sediment material shall not be allowed. Maintenance dredging and removal of material entering excavations from outside the limits of excavation dredged by the Contractor shall be removed and no additional compensation shall be allowed therefor and these additional quantities are included in the maximum amount of dredging allowed. Modifications to the existing permits proposing revisions to the maximum quantities of dredged material shall not be allowed. If during the progress of the work, it becomes apparent that the Contractor may exceed the maximum quantity of dredged material permitted for this project, the Contractor shall immediately stop all dredging activities and notify the Engineer in writing. The Contractor shall then reevaluate the construction methods used to perform the dredging work and shall submit a revised dredging operation plan, as outlined elsewhere in these special provisions, to the Engineer, outlining the proposal to complete the work without exceeding the permitted quantity of dredged material. This revised dredging operation plan may require the use of alternate means and methods of construction, such as use of shoring, which may be required to complete the work. The Contractor shall not be allowed to resume any dredging activities, until the revised dredging operation plan has been approved in writing by the Engineer. There shall be no compensation or extension of contract time in accordance with Section 8-1.09, "Right of Way Delays," of the Standard Specifications, for any delays resulting from conforming to the requirements of this section of the special provisions."

In the Special Provisions, Section 10-1.28, "DREDGING," Subsection "UPLAND DISPOSAL," the word "bedrock" is revised to "rock" on item B and items F, G and H are deleted.

In the Special Provisions, Section 10-1.28, "DREDGING," Subsection "IN-BAY (AQUATIC) DISPOSAL," the first paragraph is revised as follows:

"Aquatic disposal has been approved for 12,230 cubic meters (16,000 cubic yard) of the bay sediment material not listed in "UPLAND DISPOSAL" of this section consisting of clay, silt, or sand resulting from cleaning out of pilings and casings."

In the Special Provisions, Section 10-1.28, "DREDGING," Subsection "SERPENTINE MATERIAL," is deleted.

In the Special Provisions, Section 10-1.29, "CEMENT-BENTONITE BACKFILL FOR PIER 5," Subsection "SUBMITTALS," the Resident Engineer's Office address in the first paragraph, is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

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In the Special Provisions, Section 10-1.41, "PILING," Subsection "PERMANENT STEEL CASING," in the seventh paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.41, "PILING," Subsection "PERMANENT STEEL CASING OSCILLATION, ROTATION AND VIBRATION," Subsection "LOAD TEST PILE," the following sentence is added to the beginning of the first paragraph:

"The Contractor's attention is directed to Section 5-1.36, "CONTAMINATED AND HAZARDOUS MATERIAL, GENERAL," for information regarding the disposal of excavated material from the test pile location."

In the Special Provisions, Section 10-1.41, "PILING," Subsection "PERMANENT STEEL CASING OSCILLATION, ROTATION AND VIBRATION," Subsection "TESTING AND REPORTING," the fifth paragraph is revised as follows:

"The load test procedure shall be as follows:

1. Construct the load test pile as shown on the plans. Place 7 sets of 4 strain gages (28 total) along the reinforcing steel cage of the rock socket as recommended by the manufacturer and as approved by the Engineer.
2. Load the bottom of the load test pile by pressurizing the load cell assembly to determine the ultimate side shear capacity of the bottom section of the load test pile. Design load of the bottom section of the load test pile is estimated to be 28,093 kN, after taking into account the pile buoyant weight.
3. Flush and washout the tip of the pile using the gamma tubes and high pressure water. Pressure grout below the pile tip, allow grout to cure 5 days.
4. Load the top section of the load test pile by pressurizing load cell assembly to test the ultimate side shear capacity of the upper section of the load test pile. Design load of the upper section of the load test pile is 39,026 kN, after taking into account the pile weight.
5. Determine the capacity of the steel shell by checking the strains in the steel shell at appropriate points."

In the Special Provisions, Section to 10-1.41, "PILING," Subsection "CAST-IN-DRILLED-HOLE CONCRETE PILES," the following paragraph is added after the third paragraph:

"The Contractor's equipment used to excavate the entire length of 2.2 m Cast-in-Drilled-Hole Concrete Piling (Rock Socket) in this contract shall have the capability of excavating the holes to a larger constant diameter of at least 2.8 m, hereinafter referred to as over reaming. The Contractor's equipment used to excavate the entire length of 2.6 m Cast-in-Drilled-Hole Concrete Piling in this contract (except the 1 meter overlap within the isolation casing) shall have the capability of excavating the holes to a larger constant diameter of at least 3.2 m. The over reaming capacity of the equipment shall be capable of being activated from the top of the hole or casing without having to retract the equipment from the hole to add attachments. If the Contractor chooses to perform drilling operations on multiple piles simultaneously, the over reaming equipment shall be provided at each location where drilling is occurring. In addition, where over reaming is to be performed below permanent steel casing, the Contractor shall provide a means of securing the permanent steel casing from sinking into the over reamed hole."

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In the Special Provisions, Section to 10-1.41, "PILING," after Subsection "CAST-IN-DRILLED-HOLE CONCRETE PILES," and before Subsection "SLURRY," new Subsection "OVER REAM AND FILL" is added as attached.

In the Special Provisions, Section 10-1.41, "PILING," Subsection "SLURRY," the third paragraph is revised as follows:

"Water for slurry may be either fresh water (potable), natural ground water or saltwater (Carquinez Straits water). If freshwater is used, the Contractor shall determine the chlorine content prior to use. The slurry mixing sequence shall conform to the requirements of these special provisions, and the recommendations of the slurry manufacturer. Slurry shall not weaken the bond between the concrete and both the reinforcement and the foundation material at the sides of the excavation."

In the Special Provisions, Section 10-1.41, "PILING," Subsection "SLURRY," Subsection "SYNTHETIC," the sixth, seventh and eighth paragraphs are replaced with the following paragraph:

"The Contractor shall develop a slurry plan and slurry test procedure specifically for this project with the aid of the slurry manufacturer's representative. The Contractor shall submit the slurry plan and test procedure for review to the Resident Engineer's Office, 4585 Pacheco Blvd, Suite 200 Martinez, California for approval in accordance with the provisions in Section 5-1.02, "Plans and Working Drawings." For initial review, 10 sets shall be submitted. The Contractor shall allow the Engineer 4 weeks to review the drawings and calculations after a complete set has been received. After review, between 6 and 12 sets, as requested by the Engineer, shall be submitted to said Office for final approval and for use during construction. The Contractor's attention is directed to the supplemental boring program that will be conducted by the Engineer. Fresh core samples from the supplemental drilling program will be available to the Contractor for use in developing his slurry plan. The slurry plan and test procedure shall contain, as a minimum:

Directions for preparing and testing mix water, including methods of obtaining desired pH.
Methods of preparing and mixing the slurry, including amounts of products to be added and pH measurement.
Methods for cleaning the slurry of sediment, including viscosity and slurry maintenance procedures.
Methods for neutralizing and disposing of the slurry."

