SOLICITATION NO. W911WN-04-R-0003

CHARLEROI LOCKS, CONTRACT 1
CHARLEROI LOCKS AND DAM
MONONGAHELA RIVER, PENNSYLVANIA

# AMENDMENT

NUMBER 2

# AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

| 1. CONTRACT ID CODE | PAGE OF PAGES |
|---|---|
| J | 1 \| 2 |

| 2. AMENDMENT/MODIFICATION NO. | 3. EFFECTIVE DATE | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO.(If applicable) |
|---|---|---|---|
| 0002 | 25-May-2004 | W81ET4-4058-0100 | |

| 6. ISSUED BY | CODE | 7. ADMINISTERED BY (If other than item 6) | CODE |
|---|---|---|---|
| U.S. ARMY ENGINEER DISTRICT, PITTSBURGH<br>CONTRACTING DIVISION (ROOM 727)<br>W S MOORHEAD FEDERAL BUILDING<br>1000 LIBERTY AVENUE<br>PITTSBURGH PA 15222-4186 | W911WN | **See Item 6** | |

| 8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code) | | |
|---|---|---|
| | X | 9A. AMENDMENT OF SOLICITATION NO. W911WN-04-R-0003 |
| | X | 9B. DATED (SEE ITEM 11) 26-Apr-2004 |
| | | 10A. MOD. OF CONTRACT/ORDER NO. |
| | | 10B. DATED (SEE ITEM 13) |
| CODE / FACILITY CODE | | |

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [X] is extended, [ ] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SEE ATTACHED

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

| 15A. NAME AND TITLE OF SIGNER (Type or print) | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)<br>TEL: EMAIL: | |
|---|---|---|---|
| 15B. CONTRACTOR/OFFEROR<br>(Signature of person authorized to sign) | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA<br>BY<br>(Signature of Contracting Officer) | 16C. DATE SIGNED<br>07-May-2004 |

The following changes are made to the Request for Proposal for Charleroi Locks, Contract 1, Charleroi Locks and Dam, Monongahela River, Pennsylvania:

SPECIFICATIONS:

The following specification sections have been revised by Amendment No. 0002. Text revisions for Amendment No. 0002 are indicated within the specification sections by overstrike (deletions) and underscore (additions) and sections which have been revised have a footnote at the bottom which states "Section Revised By Amendment 0002".

CD-ROM Project Information Screen. Change the Proposal Due Date from "June 21, 2004" to July 8, 2004.

SF 1442, Solicitation, Offer and Award.
Block 13A. Change the proposal due date from "21 JUN 2004" to 8 JUL 2004. The time remains at 3:00 P.M.

Past Performance Survey.
Page PPS-1. In the twelfth line of the note, change the date from "21 June 2004" to 8 July 2004.

SECTION 00010 - SUPPLIES OR SERVICES AND PRICES/COSTS Delete the bid schedule in its entirety and replace it with the attached revised bid schedule. Note that changes are not highlighted, but are indicated by an asterisk (*). THESE REVISED PAGES MUST BE SUBMITTED WITH YOUR OFFER.

Wage Rates
General Decision Number PA030004 04/302004. Delete this decision in its entirety and substitute the attached revised General Decision No. PA030004 05/14/2004 in lieu thereof.

Replace the following Specification sections with the attached revised sections:

Section 01100
Section 01270
Section 03015
Section 11295

DRAWINGS:

Drawing 037-LCH-0/8: In the index, change the drawing titles for the following drawings as indicated:

| Drawing Number | Existing Title | New Title |
|---|---|---|
| 037-LCH-4/37 | RIVER WALL, R-8 -10, R-13 – 18, R-26 - 28, R-33 - 35, CONSTRUCTION SEQUENCE | DRAWING NOT USED |
| 037-LCH-4/43 | DRAWING NOT USED | RIVER WALL, R-8 -10, R-13 – 18, R-26 - 28, R-33 - 35, CONSTRUCTION SEQUENCE |

Drawing 037-LCH-20/62. In part B "Concrete", delete Note 2. Drilled shaft types 4A and 4C are not part of this contract

Drawing 037-LCH-28/1. Section C. In the call out for the emptying valve, change the drawing from "Sheet 24/39" to Sheet 24/3.

Questions for Clarification:

The following are representative questions received by the Government and responses to those questions:

Q1. Is the 1-1/8" dia.x12" Stud shown on drawing 20/12 one per lineal foot of monolith wall or one per lineal foot of sheet-pile wall?

A1. The 1-1/8" Diameter studs shown on drawings 20/12 and 20/15 are to be spaced 1 foot center to center along the length of the wall .

Q2. Is it possible to substitute other guide piles or structural members to assist in the construction of the upstream and downstream PZ- 35 sheet pile cut-off walls?

A2. For the purposes of the bid preparation, the HP 12x84 sections should be used as detailed in the drawings. After the award, the successful bidder could pursue the use of other guide piles or structural members as detailed in Specifications Section 01330, paragraph 3.5.8 entitled "Deviations". However, the contractor would be responsible for performing all analysis and design and verifying that the original design criteria are satisfied.

Q3. Can the sheet pile cofferdam height be made higher than 740.0, to lets say 746.5 which is the same elevation as the upstream cofferdam? The existing lock stub wall directly upstream is 751.0. The contractor could redesign the cofferdam with an additional row of bracing or size up members etc.

A3. For the purposes of the bid preparation, the lower cofferbox cannot be raised from elevation 740.0 to elevation 746.5. All proposals are to be based on the cofferboxes as detailed in the contract drawings and specifications – including the height of the cofferboxes. After the award, the successful bidder could pursue this as detailed in Specifications Section 01330, paragraph 3.5.8 entitled “Deviations”. However, the contractor would be responsible for performing all analysis and design and verifying that the original design criteria are satisfied.

This amendment will be issued via the internet only.

