STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ADDENDUM NO. 5
FOR

INTERSTATE ROUTE H-3, H-3 FINISH (UNIT VIII)
FEDERAL-AID INTERSTATE PROJECT NO. I-H3-1(75) Unit VIII
AND
INTERSTATE ROUTE H-1 SEISMIC RETROFIT
AUSTIN-BISHOP SEPARATION AND WAIAU INTERCHANGE
FEDERAL-AID INTERSTATE PROJECT NO. BR-H1-1(241)

DISTRICT OF EWA
ISLAND OF OAHU
2003

Amend the bid documents as follows:

1. SPECIAL PROVISIONS

a. Replace the Table of Contents, Pages 1 through 6, dated 4/3/03 with the attached Table of Contents, Pages 1 through 6, dated 6/20/03.

b. Replace Page 203-15a, dated 11/27/02 with the attached Page 203-15a, dated 6/20/03.

c. The attached Pages 304-1a through 304-3a, dated 9/18/03 shall be incorporated and made a part of the Special Provisions.

d. Replace Pages 411-1a and 411-24a, dated 3/12/03 with the attached Pages 411-1a and 411-24a, dated 9/18/03.

e. Replace Page 501-1a dated r03/12/03 with the attached Pages 501-1a through 501-2a dated r06/20/03.

f. Replace Pages 503-1a through 503-4a dated r03/12/03 with the attached Pages 503-1a through 503-5a dated r06/20/03.

g. Replace Page 504-1a dated r03/12/03 with the attached Page 504-1a dated 9/18/03

h. Replace Pages 601-1a through 601-15a, dated r03/12/03 with the attached Pages 601-1a through 601-15a dated r06/20/03.

i. Replace Pages 602-1a through 602-2a dated r03/12/03 with the attached Pages 602-1a through 602-2a dated r06/20/03.

j. Replace Page 603-8a dated 3/12/03 with the attached Page 603-8a dated 9/18/03.

k. Replace Page 638-1a, dated 3/12/03 with the attached Page 638-1a, dated 9/18/03.

l. Replace Pages 663-1a through 663-3a, dated 3/12/03 with the attached Pages 663-1a through 663-3a, dated 9/18/03.

m. Replace Pages 690-1a through 690-7a, dated 1/24/03 with the attached Page 690-1a through 690-11a, dated 9/18/03.

2. PROPOSAL SCHEDULE

a. Replace Pages P-8 through P-44, dated 03/31/03 with the attached Pages P-8 through P-44, dated 9/18/03.

3. PLANS

a. Replace Plan Sheet Nos.:

6, 8, 14, 15, 18 through 20, 23, 39 through 41, 56 through 64, 66 through 69, 71 through 74, 76, 78 through 81, 90, 91, 99, 100, 104 through 111, 114, 117 through 124, 126 through 129, 131 through 140, 142 through 145, 148, 156 through 194, 196, 201, 203, 205, 206, 210 through 212, 216 through 218, 224 through 226, 228 through 230, 238, 242, 245, 252, 254 through 258, 261 through 268, 270 through 282, 284, 285, 297, 300, 304, 309, 312 through 315, 359, 406, 407, 414, 416 through 418, 420 through 422, 424 through 426, 432, 437, 445, 447 through 455, 457 through 461, 463, 466, 467, 470, 473, 474, 477 through 503, 507, 508, 511, 515 through 520, 523, 524, 526 through 530, 532, 536 through 538, 541 through 545, 556 through 558, 560, 563, 774, 775, 783, and 784

with the attached Plan Sheet Nos.:

ADD.6, ADD.8, ADD.14, ADD.15, ADD.18 through ADD.20, ADD.23, ADD.39 through ADD.41, ADD.56 through ADD.64, ADD.66 through ADD.69, ADD.71 through ADD.74, ADD.76, ADD.78 through ADD.81, ADD.90, ADD.91, ADD.99, ADD.100, ADD.104 through ADD.111, ADD.114, ADD.117 through ADD.124, ADD.126 through ADD.129, ADD.131 through ADD.140, ADD.142 through ADD.145, ADD.148, ADD.156 through ADD.194, ADD.196, ADD.201, ADD.203, ADD.205, ADD.206, ADD.210 through ADD.212, ADD.216 through ADD.218,

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b. The attached Plan Sheet Nos. ADD.311S-1, ADD.457S-1, ADD.471S-1, ADD.472S-1, and ADD.472S-2 shall be incorporated and made a part of the Plans.

Please acknowledge receipt of this Addendum No. 5 by writing in "Addendum No. 5 _____" and recording the date of its receipt on page P-4 of the Proposal.

for RODNEY K. HARAGA
Director of Transportation

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within the roadway area where the Contractor removed unsuitable fill foundation material; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item	Pay Unit
Roadway Excavation	Cubic Yard"

END OF SECTION

Amend Section 304 - Aggregate Base Course to read as follows:

"**SECTION 304 - AGGREGATE BASE COURSE**

304.01 Description. This section is for furnishing and placing one or more courses of aggregate base on a prepared surface according to the contract.

304.02 Materials. Materials shall conform to the following:

Aggregate for Untreated Base	703.06
Water	712.01
Cullet and Cullet-Aggregate Mixtures as Construction Materials	717.01

304.03 Construction Requirements.

(A) Placing. Place the base material on the prepared surface without segregation. Remix the segregated materials until a uniform distribution is obtained. Do not dump the material in piles on the prepared surface.

Depositing and spreading shall commence at that part of the work farthest from the point of loading the material and shall progress continuously without breaks.

When the required compacted depth of the base course exceeds 6 inches, construct the base in two or more layers of approximately equal thickness. The maximum compacted thickness of one layer shall not exceed 6 inches.

When using a vibratory roller weighing 9 tons or more, the Contractor may increase lift thickness to 7 inches.

The Engineer will not permit the spreading of filler material over the surface of the compacted base. Incorporate the additional material, if required, uniformly throughout the thickness of the compacted material by scarifying and blading. The combined material shall meet quality requirements as specified.

(B) Shaping and Compacting. The Contractor shall do such shaping work as necessary. The finished base shall conform to the required grade and cross-section. The finished base where not controlled by adjacent structures or features shall not vary more than 0.04 foot above or below the theoretical grade.

Continue the compaction of each layer until a density of not less than 95% of the maximum density has been achieved according to Subsection 106.09 - Special Test Methods. The Engineer will make field density determination according to Hawaii Test Methods HDOT TM 1, 2, and 3. The Contractor shall maintain the surface of each layer during the compaction operations so that a uniform texture is produced and the aggregate is firmly keyed.

When high or low spots develop during rolling operations, the Contractor shall smooth out such spots by blading with a self-propelled and pneumatic-tired motor grader. The grader shall have a wheel base not less than 15 feet long and a blade not less than 10 feet long.

Use 3-wheel rollers to initially compact each layer. Follow up with pneumatic-tired rollers for intermediate rolling. Use 3-wheel rollers to do the final rolling. The Contractor may submit alternate methods or equipment for compacting the aggregate base course for acceptance by the Engineer.

(C) Equipment. The 3-wheel rollers and pneumatic-tired rollers shall conform to Subsection 401.05(B)(4) - Rollers.

304.04 Method of Measurement. The Engineer will measure aggregate base per cubic yard.

The Engineer will measure aggregate base according to the dimensions shown on the plans or as specified by the Engineer.

The Engineer will determine the bulk specific gravity according to AASHTO T 85 (ASTM C 127). The Engineer will carry the specific gravity value used in the computation to the nearest tenth. The Engineer will deduct the moisture, at the time of weighing for payment, over 5%, based on dry mass of aggregate, from the weighed tonnage.

304.05 Basis of Payment. The Engineer will pay for the accepted aggregate base at the contract unit price per cubic yard.

The price includes full compensation for preparing the surface for the base course material; furnishing, depositing, spreading, shaping, and compacting the base course; adding water for compaction; and furnishing labor, material, tools, equipment, and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item	**Pay Unit**
Aggregate Base	Cubic Yard"

END OF SECTION

Amend **Section 411 - Portland Cement Concrete Pavement** to read as follows:

"SECTION 411 - PORTLAND CEMENT CONCRETE PAVEMENT

411.01 Description. This section is for constructing pavement excluding approach slabs adjacent to Waimalu Viaduct, composed of portland cement concrete (PCC) with or without reinforcement, on a prepared subgrade or base course according to the contract or as specified by the Engineer.

At the option of the Contractor, the Contractor may construct the pavement with equipment using stationary side forms or slip form paving.

411.02 Materials. Concrete shall have a minimum flexural strength, f'_r of 650 psi unless otherwise indicated on the plans, and shall conform to Section 601 - Structural Concrete.

Reinforcing steel shall conform to Subsection 709.01, except as otherwise noted on the plans.

Other materials shall conform to:

Joint Filler	705.01
Joint Sealer	705.04
Curing Materials	711.01

411.03 Construction Requirements.

(A) Proportioning. Base the proportioning on the predetermined cement content or designed for minimum flexural strength as specified in the contract. Submit the proportions of the materials for acceptance by the Engineer.

Determine the slump according to AASHTO T 119 (ASTM C 143) and air content according to AASHTO T 152 (ASTM C 231). Make, cure, and test the test specimens according to AASHTO T 23 (ASTM C 31), AASHTO T 22 (ASTM C 39) and AASHTO T 97 (ASTM C 78), and the cement content according to AASHTO T 121 (ASTM C 138).

State the proportions in terms of aggregates in a saturated surface-dry condition. Adjust the batch weights periodically to take into account the actual moisture of the aggregates at the time of use. The designated proportions govern during the progress of the work except in the following:

(1) Do not make changes in the sources or character of the materials without due notice to the Engineer. Do not use the new materials until the Engineer designates and accepts the new proportions based upon laboratory tests and trial mixes.

erection and maintenance of warning signs, lights, pavement bridges, or crossover.

When by the Engineer, construct pavement crossings for the convenience of public traffic according to Subsection 104.04 - Maintenance of Traffic. The Engineer will not make additional compensation for the work involved.

Repair or replace damages to the pavement before final acceptance.

The Engineer will require the Contractor to have available materials for the protection of the edges and surface of the unhardened concrete. The protective materials include standard metal form or wood plank having a nominal thickness of not less than two inches and a nominal width of not less than the thickness of the pavement at its edges. The surface protective material includes burlap or cotton mats, curing paper, or plastic sheeting. When rain appears imminent, paving operations shall stop. Place the forms against the sides of the pavement and cover the surface of the unhardened concrete with the protective covering.

(S) Opening to Traffic. Do not open the pavement to traffic until the specimen beams conforming to Subsection 411.03(J) - Test Specimens attain a flexural strength of 650 pounds per square inch when tested according to AASHTO T 97. Do not open the pavement to traffic before 7 days regardless of strength attainment unless approved by the Engineer.

For pavement areas approved for early opening (less than 7 days), do not open to traffic before concrete attain a minimum flexural strength of 450 pounds per square inch.

Clean, sign, and mark the pavement properly and clear the pavement of obstructions before opening the roadway to public traffic.

The Engineer will not allow construction traffic, equipment, or materials on the pavement while the pavement is attaining the strength.

(T) Tolerance in Pavement Thickness. The Engineer will check the thickness of the pavement by cores taken by the Contractor according to AASHTO T 24. The Engineer will inform the Contractor to take core samples and observe the Contractor taking core samples. The Engineer will test the cores according to AASHTO T 148. Cores are to be taken to determine thickness acceptability after completion of corrective work.

SECTION 501 - STEEL STRUCTURES

Make the following amendments to said Section:

(I) Amend **501.03 (E) (11) Bolted Connections** by revising the last paragraph to read as follows:

"Bolted connections unless otherwise shown on the plans or specified in the special provisions shall be made with high-strength steel bolts.

All connections made with high-strength bolts shall be tensioned whether classified as slip critical or bearing type connection, unless otherwise designated on the plans.

Bolted connections using high-strength steel bolts shall conform to the "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts," approved by the Research Council on Structural Connections of the Engineering Foundation, and the following provisions:

Contact surfaces of all high-strength bolted connections shall be cleaned and coated before assembly in accordance with the provisions for cleaning and painting structural steel. The total thickness on each surface shall be between one and 3 mils.

All bolts shall conform to ASTM Designation: A 325 and shall be installed with a hardened washer under the nut or bolt head, whichever is the element turned in tightening.

Bolts shall be tightened to the required tension by tightening and using twist-off-type tension-control bolt assemblies or direct tension indicators.

Bolt tension shall be checked at locations selected by the Engineer. Checking of bolt tension shall be done by the Contractor in the presence of the Engineer.

Tightening of the bolts by the turn-of nut method or by a calibrated wrench method will not be permitted.

Nuts shall be located, wherever practicable, on the side of the member which will not be visible from the traveled way. Nuts for bolts that will be partially embedded in concrete shall be located on the side of the member that will be encased in concrete."

(II) Amend **501.03 (F) (4) Cleaning of Surfaces** by revising the first paragraph as follows:

"Prior to painting, the Contractor shall thoroughly remove and clean rust, loose mill scale, dirt, oil, grease, anti-weld spatter and other foreign substances on the metal surfaces. If rust appears on any cleaned surface before the paint can be applied, the Contractor shall reclean that surface before painting.

(III) Amend **501.04 Method of Measurement** by revising the first paragraph to read as follows:

"501.04 Method of Measurement. The Engineer will measure pipe support hangers per each complete in place. The Engineer will not measure structural steel for overhead sign supports for payment."

(IV) Amend **501.05 Basis of Payment** to read as follows:

"501.05 Basis of Payment. The Engineer will pay for the accepted pipe support hangers and luminaire support brackets at the contract unit price per each. The Engineer will pay for the accepted structural steel for overhead sign supports at a contract lump sum price.

The price includes full compensation for furnishing including bolts, anchor bolts, nuts, and washers; fabricating; delivering; erecting; cleaning; zinc-coating including the hardware, forgings, and castings; and painting the structural steels and other metals; and furnishing materials, labors, equipment, tools, and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item	**Pay Unit**
8 - Inch Pipe Support Hangers	Each
12 - Inch Pipe Support Hangers	Each
Luminaire Support Bracket _____	Each
Structural Steel _____	Lump Sum"

END OF SECTION

SECTION 503 - CONCRETE STRUCTURES

Make the following amendments to said Section:

(I) Amend **503.03 (B) Falsework and Centering** by adding the following paragraphs as follows:

"During placement of deck concrete, except that in the deck closure, reinforcing steel protruding from the new deck into the closure space shall be completely free of contact with the existing structure. Contact with existing reinforcing steel or concrete or attachments thereto, including forms, shall not be permitted.

Formwork for the new portion of the Viaduct shall not be supported by any portion of the existing Viaduct except that the portion of the Bent cap which dowels into the existing Bent cap as shown in Section 1 on plan sheet 496 may be supported by the existing column and except that formwork for the deck closure pour and in-span beams (diaphragms) shall be supported from the superstructure on both sides of the closure space and in-span beams.

Falsework for any component of the soil nail retaining walls shall not increase the design load for the soil nail retaining walls."

(II) Amend **503.03 (B) Falsework and Centering** by revising the second to the last sentence of the ninth paragraph as follows:

"The design horizontal load for the falsework bracing system shall be the sum of the actual horizontal loads due to equipment, construction sequence or other causes plus an allowance for wind pressure; however, the minimum lateral load used in the design shall be three percent of the total dead load or 150 pounds per linear foot whichever is greater."