In the Special Provisions, Section 10-1.41, "PILING," Subsection "SLURRY," Subsection "Construction," the second paragraph is revised as follows:

"For all CIDH concrete piles constructed under slurry, once drilling or excavation of the CIDH has begun it shall continue 24 hours a day until the shaft is completed to the specified tip elevation and concrete has been placed at least up to the level of the optional construction joint near the bottom of the permanent steel casing. At locations where the over ream and fill method is utilized, the construction of the CIDH may be discontinuous only during the required cure time for the fiber reinforced fill concrete lifts. Where pile construction is interrupted for fiber reinforced concrete fill cure time, the circulation and testing of the slurry shall be maintained unless otherwise directed by the Engineer. Cleaning of the casing, sonic logging of the casing and shaft and placement of the reinforcing cage shall begin immediately after completion of the drilling to the specified tip elevation. Concrete placement shall begin immediately after the reinforcing cage is inserted into the hole and the bottom has been re-cleaned."

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In the Special Provisions, Section 10-1.41, "PILING," Subsection "SLURRY," Subsection "Sonic Logging," the third paragraph is revised as follows:

"Sonic logging results shall be used to determine whether hole diameter and plumbness are in accordance with the requirements of these special provisions. Sonic logging of the CIDH hole shall be performed in the presence of the Engineer. Every 2.5 m, 2.2 m and 2.6 m CIDH concrete pile to be cast using slurry shall be sonically logged and hard copy printouts shall be provided to the Engineer for review. No reinforcing shall be placed into the hole or casing until the Engineer has approved the sonic log for that hole. Holes or portions of holes that deviate from plumb by more than 25 mm in 3 m of length shall be rejected and shall be backfilled with tremmie placed fiber reinforced concrete and redrilled in accordance with Section 49-4.03, "Drilled Holes," of the Standard Specifications. Plumbness within the casing shall be measured with respect to the vertical axis centered at the top of the casing. To account for possible irregularity within the rock socket, plumbness will be measured by fitting a theoretical cylinder the same diameter as that required for the rock socket, to the traces provided by the sonic logging, and comparing the longitudinal centerline axis of the cylinder to the vertical axis. Holes or portions of holes which indicate diameters greater than 1.5 times the pile diameter shall be rejected and shall be backfilled with tremmie placed, fiber reinforced concrete and redrilled in accordance with Section 49-4.03, "Drilled Holes," of the Standard Specifications. A mix design for fiber reinforced concrete for filling of rejected holes shall be submitted in accordance with Section 90, "Portland Cement Concrete" of the Standard Specifications. The concrete shall contain steel fiber reinforcement at a dosage of at least 59 kg per cubic meter. Steel fiber reinforcement shall be a deformed wire at least 50 mm in length with an aspect ratio of more than 50 conforming to ASTM A820. The type of steel fiber reinforcement shall be submitted to the engineer for approval with the mix design. There shall be no minimum cement content required; however, redrilling of filled holes shall not take place until the concrete has gained a compressive strength of at least 14 Mpa as determined by previous testing of the mix to develop a compressive strength versus time chart. The strength versus time chart shall be developed by breaking pairs of cylinders at 6 hour intervals for 7 days after casing of the cylinders. In addition, the 14, 21 and 28 day compressive strengths shall also be determined for the mix. The materials used for the fiber reinforced concrete mix shall conform to Section 90, "Portland Cement Concrete," of the Standard Specifications. Fiber reinforced concrete shall be considered as containing steel reinforcement with regard to the use of calcium chloride."

In the Special Provisions, Section 10-1.41, "PILING," Subsection "MEASUREMENT AND PAYMENT (PILING)," the ninth paragraph is revised as follows:

"Full compensation for slurry, storage of slurry, recycling of slurry, depositing concrete under slurry, test batches, inspection pipes, building test platforms above high tide, temporary and permanent steel casing, filling inspection holes and pipes with grout, filling cave-ins with fiber reinforced concrete where the diameter is shown to be greater than 1.5 times the intended diameter (not including filling of over reamed piles), storing, barging and disposing of sediment drill cuttings at the designated disposal site, storing, and disposal of bedrock drill cuttings and redrilling through concrete (except redrilling through concrete placed in over reamed piles) shall be considered as included in the contract prices paid per meter for cast-in-drilled-hole concrete piling of the sizes listed in the Engineer's Estimate and no additional compensation will be allowed therefor."

In the Special Provisions, Section 10-1.41, "PILING," Subsection "MEASUREMENT AND PAYMENT (PILING)," the following paragraphs are added after the last paragraph:

"Over reaming cast-in-drilled-hole piling and filling of the over reamed hole with fiber reinforced concrete fill and subsequently redrilling through the fiber reinforced concrete will be measured and paid for by the linear meter as over ream and fill of the various sizes shown in the Engineer's Estimate."

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Full compensation for providing over reaming equipment for constructing 2.2 m Cast-in-Drilled-Hole Concrete Piling (Rock Sockets) and for 2.6 m Cast-in-Drilled-Hole Concrete Piling, including maintaining such equipment on site for the duration of the pile excavations, shall be considered as included in the contract unit price paid for 2.2 m Cast-in-Drilled-Hole Concrete Piling (Rock Socket) or 2.6 m Cast-in-Drilled-Hole Concrete Piling, and no additional compensation will be allowed therefor.

Full compensation for drilling through fiber reinforced concrete placed as part of the over ream and fill method, including disposing of the drill cuttings from drilling through fiber reinforced concrete, shall be considered as included in the contract unit price paid for 2.2 m Cast-in-Drilled-Hole Concrete Piling (Rock Socket) or 2.6 m Cast-in-Drill Hole Concrete Piling, and no additional compensation will be allowed therefor.

The contract unit price paid per meter for over ream and fill of the various sizes shown in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in over reaming and for filling the over reamed length with fiber reinforced concrete, including disposal of all drill cuttings, maintaining of the slurry during the concrete cure period, and submittal and testing of fiber reinforced concrete mix designs, complete in place, as specified in these special provisions, and as directed by the Engineer."

In the Special Provisions, Section 10-1.43, "PRESTRESSING CONCRETE," Subsection "GENERAL," Subsection "Grout and Grouting," in the fourth paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "LIGHTWEIGHT CONCRETE," the fifth paragraph is revised as follows:

"The fine aggregate portion of the lightweight concrete mix shall consist of lightweight fine aggregate or of natural sand conforming to the requirements of ASTM C 33 or manufactured sand fine aggregate, or a combination thereof, as required to comply with the equilibrium density requirements of these special provisions."