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SECTION 00010
SUPPLIES OR SERVICES AND PRICES/COSTS

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|
| 0001 | REIMBURSEMENT FOR ACTUAL PERFORMANCE AND PAYMENT BONDS PREMIUM (SEE SECTION 00800 PARAGRAPH 52.777-4020) | | | NOT TO EXCEED | $_____.____ |
| 0002 | MOBILIZATION AND DEMOBILIZATION | 1 | LS | SUM | $_____.____ |
| 0003 | MONTHLY PROGRESS IMAGES | 48 | MO | $_____.____ | $_____.____ |
| 0004 | CONSTRUCTION PROJECT SCHEDULE | 1 | LS | SUM | $_____.____ |
| 0005 | RELOCATE GOVERNMENT TRAILER | 1 | LS | SUM | $_____.____ |
| 0006 | FURNISH AND SET UP GOVERNMENT CONSTRUCTION OFFICE | 1 | LS | SUM | $_____.____ |
| 0007 | CONCRETE TESTING LAB | 1 | LS | SUM | $_____.____ |
| 0008 | OPERATE AND MAINTAIN CONCRETE TESTING LAB | 48 | MO | $_____.__ | $_____.____ |
| 0009 | TEMPORARY CONSTRUCTION FACILITIES | 1 | LS | SUM | $_____.____ |
| 0010 | DREDGING, LOCK AND APPURTENANCES | 53,410 | CD | $_____.____ | $_____.____ |
| 0011 | DRILLING HOLES IN CONCRETE FOR H-PILES, RIVERWALL STABILIZATION | 85 | LF | $_____.____ | $_____.____ |
| 0012 | FURNISH AND INSTALL H-PILES, RIVERWALL STABILIZATION | 395 | LF | $_____.____ | $_____.____ |
| 0013 | DRILLING HOLES IN ROCK FOR ROCK ANCHORS, RIVERWALL STABILIZATION | 570 | LF | $_____.____ | $_____.____ |
| 0014 | DRILLING HOLES IN CONCRETE FOR ROCK ANCHORS, RIVERWALL STABILIZATION | 126 | LF | $_____.____ | $_____.____ |
| 0015 | DRILLING AND CASING HOLES IN EARTH FOR ROCK ANCHORS, RIVERWALL STABILIZATION | 420 | LF | $_____.____ | $_____.____ |
| 0016 | ROCK ANCHORS, RIVERWALL STABILIZATION | 1,090 | LF | $_____.____ | $_____.____ |
| 0017 | PERFORMANCE TESTS, ROCK ANCHORS, RIVERWALL STABILIZATION | 2 | EA | $_____.____ | $_____.____ |
| 0018 | PROOF TESTS, ROCK ANCHORS, RIVERWALL STABILIZATION | 12 | EA | $_____.____ | $_____.____ |
| 0019 | WATERTIGHTNESS TESTING, ROCK ANCHORS, RIVERWALL STABILIZATION | 28 | EA | $_____.____ | $_____.____ |
| 0020 | PREGROUTING HOLES, ROCK ANCHORS, RIVERWALL STABILIZATION | 330 | CF | $_____.____ | $_____.____ |

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|
| 0021 | REDRILLING GROUTED HOLES, ROCK ANCHORS, RIVERWALL STABILIZATION | 1,135 | LF | $_____.____ | $_____.____ |
| 0022 | PORTLAND CEMENT | 5,150 | TN | $_____.____ | $_____.____ |
| 0023 | POZZOLAN | 3,765 | TN | $_____.____ | $_____.____ |
| 0024 | GROUND GRANULATED BLAST FURNACE SLAG | 10,897 | TN | $_____.____ | $_____.____ |
| 0025 | SILICA FUME | 412 | TN | $_____.____ | $_____.____ |
| 0026 | ANTI-WASHOUT MIXTURE | 16,814 | GL | $_____.____ | $_____.____ |
| 0027 | TREMIE CONCRETE | 34,330 | CD | $_____.____ | $_____.____ |
| 0028 | MASS CONCRETE, LOCK WALL MONOLITHS | 27,020 | CD | $_____.____ | $_____.____ |
| 0029 | CAST IN PLACE STRUCTURAL CONCRETE, LOCK WALL MONOLITHS | 590 | CD | $_____.____ | $_____.____ |
| 0030 | PVC WATERSTOPS | 6,410 | LF | $_____.____ | $_____.____ |
| 0031 | COPPER WATERSTOPS | 195 | LF | $_____.____ | $_____.____ |
| 0032 | FABRICATION AND INSTALLATION COSTS FOR REINFORCING STEEL AND DOWELS, LOCK WALLS AND APPURTENANCES | 2,171,740 | LB | $_____.____ | $_____.____ |
| 0033 | FIELD DEMONSTRATIONS | 1 | LS | SUM | $_____.____ |
| 0034 | FABRICATION AND INSTALLATION COSTS FOR PERMANENT CASING, 54-INCH DIAMETER FOUNDATION DRILLED SHAFTS (48-INCH ROCK SOCKET) | 525 | LF | $_____.____ | $_____.____ |
| *** 0035** | **FABRICATION AND INSTALLATION COSTS FOR PERMANENT CASING, 78-INCH DIAMETER FOUNDATION DRILLED SHAFTS (72-INCH ROCK SOCKET)** | **1,430** | **LF** | **$_____.____** | **$_____.____** |
| *** 0036** | **SOIL EXCAVATION, 54-INCH DIAMETER FOUNDATION DRILLED SHAFTS** | **270** | **LF** | **$_____.____** | **$_____.____** |
| *** 0037** | **SOIL EXCAVATION, 78-INCH DIAMETER FOUNDATION DRILLED SHAFTS (72-INCH ROCK SOCKET)** | **1,026** | **LF** | **$_____.____** | **$_____.____** |
| *** 0038** | **ROCK EXCAVATION, 54-INCH DIAMETER FOUNDATION DRILLED SHAFTS (48-INCH ROCK SOCKET)** | **1,170** | **LF** | **$_____.____** | **$_____.____** |
| *** 0039** | **ROCK EXCAVATION, 78-INCH DIAMETER FOUNDATION DRILLED SHAFTS (72-INCH ROCK SOCKET)** | **4,106** | **LF** | **$_____.____** | **$_____.____** |
| 0040 | CROSSHOLE SONIC LOGGING (CSL), FOUNDATION DRILLED SHAFTS | 144 | EA | $_____.____ | $_____.____ |

| | ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|---|
| * | **0041** | **ACCESS TUBES, CROSSHOLE SONIC LOGGING, FOUNDATION DRILLED SHAFTS** | **1** | **LS** | **SUM** | **$_____.____** |
| | 0042 | CONCRETE, FOUNDATION DRILLED SHAFTS | 6,705 | CD | $_____.____ | $_____.____ |
| * | **0043** | **CORING OF FOUNDATION DRILLED SHAFTS, VERIFICATION OF CROSSHOLE SONIC LOGGING RESULTS** | **2,800** | **LF** | **$_____.____** | **$_____.____** |
| | 0044 | FABRICATION AND INSTALLATION COSTS FOR REINFORCING STEEL, FOUNDATION DRILLED SHAFTS | 4,347,400 | LB | $_____.____ | $_____.____ |
| | 0045 | EXPLORATORY DRILLING, SOIL DRILLING WITHOUT SAMPLING | 230 | LF | $_____.____ | $_____.____ |
| | 0046 | EXPLORATORY DRILLING, SOIL DRILLING WITH SAMPLING | 230 | LF | $_____.____ | $_____.____ |
| | 0047 | EXPLORATORY DRILLING, ROCK DRILLING, WITH CORING | 1,090 | LF | $_____.____ | $_____.____ |
| | 0048 | EXPLORATORY DRILLING, SEALING OF EXPLORATORY HOLES WITH CEMENT GROUT | 1,090 | LF | $_____.____ | $_____.____ |
| | 0049 | EXPLORATORY PILE DRIVING | 1 | LS | SUM | $_____.____ |
| * | **0050** | **FABRICATION AND INSTALLATION COSTS FOR SHEET PILE, NON-COFFERBOXES** | **8,710** | **LF** | **$_____.____** | **$_____.____** |
| * | **0051** | **FABRICATION AND INSTALLATION COSTS FOR H-PILES, NON-COFFERBOXES** | **1,010** | **LF** | **$_____.____** | **$_____.____** |
| * | **0052** | **FURNISH, INSTALL AND REMOVE COFFERBOX PILING** | **1** | **LS** | **SUM** | **$_____.____** |
| | 0053 | UNDERWATER ALLUVIUM EXCAVATION INSIDE COFFERBOXES | 3,400 | CD | $_____.____ | $_____.____ |
| | 0054 | COFFERBOX DEWATERING | 1 | LS | SUM | $_____.____ |
| | 0055 | MODIFICATIONS TO EXISTING STUB WALL | 1 | LS | SUM | $_____.____ |
| | 0056 | ALTERNATING TREAD STAIRS | 1 | LS | SUM | $_____.____ |
| | 0057 | MITER GATE EMBEDDED ANCHORAGES | 1 | LS | SUM | $_____.____ |
| | 0058 | FLOATING MOORING BITT ANCHORAGES | 1 | LS | SUM | $_____.____ |

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|
| 0059 | PRECAST CONCRETE EMPTYING CULVERTS | 1 | LS | SUM | $_____.____ |
| 0060 | CORNER PROTECTION | 170 | LF | $_____.____ | $_____.____ |
| 0061 | WALL ARMOR AND MONOLITH JOINT PROTECTION | 1,765 | LF | $_____.____ | $_____.____ |
| 0062 | CORNER CASTINGS | 8 | EA | $_____.____ | $_____.____ |
| 0063 | ACCESS HATCHES | 1 | LS | SUM | $_____.____ |
| 0064 | GRATING | 20 | SF | $_____.____ | $_____.____ |
| 0065 | ALUMINUM PLANKING | 1,480 | SF | $_____.____ | $_____.____ |
| 0066 | EQUIPMENT ACCESS AND EMPTYING VALVE ACCESS COVERS | 578 | SF | $_____.____ | $_____.____ |
| 0067 | GATE ANCHORAGE RECESS COVER | 19 | SF | $_____.____ | $_____.____ |
| 0068 | ALUMINUM RABBET ANGLES | 1,225 | LF | $_____.____ | $_____.____ |
| 0069 | CHECK POSTS | 8 | EA | $_____.____ | $_____.____ |
| 0070 | LINE HOOKS AND GUARDS | 10 | EA | $_____.____ | $_____.____ |
| 0071 | FABRICATION AND INSTALLATION COSTS FOR EMPTYING VALVES AND EMPTYING BULKHEADS | 1 | LS | SUM | $_____.____ |
| 0072 | COMPRESSED AIR AND SERVICE WATER LINES | 1 | LS | SUM | $_____.____ |
| 0073 | ELECTRICAL WORK | 1 | LS | SUM | $_____.____ |
| 0074 | ROCK CONSTRUCTION ENTRANCE, GOVERNMENT FURNISHED DISPOSAL SITE | 4 | EA | $_____.____ | $_____.____ |
| 0075 | COAL FINE REMOVAL, GOVERNMENT FURNISHED DISPOSAL SITE | 11,400 | CD | $_____.____ | $_____.____ |
| 0076 | OFF-LOADING DOCK IMPROVEMENTS, GOVERNMENT FURNISHED DISPOSAL SITE | 1 | LS | SUM | $_____.____ |
| 0077 | SILT FENCE, GOVERNMENT FURNISHED DISPOSAL SITE | 3,680 | LF | $_____.____ | $_____.____ |
| 0078 | SUPER SILT FENCE, GOVERNMENT FURNISHED DISPOSAL SITE | 1,035 | LF | $_____.____ | $_____.____ |
| 0079 | GRASS LINED CHANNELS, GOVERNMENT FURNISHED DISPOSAL SITE | 1,940 | LF | $_____.____ | $_____.____ |
| 0080 | SEDIMENT BASIN NO. 1, GOVERNMENT FURNISHED DISPOSAL SITE | 1 | LS | SUM | $_____.____ |
| 0081 | CLEANING OF SEDIMENT BASIN NO. 1, GOVERNMENT FURNISHED DISPOSAL SITE | 1 | LS | SUM | $_____.____ |