(III) Amend **503.03 (B) Falsework and Centering** by revising the tenth paragraph as follows:

"The design calculations shall show the stresses and deflections in the load supporting members. Anticipated total settlements of falsework and forms shall be shown on the falsework drawings. These should include falsework footing pressure and settlement and joint take-up. Anticipated settlements shall not exceed one inch. Falsework supporting deck slabs and overhangs on girder bridges shall be designed so that there will be no differential settlement between the girders and the deck forms during placement of deck concrete. For structures where the height of any portion of the falsework exceeds 14 feet, or where any individual falsework clear span length exceeds 16 feet, or where provision for vehicular, pedestrian or railroad traffic through the falsework is made, such drawings shall be signed by an engineer who is registered as a

Structural Engineer in the State of Hawaii. Falsework over or adjacent to roadways which are open to traffic shall be designed and constructed so that the falsework will be stable if subjected to impact by vehicles.

(IV) Amend **503.03 (F) Placing Concrete** by revising the first sentence of the ninth paragraph as follows:

"The Contractor shall thoroughly work the external surface of the concrete during the placing by using acceptable tools."

(V) Amend **503.03 (F) Placing Concrete** by revising the 12th paragraph as follows:

"When constructing walls or beams which are more than four feet in height and which have a top slab, the Contractor shall allow the concrete in such walls or beams to set at least 12 hours before placing the top slab. The Contractor shall provide appropriate keys in the walls or beams to anchor the top slab."

(VI) Amend **503.03 (L) Curing Methods** by adding the following sentence:

"Other exceptions are that the Contractor shall cure the first phase of the approach slab at both abutments of the Viaduct in the same manner as for the bridge decks and that the Contractor may follow the manufacturer's recommendations for the cure the second phase of the approach slab at both abutments."

(VII) Amend **503.03 (M)(3)(a) Finishing Bridge Decks** by deleting the eighth paragraph and by revising the 15th paragraph as follows:

"When the width of the deck pour is six feet or less, the Contractor may use finishing methods other than those specified providing the completed deck surface conforms to the contract."

(VIII) Amend **503.03 (M)(3)(a)1. Machine Finishing** by adding the following sentence to the second paragraph:

"The supports for the screed rails shall not be placed within the deck concrete."

(IX) Amend **503.03 (M)(3)(a)1. Machine Finishing** by revising the first sentence of the third paragraph as follows:

"Before the Contractor begins concrete operations, the Contractor shall operate the strike off and finishing machines over the full length and full width of the bridge segment to be paved."

(X) Amend **503.03 (M)(3)(a)1. Machine Finishing** by replacing the last two paragraphs with the following:

"The viaduct deck and the approach slabs shall be textured longitudinally by mechanical grooving. Grooves shall be cut into the hardened concrete using a mechanical water-cooled diamond edge blade saw device which shall leave grooves nominally 0.095-inch wide and 1/8-inch deep. The grooves shall be spaced apart in random spacing. The distance between the center grooves will have the following sequence: 3/4-inch, 1-1/8-inch, 5/8-inch, 1-inch, 5/8-inch, 1-1/8-inch, and 3/4-inch, in six-inch repetitions across the width to be grooved, in one pass of the mechanical saw device. If the machine is not able to groove the width in one pass, it shall match the pattern exactly and no joint shall be visible. One six-inch sequence may be adjusted by 1/4 sequence increments, to accommodate various cutting head widths, provided the general pattern is carried out. The tolerance for the width of the grooves is 0 to +0.05-inch. (i.e., the maximum groove width shall be 0.145-inch wide and the minimum groove width shall be 0.095-inch wide) and the tolerance for the depth of the grooves is 0 to ±1/16-inch. The tolerance for the spacing of the grooves is +1/4-inch at the exterior curves, between passes; this will be allowed to accommodate the bridge's curvature.

If grooves cannot be cut in a continuous longitudinal operation, the continuation of grooves shall be aligned such that joints are not visible. At the existing expansion joint structural steel nosings, groove cutting shall be adjusted so that the grooves end within two inches (measured normal to the center line of joint) leaving no ungrooved surface adjacent to each side of the joint greater than two inches in width. If, after the initial grooving, it is discovered that there are portions of the surface that remain ungrooved, the Contractor shall groove these areas based on a remedial plan accepted by the Engineer.

Before grooves are cut into the accepted hardened concrete, a final straight edging and corrective work, if required, shall be done by the Contractor. Grooves shall be cut continuously and parallel to the existing grooves. Grooving shall be done after the concrete has attained sufficient strength to prevent spalling and ravelling, and before the structure is opened to traffic.

A working drawing to control, collect and dispose of run-off water at an accepted off-site facility shall be submitted to the Engineer.

The requirements of Section 411.03(I) - Placing Concrete and Section 411.03(N) - Surface Test shall apply to the bridge deck.

The Contractor shall not apply any additional water to the deck surface in an effort to aid his finishing operation. The unauthorized application of water will result in the rejection of that day's concrete placement."

(XI) Amend **503.04 Method of Measurement** to read as follows:

"**503.04 Method of Measurement.** The Engineer will not measure concrete for payment.

The Engineer will not measure the mechanical grooving of the viaduct deck and approach slabs.

The Engineer will not make deductions for the volume occupied by the reinforcing steel, piles, floor drains, weepholes, timber bumpers, pipes less than 8 inches, conduits, or expansion joint materials.

The Engineer will consider the wingwalls to be a part of the structure.

The Engineer will measure reinforcing steel according to Section 602 - Reinforcing Steel.

The Engineer will measure deck replacement concrete according to Section 540 - Viaduct Deck Replacement Concrete.

The Engineer will measure bearing and expansion plates according to Section 506 - Bearing and Expansion Plates."

(XII) Amend **503.05 Basis of Payment** to read as follows:

"**503.05 Basis of Payment.** The Engineer will pay for the accepted concrete at the contract lump sum price complete in place.

The Engineer will pay for the accepted mechanical grooving of the viaduct deck and approach slabs at the contract lump sum price complete in place.

The price includes full compensation for the concrete; for placing, curing and finishing including grooving; for furnishing materials including admixtures and cement (including extra cement added to concrete deposited under water); for furnishing and installing drains, scuppers, premolded joint fillers, joint seals, mud slabs beneath the footings, reinforcing steel for reinforced concrete jacket on 16" waterline, waterproofing at construction joints, waterstops, pipes, and conduits; for furnishing and installing metal rockers, anchor bolts, structural shapes for expansion joints and other similar items; for timber bumpers, forms, form lining and falsework or centering, bearing pads, structural steel bearing

plates; and for equipments, tools, labor, materials, and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item	**Pay Unit**
Mechanical Grooving	Lump Sum
Concrete _____ (Class _____ if applicable)	Lump Sum

The Engineer will pay for reinforcing steel according to Section 602 - Reinforcing Steel.

The Engineer will pay for bearing and expansion plates according to Section 506 - Bearing and Expansion Plates."

END OF SECTION

SECTION 504 - PRESTRESSED CONCRETE

Make the following amendments to said Section:

Amend **504.03(A) General** by revising the last paragraph to read as follows:

"The Contractor shall furnish and place the prestressed concrete members according to the dimensions in the plans and within the tolerances specified in the PCI "Manual for Quality Control for Plants and Production of Structural Precast Concrete Products" (MNL-116-99). Two copies of this manual shall be furnished to the Engineer and such copies shall be incidental to the prestressed concrete members. However, the Contractor shall modify and schedule the fabrication of the prestressed concrete members such that any increase in camber due to time, creep or other factors shall not cause the total camber to exceed the maximum camber immediately prior to erection of girders as shown on the plans. Any prestressed concrete member that exceeds the PCI tolerance limit or the maximum camber specified in the contract will not be accepted."

Amend **504.03 (I) Handling, Storage and Transportation** by adding the following paragraph:

"The Contractor shall submit working drawings for the proper member support at each stage of handling, storage, transportation and placing prior to the concrete pour of the diaphragms. The member support shall minimize warping, bowing and the possibility of loss of support or bearing.

Girders shall not be stored on the viaduct or on any portion of the freeway."

Amend **504.03 (J) Placing** to read as follows:

"The Contractor shall place the precast, prestressed concrete members in the structure according to the contract. The placing of the girder shall not be done when the wind velocity could cause the girder to swing beyond the control of the crane operator or other placing personnel. During the placing operation, the girder shall not be allowed to swing, cross over or be above the lanes carrying public traffic. The girder, crane or any lifting machine shall not be allowed to be on or above the airspace of private property near the construction site.

Girder erection/placing times shall be limited to 10 A.M. to 2 P.M. if Interstate Route H-1 is used but the allowable work times for construction, including girder erection/placing, below the Viaduct girder soffit level are shown on plan sheet no. AC13.1"

END OF SECTION

Amend **Section 601 - Structural Concrete** to read as follows:

"SECTION 601 - STRUCTURAL CONCRETE

601.01 Description. Structural concrete shall consist of portland cement, fine aggregate, coarse aggregate, and water. Proportion and mix the structural concrete according to the contract. Admixtures for entraining air, retarding or accelerating the set, tinting and other purposes as required or permitted may be added.

601.02 Materials. Materials shall conform to the following:

Portland Cement	701.01
Fine Aggregate for Concrete	703.01
Coarse Aggregate for Concrete	703.02
Admixtures	711.03
Water	712.01

Coarse aggregates for lightweight concrete shall conform to ASTM C 330 except the contract waives Sections 5, 7, and 9.

601.03 Quality Control. In portland cement concrete production, the Contractor shall be responsible for the quality control of materials during the handling, blending, mixing, curing, and placement operations. The person responsible for concrete production control and sampling and testing for quality control shall be proficient in concrete technology and shall have a sound knowledge of the contract. The person responsible shall be able to adjust concrete mix designs for improving workability and contract compliance.

Sample, test, and inspect the concrete necessary to assure quality control of the component materials and the concrete. Sampling and testing for quality control shall be according to the standard methods prescribed in this contract. Do the quality control tests for slump, air content, temperature, and unit weight during the production of structural concrete other than concrete for incidental construction. Notify the Engineer of the test results.

601.04 Design and Designation of Concrete. The Contractor shall be responsible for the design of concrete mixture for the concrete work specified. When requested by the Engineer, the Contractor shall submit the mix designs using State Highways Division form DOT 4-151. Work shall not start until the Engineer accepts the mix design. The Engineer will accept the concrete mix

design using information given in Table 601-I - Design of Concrete and other pertinent requirements of the contract. This acceptance will not relieve the Contractor from obligations to furnish a workable mixture.

Whenever the 28-day compressive strength, f'_c, is 4,000 psi or greater, consider the concrete to be designated by compressive strength and shall be the minimum required at 28 days.

The classes of concrete for 28-day compressive strengths, f'_c, that are less than 4,000 psi are designated in Table 601-I - Design of Concrete. They are not a requirement for acceptance of concrete.

Proportion the concrete designated by compressive strength such that the concrete will conform to the strength specified in this contract.

Concrete deposited in water shall be seal concrete.

Design concrete placed in bridge decks and pavements exposed to the wearing of traffic with an air content of 3% which includes entrapped and entrained air. Maintain the air content for plastic concrete within a tolerance of ± 1% during the work. Unless the contract designates the concrete by compressive strength, the concrete shall be Class BD.

When placing concrete in bridge decks, incorporate a water-reducing and set-retarding admixture into the concrete. The water-reducing and set-retarding admixture shall have the capability of varying the degree of retardation without adversely affecting the other characteristics of the concrete. Submit a design dosage for the admixture to the Engineer for acceptance.

Unless specified in other parts of the contract, the concrete shall be Class A.

The design of concrete shall be as required in Table 601-I.

TABLE 601-I - DESIGN OF CONCRETE			
Class of Concrete	**28-Day Strength f'_c, psi**	**Minimum Cement Content 100 lbs./c.y. (8.0 Maximum)**	**Maximum Water-Cement Ratio, lb./lb.**
A	3000	5.6	0.55
B	2500	5.0	0.62
C	2000	4.4	0.71
D	1500	4.0	0.80
SEAL	3000	6.1	0.55
Designated by Strength f'_c or $^*f'_r$	As Specified	6.1	0.45
$^*f'_r$ = Specified Modulus of Rupture			

Proportion the concrete materials according to the requirements for each concrete designated by class, cement content in pounds per cubic yards, or 28-day compressive strength specified in the contract using the absolute volume method. Use the volumetric proportioning methods as outlined in the American Concrete Institute (ACI) Standard 211.1-89, "Recommended Practices for Selecting Proportions for Normal and Heavyweight Concrete."

The coarse aggregate size for concrete shall be No. 57 (one inch to No. 4) or No. 67 (3/4 inch to No. 4). For concrete placed in the bottom slab and stems of box girders, use the No. 67 size aggregate. When accepted by the Engineer in writing, the Contractor may use smaller size aggregates where encountering limited spacing between forms and reinforcement.

When called for in the contract, lightweight concrete shall have a minimum compressive strength of 3,000 psi at 28 days. The lightweight concrete shall contain not less than 560 pounds of portland cement per cubic yard. Make, cure, and determine the compressive strength of lightweight concrete cylinders according to AASHTO T 22 and T 23. Lightweight concrete shall have a maximum wet plastic unit weight of 135 pcf and a nominal slump of 3.5 inches.

Determination of compliance with the requirements shown in this subsection shall be according to the following standard methods:

STANDARD METHODS	
Sampling Fresh Concrete	AASHTO T 141
Weight Per Cubic Foot Yield and Air Content of Concrete	AASHTO T 121
Slump of Portland Cement Concrete	AASHTO T 119
Air Content of Freshly Mixed Concrete by the Pressure Method	AASHTO T 152
Specific Gravity and Absorption of Fine Aggregate	AASHTO T 84
Specific Gravity and Absorption of Coarse Aggregate	AASHTO T 85
Temperature of Freshly Mixed Concrete	ASTM C 1064

Test for strength shall be according to the following:

TEST FOR STRENGTH	
Making and Curing Concrete Compressive and Flexural Test Specimens in the Field	AASHTO T 23
Compressive Strength of Molded Concrete Cylinders	AASHTO T 22 (6 inch by 12 inch cylinders only)
Flexural Strength of Molded Beams	AASHTO T 97

When concrete is designated by compressive strength, f'_c, or flexural strength, f'_r, the Engineer will require prequalification of materials and mix proportions proposed for use before placing such concrete. The Engineer will prequalify the concrete on past performance records using statistical computations of the population sizes and (n-1) weighting, or trial batch test reports according to the computed minimum average strength for the material and mix proportions. The Engineer will resolve the minimum average strength on a probability of not more than one in 20 tests falling below the specified strength for the following conditions:

(1) When past performance records are available, the documented performance records shall include:

(a) a minimum of 15 consecutive 28-day strength tests from projects having the same materials and mix proportions or

(b) two groups totaling 30 or more test results representing similar materials in which the mix proportion strengths are within 20% of the specified strength from within the last one year.

The Engineer will analyze the performance records to establish a standard deviation. The Engineer will resolve the minimum average strength on the computed standard deviation.

(2) When no sufficient past performance records are available, the Engineer will assume the current standard deviation to be 500 psi for compressive strength, f'_c, and 50 psi for flexural strength, f'_r.

Unless sufficient performance records are available from other projects at the DOT Materials Testing and Research Branch, submit test performance records or trial test reports for prequalifications of concrete provided:

(1) such data shall be the most recent tests made on concrete of the proposed mix design and

(2) the Contractor has obtained such data within one year of the proposed use.

The test data and trial batch test reports shall include the following information:

(1) Date of mixing.