In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "LIGHTWEIGHT CONCRETE," the ninth paragraph is revised as follows:

"The absolute volume of coarse aggregate shall be limited to that volume which permits the mixing, transporting, placing, consolidating, and finishing of the concrete without segregation. The equilibrium density of lightweight concrete furnished for each mix design used shall be a single density, selected by the Contractor, within the limits of 1922 kilograms plus 0 or minus 80 kilograms per cubic meter. The Contractor shall furnish certified copies of the manufacturer's test reports showing the fresh concrete density that is anticipated to result in the equilibrium density selected by the Contractor. The density of fresh concrete produced for use in the work shall not vary from the density shown in the test report by more than 65 kg per cubic meter nor shall it exceed 2002 kg per cubic meter. The density of fresh concrete shall be determined in conformance with the requirements in California Test 518. The equilibrium density shall be determined in conformance with the requirements in ASTM Designation: C 567, except that the drying time shall be 112 days."

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In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "LIGHTWEIGHT CONCRETE," the fourteenth paragraph is revised as follows:

"The aggregates shall be uniformly pre-wetted or presaturated in such a manner that uniform penetration of the concrete will be maintained. For lightweight aggregate, the following minimum pre-wetting or presaturation procedures shall be followed:

The lightweight aggregate shall be uniformly sprinkled with water, either by continuous or intermittent methods for seven days in advance of concrete placement. Water sprinkling shall be discontinued for 12 hours preceding the incorporation of the lightweight aggregate into the respective mix. However, the stockpile shall be monitored, and when necessary top-dressed to maintain the surface zone moisture content consistent with the material beneath the surface zone. Lightweight aggregate shall be used in a uniform damp condition. Where practical, the entire inventory shall be stockpiled and conditioned before the initial placement to promote uniformity. If after 5 days of water conditioning, the Contractor can demonstrate to the Engineer, that the lightweight aggregate exhibits an internal moisture of at least 15 percent (or the maximum saturated surface dry absorption for the aggregate in accordance with ASTM Designation: C 127), the seven day conditioning period may be reduced accordingly."

In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "LIGHTWEIGHT CONCRETE," the first sentence of the fifteenth paragraph is revised as follows:

"Portland cement, aggregates, water, and admixtures shall be proportioned to produce lightweight concrete containing not less than 350 kg nor more than 600 kg of cement per cubic meter, except that concrete used in roadway deck slabs and slab spans for highway bridges shall contain not less than 400 kg per cubic meter."

In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "LIGHTWEIGHT CONCRETE," Subsection "Testing lightweight concrete," the first subparagraph is revised as follows:

"For each set of lightweight concrete cylinders taken for strength testing, three additional companion cylinders shall be taken to determine the equilibrium density of the lightweight concrete. Testing of two of the cylinders for equilibrium density shall be in accordance with ASTM Designation: C 567, except that the equilibrium density shall be reported at 28, 56, 84 and 112 days for each cylinder. The third cylinder shall be utilized to calculate the approximate equilibrium density using the oven-dry density in accordance with Section 9.2, "Calculation of Approximate Equilibrium Density," of ASTM Designation: C 567."

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In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "LIGHTWEIGHT CONCRETE," Subsection "Testing lightweight concrete," the third paragraph is revised as follows:

"Should the results of any single 112-day equilibrium density test (based on sample cylinders) not satisfy the specified mix design requirements but not be more than 30 kg per cubic meter above the design equilibrium density, the Contractor shall, at the Contractor's expense, make corrective changes, subject to approval of the Engineer, in the mix proportions or in the concrete fabrication procedures before placing additional concrete, and shall pay to the State \$50.00 for each structurally adequate in-place cubic meter of concrete represented by the deficient test. If the result of any single 112-day equilibrium density test (based on sample cylinders) is more than 30 kilograms but less than 60 kilograms above the specified equilibrium density, the Contractor shall make the corrective changes specified above, and shall pay to the State \$100.00 for each structurally adequate in-place cubic meter of concrete represented by the deficient test. All concrete represented by a single test (based on sample cylinders) which indicates an equilibrium density above 1982 kilograms per cubic meter will be rejected in accordance with the provisions in Section 6-1.04, "Defective Materials."

In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "MEASUREMENT AND PAYMENT" is moved to follow Subsection "PRECAST PIER FOOTING FORMS."

In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "COST REDUCTION INCENTIVE PROPOSALS FOR CAST-IN-PLACE PRESTRESSED BOX GIRDER BRIDGES CONSTRUCTED ON FALSEWORK," in the fifth paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.45, "CONCRETE STRUCTURES," Subsection "COST REDUCTION INCENTIVE PROPOSALS FOR CAST-IN-PLACE SEGMENTALLY CONSTRUCTED PRESTRESSED BOX GIRDER BRIDGES," in the sixth paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.60, "INTEGRATED DRAWINGS," in the sixth paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.75, "MISCELLANEOUS METAL (MAINTENANCE ACCESS)," in the third paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

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In the Special Provisions, Section 10-1.76, "MISCELLANEOUS METAL (MOVABLE INSPECTION PLATFORMS)," Subsection "Drawings," the following sentence is added after the second sentence of the first paragraph:

"The Engineer shall have 6 weeks to review the working drawings after a complete plan has been received. If a returned corrected set of drawings and calculations is resubmitted for review by the Engineer, the Engineer shall have an additional 6 weeks to review the submittal. Should the Engineer fail to complete the review within this time allowance and if, in the opinion of the Engineer, the Contractor's controlling operation is delayed or interfered with by reason of the delay in reviewing the working drawings, the delay will be considered a right of way delay in conformance with the provisions in Section 8-1.09, "Right of Way Delays," of the Standard Specifications."

In the Special Provisions, Section 10-1.76, "MISCELLANEOUS METAL (MOVABLE INSPECTION PLATFORMS)," Subsection "Drawings--", in the first paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.79, "FIBERGLASS REINFORCED PLASTIC DOORS AND FRAMES," Subsection "SUBMITTALS," in the first paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-1.93, "PRECAST CONCRETE BOX CULVERTS" is deleted.

In the Special Provisions, Section 10-1.94, "LIGHTWEIGHT EMBANKMENT MATERIAL (CELLULAR CONCRETE)," is deleted.