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|
| 0082 | HAUL ROAD EXCAVATION, GOVERNMENT FURNISHED DISPOSAL SITE | 1,325 | CD | $_____.____ | $_____.____ |
| 0083 | CONFINEMENT BERM, GOVERNMENT FURNISHED DISPOSAL SITE | 2,280 | CD | $_____.____ | $_____.____ |
| 0084 | HAUL ROAD EMBANKMENTS, FILL, GOVERNMENT FURNISHED DISPOSAL SITE | 28,770 | CD | $_____.____ | $_____.____ |
| 0085 | 8-INCH AGGREGATE SURFACING, GOVERNMENT FURNISHED DISPOSAL SITE | 9,315 | SY | $_____.____ | $_____.____ |
| 0086 | GUIDERAIL, GOVERNMENT FURNISHED DISPOSAL SITE | 465 | LF | $_____.____ | $_____.____ |
| 0087 | DREDGING AT DOCK, GOVERNMENT FURNISHED DISPOSAL SITE | 7,200 | CD | $_____.____ | $_____.____ |
| 0088 | SECURITY SIGNS, GOVERNMENT FURNISHED DISPOSAL SITE | 1 | LS | SUM | $_____.____ |
| 0089 | 15-INCH RCP CULVERT, GOVERNMENT FURNISHED DISPOSAL SITE | 154 | LF | $_____.____ | $_____.____ |
| 0090 | 18-INCH RCP CULVERT, GOVERNMENT FURNISHED DISPOSAL SITE | 55 | LF | $_____.____ | $_____.____ |
| 0091 | TEMPORARY DISPOSAL STOCKPILE | 44,000 | CD | $_____.____ | $_____.____ |
| 0092 | TEMPORARY SEEDING, GOVERNMENT FURNISHED DISPOSAL SITE | 12 | AC | $_____.____ | $_____.____ |
| 0093 | FILTER FABRIC FENCE, 18-INCH HIGH, LEFT BANK BATCH PLANT AREA | 1,530 | LF | $_____.____ | $_____.____ |
| 0094 | FILTER FABRIC FENCE, 30-INCH HIGH, LEFT BANK BATCH PLANT AREA | 240 | LF | $_____.____ | $_____.____ |
| 0095 | SUPER SILT FENCE, LEFT BANK BATCH PLANT AREA | 410 | LF | $_____.____ | $_____.____ |
| 0096 | ROCK CONSTRUCTION ENTRANCE, LEFT BANK BATCH PLANT AREA | 2 | EA | $_____.____ | $_____.____ |
| 0097 | SITE CLEANUP, CLEARING AND GRUBBING, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0098 | CONCRETE FOUNDATION SLABS DEMOLITION AND PLACEMENT, AND EXISTING DEBRIS DISPOSAL, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0099 | SITE EARTHWORK, LEFT BANK BATCH PLANT AREA | 20,000 | CD | $_____.____ | $_____.____ |
| 0100 | GRANULAR FILL MATERIAL, LEFT BANK BATCH PLANT AREA | 870 | CD | $_____.____ | $_____.____ |

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|
| 0101 | ROCK FILTER OUTLETS AND ASSOCIATED 18-INCH HIGH FILTER FABRIC FENCE, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0102 | DIRT-BAG PUMPED SILT CONTROL SYSTEM, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0103 | OUTFALL 002, ROCK FILTER, AND RIPRAP EROSION PROTECTION, LEFT BANK BATCH PLANT AREA | 1 | EA | $_____.____ | $_____.____ |
| 0104 | TRAPEZOIDAL CHANNEL, R-3 RIPRAP LINING, BULKHEAD STRUCTURE AREA, LEFT BANK BATCH PLANT AREA | 130 | LF | $_____.____ | $_____.____ |
| 0105 | OUTFALL 001, MANHOLE, 48-INCH DIAMETER PRECAST REINFORCED CONCRETE, LEFT BANK BATCH PLANT AREA | 1 | EA | $_____.____ | $_____.____ |
| 0106 | 24-INCH OUTFALL 001 PIPE & FITTINGS, REINFORCED CONCRETE PIPE AND BACKFILL, LEFT BANK BATCH PLANT AREA | 70 | LF | $_____.____ | $_____.____ |
| 0107 | VALVE STATION MANHOLE, 60-INCH DIAMETER PRECAST REINFORCED CONCRETE, LEFT BANK BATCH PLANT AREA | 1 | EA | $_____.____ | $_____.____ |
| 0108 | GATE VALVE AND REDUCER COUPLING, LEFT BANK BATCH PLANT AREA | 1 | EA | $_____.____ | $_____.____ |
| 0109 | 24-INCH, SDR 21 HDPE PIPE FROM VALVE STATION MANHOLE TO INLET NO. 1, LEFT BANK BATCH PLANT AREA | 12 | LF | $_____.____ | $_____.____ |
| 0110 | INLETS NO. 1, 2 AND 5, PADOT TYPE C, LEFT BANK BATCH PLANT AREA | 3 | EA | $_____.____ | $_____.____ |
| 0111 | INLETS NOS. 3 AND 4, PADOT TYPE M, LEFT BANK BATCH PLANT AREA | 2 | EA | $_____.____ | $_____.____ |
| 0112 | 24-INCH PE, SMOOTH INTERIOR, STORM SEWER PIPE FROM INLET NO. 1 THROUGH NO. 4, BETWEEN INLET NO. 2 AND NO. 5 AND BETWEEN MANHOLE NO. 1 AND NO. 2, LEFT BANK BATCH PLANT AREA | 710 | LF | $_____.____ | $_____.____ |
| 0113 | MANHOLES NOS. 1 & 2, 48-INCH DIAMETER PRECAST REINFORCED CONCRETE, LEFT BANK BATCH PLANT AREA | 2 | EA | $_____.____ | $_____.____ |

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|
| 0114 | PLAIN CONCRETE CURB, INSIDE EDGE OF ACCESS RAMP, LEFT BANK BATCH PLANT AREA | 90 | CD | $_____.____ | $_____.____ |
| 0115 | CONCRETE PAVEMENT, ACCESS RAMP AND LANDING AREA, LEFT BANK BATCH PLANT AREA | 460 | CD | $_____.____ | $_____.____ |
| 0116 | TOPSOIL, LEFT BANK BATCH PLANT AREA | 2,075 | TN | $_____.____ | $_____.____ |
| 0117 | SEEDING, LEFT BANK BATCH PLANT AREA | 1.5 | AC | $_____.____ | $_____.____ |
| 0118 | TURF REINFORCEMENT MAT, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0119 | SOIL-FILLED CELLULAR/GRID CONFINEMENT SYSTEM, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0120 | GUIDERAIL, PADOT TYPE 2-SC, LEFT BANK BATCH PLANT AREA | 690 | LF | $_____.____ | $_____.____ |
| 0121 | CHAIN LINK FENCING, 6-FT HIGH GENERAL SECURITY FENCE, LEFT BANK BATCH PLANT AREA | 1,095 | LF | $_____.____ | $_____.____ |
| 0122 | CHAIN LINK FENCING, 8-FT HIGH HIGH SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA | 500 | LF | $_____.____ | $_____.____ |
| 0123 | MAIN ACCESS GATE, 31-FT MIN OPENING, 6-FT HIGH, GENERAL SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA | 1 | EA | $_____.____ | $_____.____ |
| 0124 | SLIDING ACCESS GATE, 19-FT WIDE, 8-FT HIGH, HIGH SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA | 1 | EA | $_____.____ | $_____.____ |
| 0125 | SWINGING ACCESS GATE, 4'-0" WIDE, 6-FT HIGH, GENERAL SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA | 1 | EA | $_____.____ | $_____.____ |
| 0126 | SWINGING ACCESS GATE, 4'-0" WIDE, 8-FT HIGH, HIGH SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA | 1 | EA | $_____.____ | $_____.____ |
| 0127 | MODIFICATIONS TO EXISTING GROUNDWATER MONITORING WELLS, CBP-1 AND CBP-2, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0128 | BITUMINOUS CONCRETE BASE COURSE (BCBC) , LEFT BANK BATCH PLANT AREA | 18,700 | SY | $_____.____ | $_____.____ |