(2) Mixing equipment and procedures used.

(3) The size of batch in cubic yards and the weight, type, and source of ingredients used.

(4) Slump of concrete.

(5) The air content of the concrete when using an air entraining agent.

(6) The age and strength of concrete cylinders tested.

Trial batch test reports shall show that the concrete equals or exceeds the minimum average strength. The test is the average 28-day test results of five consecutive concrete cylinders or concrete beams taken from a single batch. No cylinder or beam shall have a strength less than 85% of the minimum average strength.

An official of the firm that did the tests shall sign the test data and trial test reports.

The Engineer reserves the right to stop the work when the mix properties are sufficiently out of control and a series of excessively low strength tests are occurring. Do not continue concrete work until after establishing the cause and informing the Engineer the necessary corrective action taken. The corrective

action may range from a minor adjustment of proportions to the establishment of a new mix design.

In addition to the 28-day flexural strength requirement in pavements, design concrete for pavement slabs to be open to traffic to meet the required opening flexural strength as required in the Contract Documents and accepted by the Engineer. The designed slump for early opening concrete may be increased to 4 ± 1.5 inches with the use of a non-retarding high range water reducer system.

601.05 Batching. Measure and batch the materials according to the following provisions:

(A) Portland Cement. Sacked or bulk cement may be used. Do not use fraction of a sack of cement in a batch of concrete unless the cement is weighed.

Weigh bulk cement on an accepted weighing device. Seal and vent the bulk cement weighing hopper properly to preclude dusting during operation. Do not suspend the discharge chute from the weighing hopper. Also, arrange the discharge chute so that cement will not lodge in the hopper or leak from the hopper.

Accuracy of batching shall be ± 1% of the required mass.

(B) Water. Measure water by volume or by mass. The device for measurement of water shall be readily adjustable and shall have an accuracy within 1% of the quantity of water required for the batch. Arrange the device so that variable pressures in the water supply line does not affect the measurements. Equip the measuring tanks with outside taps and valves or other accepted means to provide for checking their calibration. Water, as measured, shall be within 1% of the required quantity.

(C) Aggregates. Store and stockpile the aggregates so that the Contractor avoids separation of coarse and fine particles within each size and does not intermix the various sizes before proportioning. Protect the stored or stockpiled aggregates from dust or other foreign matter. Do not stockpile the aggregates from different sources and of different gradings together.

Handle aggregates from stockpiles or other sources to the batching plant by maintaining a uniform grading of the material. Do not use aggregates that have become segregated or mixed with earth or foreign matter. Stockpile or bin the aggregates at least 12 hours for draining before batching the aggregate when producing or handling the aggregates by hydraulic methods and washing the aggregates for draining. When

the aggregates contain a high or non-uniform moisture content, the Engineer will require storage or stockpile over 12 hours.

Proportion the aggregates by weight. The exception is that the aggregates in concrete for minor structures, curbs, and sidewalks may be proportioned by volume or weight. For volume proportioning, use the measuring boxes of known capacity to measure the quantity of each size of aggregate.

Use the batch weight based on dry materials plus the total weight of moisture (both absorbed and surface) contained in the aggregate. The individual aggregates shall be within ± 2% of the required weight. The total mass of the aggregates shall be within ± 1% of the required weight.

(D) Admixtures. Store, proportion, and dispense admixtures according to the following provisions:

(1) Liquid Admixtures. Dispense chemical admixtures, air entraining admixtures, and calcium chloride in liquid form. Dispense such liquid admixture by automatic dispensing equipment. Dispensers for liquid admixtures shall have sufficient capacity to measure the prescribed quantity for each batch of concrete. Each dispenser shall include a graduated measuring unit into which liquid admixtures can be measured to within ± 5% of the prescribed quantity for each batch. Locate and maintain the dispenser where the graduations can be read accurately from the point at which proportioning operations are controlled to permit a visual check of batch accuracy before discharging. Mark each measuring unit clearly for the type and quantity of admixture.

Arrange with the supplier to provide safe and suitable facilities for sampling admixtures.

When using more than one liquid admixture for the concrete mix, provide a separate measuring unit for each liquid admixture. Dispense the liquid admixture by injecting so that the admixture is not mixed at high concentrations and not interfere with the effectiveness of each other.

When using liquid admixtures in concrete, the dispensers shall operate automatically with the batching control equipment. Equip such dispensers with an automatic warning system in good operating condition that will provide a visible or audible signal at the point that the proportioning operations are controlled:

(a) when the quantity of admixture measured for each batch of concrete varies from the pre-selected dosage by more than 5% or

(b) when not emptying the entire contents of the measuring unit from the dispenser into each batch of concrete.

Unless liquid admixtures are added to the pre-measured water in the batch, arrange their liquid discharges into the batch of concrete to flow into the stream of water that will disperse the admixture throughout the batch.

Measure and disperse special admixtures as recommended by the admixture manufacturer and as accepted by the Engineer. Special admixtures shall include "high range" water reducers requiring dosages greater than the capacity of conventional dispensing equipment.

(2) Mineral Admixtures. Protect mineral admixtures from exposure to moisture until used. Pile the sacked material to permit access for tally, inspection and identification for each shipment.

Provide adequate facilities to keep the mineral admixtures separated and to assure inserting only the specified mineral admixtures in the work. Provide safe and suitable facilities for sampling mineral admixtures.

Incorporate the mineral admixtures into concrete using equipment conforming to Subsection 601.05(A) - Portland Cement.

When completely mixing the concrete in paving or continuous mixers, weigh the mineral admixture in a separate weigh hopper. Introduce the mineral admixture and cement simultaneously into the mixer proportionately with the aggregate.

When requiring interlocks for cement charging mechanisms and weighing the cement and mineral admixtures cumulatively, interlock their charging mechanisms to prevent the introduction of mineral admixture until the weight of cement in the weigh hopper is within the tolerances specified in Subsection 601.05(A) - Portland Cement.

In determining the maximum amount of free water that may be used in the concrete, consider the mineral admixture to be cement.

(E) Bins and Scales. The batching plant shall include separate and adequate bins for each size of aggregate. When using cement in bulk, include a separate and adequate bin and weighing hopper for the cement.

Attach the cement weighing hopper to a separate scale for individual weighing or to the aggregate scale for cumulative weighing. When weighing the cement cumulatively, weigh the cement before the other ingredients.

Scales for batching shall be of the springless-dial or beam-type. When using beam-type scales, make provisions to show the operator that the required load in the weighing hopper is approaching. The device shall make the indication within the last 200 pounds of load and within 50 pounds of overload.

Scales shall be accurate to 0.5% throughout the range of use. Design poises to lock thus preventing unauthorized change of position. Use scales inspected the State Measurement Standards Branch of the Department of Agriculture to assure their continued accuracy. Provide not less than ten 50 pounds weight for testing scales.

Batching plants may be equipped with automatic weighing devices of accepted types to proportion aggregates and bulk cement.

(F) Batching and Hauling. To check the accuracy of batch mass, resolve the gross and tare mass of batch trucks, truck mixers, and truck agitators when specified by the Engineer. Weigh the equipment on certified scales at no cost to the State.

When mixing is at the work site, transport the aggregates in batch boxes, vehicle bodies, or other containers of adequate capacity and construction. Partitions separating batches shall be adequate and effectively prevent spilling from one compartment to another while in transit or dumping. When using bulk cement, use a suitable method for handling the cement from weighing hopper to transporting container or into the batch itself for transportation to the mixer. Arrange batching and hauling to provide positive assurance of the actual presence in each batch of the entire cement content specified.

Transport bulk cement to the mixer in tight compartments carrying the full quantity of cement required for the batch. When placing cement in contact with the aggregates, the Engineer may reject the batches

unless they are mixed and placed within 1.5 hours from contact. The Contractor may transport cement in original shipping packages on top of the aggregates, provided each batch contains the number of sacks required by the job mix.

Deliver the batches to the mixer intact. Dump each batch into the mixer without loss of cement. Also, when carrying more than one batch on the truck, dump the batch into the mixer without spilling the material from one batch compartment into another.

601.06 Mixing. Mix the concrete in mechanically operated mixers. When the Engineer permits, mix batches by hand methods according to the last paragraph of this section.

Mixers may be stationary or truck mixers. The mixer shall produce concrete uniform in color, appearance and distribution of the materials throughout the mass. Variation in the mixed concrete attributable to worn pickup or throw over blades will be just cause for inspection. When such inspection reveals the blades to be worn down more than one inch below the original height of the manufacturer's design, repair or replace the blades. Make a copy of the manufacturer's design, showing dimensions and arrangement of blades upon request.

Charge the batches into central or truck mixers so that part of the mixing water enters ahead of the cement and aggregates. The flow of water shall be uniform. The total water of each batch shall be in the mixer by the end of the first quarter of the mixing period. When using mixers having multiple compartment drums, the Engineer will consider the time required to transfer material between compartments mixing time. The speed at which the drum shall rotate shall be as designated by the manufacturer. If such mixing does not provide concrete of uniform and smooth texture, perform additional revolutions at the same speed until each batch of concrete is thoroughly mixed. The Engineer will consider the mixing time from the time cement, aggregates, and 60% of the water are in the drum. Concrete mixed in each batch shall not exceed the manufacturer's guaranteed capacity. The Engineer will consider the guaranteed capacity of a mixer to be the manufacturer's rated capacity.

Equip central or truck mixers with an attachment for automatically timing the mixing of each batch of concrete. The timing device includes an automatic arrangement for locking the discharge chute and a device for warning the operator when the materials have been mixed the required length of time. When the timing or locking device becomes broken or fail to operate, immediately place before the mixer operator a clock or watch having a second hand. When failing to make repairs within three days after the timing or locking device becomes unserviceable, shut down and make the proper repairs.

The required mixing time in stationary mixers shall be between 50 seconds and five minutes. The mixing time shall be as necessary to produce concrete that meets the uniformity criteria when tested according to Section 11.3.3 of ASTM C 94. The Contractor may designate the mixing time between 50 seconds and five minutes to do the uniformity tests. The mixed concrete shall meet the uniformity requirements specified before using concrete for pavements or structures. The Engineer may allow the use of test concrete for appropriate incidental construction. Furnish labor, sampling equipment, and materials required for uniformity tests of the concrete mixture. The Engineer will furnish required testing equipment including scales, cubic measure, and air meter. The Engineer will do the test. The Engineer will not make payment for the labor, equipment, materials, or testing. The Engineer will consider them incidental to the concrete. After establishing operational procedures of batching and mixing, the Engineer will not permit changes in procedure without re-establishing procedures by uniformity tests. Repeat the mixer performance tests whenever the appearance of the concrete or the coarse aggregate content of samples is not according to ASTM C 94. For paving mixers, add four seconds to the specified mixing time when timing starts as soon as the skip reaches its maximum raised position.

Mix the truck mixed concrete at the proportioning plant. The mixer shall operate at agitating speed while in transit. The Contractor may mix the truck mixed concrete at the point of delivery provided the cement, or cement and mixing water, is added at that point. Mixing of truck mixed concrete shall begin immediately after the introduction of the mixing water to the cement and aggregates, or introduction of the cement to the aggregates.

A truck mixer includes a water tight revolving drum suitably mounted and fitted with adequate blades, and equipped with electrically or mechanically actuated revolution counters. Truck mixers shall produce a thoroughly mixed and uniform mass of concrete and shall discharge concrete without segregation.

Attach a metal manufacturer's standard rating plate to each truck mixer permanently. The rating plate shall state the truck mixer's maximum volume of mixed concrete for the various uses. Also attach a manufacturer's data plate stating the maximum and minimum mixing speeds and other data needed by the manufacturer to each truck mixer. When using the truck mixers for mixing, concrete in each batch shall not exceed the maximum capacity shown on the metal rating plate. When the equipment does not have a rating plate, an attested copy of the manufacturer's rating shall suffice or the batch volume shall not exceed 63% of the gross interior volume.

Operate truck mixers at the speed of rotation designated by the manufacturer. The mixing speeds for the revolving drum type shall be not less than 6 nor more than 18 revolutions per minute.

Initially mix each batch of truck mixed concrete not less than 70 nor more than 100 revolutions of the drum after all the ingredients including water are in the mixer. When the batch volume is less than 63% of the gross volume of the drum or less than 91% of the rated maximum capacity, the number of revolutions required for mixing shall be not less than 50 nor more than 100 revolutions per minute.

Water may be added to the mixture not more than two times after the completion the initial mixing. Each time water is added, turn the drum an additional 30 revolutions or more if necessary at mixing speed until the concrete is uniformly mixed.

When furnishing shrink-mixed concrete, transfer the concrete that has been partially mixed at a central plant to a truck mixer. Requirements for transit-mixed concrete shall apply. The Engineer will not allow credit in the number of revolutions at mixing speed for partial mixing in a central plant.

When the Engineer permits hand mixing, use hand mixing in batches not more than 0.33 cubic yard and mix on a watertight, level platform. Measure the proper amount of coarse aggregate in measuring boxes and spread on the platform. Spread the fine aggregate on this layer. The coarse aggregate and fine aggregate layers shall not be more than one foot in total depth. Spread dry cement on this mixture. Turn the whole mass not less than two times dry. Then add and distribute evenly sufficient clean water. Turn the whole mass again not less than three times not including placing in the carriers or forms.

601.07 Transporting Mixed Concrete. The Contractor may transport mixed concrete to the delivery point in:

(1) truck agitators, or

(2) truck mixers operating at the speed designated by the manufacturer of the equipment as agitating speed, or

(3) non-agitating hauling equipment, provided the:

(a) consistency and workability of the mixed concrete upon discharge at the delivery point is suitable for adequate placement and consolidation in place and

(b) mixed concrete after hauling to the delivery point conforms to the uniformity criteria when tested as specified in Section 11.5.1 of ASTM C 94.

A truck agitator includes a watertight revolving drum or a watertight container suitably mounted and fitted with adequate revolving blades and a removable cover. Operate truck mixers or truck agitators within the limits of capacity and speed of rotation designated by the manufacturer for agitating. Agitators shall not exceed 80% of gross drum volume. Agitating speed for both the revolving drum mixers and revolving blade type agitators shall be between two and six revolutions per minute of the drum or of the mixing blades. Truck mixers or truck agitators shall have electrically or mechanically actuated counters. Actuate the counters after introducing the cement to aggregates.

Bodies of non-agitating hauling equipment shall be smooth and watertight metal containers equipped with gates that will permit control of discharge of the concrete. Provide accepted covers for protection against weather. When hauling concrete in non-agitating trucks, complete the discharge within 30 minutes after introducing the mixing water to the cement and aggregates.

When using a truck mixer or agitator for transporting concrete to the delivery point, complete the discharge:

(1) within 1.5 hours or

(2) before 250 revolutions of the drum or blades for central mixed concrete, or 300 revolutions of the drum or blades for truck mixed concrete, whichever comes first after introducing the mixing water to the cement and aggregates, or cement to the aggregates.

In hot weather or under conditions contributing to quick stiffening of the concrete, the Engineer will reduce the time.

The manufacturer of truck mixed concrete and of central mixed concrete shall furnish the Engineer a delivery ticket with each truck load of concrete before unloading at the jobsite. The delivery ticket shall have the following information, printed, stamped, or written:

(1) Name of concrete plants,

(2) Serial number of ticket,

(3) Date and truck number,

(4) Name of Contractor,

(5) Specific project, route, or designation of job (name and location),

(6) Specific class or designation of concrete according to the contract,

(7) Quantity of concrete in cubic yards,

(8) The time the Contractor loads the batch or first mixing of cement and aggregates occurs,

(9) Name and quantity of admixture, if any,

(10) Readings of non-resettable revolution counters of truck mixers after the introduction of the cement to aggregates, or the introduction of the mixing water to the cement and aggregates,

(11) "Central Mixed" or "Premixed" when mixing the concrete completely in a central mixer.