In the Special Provisions, Section 10-3.20, "HEALTH MONITORING SYSTEM (SHIPPING CHANNEL SPAN)," Subsection "SUBMITTALS," in the first paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-3.20, "HEALTH MONITORING SYSTEM (SHIPPING CHANNEL SPAN)," Subsection "INSTALLATION," Subsection "Submittals," in the first paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

Addendum No. 4
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04-CC,Sol-680-40.1/41.4 - L0.0/L1.0
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In the Special Provisions, Section 10-3.20, "HEALTH MONITORING SYSTEM (SHIPPING CHANNEL SPAN)," Subsection "MONITORING," Subsection "Submittals," in the first paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Special Provisions, Section 10-3.20, "HEALTH MONITORING SYSTEM (SHIPPING CHANNEL SPAN)," Subsection "MATERIALS TESTING," Subsection "Submittals," in the second paragraph, the Resident Engineer's Office address is revised as follows:

"Resident Engineer's Office
4585 Pacheco Blvd., Suite 200
Martinez, California 94553"

In the Proposal and Contract, the Engineer's Estimate Items 40, 59, 61, 67, 82, 86, 87, 106, 138, 139, and 149, are revised, Items 173, 174, 175, 176, and 177 are added and Items 63, 72, 73, and 172 are deleted as attached.

In the Proposal and Contract, an A+B worksheet is added.

To Proposal and Contract book holders:

Replace the entire Engineer's Estimate in the Proposal with the attached revised Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Attached is a copy of the supplemental Material Information Handout on Compact Disk.

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

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

Inform subcontractors and suppliers as necessary.

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

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

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief
Plans, Specifications & Estimates Branch
Office of Office Engineer

Attachments

CONTAMINATED AND HAZARDOUS MATERIAL

MATERIAL DISPOSAL CLASSIFICATION

TEST PILE EXCAVATION	
ZONE (MBGS)	MATERIAL CLASSIFICATION
0.0 TO 0.6	NON-HAZARDOUS
0.6 TO 1.7	RCRA HAZARDOUS
1.7 TO 5.3	CONTAMINATED
5.3 TO PILE TIP	NON-HAZARDOUS

NOTES:

MBGS Meters below ground surface

NON-HAZARDOUS Material that does not contain contaminants at concentrations that could, under ambient conditions at a disposal site, be released in concentrations that exceed applicable water quality objectives or could degrade waters of the State

RCRA-HAZARDOUS Material that contains contaminants at concentrations equal to or greater than the threshold limit concentrations in Section 66261.24 (a) (1) of Title 22 of the California Code of Regulations

CONTAMINANT SUMMARY

TEST PILE						
SAMPLE DEPTH (bgs)	SAMPLE ID	CAM 17 (mg/kg)	WET (mg/l)	TCLP (mg/l)	TPH-G (mg/kg)	TPH-D (mg/kg)
0.15 m	TP1-0.5	Antimony = 0.86 Arsenic = 10 Barium = 120 Beryllium = ND Cadmium = ND Chromium = 22 Cobalt = 8.1 Copper = 22 Lead = 26 Mercury = ND Molybdenum = 4.8 Nickel = 20 Selenium = ND Silver = ND Thallium = ND Vanadium = 34 Zinc = 98	NA	NA	4.6	15

0.31 m	TP1-1	Antimony = 0.96 Arsenic = 9.8 Barium = 110 Beryllium = ND Cadmium = ND Chromium = 20 Cobalt = 6.4 Copper = 18 Lead = 21 Mercury = ND Molybdenum = 46 Nickel = 15 Selenium = 0.38 Silver = ND Thallium = ND Vanadium = 30 Zinc = 61	NA	NA	ND	8.6
0.76 m	TP1-2.5	Antimony = 1.3 Arsenic = 4.2 Barium = 44 Beryllium = ND Cadmium = ND Chromium = 39 Cobalt = 4.8 Copper = 14 Lead = 286 Mercury = ND Molybdenum = 1.9 Nickel = 15 Selenium = ND Silver = ND Thallium = ND Vanadium = 16 Zinc = 60	Lead = 14.4	Lead = 5.6	8.6	23
1.70 m	TP1-5.5	Antimony = 2.1 Arsenic = 14 Barium = 174 Beryllium = 0.06 Cadmium = ND Chromium = 36 Cobalt = 14 Copper = 54 Lead = 110 Mercury = ND Molybdenum = 4.6 Nickel = 40 Selenium = ND Silver = ND Thallium = ND Vanadium = 43 Zinc = 103	Lead = 4.4	Lead = 0.95	8.0	16

3.50 m	TP1-11.5	Antimony = 1.2 Arsenic = 19 Barium = 85 Beryllium = 0.22 Cadmium = ND Chromium = 34 Cobalt = 5.7 Copper = 13 Lead = 43 Mercury = ND Molybdenum = 4.9 Nickel = 20 Selenium = ND Silver = ND Thallium = ND Vanadium = 36 Zinc = 87	NA	NA	ND	230
5.30 m	TP1-17.5	Antimony = 0.72 Arsenic = 15 Barium = 39 Beryllium = ND Cadmium = ND Chromium = 35 Cobalt = 9.6 Copper = 30 Lead = 14 Mercury = 0.17 Molybdenum = 3.8 Nickel = 33 Selenium = ND Silver = ND Thallium = ND Vanadium = 49 Zinc = 40	NA	NA	ND	2.2
6.80 m	TP1-22	Antimony = 1.0 Arsenic = 11 Barium = 35 Beryllium = ND Cadmium = ND Chromium = 30 Cobalt = 8.4 Copper = 25 Lead = 8.4 Mercury = 0.20 Molybdenum = 3.3 Nickel = 26 Selenium = ND Silver = ND Thallium = ND Vanadium = 46 Zinc = 32	NA	NA	ND	2.1

CONTAMINANT SUMMARY (CONT.)

TEST PILE						
SAMPLE DEPTH (bgs)	SAMPLE ID	TPH-MO (mg/kg)	AHVOC (µg/kg)	PAH (mg/kg)	PESTICIDES (µg/kg)	PCB (mg/kg)
0.15 m	TP1-0.5	15	NA	ND	DDT = 67	ND
0.31 m	TP1-1	22	Xylene = 11	ND	DDT = 40	ND
0.76 m	TP1-2.5	23	ND	Benzo(a)pyrene = 0.01 Benzo(b)flouranthene = 0.013 Flouranthene = 0.024 Phenanthrene = 0.023 Pyrene = 0.022	ND	ND
1.70 m	TP1-5.5	16	ND	Benzo(a)pyrene = 0.016 Benzo(b)flouranthene = 0.017 Dibenzo(a,b)anthracene = 0.020 Ideno(1,2,3-c,d)pyrene = 0.025 Benzo(g,h,I)perylene = 0.030	ND	ND
3.50 m	TP1-11.5	560	ND	Benzo(a)anthracene = 0.131 Benzo(a)pyrene = 0.020 Benzo(b)flouranthene = 0.076 Chrysene = 0.208 Acenaphthene = 0.021 Anthracene = 0.024 Flouranthene = 0.067 Naphthalene = 1.22 Phenanthrene = 0.101 Pyrene = 0.064	ND	ND
5.30 m	TP1-17.5	4.4	NA	ND	ND	ND
6.80 m	TP1-22	5.8	ND	ND	ND	ND