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|
| 0129 | BITUMINOUS WEARING COURSE, LEFT BANK BATCH PLANT AREA | 18,700 | SY | $_____.____ | $_____.____ |
| 0130 | BITUMINOUS BINDER COURSE, LEFT BANK BATCH PLANT AREA | 18,700 | SY | $_____.____ | $_____.____ |
| 0131 | TRAPEZOIDAL CHANNEL, PAVED LINING, LEFT BANK BATCH PLANT AREA | 385 | LF | $_____.____ | $_____.____ |
| 0132 | ASPHALT DIVERSION BERM, LEFT BANK BATCH PLANT AREA | 2 | EA | $_____.____ | $_____.____ |
| 0133 | ASPHALT WEDGE CURB, ID-2 WEARING, LEFT BANK BATCH PLANT AREA | 1,860 | LF | $_____.____ | $_____.____ |
| 0134 | GRAVEL ACCESS ROAD, LEFT BANK BATCH PLANT AREA | 250 | SY | $_____.____ | $_____.____ |
| 0135 | SEDIMENTATION BASINS NOS. 1 & 2, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0136 | CLEANING OF SEDIMENT BASIN NO. 1, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0137 | CLEANING OF SEDIMENT BASIN NO. 2, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0138 | PRECAST CONCRETE BLOCK WALL BETWEEN SEDIMENTATION BASIN NO. 1 AND NO. 2, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0139 | OUTLET STRUCTURE FROM SEDIMENTATION BASIN NO. 2 TO pH TREATMENT SYSTEM, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0140 | OIL/CONTAINMENT BOOM (60-FT LONG), LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0141 | OPEN GRATE TRENCH, LEFT BANK BATCH PLANT AREA | 320 | LF | $_____.____ | $_____.____ |
| 0142 | CONCRETE SLABS, BATCH PLANT BIN AREA AND TRUCK TIRE WASH AREA, LEFT BANK BATCH PLANT AREA | 360 | CD | $_____.____ | $_____.____ |
| 0143 | CONCRETE BATCH PLANT, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0144 | SHEET PILE BARRIER, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0145 | BULKHEAD STRUCTURE INSTALLATION, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |
| 0146 | PH MONITORING AND CONTROL SYSTEM, LEFT BANK BATCH PLANT AREA | 1 | LS | SUM | $_____.____ |

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|
| 0147 | ENVIRONMENTAL COMPLIANCE MEASUREMENTS, SAMPLING, TESTING AND REPORTING DURING BATCH PLANT OPERATION, LEFT BANK BATCH PLANT AREA | 48 | MO | $_____.____ | $_____.____ |
| 0148 | ENVIRONMENTAL CONTROL REPRESENTATIVE (ECR) FOR ENVIRONMENTAL COMPLIANCE MONITORING AND EQUIPMENT OPERATION AND MAINTENANCE, LEFT BANK BATCH PLANT AREA | 48 | MO | $_____.____ | $_____.____ |
| 0149 | JET GROUT COLUMNS, COFFERBOX CLOSURES | 64 | LF | $_____.____ | $_____.____ |
| 0150 | TEST CORE SAMPLES, JET GROUT COLUMNS | 16 | LF | $_____.____ | $_____.____ |
| 0151 | STEEL MATERIALS COSTS FOR REINFORCING STEEL AND DOWELS, LOCK WALLS AND APPURTENANCES | 2,171,740 | LB | $_____.____ | $_____.____ |
| 0152 | STEEL MATERIALS COSTS FOR PERMANENT CASING, 54-INCH DIAMETER FOUNDATION DRILLED SHAFTS (48-INCH ROCK SOCKET) | 152,935 | LB | $_____.____ | $_____.____ |
| 0153 | STEEL MATERIALS COSTS FOR PERMANENT CASING, 78-INCH DIAMETER FOUNDATION DRILLED SHAFTS (72-INCH ROCK SOCKET) | 572,725 | LB | $_____.____ | $_____.____ |
| * **0154** | **DELETED** | | | | |
| 0155 | STEEL MATERIALS COSTS FOR REINFORCING STEEL, FOUNDATION DRILLED SHAFTS | 4,347,400 | LB | $_____.____ | $_____.____ |
| * **0156** | **STEEL MATERIALS COSTS FOR SHEET PILE, NON-COFFERBOXES** | **575,000** | **LB** | **$**_____**.**____ | **$**_____**.**____ |
| * **0157** | **STEEL MATERIALS COSTS FOR H-PILES, NON-COFFERBOXES** | **115,000** | **LB** | **$**_____**.**____ | **$**_____**.**____ |
| * **0158** | **DELETED** | | | | |
| 0159 | STEEL MATERIALS COSTS FOR EMPTYING VALVES AND EMPTYING BULKHEADS | 554,900 | LB | $_____.____ | $_____.____ |
| | SUBTOTAL, ITEMS 0001 THROUGH 0159 INCLUSIVE | | | | $_____.____ |

| ITEM | DESCRIPTION | * QUANTITY | U/M | U/P | AMOUNT |
|---|---|---|---|---|---|

* ALL QUANTITIES ARE ESTIMATED, EXCEPT WHERE THE UNIT IS GIVEN AS "LS" OR "EA"

NOTE: ALL EXTENSIONS OF THE UNIT PRICES SHOWN WILL BE SUBJECT TO VERIFICATION BY THE GOVERNMENT.