Furnish additional information designated by the Engineer and required by the job specification upon request.

601.08 Consistency. Regulate the water used in concrete mixes so that the consistency of the concrete as determined according to AASHTO T 119 is within the nominal slump range shown in Table 601-II. When the slump of the concrete is found to exceed the nominal slump, adjust the mixture of subsequent batches.

The ability of the equipment to properly place the concrete gages the consistency of the concrete. The difficulty in mixing, transporting, or pumping does not gage the consistency of the concrete. The Engineer will reject harsh or unworkable concrete that cannot be placed properly. Remove them at no cost to the State.

The slump for concrete shall be as specified in Table 601 -II.

TABLE 601-II - SLUMP FOR CONCRETE

Type of Work	Nominal Slump Inches	Maximum Slump Inches
Concrete Pavements	0 - 3	3-1/2
Reinforced Concrete Structures:		
Sections Over 12 Inches	0 - 4	5
Sections 12 Inches Thick or Less	2 - 5	6
Non-Reinforced Concrete Facilities	1 - 3	4
Concrete Placed Underwater	6 - 8	9
Bridge Decks	0 - 3	3-1/2

When adverse or difficult conditions exist, the Contractor may exceed the above specified slump limitation if permitted by the Engineer in writing and

maintains the water-cement ratio before placement. The cost of additional cement and water, or admixture shall be at no cost to the State. The Engineer will not allow additional compensation.

601.09 Forms. Construct forms according to the applicable sections of the contract.

601.10 Placing Concrete. Place concrete according to the applicable sections of the contract.

601.11 Finishing Concrete Surfaces. Finish concrete surfaces according to the applicable sections of the contract.

601.12 Curing Concrete. Cure the concrete according to the applicable sections of the contract.

601.13 Method of Measurement. The Engineer will measure concrete according to the applicable sections of the contract.

601.14 Basis of Payment. The Engineer will pay for the accepted concrete according to the applicable sections of the contract."

END OF SECTION

SECTION 602 - REINFORCING STEEL

Make the following amendments to said Section:

(I) Amend **602.06 Placing and Fastening** by adding the following paragraphs:

"Threaded inserts for reinforcing steel (rebars) shall develop the tensile strength of the rebars. The threaded rebars and their inserts shall be incidental to the rebars.

All-plastic bar supports will be allowed for vertical construction only.

During the placement of the deck closure concrete, the new and existing transverse reinforcing steel within the closure shall be securely connected together or to common longitudinal reinforcement"

(II) Amend **602.06(A) Splicing** by revising the second to the last sentence in the last paragraph to read as follows:

"The number of bars spliced at sections normal to the axis of the member shall not exceed 33 percent of the total main reinforcement in the member."

(III) Amend **602.07 Method of Measurement** and **602.08 Basis of Payment** to read as follows:

"**602.07 Method of Measurement.** The Engineer will not measure reinforcing steel for payment.

The Engineer will base the weights calculated according to Table 602-III.

TABLE 602-III - BAR DESIGNATION, WEIGHT, AND AREA

Bar No.	Weight Per Linear Foot (Pounds)	Area (Square Inches)
3	0.376	0.11
4	0.668	0.20
5	1.043	0.31
6	1.502	0.44
7	2.044	0.60
8	2.670	0.79
9	3.400	1.00
10	4.303	1.27
11	5.313	1.56
14S	7.650	2.25
18S	13.600	4.00

The Engineer will not make allowance for clips, wire or other material used for fastening reinforcement in place.

The Engineer will not measure mesh reinforcement.

602.08 Basis of Payment. The Engineer will pay for reinforcing steel on a contract lump sum basis. The Engineer will not pay for reinforcing steel for the reinforced concrete jacket on the 16-inch waterline separately. The Engineer will consider the price for the reinforcing steel for the reinforced concrete jacket on the 16-inch waterline as included in the contract price of Section 503 - Concrete Structures.

The price includes full compensation for furnishing and placing threaded reinforcing steel and their inserts; furnishing and testing sample splices and completed splices cut from rebars placed in the work, including replacing or resplicing rebars to the length shown in the contract; furnishing access facilities to permit the Engineer to do the tests, and for losses or delays to the Contractor resulting from the sampling and testing specified herein; and furnishing labor, equipment, materials, tools and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item	**Pay Unit**
Reinforcing Steel for _____	Lump Sum

The Engineer will not pay for mesh reinforcement separately. The Engineer will consider the cost for mesh reinforcement as included in the contract price of the various contract items."

END OF SECTION

The Engineer will measure cleaning of existing culverts on a force account basis according to Subsection 109.04 - Extra and Force Account Work.

603.05 Basis of Payment. The Engineer will pay for the accepted bed course material at the contract unit price per cubic yard. The price includes full compensation for furnishing, placing, and compacting the bed course material; and furnishing labor, material, tools, equipment, and incidentals necessary to complete the work.

The Engineer will pay for the accepted culvert at the contract unit price per linear foot complete in place. The price includes full compensation for diverting the water temporarily; removing solid rock; backfilling and compacting the trench; furnishing, laying, and joining the reinforce concrete pipe; furnishing labor, material, tools, equipment, and incidentals necessary to complete the work.

The Engineer will pay for the accepted column drain cleanouts at the contract unit price per each complete in place. The price includes full compensation for furnishing and installing ductile iron pipe cleanouts and fittings, and furnishing all labor, materials, tools, equipment and incidentals necessary to complete the work.

The Engineer will pay for the accepted connections to existing column drain at the contract unit price per each complete in place. The price includes full compensation for excavation and backfill; furnishing and installing polyvinyl chloride pipe, cleanouts and fittings, including ferrule, brass plug, concrete encasement and telescoping sleeves; connection to existing column drain; and furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

The Engineer will pay for the accepted concrete collars for drain connection at the contract unit price per each complete in place. The price includes full compensation for furnishing and installing concrete collars, and furnishing all labor, materials, tools equipment and incidentals necessary to complete the work.

The Engineer will pay for the accepted drain cleanouts to grade at the contract unit price per each. The price includes full compensation for furnishing and installing polyvinyl chloride pipe cleanouts and fittings, including ferrule, brass plug and concrete block; and furnishing materials, equipment, tools, labor and other incidentals necessary to complete the work.

The Engineer will pay for the accepted cleaning of existing culverts on a force account basis according to Subsection 109.04 - Extra and Force Account Work. The price includes full compensation for cleaning, removing and disposing of any silt, trash, and vegetation growth from existing culverts and adjoining drainage structures; and furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Make the following Section a part of the Standard Specification:

"SECTION 638 - CELLULAR PHONE

638.01 Description. This work includes furnishing cellular phone service for the Engineer.

638.02 General Requirements.

The Contractor shall:

(A) Furnish and establish service for seven (7) cellular phones for use by the Engineer. Each phone shall meet the following specifications:

(1) Include two batteries, each rated by the manufacturer as providing a minimum of four hours continuous talk time or 40 hours of stand-by time;

(2) Have voice mail capability, and vibrate mode when called;

(3) Maximum weight of 10 ounces;

(4) Include desktop rapid charger, vehicle charger, hands-free cellular phone headset, microphone and holder;

(5) The phone shall be capable of being attached to a belt or shall include a carrying case;

(6) Obtain phone service from a cellular phone company that provides the strongest signal within the project area for the particular phone provided;

(7) Phone service shall be for 1,200 "anytime minutes" payment plan; and

(8) Phone service shall provide an itemized billing.

(B) Provide a replacement cellular phone at no additional cost to the State within two working days whenever any cellular phone provided to the Engineer is damaged or inoperable due to an accident, or other causes.

Provide the cellular phones and phone service for the period beginning one week prior to the Notice to Proceed date and ending 30 days after final acceptance of the project. At that time, the cellular phones shall become the property of the Contractor.

The following Section shall be made part of the Standard Specifications:

"SECTION 663 – EROSION CONTROL MATTING

663.01 Description. This work includes furnishing and installing an erosion control mat according to the contract.

663.02 Materials.

(A) General. The erosion control matting shall be a multi-layered geosynthetic netting specifically designed for erosion control as a long-term installation. The erosion control matting shall provide erosion protection for at least 36 months during vegetation establishment. The matting shall allow grass or other natural ground cover to grow and take root through the matting. The internal matrix material color shall be green or brown and the outer net material shall be black.

(B) Physical Properties. The erosion control matting shall have the following minimum physical properties:

(1) Materials shall be manufactured from either polyethylene, polypropylene, polyolefin or nylon.

(2) Thickness of the erosion control matting shall be 0.30 inches minimum according to ASTM D 5199.

(3) Ultraviolet Stability. ASTM D 4355 (tensile strength retained after 1000 hours) 80%.

(4) Porosity. (Calculation based upon weight, thickness and specific gravity) minimum 95%.

(5) Resiliency. (Thickness retained after 3 cycles of a 100 psi load for 60 seconds followed by 60 seconds without load-thickness measured 30 minutes after load removed by ASTM D 1777) 75% minimum.

(6) Tensile Strength. ASTM D 5305, 2-inch Strip Test, 95 x 95 lbs/foot minimum.

(7) Elongation. ASTM D 5305, 2-inch Strip Test, 70% x 70% maximum.

(C) Brochures and Manufacturer=s Certification. The manufacturer of the erosion control matting shall submit brochures and certifications stating the quality of the material meet the intended use on the project. The certification shall clearly show the product number or other similar control number, which match the markings on the product delivered to the site. The manufacturer shall furnish certified test reports with each shipment attesting that the erosion control matting meets the requirements of the specification for material physical properties. Samples of the erosion control matting shall also be submitted to the Engineer.

663.03 Construction Requirements.

(A) General. Protect the permanent exposed soil face of the reinforced soil slope with an erosion control matting.

(B) Installation.

(1) Site Preparation. Grade, install 8-inch layer of topsoil and compact the slope face properly. Remove all materials such as rocks and vegetation that would interfere with the soil and the erosion control matting.

(2) Anchor Trenches. Anchor trenches shall be as recommended by the manufacturer. The trenches shall be a minimum of 16 inches deep and 8 inches wide before placing the erosion control matting. Backfill and compact trenches properly to the original requirements of the slope.

(3) Planting. Install the erosion control matting prior to hydromulching to retain and cover the planted grass sprigs and avoid disturbance by work crews.

(4) Placement. Place the erosion control matting according to the manufacturer's recommendations and supervision. Provide supervision by the manufacturer at the start up and initial installation. The matting roll ends shall be overlapped a minimum of 18 inches. The adjacent edges of the matting shall be overlapped a minimum of 3 inches.

(5) Anchoring. Anchor the erosion control matting at overlaps with 12-inch x 2-inch x 12-inch 8G metal staples. The distribution of the staples shall be a minimum of two per square yard. The Engineer will not allow wood anchors, such as pegs or stakes of any kind, which extend above the ground surface. Alternate anchoring

methods will be allowed if approved by the matting manufacturer and accepted by the Engineer.

For installation in rock area, anchor matting according to the manufacturer's recommendations.

(6) Repairs. Correct tears and holes, except the grass sprig planting holes, sprinkler head and valve locations, in the erosion control matting with a minimum of 3-foot overlap in each direction of the damage. Re-hydromulch the repaired area if ordered by the Engineer. Repair and/or replace the damaged or defective erosion control matting at no cost to the State.

(7) Installation Plan. Submit an installation plan prior to any work on the slope.

663.04 Method of Measurement. The Engineer will measure accepted erosion control matting per square yard. Additional area for overlaps shall not be measured separately.

663.05 Basis of Payment. The Engineer will pay for the accepted erosion control matting at the contract unit price per square yard, complete in place. The price includes full compensation for furnishing and installing additional area for overlaps, all accessories including staples and the anchor trenches, and furnishing all material, equipment, labor and tools required to complete the work.

The Engineer will make payment under:

Pay Item	**Pay Unit**
Erosion Control Matting	Square Yard

END OF SECTION"

Make the following Section a part of the Standard Specifications:

"SECTION 690 - REMOVAL OF LEAD-CONTAINING OR ASBESTOS-CONTAINING MATERIALS

690.01 Description. This section is for removing, handling, transporting and disposing of lead-containing or asbestos-containing materials and debris at but not limited to existing drain pipes on the Waimalu Viaduct (Westbound), in compliance with all applicable laws and regulations concerning lead, including all incidental and pertinent operations.

690.02 Materials. None specified.

690.03 Construction Requirements.

(A) References. All work under this contract, and any other trade work conducted with the project, shall be performed in strict accordance with all applicable federal, state and local regulations, standards and codes governing removal of lead-containing materials, and transportation and disposal of lead-containing materials. The most recent edition of any relevant regulation, standard, document or code shall be in effect.

Applicable statutory and regulatory requirements shall include, but not be limited to, the following:

(1) Title 29, Code of Federal Regulations, section 1926.62, entitled "Lead Exposure in Construction; Interim Final Rule."

(2) Department of Labor and Industrial Relations: State of Hawaii, Occupational Safety and Health Standards; Title 12, Subtitle 8, Chapter 148.1, (also known as chapter 12-148.1, Hawaii Administrative Rules, entitled "Lead Exposure in Construction."

(3) Title 29 Code of Federal Regulations Part 1910.134, Respiratory Protection.

(4) Federal Register: Vol. 54, No. 131; Tuesday, July 11, 1989. Department of Labor, Occupational Safety and Health Administration; 29 CFR Parts 1910, 1915, 1917, and 1918; Occupational Exposure to Lead; Statement of Reasons; Final Rule.

(5) Title 40 Code of Federal Regulations Part 61, National Emissions Standards for Hazardous Air Pollutants.

(B) **Definitions**.

(1) **Action Level (AL)**. Contractor employee exposure averaged over an 8-hour period, without regard to the use of respirators, to a particular airborne concentration. OSHA requirements become effective at this level. Lead: 30 micrograms per cubic meter of air.

(2) **Air Monitoring**. The process of measuring the content of a specific, known, volume of air in a stated period of time. For this project, NIOSH 7082 method for lead monitoring.

(3) **Authorized Visitor**. The Engineer, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.

(4) **Contaminated Area**. An area where unwanted toxic or harmful substances exists.

(5) **HEPA Filter**. A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of particulates greater than 0.3 micron in length.

(6) **Lead**. Metallic lead, all inorganic lead compounds, and inorganic lead soaps. Excluded are all other organic lead compounds.

(7) **Monitoring Specialist**. A person under the supervision of the Contractor who is trained in health and safety requirements for lead exposure and air-monitoring in accordance with 40 CFR 745, 29 CFR 1926.62 and HIOSH 12-148.1.

(8) **Permissible Exposure Limit (PEL)**. The Contractor shall ensure that no Contractor employee is exposed to concentrations greater than the PEL as determined from an 8-hour time weighted average per 29 CFR 1926.62. Lead: 50 micrograms per cubic meter of air. If an employee is exposed for more than eight hours in a work day, the PEL shall be determined by the following formula:

PEL (micrograms/cubic meter of air) = 400/No. hrs. worked per day

(9) **Personal Monitoring**. Contractor's sampling of airborne lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average. The samples shall be representative of the employee's work tasks. The breathing zone shall be considered an area within 12 inches of the nose or mouth of an employee.