NOTES:

- ND Not detected at concentrations greater than the laboratory reporting limit
- NA Not analyzed
- CAM-17 California Assessment Manual metals
- WET California waste extraction test
- TCLP Environmental Protection Agency toxicity characteristic leaching procedure
- TPH-G Total petroleum hydrocarbons in gasoline range
- TPH-D Total petroleum hydrocarbons in diesel range
- TPH-MO Total petroleum hydrocarbons in motor oil range
- AHVOC Aromatic halogenated volatile organic compounds
- PAH Polycyclic aromatic hydrocarbons
- PCB Polychlorinated biphenyls
- Constituents that are not reported in the table were ND

CONTAMINATED AND HAZARDOUS MATERIAL EXCAVATION

Contaminated and hazardous material excavation shall consist of excavating material identified on the plans as contaminated material, hazardous material, slag, or cinder within excavation limits shown on the plans, specified in the Standard Specifications, or specified or directed by the Engineer and placing or disposing of the material as specified in this section.

Excavated contaminated material, hazardous material, slag, and cinder shall be managed as follows:

A. Contaminated material – Haul and place the material within the roadway prism from "L" 12+35 to "L" 14+20, dispose of the material at a site outside of the highway right of way where ambient environmental conditions will not cause contaminants to be released at concentrations that exceed applicable water quality objectives or could degrade waters of the State, or dispose of the material at a permitted waste management facility in conformance with Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications and these special provisions.

B. Hazardous material – Haul and dispose of the material at a permitted hazardous waste management facility in conformance with Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications and these special provisions.

C. Slag – Haul and dispose of the material at a permitted waste management facility in conformance with Section 7-1.13, "Disposal of Material outside the Highway Right of Way," of the Standard Specifications and these special provisions.

D. Cinder – Haul and dispose of the material at a permitted waste management facility in conformance with Section 7-1.13, "Disposal of Material outside the Highway Right of Way," of the Standard Specifications and these special provisions.

Except that when the material is excavated from trenches for irrigation or electrical systems the material shall be used to backfill the trench.

Attention is directed to "Contaminated and Hazardous Material, General" of these special provisions for handling, characterization, and stockpiling requirements.

Contaminated and hazardous material excavation will be measured and paid for by the cubic meter as structural excavation (bridge)(contaminated) and as structural excavation (bridge)(hazardous).

Full compensation for excavating, loading, hauling, and placing or disposing of contaminated material shall be considered as included in the contract price paid per cubic meter for structure excavation (bridge) (contaminated), structure excavation (Type D) (contaminated), and roadway excavation (contaminated) and no further compensation will be allowed therefor.

Full compensation for excavating, loading, hauling, and disposing of hazardous material shall be considered as included in the contract price paid per cubic meter for structure excavation (bridge) (hazardous) and roadway excavation (hazardous) and no further compensation will be allowed therefor.

Full compensation for excavating, loading, hauling, and disposing of slag and cinder shall be considered as included in the contract price paid per cubic meter for structure excavation (Type A) (slag and cinder) and no further compensation will be allowed therefor.

Pervious backfill material in connection with bridge work will be measured and paid for by the cubic meter as structure backfill (bridge).

Pervious backfill material within the limits of payment for retaining walls will be measured and paid for by cubic meter as structure backfill .

Sand below footings, as shown at Piers 16 and 17, shall be measured and paid by the cubic meter as sand backfill.

If structure excavation or structure backfill involved in bridges is not otherwise designated by type, and payment for the structure excavation or structure backfill has not otherwise been provided for in the Standard Specifications or these special provisions, the structure excavation or structure backfill will be paid for at the contract price per cubic meter for structure excavation (bridge) or structure backfill (bridge).

Structure excavation designated as (Type D), for footings at the locations shown on the plans, will be measured and paid for by the cubic meter as structure excavation (Type D). Ground water or surface water is expected to be encountered at these locations, but seal course concrete is not shown or specified. Structure excavation for footings at locations not designated on the plans as structure excavation (Type D) or (Type A), and where ground or surface water is encountered, except locations where seal course concrete is shown or specified, will be measured and paid for by the cubic meter as structure excavation (bridge).

Full compensation for submitting the Pier 5 Construction Plan shall be considered as included in the contract prices paid per cubic meter for the various items of excavation and backfill shown in the Engineer's Estimate and no additional compensation will be allowed therefor.

Full compensation for controlling groundwater at excavations and cast-in-drilled-hole piling at Abutment 1 and Piers 2 through 5 shall be considered as included in the contract prices paid per cubic meter for the various items of excavation and backfill shown in the Engineer's Estimate and no additional compensation will be allowed therefor.

Full compensation for placing sand backfill under completed footings shall be considered as included in the contract price paid per cubic meter for sand backfill and no additional compensation will be allowed therefor.

OVER REAM AND FILL

At the pier locations shown in the following table, where the Engineer has identified a significant probability of caving conditions, construction of each cast-in-drilled-hole piling below the permanent steel casings or isolation casings shall be preceded by over reaming of the hole, filling of the hole with fiber reinforced concrete and subsequently redrilling through fiber reinforced concrete in accordance with these special provisions.

Bridge Number	Name or	Ream Hole Size	Pier Number	Elevation of Reaming
Benicia Bridge and OH	Martinez	3.2m	Pier 4	Full length of 2.6m CIDH below isolation casing
Benicia Bridge and OH	Martinez	2.8m	Piers 10, 13, 14 and Load Test Pile	Full length of rock socket

The work involved in the over ream and fill shall be designated in the resource loading required in the Baseline Schedule required in "Progress Schedule (Critical Path)" of these special provisions. The assumed lift height between successive drillings and required cure time for the Contractor's selected fiber reinforced fill concrete shall be included in the scheduling assumptions.

Engineer, the Contractor shall over ream the 2.2m rock socket length to a minimum diameter of 2.8m or the 2.6m CIDH to a minimum diameter of 3.2m. Immediately after a Contractor selected length of the hole has been over reamed, the excavation equipment shall be raised and fiber reinforced concrete shall be placed by tremmie into the hole to fill the entire length that was just over reamed. After allowing the concrete to reach a compressive strength of at least 14 Mpa, the hole for the 2.2 m CIDH (rock socket) or the 2.5m CIDH shall be drilled through the fiber reinforced concrete. This process shall be repeated until the specified tip elevation of the pile is reached. The length of over reaming to be used between concrete placements shall be determined by the Contractor to prevent caving but shall in no case be more than 10m in length without prior written approval of the Engineer.