PLEASE DO NOT ROUND OFF TOTALS. IN CASE OF VARIATION BETWEEN THE UNIT PRICE AND THE EXTENSION, THE UNIT PRICE WILL BE CONSIDERED TO BE THE BID. IF A MODIFICATION TO A BID BASED ON UNIT PRICES IS SUBMITTED, WHICH PROVIDES FOR A LUMP SUM ADJUSTMENT TO THE TOTAL ESTIMATED COST, THE APPLICATION OF THE LUMP SUM ADJUSTMENT TO EACH UNIT PRICE IN THE BID SCHEDULE MUST BE STATED. IF IT IS NOT STATED, THE BIDDER AGREES THAT THE LUMP SUM ADJUSTMENT SHALL BE APPLIED ON A PRORATA BASIS TO EVERY UNIT PRICE IN THE BID SCHEDULE.

THE FOLLOWING IS A LIST OF ABBREVIATIONS AND THEIR MEANINGS AS USED IN THE PRICE SCHEDULE UNDER U/M (UNIT OF MEASURE):

| | |
|---|---|
| AC | ACRES |
| CD | CUBIC YARD |
| CF | CUBIC FEET |
| DA | DAYS |
| EA | EACH |
| GL | GALLONS |
| LB | POUNDS |
| LF | LINEAR FEET |
| LS | LUMP SUM |
| MO | MONTHS |
| SE | SETS |
| SF | SQUARE FEET |
| SY | SQUARE YARDS |
| TN | TONS |

**General Decision Number: PA030004 05/14/2004**

General Decision Number: PA030004 05/14/2004

Superseded General Decision Number: PA020004

State: Pennsylvania

Construction Types: Heavy and Highway

Counties: Allegheny, Armstrong, Beaver, Bedford, Blair, Butler, Cambria, Cameron, Centre, Clarion, Clearfield, Clinton, Crawford, Elk, Erie, Fayette, Forest, Franklin, Fulton, Greene, Huntingdon, Indiana, Jefferson, Lawrence, McKean, Mercer, Mifflin, Potter, Somerset, Venango, Warren, Washington and Westmoreland Counties in Pennsylvania.

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS (excluding sewer grouting projects and excluding sewage and water treatment plant projects)

| Modification Number | Publication Date |
|---|---|
| 0 | 06/13/2003 |
| 1 | 11/21/2003 |
| 2 | 11/28/2003 |
| 3 | 12/05/2003 |
| 4 | 12/12/2003 |
| 5 | 12/19/2003 |
| 6 | 01/16/2004 |
| 7 | 01/23/2004 |
| 8 | 02/20/2004 |
| 9 | 03/05/2004 |
| 10 | 04/16/2004 |
| 11 | 04/30/2004 |
| 12 | 05/14/2004 |

BOIL0013-005 08/30/2003
CENTRE, FRANKLIN, POTTER, CLINTON, FULTON, HUNTINDON AND MIFFLIN COUNTIES

| | Rates | Fringes |
|---|---|---|
| Boilermaker | $ 33.38 | 15.69 |

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BOIL0154-004 06/01/2003
ALLEGHENY, ARMSTRONG, BEAVER, BEDFORD, BLAIR, BUTLER, CAMBRIA, CAMERON, CLARION, CLEARFIELD, CRAWFORD, ELK, FAYETTE, FOREST, GREENE, INDIANA, JEFFERSON, LAWRENCE, MCKEAN, MERCER, SOMERSET, VENANGO, WARREN, WASHINGTON AND WESTMORELAND COUNTIES

| | Rates | Fringes |
|---|---|---|

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  Boilermaker.....................$ 29.27            14.69
-------------------------------------------------------------------
BOIL0744-003 01/01/2004
ERIE COUNTY
                                    Rates          Fringes
  Boilermaker.....................$ 29.14            16.17
-------------------------------------------------------------------
BRPA0009-023 12/01/2003
BEAVER COUNTY
                                    Rates          Fringes
  Bricklayer......................$ 23.03            10.12
-------------------------------------------------------------------
BRPA0009-024 12/01/2003
WASHINGTON (Cross Creek, Hanover, Jefferson, Mt Pleasant,
Nottingham, Peters, Robinson, Smith, Union Twps) COUNTY
                                    Rates          Fringes
  Bricklayer......................$ 25.40             9.72
-------------------------------------------------------------------
BRPA0009-025 12/01/2003
BUTLER, LAWRENCE, AND MERCER COUNTIES
                                    Rates          Fringes
  Bricklayer......................$ 23.03            10.10
-------------------------------------------------------------------
BRPA0009-032 12/01/2003
FAYETTE (Jefferson & Washington Twps), GREENE (Except
Cumberland, Dunkirk, Greene, Monongahelia Twps), INDIANA, AND
WESTMORELAND (Rostraver Twp) COUNTIES
                                    Rates          Fringes
  Bricklayer......................$ 24.27             9.77
-------------------------------------------------------------------
BRPA0009-033 12/01/2003
ARMSTRONG, CLARION (Brady, Madison, Perry, Tobe, Porter,
Redbank Twps), FAYETTE (Except Jefferson & Washington Twps),
GREENE (Cumberland, Dunkirk, Greene, Monongahelia Twps),
INDIANA, AND WESTMORELAND (Except Rostrave Twp) COUNTIES
                                    Rates          Fringes
  Bricklayer......................$ 24.27             9.77
-------------------------------------------------------------------
BRPA0009-034 11/01/2003
ERIE COUNTY
                                    Rates          Fringes
  Bricklayer......................$ 22.35            10.04
-------------------------------------------------------------------
CARP2235-005 01/01/2004
                                    Rates          Fringes
  Piledriverman
    Piledriverman.................$ 25.22             8.98
    Piledriverman (Welder)......$ 25.46             9.04
-------------------------------------------------------------------
CARP2235-006 01/01/2004
                                    Rates          Fringes
  Diver...........................$ 37.83             8.98
  Tender..........................$ 25.22             8.98
-------------------------------------------------------------------
CARP2274-001 01/01/2004
                                    Rates          Fringes
  Carpenter (ALLEGHENY,
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ARMSTRONG, BEAVER, BUTLER,
ERIE, FAYETTE, GREENE,
LAWRENCE, MERCER,
WASHINGTON, AND
WESTMORELAND COUNTIES)

| | | |
|---|---|---|
| Carpenters (Welders) | $ 24.86 | 8.88 |
| Carpenters | $ 24.34 | 8.70 |

Carpenter (BEDFORD, BLAIR,
CAMBRIA, CAMERON, CENTRE,
CLARION, CLINTON,
CLEARFIELD, CRAWFORD, ELK,
FOREST, FRANKLIN, FULTON,
HUNTINGDON, INDIANA,
JEFFERSON, MCKEAN, MIFFLIN,
POTTER, SOMERSET, VENANGO,
AND WARREN COUNTIES)

| | | |
|---|---|---|
| Carpenters (Welders) | $ 24.68 | 8.82 |
| Carpenters | $ 24.16 | 8.63 |