(10) **Lead Specialist**. A person employed by the Contractor who is trained in the recognition and control of lead hazards in accordance with current federal, state and local regulations, who will perform air monitoring and inspections during removal and abatement work, and who shall have the authority to initiate engineering controls. A Certified Industrial Hygienist (CIH) certified by the American Board of Industrial Hygiene or a Certified Safety Professional (CSP) certified by the Board of Certified Safety Professionals is the preferred choice.

(C) **Abbreviations**.

(1) **CFR.** Code of Federal Regulations.

(2) **HIOSH.** Department of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii.

(3) **EPA.** U.S. Environmental Protection Agency.

(4) **NIOSH.** National Institute for Occupational Safety and Health.

(5) **OSHA.** Occupational Safety and Health Administration.

(6) **NESHAP.** National Emissions Standards for Hazardous Air Pollutants.

(7) **LCM.** Lead-Containing Material(s).

(8) **TCLP.** Toxicity Characteristic Leaching Procedure.

(D) **Contractor Responsibilities.** The Contractor shall be solely responsible for the instruction of personnel in proper personnel protection requirements and for enforcing personnel protection requirements. The Contractor shall be aware that these specifications provide only a minimum acceptable standard. Comply with all requirements of 29 CFR 1926.62 and HIOSH 12-148.1. Also comply with all applicable EPA regulations in regards to lead-containing materials.

(1) **Respirators**. Use appropriate respirators and filters which meet all requirements of OSHA 29 CFR 1926.62 and HIOSH 12-148.1.

(2) **Protective Clothing**. Use appropriate personal protective clothing (disposable suits, eye protection, gloves, etc.) as required by OSHA 29 CFR 1926.62 and HIOSH 12-148.1.

(E) General Requirements.

(1) Persons performing the work specified herein, including the removal of pipe with lead-containing materials, and transportation and disposal of lead-containing materials, shall at minimum have successfully completed Lead OSHA Awareness Training. The work shall be performed in compliance with all applicable federal, state, and local regulations, and by workers who are capable of and willing to perform the work of this contract.

(2) Provide a copy of the Toxic Characteristic Leachability Procedure (TCLP) testing results report of the subject piping to the landfill which will be accepting the construction waste. Prior notification of the landfill is required. Provide an additional copy of the TCLP testing results report to the Engineer.

(F) Potential Lead Hazard.

(1) The disturbance or dislocation of lead-containing materials may cause lead-containing dust to be released into the atmosphere, thereby creating a potential health hazard to the workers and the general public. Apprise all workers, supervisory personnel, subcontractors, consultants and authorized visitors who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.

(2) When in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified lead-containing materials, take appropriate and continuous measures as necessary to protect all such persons, workers and the general public from the potential hazard of exposure to respirable airborne lead dust. Such measures shall include the procedures and methods described in the regulations of applicable federal, state and local agencies.

(G) Lead-Containing Materials. All federal, state and local personnel requirements apply in the handling of the lead-containing materials regardless of the amount of lead present.

(1) Lead-containing caulking or asbestos-containing caulking may exist at joists where existing drain pipes to be removed penetrate the viaduct concrete columns.

(2) Collect and properly containerize all LCM debris created by the pipe removal activities daily. Comply with all federal, state and local regulations for the proper packaging and disposal of lead-containing waste including but not limited to 40 CFR 260 to 268, 49 CFR 172 and 49 CFR 178.

(H) **Work Area Preparation.**

(1) **Treatment of Surfaces**. During removal activities, industry standard dust control methods shall be used to control dust.

(2) **Barriers**. Standard barriers such as construction warning tape, fencing, etc. shall be used to prevent the general public access onto the work site.

(3) **NESHAP Compliance**. Compliance with the requirements of EPA's NESHAP regulation is required for this project. The Contractor shall be responsible for proper notification of the removal of the pipes with LCM to the EPA and the State Department of Health.

(4) **Worker Training and Protection**. Ensure that all personnel working on site during the removal work are properly trained and protected as required by law.

(I) **Testing and Monitoring.**

(1) The Lead Specialist will wipe sample surrounding areas of viaduct structure or features to remain prior to the start of the pipe removal work. Wipe sampling will be in compliance with the HUD Guidelines.

(2) The Lead Specialist or Monitoring Specialist will perform area air monitoring for lead in and around the work area to ensure that the concentration of lead does not exceed the action level as described below.

(3) Clearance wipe sampling of the surrounding viaduct structure or features to remain will be performed by the Construction Manager.

(4) TCLP testing of waste materials such as pipe, caulking, debris, disposable PPE, plastic, etc. shall be performed by the Lead Specialist prior to disposal.

(5) Visual clearance of the removal area will be performed by the Lead Specialist to ensure that the area is essentially clean of all lead-containing waste and debris.

(J) **Monitoring Results.**

(1) Airborne lead levels in areas adjacent to the work area or in any part of the work site impacted by the removal activities shall not exceed 30 micrograms per cubic meter of air or 1.5 micrograms per cubic meter of air for a 90 day average or measured background (whichever is more stringent).

(2) If the above ambient concentrations and/or the PEL's are exceeded, cease all work immediately in any work area causing or contributing to such a condition. Take remedial action (e.g. misting with more water, etc.) to reduce concentrations to acceptable levels.

(3) The Contractor shall be solely responsible for monitoring his/her personnel in compliance with all OSHA and HIOSH requirements.

(K) **Transportation and Disposal.**

(1) **Disposal of Non-Hazardous Construction Debris (TCLP for 8 RCRA Metals Not Exceeding EPA Limits).** Remove non-hazardous lead waste including, debris, scraps, waste materials, rubbish, and trash from the site and disposed of at a landfill approved for such purposes. The Contractor shall submit to the Engineer, documentation that the lead-containing waste material removed from the work area has been accepted by the landfill owner.

Advise the landfill operator, at least twenty-four (24) hours prior to transportation, of the material to be delivered.

(2) **Disposal of Hazardous Construction Debris (TCLP for 8 RCRA Metals Exceeding EPA Limits).** Remove hazardous lead waste including, debris, scraps, waste materials, rubbish, and trash from the site and disposed of at an EPA approved landfill, approved for accepting hazardous lead waste. Submit to the Engineer documentation that the hazardous lead-containing waste material removed from the work area has been accepted by the landfill owner.

(L) **Removal and Disposal of Asbestos-Containing Materials.** The work may require the removal and disposal of asbestos-containing materials.

(1) General Requirements. All work shall be done in compliance with the publications in this section as well as all occupational Safety and Health Standards, the Uniform Building Code, the Uniform Fire Code, and as specified herein.

(a) Title 29 CFR Part 1910

(b) Title 29 CFR Part 1926

(c) Title 40 CFR Part 61

(d) Title 49 CFR 100 - 199

(2) Air Monitoring.

(a) Airborne concentrations of asbestos fibers shall be monitored in accordance with 29 CFR 1926.1101, current EPA guidance, and as specified herein. In addition to the monitoring done by the Contractor, the Engineer may perform independent monitoring inside and outside of the work area. All monitoring shall be performed by trained air monitoring technicians. All sampling pumps shall be calibrated in the field with a secondary calibration device before and after each sample. Built-In rotometers on pumps are not acceptable.

(i) The minimum number of daily samples per work area without a negative exposure assessment are as follows:

a. Three (3) air sample within the work area.
b. Three (3) air samples located outside the work area.

(ii) The Contractor shall conduct personnel monitoring continuously during asbestos removal operations to determine the 8-hour time weighted exposure of workers to airborne fibers.

(iii) The Contractor shall direct its laboratory in writing to release all employees and work site air monitoring data, and all other pertinent data and records to the Engineer.

(iv) A laboratory accredited by the American Industrial Hygiene Association (AIHA) shall perform all analyses.

(v) The Contractor shall have its laboratory archive all air samples until the successful completion of the project.

(b) Laboratory results from air monitoring will be submitted to the Engineer within 20 hours from the end of the work shift for which monitoring was performed.

(c) The independent testing laboratory shall be accredited by AIHA for the analyses required and shall be accredited by the National Institute of Science and Technology (NIST) under their National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos analysis and airborne asbestos fibers as appropriate.

(3) Initial Submittal. The Contractor shall submit the following documentation to the Engineer for review, approval, or rejection:

(a) A work plan, prepared and signed by an EPA Accredited Project Designer and a Certified Industrial Hygienist (CIH), which includes procedures for:

(i) Work area set-up and preparation,

(ii) asbestos removal,

(iii) worker protection,

(iv) material decontamination,

(v) personnel decontamination, and

(vi) waste transport and disposal.

(b) Authorization to dispose of asbestos waste by the proposed disposal site operator.

(c) Name and address of the proposed waste transporter.

(d) Notifications and Certificates.

(i) A copy of the Contractor's written "Notification of Demolition and Renovation" to the EPA and the State of Hawaii Department of Health.

(ii) A copy of the Contractor's written notification listing proposed workers to the State of Hawaii, Department of Health with the response showing worker approval.

(iii) Legible copies of workers' current EPA and State of Hawaii, Asbestos Abatement Certificates.

(e) Submit the name of the proposed Competent Person and a list of his previous projects.

No work shall begin prior to the Engineer's receipt and approval of the specified documentation.

(4) Periodic Submittals. Submit the previous day's Project Daily Logs to the Engineer.

(5) Work Areas.

(a) Establish regulated work area in compliance with 29 CFR 1926.1101.

(b) Install decontamination areas in compliance with 29 CFR 1926.1101.

(6) Personnel Protection Procedures.

(a) Post the decontamination, safety, and work procedures to be followed by workers.

(b) Provide continuous on-site supervision by the approved Competent Person.

(c) Follow all worker protection procedures as described in the approved work plan.

(d) Provide the highest level of respiratory protection unless approved and documented exposure assessments establish that a lower level of protection is adequate.

(e) Maintain a daily log of all workers and visitors entering the regulated work area. Log shall contain the name and social security number of each individual, his organization, accurate time of entering and leaving, and purpose of visit.

(f) Monitor worker exposure to airborne asbestos fibers as required by 29 CFR 1926.1101.

(g) Provide approved filters for other airborne contaminants (solvents, etc.) which may be present. These filters shall be used in combination with approved asbestos filters. At no time shall this Permissible Exposure Limit (PEL) for any airborne contaminant exceed the PEL listed in 29 CFR 1910, Subpart Z.

(7) Asbestos Removal Procedures. Asbestos removal shall be in accordance with the Contractor's approved work plan, applicable regulations, and this specification.

(8) Cleaning of Work Area.

(a) Upon completion of asbestos removal within a work area, remove visible accumulation of asbestos material and debris. Wet or High Efficiency Particulate Air (HEPA) vacuum all work area surfaces.

(b) Ensure that all asbestos-containing materials have been removed from concave corners and textured surfaces (i.e., concrete floors).

(c) Notify the Engineer in writing that asbestos work has been completed and the work area is ready for visual inspection. Include a statement that all asbestos in the work area has been removed, repaired, and/or encapsulated as required by the contract and that all debris has been removed.

(9) Disposal.

(a) Dispose of asbestos wastes in an EPA and DEC permitted asbestos landfill.

(b) Comply with current waste handling, storage, transportation, and disposal requirements of the waste disposal facility, U.S. DOT and EPA regulations.

(c) Label waste containers and vehicles in accordance with 40 CFR Part 61 and 49 CFR 100-199. Affix warning labels having waterproof print and permanent adhesive to all waste containers.

(d) Affix a Class 9 label with ID number 2212 on all four sides of the waste transport vehicle.

(e) Waste transport vehicles shall be lined with 6-mil polyethylene and be fully enclosed.

(f) Waste shipping papers shall identify wastes as "Asbestos 9, NA 2212 III, RQ" and list the total quantity being transported in addition to the requirements of 40 CFR 61.

690.04 Method of Measurement. The Engineer will not measure removal of lead-containing and asbestos-containing materials for payment.

690.05 Basis of Payment. The Engineer will not pay for removal of lead-containing and asbestos-containing materials separately. The Engineer will consider the cost for removal of lead-containing and asbestos-containing materials as included in the contract price of the various contract items in Section 202 - Removal of Structures and Obstructions.

The cost is for instructing personnel in proper personnel protection requirements and enforcing those requirements; protective equipment and clothing; testing and monitoring; work area preparation; collecting, transporting and disposing of lead-containing materials; and furnishing labor, material, tools, equipment, and incidentals necessary to complete the work."