A mix design for fiber reinforced concrete for filling of over reamed holes shall be submitted in accordance with Section 90, "Portland Cement Concrete" of the Standard Specifications. The concrete shall contain steel fiber reinforcement at a dosage of at least 59kg per cubic meter. Steel fiber reinforcement shall be a deformed wire at least 50mm in length with an aspect ratio of more than 50 conforming to ASTM A820. The type of steel fiber reinforcement shall be submitted to the engineer for approval with the mix design. There shall be no minimum cement content required; however, redrilling of filled holes shall not take place until the concrete has gained a compressive strength of at least 14 Mpa as determined by previous testing of the mix to develop a compressive strength versus time chart. The strength versus time chart shall be developed by breaking pairs of cylinders at 6 hour intervals for 7 days after casing of the cylinders. In addition, the 14, 21 and 28 day compressive strengths shall also be determined for the mix. The materials used for the fiber reinforced concrete mix shall conform to Section 90, Portland Cement Concrete," of the Standard Specifications. Fiber reinforced concrete shall be considered as containing steel reinforcement with regard to the use of calcium chloride.

All over reaming, placing fiber reinforced concrete and subsequent redrilling shall be performed under slurry as specified elsewhere in these special provisions. The Contractor shall pay special attention to maintaining the slurry properties when drilling through previously placed concrete due to the potential for slurry decomposition. Disposal of all over reaming drill cuttings shall be in accordance with these special provisions. At the locations where the over ream and fill method has been used, all the requirements for installation and testing of the cast-in-drilled-hole piles elsewhere in these special provisions shall still apply.

Where the Contractor is directed by the Engineer to use the over ream and fill method at locations not listed in the above table, the work will be paid for at the unit price bid for over ream and fill of the various sizes shown in the Engineer's estimate.

Alternatives to the over ream and fill method will be considered by the Engineer provided the Contractor demonstrates by testing that the shear friction capacity of the rock socket, when using the Contractor's proposed method, is equal to or greater than that assumed in the design. Acceptable proof that the Contractor's proposed method is equivalent shall be an Osterberg load test of a rock socket on a non-production pile constructed to the same elevations and under the same conditions as a production pile. The location of a Osterburg test pile shall be at the center of the Pier 10 pile cap or at another location as approved by the Engineer. Alternative methods will be considered only when presented as part of a cost reduction incentive proposal as specified elsewhere in these special provisions.

ENGINEER'S ESTIMATE
04-006034

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	020627	ELECTRONIC MOBILE DAILY DIARY COMPUTER SYSTEM DATA DELIVERY	LS	LUMP SUM	LUMP SUM	
2	020628	MODIFY MONITORING WELLS	EA	1		
3	020629	ABANDON MONITORING WELLS	EA	2		
4	020630	REMOVE ABANDONED 51 MM GAS LINE	M	210		
5	020631	REMOVE 254 MM WATER LINE (ASBESTOS)	M	230		
6 (S)	020632	ROADWAY EXCAVATION (HAZARDOUS)	M3	1290		
7 (S)	020633	ROADWAY EXCAVATION (CONTAMINATED)	M3	4220		
8	020634	TIME RELATED OVERHEAD	WDAY	1100		
9	070010	PROGRESS SCHEDULE (CRITICAL PATH)	LS	LUMP SUM	LUMP SUM	
10	020635	TRANSPORTATION FOR ENGINEER	LS	LUMP SUM	LUMP SUM	
11	071322	TEMPORARY FENCE (TYPE CL-1.8)	M	525		
12	048467	TEMPORARY HINGE TIEDOWN	EA	6		
13	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
14	074020	WATER POLLUTION CONTROL	LS	LUMP SUM	LUMP SUM	
15	020636	NON-STORM WATER DISCHARGES	LS	LUMP SUM	LUMP SUM	
16	020637	TEMPORARY SILT FENCE	M	480		
17	020638	TEMPORARY COVER	LS	LUMP SUM	LUMP SUM	
18	020639	TEMPORARY DRAINAGE INLET PROTECTION	EA	15		
19	020640	TEMPORARY CONCRETE WASHOUT FACILITY	LS	LUMP SUM	LUMP SUM	
20	020641	TEMPORARY FENCE (TYPE ESA)	M	130		

ENGINEER'S ESTIMATE
04-006034

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21	020642	TEMPORARY ENTRANCE/EXIT	LS	LUMP SUM	LUMP SUM	
22	020643	FIBER ROLL CHECK DAM	EA	8		
23	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
24	129000	TEMPORARY RAILING (TYPE K)	M	25		
25	129510	TEMPORARY RETAINING WALL	M2	780		
26	150608	REMOVE CHAIN LINK FENCE	M	290		
27	020644	REMOVE CHAIN LINK FENCE (TYPE CL-1.8 WITH EXTENSION ARM AND 3-BARBED WIRES)	M	250		
28	150710	REMOVE TRAFFIC STRIPE	M	1120		
29	150713	REMOVE PAVEMENT MARKING	M2	60		
30	150744	REMOVE ROADSIDE SIGN (WOOD POST)	EA	1		
31	150745	REMOVE ROADSIDE SIGN (METAL POST)	EA	1		
32	152396	RELOCATE SIGN PANEL	EA	1		
33	152604	MODIFY INLET	EA	1		
34	160101	CLEARING AND GRUBBING	LS	LUMP SUM	LUMP SUM	
35	190101	ROADWAY EXCAVATION	M3	13 200		
36	192001	STRUCTURE EXCAVATION	M3	310		
37 (F)	048429	STRUCTURE EXCAVATION (BRIDGE)(HAZARDOUS)	M3	170		
38 (F)	048430	STRUCTURE EXCAVATION (BRIDGE)(CONTAMINATED)	M3	95		
39 (F)	192008	STRUCTURE EXCAVATION (TYPE A)	M3	8830		
40 (F)	048431	STRUCTURE EXCAVATION (TYPE A) (SLAG AND CINDER)	M3	2500		