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ELEC0005-006 12/26/2003
ALLEGHENY, ARMSTRONG, BEDFORD, BLAIR, CAMBRIA, CAMERON, CENTRE (Remainder), CLARION, CLEARFIELD, ELK, FAYETTE, FULTON, GREENE, HUNTINGDON, INDIANA, JEFFERSON, MCKEAN, SOMERSET, WASHINGTON AND WESTMORELAND COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electrician | $ 28.56 | 12.94 |

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ELEC0005-010 12/26/2003
BUTLER AND VENANGO COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electrician | $ 28.56 | 12.94 |

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ELEC0056-004 06/01/2003
ERIE, FOREST AND WARREN COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electrician | $ 24.20 | 11.01 |

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ELEC0126-005 06/01/2003
ALLEGHENY, ARMSTRONG, BEAVER, BEDFORD, BLAIR, CAMBRIA, CENTRE, CLARION, CLEARFIELD, FAYETTE, FULTON, GREENE, HUNTINGDON, INDIANA, JEFFERSON, SOMERSET, WASHINGTON AND WESTMORELAND

| | Rates | Fringes |
|---|---|---|
| Line Construction: | | |
| Groundman | $ 19.12 | 9.59 |
| Lineman | $ 31.87 | 9.59 |
| Truck Driver | $ 20.72 | 9.59 |
| Winch Truck Operator | $ 22.31 | 9.59 |

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ELEC0126-007 06/01/2003
FRANKLIN AND MIFFLIN COUNTIES

| | Rates | Fringes |
|---|---|---|
| Line Construction: | | |
| Groundman | $ 16.66 | 8.79 |
| Lineman | $ 27.77 | 8.79 |
| Truck Drivers | $ 18.05 | 8.79 |
| Winch Truck Operator | $ 19.44 | 8.79 |

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ELEC0143-007 06/01/2003
FRANKLIN & MIFFLIN COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electrician | $ 24.01 | 9.90+1/2% |

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ELEC0712-003 12/29/2003
CRAWFORD, BEAVER, LAWRENCE AND MERCER COUNTIES

| | Rates | Fringes |
|---|---|---|
| Electrician | $ 23.70 | 18.34 |

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ELEC0812-008 12/01/2002
CLINTON COUNTY

| | Rates | Fringes |
|---|---|---|
| Electrician | $ 22.38 | 10.11 |

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ELEC0812-009 12/01/2002
POTTER COUNTY

| | Rates | Fringes |
|---|---|---|
| Electrician | $ 23.40 | 10.14 |

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ELEC0812-011 12/01/2002
CENTRE COUNTY (Burnside, Curtin, Liberty, Howard, Marion,
Walker, Miles, Haines Townships)

| | Rates | Fringes |
|---|---|---|
| Electrician | $ 23.40 | 10.14 |

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ELEC1319-004 01/02/2000
BUTLER, CAMERON, CLINTON, CRAWFORD, ELK, ERIE, FOREST,
LAWRENCE, MCKEAN, MERCER, VENANGO, WARREN AND POTTER COUNTIES

| | Rates | Fringes |
|---|---|---|
| Line Construction: | | |
| Groundman | $ 15.55 | 6%+4.35 |
| Lineman, Dynamite Man, Heavy Equipment Operator | $ 24.74 | 6%+4.35 |
| Truck Drivers | $ 17.29 | 6%+4.35 |
| Winch Truck Operators | $ 17.54 | 6%+4.35 |

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ENGI0066-016 01/01/2004

| | Rates | Fringes |
|---|---|---|
| Power equipment operators: (BEDFORD, CAMERON, CLINTON, FOREST, FRANKLIN, FULTON, HUNTINGDON, MIFFLIN, AND POTTER COUNTIES) | | |
| GROUP 1 | $ 23.09 | 10.79 |
| GROUP 2 | $ 22.81 | 10.79 |
| GROUP 3 | $ 19.17 | 10.79 |
| GROUP 4 | $ 18.68 | 10.79 |
| GROUP 5 | $ 18.47 | 10.79 |
| Power equipment operators: (ALLEGHENY, ARMSTRONG, BEAVER, BLAIR, BUTLER, CAMBRIA, CENTRE, CLARION, CLEARFIELD, CRAWFORD, ERIE, ELK, FAYETTE, GREENE, INDIANA, JEFFERSON, LAWRENCE, MCKEAN, MERCER, | | |

SOMERSET, VENANGO, WARREN,
WASHINGTON, AND
WESTMORELAND COUNTIES)

| | | |
|---|---|---|
| GROUP 1 | $ 23.38 | 10.79 |
| GROUP 2 | $ 23.12 | 10.79 |
| GROUP 3 | $ 19.47 | 10.79 |
| GROUP 4 | $ 19.01 | 10.79 |
| GROUP 5 | $ 18.76 | 10.79 |

POWER EQUIPMENT OPERATORS CLASSIFICATIONS
GROUP 1 - Asphalt Paving Machine (Spreader), Autograde (C.M.I. and similar); Backfiller, Backhoe - 360 degree Swing; Cableway; Caisson Drill (similar to Hugh Williams), Central Mix Plant; Cooling Plant; Concrete Paving Mixer, Concrete Pump (self- propelled); Cranes; Cranes (boom or mast over 101ft.$.25 per each additional 50 feet inclusive of jib), Cranes (Tower Stationary- Climbing Tower Crane); Derrick; Derrick Boat; Dozer (d-6 & over); Dragline; Dredge; Dredge Hydraulic; Elevating Grader; Franki Pile Machine; Gradall (remote control or otherwise),),Grader (power-fine grade); Helicopter; (1500 lb. or over lift),Helicopter (under 1500 lb. lift), Hllift (4 cy. and over); Hoist 2 Drums or more (in one unit); Hydraulic Boom Truck with pivotal cab (single motor-Pitman or similar); Kocal; Lead Mechanic, Locomotive (std. Gauge); Metro-chip Harvester or similar; Milling Machine (Roto Mill or similar); Mix Mobile; Mix Mobile (with Self Loading Attachment), Mucking Machine (tunnel); Pile Driver Machine; Pipe Extrusion Machine; Prespliter Drill (self contained); Refrigeration Plant (soil Stablization) Rough Terrain Crane (25 ton over),Rough Terrain Crane (under 25 ton), Scrapers; Shovel-Power; Slip form Paver (C.M.I. and similar); Trenching Machine (30,000 lb. and over), Trenching Machine (under 30,000 lb.), Tunnell Machine (Mark XXI Jarva or similar), Vermeer Saw, Whirley
GROUP 2: Asphalt plant operator; auger (tractor mtd.); auger (truck mtd.); Backhoe (rear pivotal swing) (180 swing); belt loader (euclid or similar); boring machine; cable placer or layer; compactor with blade, concrete batch plant (electronically synchronized); concrete belt placer (C.M.I. and similar); concrete finishing machine and spreader, concrete mixer (over 1 cy.) concrete pump (stationary); core drill (truck or skid mtd. - similar to penn drill), dozer (under D-6); Ditch Witch Saw, force feedloader; fork lift (lull or similar); grader - power; grease unit opertor (head); guard rail post driver (truck mounted) guard rail post driver (skid type); hilift (under 4 cy.) hydraulic boom truck (non-pivotal cab); job work boat (powered), jumbo operator; locomotive (narrow guage); mechanic minor equipment operator (accumulative four units); mucking machine; multi-head saw (groover); overhead crane; roller -power-asphalt; ross carrier; side boom or tractor mounted boom; shuttle buggy (asphalt), stone crusher (screening-washing