END OF SECTION

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
104.1000	Lane Rental Incentive	Allow	Allow	Allow	$2,000,000.00
108.1000	Incentive Allowance	Allow	Allow	Allow	$2,925,000.00
202.0110	Removal of At Grade Existing Concrete Barriers (2,411 L.F.)	L.S.	L.S.	L.S.	$_____
202.0111	Removal of 96-Inch Sectional Plate Culvert (9 L.F.)	L.S.	L.S.	L.S.	$_____
202.0112	Removal of 24-Inch RCP Pipe (92 L.F.)	L.S.	L.S.	L.S.	$_____
202.0113	Removal of 6-Inch Perforated PVC Pipe & Cleanouts (1,295 L.F.)	L.S.	L.S.	L.S.	$_____
202.0114	Removal of Grated Drop Inlet (12 Each)	L.S.	L.S.	L.S.	$_____
202.0115	Removal of Storm Drain Manhole (1 Each)	L.S.	L.S.	L.S.	$_____
202.0116	Removal of 8-Foot x 6-Foot Outlet Structure (3 Each)	L.S.	L.S.	L.S.	$_____
202.0117	Removal of Guardrail (1,607 L.F.)	L.S.	L.S.	L.S.	$_____
202.0118	Removal of Six-Foot Chain Link Fence (2,898 L.F.)	L.S.	L.S.	L.S.	$_____
202.0119	Removal of 4-Foot Wide Concrete Ditch (1,133 L.F.)	L.S.	L.S.	L.S.	$_____
202.0120	Removal of 10-Foot Wide Concrete Ditch (1,448 L.F.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
202.0121	Removal of 4-Foot Wide Lined Ditch (642 L.F.)	L.S.	L.S.	L.S.	$_____
202.0122	Removal of Retaining Wall (14 L.F.)	L.S.	L.S.	L.S.	$_____
202.0123	Removal of Concrete Slab (TMK: 9-8-26: 60, 5'x5') (250 S.F.)	L.S.	L.S.	L.S.	$_____
202.0124	Removal of 9-Inch Thick Grouted Rubble Paving (225 S.Y.)	L.S.	L.S.	L.S.	$_____
202.0125	Removal of Concrete Driveway (1,112 S.F.)	L.S.	L.S.	L.S.	$_____
202.0126	Removal of Rolled Curb (1,164 L.F.)	L.S.	L.S.	L.S.	$_____
202.0127	Removal of A.C. and Base Course (11,634 S.F.)	L.S.	L.S.	L.S.	$_____
202.0128	Removal of CRM Wall (130 L.F.)	L.S.	L.S.	L.S.	$_____
202.0129	Removal of 2-Inch A.C. Pavement (236 S.F.)	L.S.	L.S.	L.S.	$_____
202.0130	Removal of CMU Wall (112 L.F.)	L.S.	L.S.	L.S.	$_____
202.0131	Removal of A.C. Swale (Ramp E) (6,521 S.F.)	L.S.	L.S.	L.S.	$_____
202.0132	Removal of Concrete Swale (Ramp E) (3,497 S.F.)	L.S.	L.S.	L.S.	$_____
202.0201	Removal of Existing Concrete Barrier (1,300 L.F.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
202.0202	Removal of Portion of Existing Concrete Deck (2,500 S.F.)	L.S.	L.S.	L.S.	$_____
202.0203	Removal of Portion of Existing Concrete Deck for Replacement Concrete by Shotblasting (2,815 S.F.)	L.S.	L.S.	L.S.	$_____
202.0204	Removal of Portion of Existing Concrete Deck for Replacement Concrete by Hydrodemolition (2,815 S.F.)	L.S.	L.S.	L.S.	$_____
202.0205	Removal of Portion of Existing Concrete Wingwall (74 L.F.)	L.S.	L.S.	L.S.	$_____
202.0206	Removal of Portion of Existing Portland Cement Concrete Pavement and Asphalt Concrete Pavement for Approach Slab (220 S.F.)	L.S.	L.S.	L.S.	$_____
202.0207	Removal of Inlet Structure at Sta. 89+10 (1 Each)	L.S.	L.S.	L.S.	$_____
202.0208	Removal of Portion of Existing Abutment Footing for AW-1 (1 Each)	L.S.	L.S.	L.S.	$_____
202.0209	Removal of Existing Concrete Barrier (155 L.F.) (Austin-Bishop)	L.S.	L.S.	L.S.	$_____
202.0210	Removal of 36-inch RCP Pipe (115 LF)	L.S.	L.S.	L.S.	$_____
202.0211	Removal of Thru Gutter (15 LF)	L.S.	L.S.	L.S.	$_____
202.9601	Removal of 8-Inch Water Line (240 L.F.)	L.S.	L.S.	L.S.	$_____
202.9602	Removal of 8-Inch Gate Valve (3 EA.)	L.S.	L.S.	L.S.	$_____
202.9603	Removal of Valve Box, Frame and Cover (3 EA.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
202.9604	Removal of 6-Inch Sewer Lateral (60 L.F.)	L.S.	L.S.	L.S.	$_____
202.9605	Removal of 8-Inch Sewer Pipe (97 L.F.)	L.S.	L.S.	L.S.	$_____
202.9606	Removal of 10-Inch Sewer Pipe (210 L.F.)	L.S.	L.S.	L.S.	$_____
202.9607	Removal of Existing Sewer Manhole (2 Ea)	L.S.	L.S.	L.S.	$_____
202.9608	Removal of 4-Inch Gas Line (60 L.F.)	L.S.	L.S.	L.S.	$_____
203.0110	Roadway Excavation	27,191	Cu. Yd.	$_____	$_____
206.0000	Structure Excavation for Drainage System	8,181	Cu. Yd.	$_____	$_____
206.0601	Additional Foundation Over-Excavation	F.A.	F.A.	F.A.	$50,000.00
206.2040	Trench Excavation for Water System	146	Cu. Yd.	$_____	$_____
206.2050	Trench Excavation for Sewer System	467	Cu. Yd.	$_____	$_____
206.2060	Trench Excavation for 4-Inch Gas Line	33	Cu. Yd.	$_____	$_____
206.5001	Structure Excavation for Noise Barrier Wall - 1	694	Cu. Yd.	$_____	$_____
206.5002	Structure Excavation for Noise Barrier Wall - 2	370	Cu. Yd.	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
206.5003	Structure Excavation for Noise Barrier Wall - 3	280	Cu. Yd.	$_____	$_____
206.5004	Structure Excavation for AW-1	500	Cu. Yd.	$_____	$_____
206.5005	Structure Excavation for Soil Nail Retaining Wall - 1	410	Cu. Yd.	$_____	$_____
206.5006	Structure Excavation for Soil Nail Retaining Wall - 2	4,400	Cu. Yd.	$_____	$_____
206.5007	Structure Excavation for Soil Nail Retaining Wall - 3	2,000	Cu. Yd.	$_____	$_____
206.5008	Structure Excavation for Soil Nail Retaining Wall - 4	780	Cu. Yd.	$_____	$_____
206.5009	Structure Excavation for Concrete Barrier Wall - 1	1,060	Cu. Yd.	$_____	$_____
206.5010	Structure Excavation for Concrete Barrier Wall - 2	590	Cu. Yd.	$_____	$_____
206.5011	Structure Excavation for Concrete Barrier Wall - 3	150	Cu. Yd.	$_____	$_____
206.5012	Structure Excavation for Concrete Barrier Wall - 4	350	Cu. Yd.	$_____	$_____
206.5013	Structure Excavation for Concrete Barrier Wall - 5	1,600	Cu. Yd.	$_____	$_____
206.6000	Structure Excavation for Abutments, Wingwalls, and Retaining Wall "B"	580	Cu. Yd.	$_____	$_____
206.6001	Structure Excavation for Bent Footings	2,200	Cu. Yd.	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
206.6002	Structure Excavation for Columns (Austin-Bishop)	135	Cu. Yd.	$_____	$_____
206.7200	Structure Backfill for Abutments, Wingwalls, and Retaining Wall "B"	460	Cu. Yd.	$_____	$_____
206.7201	Structure Backfill for Bent 11 Column Footing (Class D Concrete)	42	Cu. Yd.	$_____	$_____
206.7202	Controlled Low Strength Material for Column Footings	218	Cu. Yd.	$_____	$_____
206.7254	Structure Backfill for AW-1	17	Cu. Yd.	$_____	$_____
206.7255	Structure Backfill for AW-1 (Class "D" Concrete)	8	Cu. Yd.	$_____	$_____
206.7256	Structure Backfill for Soil Nail Retaining Wall - 1	40	Cu. Yd.	$_____	$_____
206.7257	Structure Backfill for Soil Nail Retaining Wall - 2	400	Cu. Yd.	$_____	$_____
206.7258	Structure Backfill for Soil Nail Retaining Wall - 3	220	Cu. Yd.	$_____	$_____
206.7259	Structure Backfill for Soil Nail Retaining Wall - 4	110	Cu. Yd.	$_____	$_____
206.7260	Structure Backfill for Concrete Barrier Wall - 1	420	Cu. Yd.	$_____	$_____
206.7261	Structure Backfill for Concrete Barrier Wall - 2	300	Cu. Yd.	$_____	$_____
206.7262	Structure Backfill for Concrete Barrier Wall - 3	58	Cu. Yd.	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
206.7263	Structure Backfill for Concrete Barrier Wall - 4	215	Cu. Yd.	$_____	$_____
206.7264	Structure Backfill for Concrete Barrier Wall - 5	514	Cu. Yd.	$_____	$_____
206.8200	Filter Material for Abutments and Wingwalls	11	Cu. Yd.	$_____	$_____
206.8201	Filter Material for Noise Barrier Walls	60	Cu. Yd.	$_____	$_____
206.8202	Filter Material for Concrete Barrier Walls	90	Cu. Yd.	$_____	$_____
206.9010	Foundation Grouting	F.A.	F.A.	F.A.	$40,000.00
208.0100	Leveling Surfaces	F.A.	F.A.	F.A.	$100,000.00
209.0100	Water Pollution and Erosion Control	F.A.	F.A.	F.A.	$750,000.00
211.1000	Reinforced Soil Slope (7,300 C.Y.)	L.S.	L.S.	L.S.	$_____
305.0100	15" Aggregate Subbase	1,519	Cu. Yd.	$_____	$_____
305.0200	12" Aggregate Subbase	434	Cu. Yd.	$_____	$_____
305.0300	6" Aggregate Subbase	2,695	Cu. Yd.	$_____	$_____
306.0100	Untreated Permeable Base Course	3,303	Cu. Yd.	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
312.0100	Plant Mix Glassphalt Concrete Base Course	6,420	Ton	$_____	$_____
401.0100	Asphalt Concrete Pavement, Mix No. IV	2,580	Ton	$_____	$_____
401.0200	Asphalt Concrete Pavement, Mix No. V	134	Ton	$_____	$_____
411.1010	13 1/2-Inch, Concrete Pavement	3,904	Cu. Yd.	$_____	$_____
411.1020	12 1/2-Inch, Concrete Pavement	1,996	Cu. Yd.	$_____	$_____
411.2000	Transverse Contraction Joint	15,000	Lin. Ft.	$_____	$_____
501.0210	Structural Steel for Luminaire Support Bracket at Pono Street, Pomohana Place, and Detour Road	10	Each	$_____	$_____
501.0211	Structural Steel for Overhead Sign Support (8,600 lb.)	L.S.	L.S.	L.S.	$_____
501.2010	8-Inch Pipe Support Hangers	30	Each	$_____	$_____
501.2011	12-Inch Pipe Support Hangers	9	Each	$_____	$_____
503.1080	Concrete for Abutments Retrofit (143 C.Y.) (Austin-Bishop)	L.S.	L.S.	L.S.	$_____
503.1090	Concrete for Abutments, Wingwalls, and Retaining Wall "B" including Type 1 Corbel (89 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1091	Concrete for Abutments, Wingwalls, and Retaining Wall "B" Footings (215 C.Y.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
503.1407	Concrete for Concrete Barrier Walls - 1 and 2 (1,100 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1408	Concrete for Concrete Barrier Walls - 3, 4, and 5 (520 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1409	Concrete for Noise Barrier Wall - 1 Footing (300 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1410	Concrete for Noise Barrier Wall - 2 Footing (180 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1411	Concrete for Noise Barrier Wall - 3 Footing (140 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1412	Concrete for Soil Nail Retaining Wall - 1 Footing (20 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1413	Concrete for Soil Nail Retaining Wall - 2 Footing (80 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1414	Concrete for Soil Nail Retaining Wall - 3 Footing (50 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1415	Concrete for Soil Nail Retaining Wall - 4 Footing (25 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1416	Concrete for Concrete Barrier Walls - 1 and 2 Footings (700 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1417	Concrete for Concrete Barrier Walls - 3, 4 and 5 Footings (250 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1910	Concrete for Approach Slabs (1st Phase) (65 C.Y.)	L.S.	L.S.	L.S.	$_____
503.1911	Concrete for Approach Slabs Including Type II Corbel (2nd Phase) (19 C.Y.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
503.2051	Concrete for Reinforced Concrete Jacket (19 C.Y.)	L.S.	L.S.	L.S.	$_____
503.2052	Concrete for Reaction and Test Blocks (Class B) (4.3 C.Y.)	L.S.	L.S.	L.S.	$_____
503.8000	Mechanical Grooving (51,521 S.F.)	L.S.	L.S.	L.S.	$_____
504.4100	Type Keehi IVM Prestressed Concrete Girders (5,291 L.F.)	L.S.	L.S.	L.S.	$_____
507.7000	Concrete Railings on Bridge	1,300	Lin. Ft.	$_____	$_____
507.7002	Concrete Median Barriers (Austin-Bishop)	80	Lin. Ft.	$_____	$_____
511.0100	Furnishing Drilled Shaft Drilling Equipment (1 Each)	L.S.	L.S.	L.S.	$_____
511.0200	Obstructions	80	Hours	$_____	$_____
511.0300	Load Test	2	Each	$_____	$_____
511.0400	Trial Shaft	150	Lin. Ft.	$_____	$_____
511.0500	Permanent Casing (27-Inch I.D. Corrugated Aluminum Pipe)	200	Lin. Ft.	$_____	$_____
511.0600	Permanent Casing (48-Inch Diameter)	500	Lin. Ft.	$_____	$_____
511.0700	Permanent Casing (60-Inch Diameter)	1,600	Lin. Ft.	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
511.0800	Unclassified Shaft Excavation (20-Inch Diameter)	450	Lin. Ft.	$_____	$_____
511.0900	Unclassified Shaft Excavation (24-Inch Diameter)	4,300	Lin. Ft.	$_____	$_____
511.1000	Unclassified Shaft Excavation (48-Inch Diameter)	1,250	Lin. Ft.	$_____	$_____
511.1100	Unclassified Shaft Excavation (60-Inch Diameter)	3,750	Lin. Ft.	$_____	$_____
511.1200	Drilled Shaft (20-Inch Diameter)	450	Lin. Ft.	$_____	$_____
511.1300	Drilled Shaft (24-Inch Diameter)	4,300	Lin. Ft.	$_____	$_____
511.1400	Drilled Shaft (27-Inch Diameter)	200	Lin. Ft.	$_____	$_____
511.1500	Drilled Shaft (48-Inch Diameter)	1,250	Lin. Ft.	$_____	$_____
511.1600	Drilled Shaft (60-Inch Diameter)	3,750	Lin. Ft.	$_____	$_____
511.1700	Coring Samples (Integrity Testing)	750	Lin. Ft.	$_____	$_____
513.0101	CMU Noise Barrier Walls, 8-inch CMU	290	Sq. Yd.	$_____	$_____
513.0102	CMU Noise Barrier Walls, 12-inch CMU	1,910	Sq. Yd.	$_____	$_____
530.0101	Segmental Retaining Wall No. 1 (7,160 S.F.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
530.0102	Segmental Retaining Wall No. 2A (5,400 S.F.)	L.S.	L.S.	L.S.	$_____
530.0103	Segmental Retaining Wall No. 2B (1,590 S.F.)	L.S.	L.S.	L.S.	$_____
530.0104	Segmental Retaining Wall No. 2C (1,672 S.F.)	L.S.	L.S.	L.S.	$_____
540.1000	Replacement Concrete for Frame A - Honolulu Half (678 S.F.)	L.S.	L.S.	L.S.	$_____
540.1001	Replacement Concrete for Frame A - Waianae Half (678 S.F.)	L.S.	L.S.	L.S.	$_____
540.1002	Replacement Concrete for Frame B (1,424 S.F.)	L.S.	L.S.	L.S.	$_____
540.1003	Replacement Concrete for Frame C (1,424 S.F.)	L.S.	L.S.	L.S.	$_____
540.1004	Replacement Concrete for Frame D (1,423 S.F.)	L.S.	L.S.	L.S.	$_____
540.1005	Tensile Bond Test	180	Each	$_____	$_____
602.0050	Reinforcing Steel for AW-1 (16,980 lb.)	L.S.	L.S.	L.S.	$_____
602.0051	Reinforcing Steel for Barrier-Wall at Austin-Bishop Separation (13,230 lb.)	L.S.	L.S.	L.S.	$_____
602.0052	Reinforcing Steel for Soil Nail Retaining Walls (140,000 lb.)	L.S.	L.S.	L.S.	$_____
602.0053	Reinforcing Steel for Concrete Barrier Walls (400,000 lb.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
602.0054	Reinforcing Steel for Concrete Barrier Wall Footings (200,000 lb.)	L.S.	L.S.	L.S.	$_____
602.0055	Reinforcing Steel for Noise Barrier Walls (150,000 lb.)	L.S.	L.S.	L.S.	$_____
602.0056	Reinforcing Steel for Noise Barrier Wall Footings (120,000 lb.)	L.S.	L.S.	L.S.	$_____
602.0090	Reinforcing Steel for Abutments, Wingwalls, and Retaining Wall "B" Including Type 1 Corbel (16,030 lb.)	L.S.	L.S.	L.S.	$_____
602.0091	Reinforcing Steel for Abutments, Wingwalls, and Retaining Wall "B" Footings (38,350 lb.)	L.S.	L.S.	L.S.	$_____
602.0092	Reinforcing Steel for Viaduct Deck Including Drop Inlets on Bridge But Excluding Closure Pour (493,358 lb.)	L.S.	L.S.	L.S.	$_____
602.0093	Reinforcing Steel for Bent Caps (220,170 lb.)	L.S.	L.S.	L.S.	$_____
602.0094	Reinforcing Steel for Columns (398,303 lb.)	L.S.	L.S.	L.S.	$_____
602.0095	Reinforcing Steel for Bent Footings (338,997 lb.)	L.S.	L.S.	L.S.	$_____
602.0096	Reinforcing Steel for Closure Pour (49,000 lb.)	L.S.	L.S.	L.S.	$_____
602.0097	Reinforcing Steel for Seat Extender at Abutments (6,730 lb.)	L.S.	L.S.	L.S.	$_____
602.0098	Reinforcing Steel for Approach Slabs (1st Phase) (12,800 lb.)	L.S.	L.S.	L.S.	$_____
602.0099	Reinforcing Steel for Approach Slabs Including Type II Corbel (2nd Phase) (3,500 lb.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
602.0100	Reinforcing Steel for Abutments Retrofit (26,300 lb.) (Austin-Bishop)	L.S.	L.S.	L.S.	$_____
602.0101	Reinforcing Steel for Collar at Pier Columns (774 lb.) (Austin-Bishop)	L.S.	L.S.	L.S.	$_____
603.0010	Bed Course Material for Culvert	939	Cu. Yd.	$_____	$_____
603.0210	8-Inch Ductile Iron Pipe, Class 52	723	Lin. Ft.	$_____	$_____
603.0220	12-Inch Ductile Iron Pipe, Class 52	65	Lin. Ft.	$_____	$_____
603.0310	6-Inch Polyvinyl Chloride Pipe, SDR 35	64	Lin. Ft.	$_____	$_____
603.0320	8-Inch Polyvinyl Chloride Pipe, SDR 35	192	Lin. Ft.	$_____	$_____
603.0330	12-Inch Polyvinyl Chloride Pipe, SDR 35	15	Lin. Ft.	$_____	$_____