ENGINEER'S ESTIMATE
04-006034

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41 (F)	192020	STRUCTURE EXCAVATION (TYPE D)	M3	1030		
42 (F)	048432	STRUCTURE EXCAVATION (TYPE D)(CONTAMINATED)	M3	86		
43 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	M3	1300		
44 (F)	048433	STRUCTURE BACKFILL (BRIDGE) (LOW PERMEABLE) (0.7 MPA)	M3	2200		
45 (F)	048434	STRUCTURE BACKFILL (BRIDGE) (LOW PERMEABLE) (6.9 MPA)	M3	371		
46 (F)	193114	SAND BACKFILL	M3	2770		
47	194001	DITCH EXCAVATION	M3	90		
48	020645	IMPORTED BORROW (50-MM LIGHTWEIGHT AGGREGATE)	M3	370		
49	020646	IMPORTED BORROW (25-MM LIGHTWEIGHT AGGREGATE)	M3	45		
50	203001	EROSION CONTROL (BLANKET)	M2	440		
51	020647	FIBER ROLLS	M	970		
52	203003	STRAW (EROSION CONTROL)	TONN	5.6		
53	203014	FIBER (EROSION CONTROL)	KG	880		
54	203024	COMPOST (EROSION CONTROL)	KG	2650		
55	203045	PURE LIVE SEED (EROSION CONTROL)	KG	90		
56	203056	COMMERCIAL FERTILIZER (EROSION CONTROL)	KG	290		
57	203061	STABILIZING EMULSION (EROSION CONTROL)	KG	200		
58	250401	CLASS 4 AGGREGATE SUBBASE	M3	140		
59	260301	CLASS 3 AGGREGATE BASE	M3	620		
60	290201	ASPHALT TREATED PERMEABLE BASE	M3	30		

ENGINEER'S ESTIMATE

04-006034

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	390155	ASPHALT CONCRETE (TYPE A)	TONN	1120		
62	390165	ASPHALT CONCRETE (OPEN GRADED)	TONN	25		
63	BLANK					
64	394002	PLACE ASPHALT CONCRETE (MISCELLANEOUS AREA)	M2	60		
65 (S)	490658	750 MM CAST-IN-DRILLED-HOLE CONCRETE PILING	M	381		
66 (S)	048435	2.2 M CAST-IN-DRILLED-HOLE CONCRETE PILING (ROCK SOCKET)	M	2220		
67 (S)	490672	2.5 M CAST-IN-DRILLED-HOLE CONCRETE PILING	M	4065		
68 (S)	048436	2.5 M PERMANENT STEEL CASING	M	4460		
69 (S)	048437	2.6 M CAST-IN-DRILLED-HOLE CONCRETE PILING	M	291		
70 (S)	048438	INSTALL SEISMIC MONITORING CASING	LS	LUMP SUM	LUMP SUM	
71 (S)	048439	PRESTRESSING HIGH STRENGTH ROD	LS	LUMP SUM	LUMP SUM	
72	BLANK					
73	BLANK					
74 (F)	510000	SEAL COURSE CONCRETE	M3	1606		
75	048442	TEST BLOCKS	LS	LUMP SUM	LUMP SUM	
76 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	M3	19 700		
77 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	M3	27 060		
78 (S-F)	048443	PRECAST PIER FOOTING FORM	M3	7740		
79 (F)	048444	STRUCTURAL CONCRETE, LIGHTWEIGHT	M3	41 600		
80 (F)	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	M3	68		

ENGINEER'S ESTIMATE**04-006034**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81 (F)	048445	STRUCTURAL CONCRETE, FENDER	M3	730		
82	510502	MINOR CONCRETE (MINOR STRUCTURE)	M3	13		
83	510504	MINOR CONCRETE (PIPE ENCASEMENT)	M3	10		
84 (F)	511064	FRACTURED RIB TEXTURE	M2	1660		
85 (S)	515050	GRIND BRIDGE DECK	LS	LUMP SUM	LUMP SUM	
86 (S)	048446	PTFE SPHERICAL BEARING (395 MM DIA)	EA	2		
87 (S)	048447	PTFE SPHERICAL BEARING (530 MM DIA)	EA	2		
88 (S)	048448	PTFE SPHERICAL BEARING (600 MM DIA)	EA	2		
89 (S)	048449	PTFE SPHERICAL BEARING (815 MM DIA)	EA	2		
90 (S)	048450	HINGE C AND D BEARING (TYPE I)	EA	16		
91 (S)	048451	HINGE C AND D BEARING (TYPE II)	EA	4		
92 (S)	048452	ELASTOMERIC BUMPERS	LS	LUMP SUM	LUMP SUM	
93 (S)	048453	JOINT SEAL (MR 20 MM)	M	25		
94 (S)	519132	JOINT SEAL ASSEMBLY (MR 321 MM - 400 MM)	M	25		
95 (S)	048454	JOINT SEAL ASSEMBLY (MR 900 MM)	M	25		
96 (S)	048455	JOINT SEAL ASSEMBLY (MR 1000 MM)	M	79		
97 (S-F)	520102	BAR REINFORCING STEEL (BRIDGE)	KG	21 930 000		
98 (S-F)	520110	BAR REINFORCING STEEL (EPOXY COATED) (BRIDGE)	KG	4 600 000		
99	048456	WELDED HEADED BAR REINFORCEMENT	EA	89 500		
100 (S-F)	048457	WELDED HEADED BAR REINFORCEMENT (EPOXY COATED)	EA	43 500		

ENGINEER'S ESTIMATE**04-006034**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101 (S-F)	550203	FURNISH STRUCTURAL STEEL (BRIDGE)	KG	289 400		
102 (S-F)	550204	ERECT STRUCTURAL STEEL (BRIDGE)	KG	289 400		
103 (F)	560218	FURNISH SIGN STRUCTURE (TRUSS)	KG	20 680		
104 (S-F)	560219	INSTALL SIGN STRUCTURE (TRUSS)	KG	20 680		
105	562004	METAL (RAIL MOUNTED SIGN)	KG	700		
106	566011	ROADSIDE SIGN - ONE POST	EA	11		
107 (S-F)	048458	REINFORCED RECYCLED PLASTIC LUMBER	M3	790		
108 (S)	590115	CLEAN AND PAINT STRUCTURAL STEEL	LS	LUMP SUM	LUMP SUM	
109	620907	300 MM ALTERNATIVE PIPE CULVERT (TYPE C)	M	30		
110	620909	450 MM ALTERNATIVE PIPE CULVERT	M	45		
111	650079	900 MM REINFORCED CONCRETE PIPE	M	80		
112 (S-F)	048459	3660 MM CORRUGATED STEEL PIPE	M	85		
113	681135	100 MM PLASTIC PIPE (EDGE DRAIN)	M	15		
114	705334	300 MM ALTERNATIVE FLARED END SECTION	EA	3		
115	705336	450 MM ALTERNATIVE FLARED END SECTION	EA	2		
116	721009	ROCK SLOPE PROTECTION (FACING, METHOD B)	M3	40		
117	020648	SUB-GRADE ENHANCEMENT FABRIC	M2	380		
118	729010	ROCK SLOPE PROTECTION FABRIC	M2	85		
119	731501	MINOR CONCRETE (CURB)	M3	2		
120	731502	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	M3	120		