603.1010	24-Inch Reinforced Concrete Pipe, Class III	21	Lin. Ft.	$_____	$_____
603.1020	36-Inch Reinforced Concrete Pipe, Class III	36	Lin. Ft.	$_____	$_____
603.1030	24-Inch Reinforced Concrete Pipe, Class III, or 24-Inch High Density Polyethylene Pipe, Type S	2,658	Lin. Ft.	$_____	$_____
603.1040	30-Inch Reinforced Concrete Pipe, Class III, or 30-Inch High Density Polyethylene Pipe, Type S	189	Lin. Ft.	$_____	$_____
603.1050	36-Inch Reinforced Concrete Pipe, Class III, or 36-Inch High Density Polyethylene Pipe, Type S	663	Lin. Ft.	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
603.2010	Column Drain Cleanout	22	Each	$_____	$_____
603.2020	Drain Cleanout to Grade	7	Each	$_____	$_____
603.4010	Concrete Collar for 24-Inch Drain Connection	1	Each	$_____	$_____
603.4020	Concrete Collar for 36-Inch Drain Connection	1	Each	$_____	$_____
603.5010	Clean Existing Culverts	F.A.	F.A.	F.A.	$750,000.00
604.0210	Inlet Structure, 2 feet to 2.99 feet	1	Each	$_____	$_____
604.0220	Inlet Structure, 11 feet to 11.99 feet	1	Each	$_____	$_____
604.0310	Type A Storm Drain Manhole, 5 feet to 5.99 feet	1	Each	$_____	$_____
604.0320	Type A Storm Drain Manhole, 6 feet to 6.99 feet	2	Each	$_____	$_____
604.0330	Type A Storm Drain Manhole, 8 feet to 8.99 feet	1	Each	$_____	$_____
604.0340	Type A Storm Drain Manhole, 10 feet to 10.99 feet	1	Each	$_____	$_____
604.0402	Standard Valve Box For Gate Valve	3	Each	$_____	$_____
604.0403	Air Relief Valve Box	1	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
604.0410	Type B Storm Drain Manhole, 4 feet to 4.99 feet	1	Each	$_____	$_____
604.0411	Type B Storm Drain Manhole, 5 feet to 5.99 feet	1	Each	$_____	$_____
604.0510	Type E Storm Drain Manhole, 6 feet to 6.99 feet	1	Each	$_____	$_____
604.0610	Special Storm Drain Manhole, 4 feet to 4.99 feet	1	Each	$_____	$_____
604.0620	Special Storm Drain Manhole, 5 feet to 5.99 feet	2	Each	$_____	$_____
604.0630	Special Storm Drain Manhole, 6 feet to 6.99 feet	1	Each	$_____	$_____
604.0640	Special Storm Drain Manhole, 7 feet to 7.99 feet	2	Each	$_____	$_____
604.0650	Special Storm Drain Manhole, 8 feet to 8.99 feet	2	Each	$_____	$_____
604.0660	Special Storm Drain Manhole, 15 feet to 15.99 feet	1	Each	$_____	$_____
604.0670	Adjust Storm Drain Manhole Frame and Cover	1	Each	$_____	$_____
604.4302	Adjusting Sewer Manhole Frame and Cover	5	Each	$_____	$_____
604.4550	Adjusting Valve Box Frame and Cover	4	Each	$_____	$_____
604.5010	Type A1 Grated Drop Inlet, 4 feet to 4.99 feet	1	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
604.5020	Type A1 Grated Drop Inlet, 5 feet to 5.99 feet	7	Each	$_____	$_____
604.5030	Type A1 Grated Drop Inlet, 6 feet to 6.99 feet	1	Each	$_____	$_____
604.5040	Type A1 Grated Drop Inlet, 7 feet to 7.99 feet	1	Each	$_____	$_____
604.5050	Type A1 Grated Drop Inlet, 8 feet to 8.99 feet	1	Each	$_____	$_____
604.5060	Type A1 Grated Drop Inlet, 10 feet to 10.99 feet	1	Each	$_____	$_____
604.5070	Type A1 Grated Drop Inlet, 14 feet to 14.99 feet	1	Each	$_____	$_____
604.5120	Type A2 Grated Drop Inlet, 5 feet to 5.99 feet	6	Each	$_____	$_____
604.5130	Type A2 Grated Drop Inlet, 6 feet to 6.99 feet	4	Each	$_____	$_____
604.5140	Type A2 Grated Drop Inlet, 7 feet to 7.99 feet	1	Each	$_____	$_____
604.5150	Type A2 Grated Drop Inlet, 13 feet to 13.99 feet	1	Each	$_____	$_____
604.5230	Type A3 Grated Drop Inlet, 7 feet to 7.99 feet	3	Each	$_____	$_____
604.5240	Type A3 Grated Drop Inlet, 9 feet to 9.99 feet	1	Each	$_____	$_____
604.5250	Type A3 Grated Drop Inlet, 12 feet to 12.99 feet	1	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
604.5310	Type A4 Grated Drop Inlet, 10 feet to 10.99 feet	1	Each	$_____	$_____
604.5410	Type A5 Grated Drop Inlet, 9 feet to 9.99 feet	1	Each	$_____	$_____
604.6010	Type D Catch Basin, 4 feet to 4.99 feet	1	Each	$_____	$_____
604.6020	Type D Catch Basin, 5 feet to 5.99 feet	2	Each	$_____	$_____
604.7010	Type B4 Steel Frame and Grate	11	Each	$_____	$_____
604.7020	Type B6 Steel Frame and Grate	1	Each	$_____	$_____
604.7030	Type B8 Steel Frame and Grate	1	Each	$_____	$_____
604.8010	Column Outlet Structure, Type A	9	Each	$_____	$_____
604.8020	Column Outlet Structure, Type B	1	Each	$_____	$_____
604.8030	Column Outlet Structure, Type C	2	Each	$_____	$_____
604.8040	Trench Drain	418	Lin. Ft.	$_____	$_____
605.0110	6-Inch Underdrain Pipe	6,910	Lin. Ft.	$_____	$_____
605.0301	Underdrain Outlet Type 1	2	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
605.0302	Underdrain Outlet Type 2	1	Each	$_____	$_____
605.2010	Underdrain Cleanout Type A	6	Each	$_____	$_____
605.2020	Underdrain Cleanout Type B	3	Each	$_____	$_____
605.2030	Underdrain Cleanout Type C	6	Each	$_____	$_____
605.2040	Underdrain Cleanout Type D	6	Each	$_____	$_____
605.2050	Underdrain Cleanout Type E	9	Each	$_____	$_____
605.2060	Underdrain Cleanout Type F	2	Each	$_____	$_____
606.1010	Strong Post W-Beam Guardrail	58	Lin. Ft.	$_____	$_____
606.2010	End Treatment Type ET-2000	1	Each	$_____	$_____
606.3010	State Furnished Portable Concrete Barrier	25	Each	$_____	$_____
607.1010	Six-Feet, Chain Link Fence with Top Rail	4,639	Lin. Ft.	$_____	$_____
607.1020	Six-Feet, Chain Link Fence without Top Rail	94	Lin. Ft.	$_____	$_____
607.1030	Eight-Feet, Chain Link Fence without Top Rail	2,168	Lin. Ft.	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
607.1040	Eight-Feet, Chain Link Fence with Barbed Wire	1,559	Lin. Ft.	$_____	$_____
607.3001	Chain Link Gate, Six Feet High and Four Feet Wide	2	Each	$_____	$_____
607.3002	Chain Link Gate, Six Feet High and Ten Feet Wide	1	Each	$_____	$_____
607.3010	Chain Link Gate, Eight Feet High and Fifteen Feet Wide	3	Each	$_____	$_____
607.3020	Chain Link Gate, Eight Feet High and Sixteen Feet Wide	2	Each	$_____	$_____
607.3030	Chain Link Gate, Eight Feet High and Twenty Feet Wide	1	Each	$_____	$_____
607.3040	Chain Link Gate, Eight Feet High and Twenty-four Feet Wide	3	Each	$_____	$_____
608.0100	Concrete Sidewalk	772	Sq. Yd.	$_____	$_____
609.0110	Curb and Gutter, Type 2DG	794	Lin. Ft.	$_____	$_____
609.0120	Rolled Curb	285	Lin. Ft.	$_____	$_____
609.0130	Thru Gutter	45	Lin. Ft.	$_____	$_____
609.0210	Concrete Header	480	Lin. Ft.	$_____	$_____
610.0110	15-Foot Wide Reinforced Concrete Driveway	1	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
610.0111	20-Foot Wide Reinforced Concrete Driveway	1	Each	$_____	$_____
610.0112	40.3-Foot Wide Reinforced Concrete Driveway	1	Each	$_____	$_____
612.0110	Grouted Rubble Paving for GRP Blanket, Including 6-Inch Bed Course	280	Cu. Yd.	$_____	$_____
612.0120	Grouted Rubble Paving for 6' x 6' GRP Pad	7	Cu. Yd.	$_____	$_____
614.0100	Standard Street Survey Monuments	2	Each	$_____	$_____
616.0610	Sprinkler System (1 Each)	L.S.	L.S.	L.S.	$_____
616.0620	High Voltage Work (1 Each)	L.S.	L.S.	L.S.	$_____
616.0630	Low Voltage Work (1 Each)	L.S.	L.S.	L.S.	$_____
617.0900	Topsoil (6,100 C.Y.)	L.S.	L.S.	L.S.	$_____
618.1510	Grassed Surfaces, St. Augustime Grass, Stolons w/ Hydromulch Cover (181,000 S.F.)	L.S.	L.S.	L.S.	$_____
618.1520	Grassed Surfaces, St. Augustine Grass, Planted Over Erosion Control Matting, Stolons w/ Hydromulch Cover (71,000 S.F.)	L.S.	L.S.	L.S.	$_____
619.1710	Plastic Edging	400	Lin. Ft.	$_____	$_____
619.1750	Planting Trees, Loulu Palm (Pritchardia hillebrandii), 7 Gal., 2' High-Brown Trunk	30	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
619.1751	Planting Trees, Foxtail Palm (Wodyetia bifurcata), 25 Gal., 3' High-Brown Trunk	12	Each	$_____	$_____
619.1752	Planting Trees, Alexander Palm (Archontophoenix alexandrae), 25 Gal., 3' High-Brown Trunk	20	Each	$_____	$_____
619.1753	Planting Trees, Chinese Fan Palm (Livistona chinensis), 5 Gal., 18" High-Brown Trunk	20	Each	$_____	$_____
619.1754	Planting Trees, MacArthur Palm (Ptychosperma macarthurii), 25 Gal., 3' High-Brown Trunk	18	Each	$_____	$_____
619.1755	Planting Shrubs, Oleander 'Red'. 'Pink', & 'Salmon' (Nerium oleander), 24" high	670	Each	$_____	$_____
619.1756	Planting Shrubs, Naupaka (Scaevola taccada), 24" high	50	Each	$_____	$_____
619.1757	Planting Shrubs, Plumbago (Plumago auriculata), 24" high	440	Each	$_____	$_____
619.1758	Planting Shrubs, False Eranthemum (Pseudoeranthemum carruthersii), 24" high	1,470	Each	$_____	$_____
621.0200	Panel for Destination Sign	1,062	Sq. Ft.	$_____	$_____
621.3000	Type VI Footing for Destination Sign	12	Each	$_____	$_____
621.4000	Relocation of Existing Destination Sign	5	Each	$_____	$_____
621.4100	Relocation of Existing Regulatory Sign	7	Each	$_____	$_____
621.4200	Relocation of Sign	8	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
621.4600	2.50-Inch Galvanized Square Tube	10	Each	$_____	$_____
621.4700	Breakaway Sign Post and Foundation for Destination Sign	3	Each	$_____	$_____
621.4800	Galvanized Steel Post for Ground-Mounted Destination and Expressway Sign	168	Lin. Ft.	$_____	$_____
621.5100	Regulatory and Warning Sign 10 Sq. Ft. or Less with Post	6	Each	$_____	$_____
621.5200	Type II Object Markers	4	Each	$_____	$_____
621.7020	Construction Sign - "Notice to Motorists" (5 Each)	L.S.	L.S.	L.S.	$_____
622.0051	Highway Lighting Standard with 40 Foot Luminaire Mounting Height, Breakaway Transformer Base, 15 Foot Bracket Arm, Luminaire and Foundation, Mounted in Grade	6	Each	$_____	$_____
622.0052	Highway Lighting Standard with 40 Foot Luminaire Mounting Height, Non-Breakaway Transformer Base, 15 Foot Bracket Arm, Luminaire and Foundation, Mounted on Wall	26	Each	$_____	$_____
622.0053	Highway Lighting Standard with 40 Foot Luminaire Mounting Height, Non-Breakaway Transformer Base, 15 Foot Bracket Arm, Luminaire and Foundation, Mounted on Viaduct	9	Each	$_____	$_____
622.0054	Highway Lighting Standard with 35 Foot Luminaire Mounting Height, Breakaway Transformer Base, 15 Foot Bracket Arm, Luminaire and Foundation, Mounted in Grade	3	Each	$_____	$_____
622.0055	Highway Lighting Standard with 35 Foot Luminaire Mounting Height, Non-Breakaway Transformer Base, 15 Foot Bracket Arm, Luminaire and Foundation, Mounted on Wall	2	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
622.0056	Highway Lighting Standard with 30 Foot Luminaire Mounting Height, Non-Breakaway Transformer Base, 8 Foot Bracket Arm, Luminaire and Foundation, Mounted in Grade	1	Each	$_____	$_____
622.0057	Highway Lighting Standard with 30 Foot Luminaire Mounting Height, Non-Breakaway Transformer Base, 8 Foot Bracket Arm, Luminaire and Foundation, Mounted in Grade in C&C right of Way	3	Each	$_____	$_____
622.0061	Underpass Lighting Luminaire, Wall Mounted	10	Each	$_____	$_____
622.0062	Underpass Lighting Luminaire, Ceiling Mounted	6	Each	$_____	$_____
622.0063	Highway Signage Lighting Luminaire	15	Each	$_____	$_____
622.0064	Relocate Highway Lighting Luminaire with Bracket Arm Mounted on Wood Pole	2	Each	$_____	$_____
622.0601	Remove Highway Lighting Standard in Grade, Abandon Foundation	28	Each	$_____	$_____
622.0602	Remove Highway Lighting Standard on Concrete Barrier, Demolish Foundation	6	Each	$_____	$_____
622.0603	Remove Highway Lighting Standard on Viaduct Railing, Demolish Foundation	6	Each	$_____	$_____
622.0604	Remove Underpass Lighting Luminaire	24	Each	$_____	$_____
622.0605	Remove Highway Signage Lighting Luminaire	2	Each	$_____	$_____
622.0801	Type "A" Highway Lighting Pullbox	3	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
622.0802	Type "B" Highway Lighting Pullbox	6	Each	$_____	$_____
622.0803	Type "B" Communications Pull Box	2	Each	$_____	$_____
622.0804	Type "C" Highway Lighting Pullbox	2	Each	$_____	$_____
622.0805	Adjust Pullbox Frame and Cover	2	Each	$_____	$_____
622.0901	24" x 18" x 10" Cast Highway Lighting Junction Box	1	Each	$_____	$_____
622.0902	30" x 10" x 6" Cast Highway Lighting Junction Box	7	Each	$_____	$_____
622.0903	30" x 10" x 6" Cast Communications Junction Box	20	Each	$_____	$_____
622.0904	12" Square x 8" Deep Stainless Steel Junction Box	3	Each	$_____	$_____
622.0905	6" Square x 4" Deep stainless Steel Junction Box	13	Each	$_____	$_____
622.3002	Two-4-Inch HECO Ductline (380 L.F.)	L.S.	L.S.	L.S.	$_____
622.5031	One 4-Inch, One 2-Inch, PVC Schedule 80 Conduit Ductline Encased in Concrete for Highway Communication System (560 L.F.)	L.S.	L.S.	L.S.	$_____
622.5032	One 2-Inch PVC Schedule 80 Conduit Ductline Encased in Concrete for Highway Lighting System (1,040 L.F.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
622.8102	Detour Road Temporary Lighting System (1 Each)	L.S.	L.S.	L.S.	$_____
622.9001	Service Equipment Enclosure, Metering Equipment, Apparatus and Control Devices (1 Each)	L.S.	L.S.	L.S.	$_____
622.9002	Concrete Transformer Pad (1 Each)	L.S.	L.S.	L.S.	$_____
623.0010	Loop Detector Sensing Unit (6 Ft. x 6 Ft.), Two Loops	1	Each	$_____	$_____
623.7002	Loop Detector Sensing Unit (6'x6'), Four Loops	1	Each	$_____	$_____
624.0172	8-Inch Gate Valve (Class 150)	3	Each	$_____	$_____
624.0173	3/4-Inch Air Relief Valve	1	Each	$_____	$_____
624.1806	Ductile Iron Fittings	4,905	Lb.	$_____	$_____
624.9000	8-Inch Ductile Iron Pipe, Class 52	251	Lin. Ft.	$_____	$_____
625.1010	Plain Pre-Cast Sewer Manhole, 7 feet to 7.99 feet	1	Each	$_____	$_____
625.1011	Plain Pre-Cast Sewer Manhole, 8 feet to 9.99 feet	1	Each	$_____	$_____
625.1020	Cast-In-Place Sewer Manhole, 7 feet to 7.99 feet	1	Each	$_____	$_____
625.1021	Cast-In-Place Sewer Manhole, 8 feet to 8.99 feet	3	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
625.2010	10-Inch Vitrified Clay Sewer Pipe	125	Lin. Ft.	$_____	$_____
625.2020	15-Inch Vitrified Clay Sewer Pipe	212	Lin. Ft.	$_____	$_____
625.3000	Reinforced Concrete Jacket for 15-Inch Sewer Pipe	52	Lin. Ft.	$_____	$_____
625.4000	Bed Course Material for Crushed Rock Cradle	30	Cu. Yd.	$_____	$_____
625.5000	Repair Existing Sewer Manhole Lining and Seal	L.S.	L.S.	L.S.	$_____
628.0100	Shotcrete	2,700	Sq. Yd.	$_____	$_____
629.1010	1-Inch Permanent Barrier Guidance Striping (Paint) (12,863 L.F.)	L.S.	L.S.	L.S.	$_____
629.1030	4-Inch Pavement Striping (Tape, Type III or Thermoplastic Extrusion) (15,747 L.F.)	L.S.	L.S.	L.S.	$_____
629.1050	8-Inch Pavement Striping (Tape, Type III or Thermoplastic Extrusion) (3,347 L.F.)	L.S.	L.S.	L.S.	$_____
629.1060	12-Inch Pavement Striping (Tape, Type III or Thermoplastic Extrusion) (430 L.F.)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.1130	Pavement Words (Tape, Type III or Thermoplastic Extrusion)	1	Each	$_____	$_____
629.1140	Pavement Symbol (Tape, Type III or Thermoplastic Extrusion)	12	Each	$_____	$_____
629.2010	Type A Pavement Marker (3,029 Each)	L.S.	L.S.	L.S.	$_____
629.2030	Type C Pavement Marker (1,051 Each)	L.S.	L.S.	L.S.	$_____
629.2040	Type D Pavement Marker (13 Each)	L.S.	L.S.	L.S.	$_____
629.2070	Type H Pavement Marker (179 Each)	L.S.	L.S.	L.S.	$_____
635.0010	Microcomputer System (Not to Exceed $10,000.00)	L.S.	L.S.	L.S.	$_____
636.0010	Field Offices (Not to Exceed $108,000.00 for Two Field Offices)	L.S.	L.S.	L.S.	$_____
636.0020	Project Site Laboratory (Not to Exceed $30,000.00)	L.S.	L.S.	L.S.	$_____
636.0030	Maintenance of Field Offices and Laboratory	F.A.	F.A.	F.A.	$80,000.00
638.0100	Cellular Phones (Not to Exceed $900.00 Each for Seven Phones)	L.S.	L.S.	L.S.	$_____
638.0200	Cellular Phone Additional Charges	F.A.	F.A.	F.A.	$1,000.00

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
640.0110	Lined Drainage Ditch, Type "A"	3,094	Lin. Ft.	$_____	$_____
640.0120	Lined Drainage Ditch, Type "B"	611	Lin. Ft.	$_____	$_____
640.0130	Lined Drainage Ditch, Type "C"	760	Lin. Ft.	$_____	$_____
640.0140	Lined Drainage Ditch, Type "D"	83	Lin. Ft.	$_____	$_____
640.0150	Lined Drainage Ditch, Type "F"	422	Lin. Ft.	$_____	$_____
640.0160	Lined Drainage Ditch, Type "G"	10	Lin. Ft.	$_____	$_____
640.1010	Reconstruct Existing Concrete Ditch	4	Lin. Ft.	$_____	$_____
640.2010	Column Outlet Swale, Type A	66	Lin. Ft.	$_____	$_____
640.2020	Column Outlet Swale, Type B	50	Lin. Ft.	$_____	$_____
645.0100	Additional Police Officers And/Or Additional Traffic Control Devices	F.A.	F.A.	F.A.	$1,500,000.00
647.1001	Three 5-Inch HECO Ductline	220	Lin. Ft.	$_____	$_____
647.1002	Two 5-Inch HECO Ductline	95	Lin. Ft.	$_____	$_____
647.1003	One 5-Inch HECO Ductline	25	Lin. Ft.	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
647.1004	One 3-Inch HECO Ductline	330	Lin. Ft.	$_____	$_____
647.3000	5' x 7' HECO Handhole	2	Each	$_____	$_____
647.4000	HECO Pole Riser	3	Each	$_____	$_____
647.5000	Demolish HECO Handhole	1	Each	$_____	$_____
647.6000	Remove HECO Pole Riser	2	Each	$_____	$_____
649.1001	Two 4-Inch Verizon Ductline	390	Lin. Ft.	$_____	$_____
649.1002	One 4-Inch Verizon Ductline	30	Lin. Ft.	$_____	$_____
649.1003	One 2-Inch Verizon Ductline	70	Lin. Ft.	$_____	$_____
649.2001	One 4-Inch Oceanic Cable Ductline	180	Lin. Ft.	$_____	$_____
649.3001	4' x 6' Verizon Handhole	1	Each	$_____	$_____
649.3002	3' x 5' Verizon Handhole	2	Each	$_____	$_____
649.3003	2' x 6' Oceanic Cable Handhole	1	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
649.4001	Verizon Pole Riser	3	Each	$_____	$_____
649.4002	Oceanic Cable Pole Riser	1	Each	$_____	$_____
649.5000	Demolish Verizon Handhole	3	Each	$_____	$_____
649.6000	Remove Verizon Pole Riser	3	Each	$_____	$_____
649.7000	Relocate Oceanic Cable Metering Equipment	1	Each	$_____	$_____
650.0100	Curb Ramps, Type B	2	Each	$_____	$_____
652.0020	1 1/2 - Inch Cold Planing	96	Sq. Yd.	$_____	$_____
652.0030	2 - Inch Cold Planing	2,622	Sq. Yd.	$_____	$_____
653.0100	162-Inch Structural Plate Culvert Lining (756 L.F.)	L.S.	L.S.	L.S.	$_____
654.1000	Cable Restrainer Assembly	18	Each	$_____	$_____
655.0001	Drilling Holes and Installing Dowel Reinforcing Bars for AW-1	24	Each	$_____	$_____
655.1000	Drilling Holes and Installing Dowel Reinforcing Bars into Existing Deck	2,500	Each	$_____	$_____
655.1001	Drilling Holes and Installing Dowel Reinforcing Bars into Existing Girder	74	Each	$_____	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
655.1002	Drilling Holes and Installing Dowel Reinforcing Bars into Existing Bent Cap	650	Each	$_____	$_____
655.1003	Drilling Holes and Installing Dowel Reinforcing Bars into Existing Abutment Walls	30	Each	$_____	$_____
655.1004	Drilling Holes and Installing Dowel Reinforcing Bars into Existing Abutment Wall Footings	28	Each	$_____	$_____
655.1005	Drilling Holes and Installing Dowel Reinforcing Bars for Seat Extender at Abutment	846	Each	$_____	$_____
655.1006	Drilling Holes and Installing Dowel Reinforcing Bars for Approach Slab	34	Each	$_____	$_____
655.1007	Drilling Holes and Installing Dowel Reinforcing Bars for Abutment Retrofit (Austin-Bishop)	1,652	Each	$_____	$_____
655.1008	Drilling Holes and Installing Dowel Reinforcing Bars for Concrete Collar at Pier Columns (Austin-Bishop)	168	Each	$_____	$_____
655.1009	Drilling Holes and Installing Dowel Reinforcing Bars for Concrete Barriers (Austin-Bishop)	168	Each	$_____	$_____
656.0001	Furnishing Specialty Equipment (1 Set)	L.S.	L.S.	L.S.	$_____
656.0100	Soil Nails (No. 9 Bar)	1,400	Lin. Ft.	$_____	$_____
656.0101	Soil Nails (No. 10 Bar)	4,800	Lin. Ft.	$_____	$_____
656.0102	Soil Nails (No. 11 Bar)	7,600	Lin. Ft.	$_____	$_____
657.0100	Furnishing Jet Grouting Equipment (1 Each)	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
657.0200	Jet Grout Test Program	L.S.	L.S.	L.S.	$_____
657.0300	Test Probes	1,400	Lin. Ft.	$_____	$_____
657.0400	Instrumentation and Monitoring (1 Each)	L.S.	L.S.	L.S.	$_____
657.0500	Jet Grout Columns (Area A)	11,000	Lin. Ft.	$_____	$_____
657.0600	Jet Grout Columns (Area B)	600	Lin. Ft.	$_____	$_____
657.0700	Jet Grout Columns (Area C)	1,100	Lin. Ft.	$_____	$_____
658.0100	Gravel Blanket in Load-Bearing Area	239	Cu. Yd.	$_____	$_____
658.0200	Gravel Blanket in Landscape Area	1,410	Cu. Yd.	$_____	$_____
660.1000	Composite Epoxy Resin-Fiber System for Pier Column Retrofit (Austin-Bishop)	2,130	Sq. Ft.	$_____	$_____
663.1000	Erosion Control Matting	11,000	Sq. Yd.	$_____	$_____
664.0100	Furnish and Install Emergency Telephone	2	Each	$_____	$_____
664.0210	Install Relocated Emergency Telephone Base Assembly	1	Each	$_____	$_____
664.0220	Remove and Reinstall Relocated Emergency Telephone Call Box Unit Assembly	F.A.	F.A.	F.A.	$10,000.00

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
670.1000	Glass Fiber Reinforced Polymer Rebar (350 L.F.)	L.S.	L.S.	L.S.	$_____
671.1000	Preconstruction Survey (80 Lots)	L.S.	L.S.	L.S.	$_____
680.0100	Trenchless Sleeves for Systems Crossings (155 L.F.)	L.S.	L.S.	L.S.	$_____
681.1000	Furnishing Specialty Equipment (1 Set)	L.S.	L.S.	L.S.	$_____
681.1001	Tie Back Anchors for AW-1	24	Each	$_____	$_____
681.1002	Reinstallation of Tieback Anchors Due to Grout Loss and Additional Performance Tests for AW-1	F.A.	F.A.	F.A.	$40,000.00
694.0010	Moveable Concrete Barrier (MCB) System (1 Each)	L.S.	L.S.	L.S.	$_____
695.0100	Moveable Concrete Barrier Transfer Machine (MCBTM) (1 Each)	L.S.	L.S.	L.S.	$_____
696.0100	Weigh-In-Motion System (1 Each)	L.S.	L.S.	L.S.	$_____
697.0010	5-Passenger Sport Wagon (Not to Exceed $675 per veh/month)	72	Veh/Month	$_____	$_____
699.1000	Mobilization (Not to Exceed 10% of the Sum of All Items Excluding the Bid Price of This Item, Furnishing Drilled Shaft Equipment, Microcomputer System, Field Offices and Project Site Laboratory, Cellular Phone, Furnishing Jet Grouting Equipment, and Force Account Items).	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
699.2000	Mobilization (Not to Exceed 10% of the Sum of All Items, Excluding the Bid Price of This Item and Force Account Items)	L.S.	L.S.	L.S.	$_____

a. Sum of All Items $_____

b. Either Furnish Foreign Steel Not to Exceed Minimal Amount (Fill in '0') or Furnish Foreign Steel in Excess of Minimal Amount (Fill in 25% X a) $_____

c. SUBTOTAL $_____

d. Contract Time X Road User Cost
_____ Calendar Days X $19,500.00/Calendar Day $_____

e. AMOUNT FOR COMPARISON OF BIDS (c+d) $_____

NOTES: Bidders must complete items a through e, including the Contract Time, in calendar days. The Contract Time shall not exceed the maximum specified on Page P-1.

Bidders must complete all unit prices and amounts. Failure to do so may be grounds for rejection of bid.

Proposal items for "Interstate Route H-1 Seismic Retrofit, Austin-Bishop Separation and Waiau Interchange, F.A.I.P. No. BR-H1-1(241)" project are indicated by "(Austin-Bishop)" in item description. All other items are for the "Interstate Route H-3, H-3 Finish (Unit VIII), F.A.I.P. No. I-H3-1(75) Unit VIII" project.