ENGINEER'S ESTIMATE

04-006034

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
121 (F)	750001	MISCELLANEOUS IRON AND STEEL	KG	108		
122 (S-F)	750501	MISCELLANEOUS METAL (BRIDGE)	KG	29 430		
123 (S-F)	750505	BRIDGE DECK DRAINAGE SYSTEM	KG	13 600		
124 (S)	048460	MISCELLANEOUS METAL (MAINTENANCE ACCESS)	LS	LUMP SUM	LUMP SUM	
125 (S)	048461	MISCELLANEOUS METAL (MOVABLE INSPECTION PLATFORMS)	LS	LUMP SUM	LUMP SUM	
126	800386	CHAIN LINK FENCE (TYPE CL-1.2, VINYL-CLAD)	M	35		
127	800391	CHAIN LINK FENCE (TYPE CL-1.8)	M	900		
128	020649	CHAIN LINK FENCE (TYPE CL-1.8, WITH EXTENSION ARM AND 3-BARBED WIRES)	M	250		
129 (F)	048462	FIBERGLASS GRATING	M2	260		
130 (F)	048463	FIBERGLASS REINFORCED PLASTIC DOOR FRAME	EA	11		
131	802584	0.9 M CHAIN LINK GATE (TYPE CL-1.8)	EA	1		
132	802594	2.7 M CHAIN LINK GATE (TYPE CL-1.8)	EA	1		
133	802596	3.7 M CHAIN LINK GATE (TYPE CL-1.8)	EA	1		
134	802672	4.9 M CHAIN LINK GATE (TYPE CL-1.8)	EA	2		
135	802676	7.3 M CHAIN LINK GATE (TYPE CL-1.8)	EA	1		
136 (S)	048464	CONSTRUCTION SURVEYING	LS	LUMP SUM	LUMP SUM	
137 (F)	810110	SURVEY MONUMENT	EA	24		
138 (S-F)	833033	CHAIN LINK RAILING (TYPE 7 MODIFIED)	M	166		
139 (S-F)	833090	TUBULAR HANDRAILING (MODIFIED)	M	182		
140 (F)	833128	CONCRETE BARRIER (TYPE 25 MODIFIED)	M	4564		

ENGINEER'S ESTIMATE**04-006034**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141	020650	CRASH CUSHION (REACT 350.9)	EA	1		
142 (S)	840515	THERMOPLASTIC PAVEMENT MARKING	M2	150		
143 (S)	840561	100 MM THERMOPLASTIC TRAFFIC STRIPE	M	5750		
144 (S)	840562	150 MM THERMOPLASTIC TRAFFIC STRIPE	M	110		
145 (S)	840563	200 MM THERMOPLASTIC TRAFFIC STRIPE	M	420		
146 (S)	840564	200 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 3.66 M - 0.92 M)	M	850		
147 (S)	840568	100 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 3.66 M - 0.92 M)	M	170		
148 (S)	850101	PAVEMENT MARKER (NON-REFLECTIVE)	EA	2250		
149 (S)	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	790		
150 (S)	860297	SIGNAL AND LIGHTING (CITY)	LS	LUMP SUM	LUMP SUM	
151 (S)	020651	TRAFFIC OPERATIONS SYSTEM	LS	LUMP SUM	LUMP SUM	
152 (S)	020652	ELECTRICAL FACILITIES 1	LS	LUMP SUM	LUMP SUM	
153 (S)	020653	ELECTRICAL FACILITIES 2	LS	LUMP SUM	LUMP SUM	
154 (S)	020654	ELECTRICAL FACILITIES 3	LS	LUMP SUM	LUMP SUM	
155 (S)	020655	ELECTRICAL FACILITIES 4	LS	LUMP SUM	LUMP SUM	
156 (S)	020656	ELECTRICAL FACILITIES 5	LS	LUMP SUM	LUMP SUM	
157 (S)	020657	ELECTRICAL FACILITIES 6	LS	LUMP SUM	LUMP SUM	
158 (S)	020658	ELECTRICAL FACILITIES 7	LS	LUMP SUM	LUMP SUM	
159 (S)	020659	ELECTRICAL FACILITIES 8	LS	LUMP SUM	LUMP SUM	
160 (S)	020660	ELECTRICAL FACILITIES 9	LS	LUMP SUM	LUMP SUM	

ENGINEER'S ESTIMATE**04-006034**

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161 (S)	020661	PIER 3 SUBSTATION CONDUIT LAYOUT	LS	LUMP SUM	LUMP SUM	
162 (S)	020662	CONDUIT LAYOUT IN PIERS 6 THROUGH 8	LS	LUMP SUM	LUMP SUM	
163 (S)	020663	CONDUIT LAYOUT IN PIERS 9 THROUGH 15	LS	LUMP SUM	LUMP SUM	
164 (S)	020664	PIER 3 SUBSTATION GROUNDING LAYOUT	LS	LUMP SUM	LUMP SUM	
165 (S)	020665	MARINE NAVIGATIONAL AIDS SYSTEM	LS	LUMP SUM	LUMP SUM	
166	869072	SEISMIC MONITORING SYSTEM	LS	LUMP SUM	LUMP SUM	
167	048465	HEALTH MONITORING SYSTEM	LS	LUMP SUM	LUMP SUM	
168	048466	HEALTH MONITORING SYSTEM (SHIPPING CHANNEL SPAN)	LS	LUMP SUM	LUMP SUM	
169	020666	RELOCATE PARK FACILITIES	LS	LUMP SUM	LUMP SUM	
170	994629	RELOCATE TRAILER	LS	LUMP SUM	LUMP SUM	
171	994650	BUILDING WORK	LS	LUMP SUM	LUMP SUM	
172	BLANK					
173 (S)	048520	LOAD TEST PILE	LS	LUMP SUM	LUMP SUM	
174 (S)	048521	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
175 (S)	048522	OVER REAM AND FILL (2.8 M MINIMUM DIAMETER)	M	681.4		
176 (S)	048523	OVER REAM AND FILL (3.2 M MINIMUM DIA)	M	27.2		
177	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

ENGINEER'S ESTIMATE

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TOTAL BID (A): = _____

TOTAL BID (B): = _____

\$ 35,000.00 x _____
(Cost Per Day) (Working Days Bid)
(Not To Exceed 1100 Days)

BASIS FOR COMPARISON OF BIDS:

(A) + (B) = _____

Notes:

- 1. TOTAL BID (A) is the grand total of the Item Totals in the Engineer's Estimate.**
- 2. Working Days Bid is defined in the Special Provisions.**