plants); stone spreader (self propelled) truck mounted drill (davey or similar); welder and repairman; well point pump operator.
GROUP 3: Broom Finisher (C.M.I. or similar); Compactors/Rollers (static or vibratory (Self-propelled);

Curb Builder; Minor Equipment Opertor (two or three units); Multi-head Tie Tamper; Pavement Breaker (self-propelled or ridden); Soil Stablizer Machine; Tire Repairman; Tractor (snaking and hauling); Well Driller and Horizontal: Winch or "A" Frame Truck (when hoisting and lowering).

GROUP 4: Ballast Regulator; Compressor; Concrete Mixer (1 cy. & under with skip); Concrete Saw (Ridden or selp-propelled); Conveyor; Elevator (Material hauling only); Fork-lift (Ridden or self-propelled); Form Line Machine; Generator; Groute Pump; Heater (Machinical); Hoist (single Drum); Ladavator, Light Plant; Mulching Machine; Personnel Boat (Powered), Pulverizer, Pumps, Seeding Machine, spray Cure Machine (powered Driven); Subgrader; Tie Puller; Tugger; Welding Machine (gas or Diesel).

GROUP 5: Deck Hand; Farm Tractor; Fireman on Boiler; Mechanic's Tender, Oiler; Power Broom; Side Delivery Shoulder Spreader (attachment).

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IRON0003-001 06/01/2003

ALLEGHENY, FAYETTE, WESTMORELAND, CAMBRIA, INDIANA, ARMSTRONG, BUTLER, BEAVER, CLARION, AND WASHINGTON COUNTIES

| | Rates | Fringes |
|---|---|---|
| Ironworker | $ 27.82 | 12.81 |
| Rodman (Heavy Only) | $ 21.29 | 9.06 |

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IRON0207-002 06/01/2003

LAWRENCE, MERCER, AND VENANGO COUNTIES

| | Rates | Fringes |
|---|---|---|
| Ironworker | $ 24.40 | 12.90 |

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IRON0348-002 08/01/2003

CRAWFORD, ERIE, FOREST, AND WARREN COUNTIES

| | Rates | Fringes |
|---|---|---|
| Ironworker | $ 22.17 | 13.35 |

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IRON0404-008 01/01/2004

FRANKLIN (Remainder), HUNTINGDON (Remainder), AND MIFFLIN COUNTIES

| | Rates | Fringes |
|---|---|---|
| Ironworker, Reinforcing | $ 21.17 | 12.95 |
| Ironworker, Structural | $ 24.17 | 12.95 |

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IRON0549-002 07/01/2003

GREENE COUNTY

| | Rates | Fringes |
|---|---|---|
| Ironworker | $ 25.82 | 12.64 |

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IRON0568-004 05/01/2003

BEDFORD, FRANKLIN (Southwest 1/3), FULTON, HUNTINGDON (Western 2/3), AND SOMERSET COUNTIES

| | Rates | Fringes |
|---|---|---|
| Ironworkers: | | |
| Sheeter, Bucker-Up | $ 24.51 | 7.97 |
| Structural, Ornamental, Reinforcing, Machinery Mover, Rigger & Machinery Erector, | | |

| | | |
|---|---|---|
| Welder, Fence Erector | $ 24.26 | 7.97 |

IRON0772-001 10/01/2003
BLAIR, CAMERON, CENTRE, CLEARFIELD, CLINTON, ELK, JEFFERSON, MCKEAN AND POTTER COUNTIES

| | Rates | Fringes |
|---|---|---|
| Ironworker | $ 23.77 | 13.43 |

* LABO1058-001 01/01/2004

| | Rates | Fringes |
|---|---|---|
| Laborer (BEDFORD, CAMERON, CENTRE, CLINTON, CRAWFORD, FOREST, FRANKLIN, FULTON, HUNTINGDON, JEFFERSON, MIFFLIN, AND POTTER COUNTIES) | | |
| GROUP 1 | $ 20.90 | 8.30 |
| GROUP 2 | $ 21.06 | 8.30 |
| GROUP 3 | $ 21.55 | 8.30 |
| GROUP 4 | $ 22.00 | 8.30 |
| GROUP 5 | $ 22.41 | 8.30 |
| GROUP 6 | $ 17.45 | 8.30 |
| GROUP 7 | $ 21.90 | 8.30 |
| GROUP 8 | $ 23.40 | 8.30 |
| Laborers: (ALLEGHENY, ARMSTRONG, BEAVER, BLAIR, BUTLER, CAMBRIA, CLARION, CLEARFIELD, ELK, ERIE, FAYETTE, GREENE, INDIANA, LAWRENCE, MCKEAN, MERCER, SOMERSET, VENANGO, WARREN, WASHINGTON, AND WESTMORELAND COUNTIES) | | |
| GROUP 1 | $ 21.00 | 8.30 |
| GROUP 2 | $ 21.16 | 8.30 |
| GROUP 3 | $ 21.55 | 8.30 |
| GROUP 4 | $ 22.00 | 8.30 |
| GROUP 5 | $ 22.41 | 8.30 |
| GROUP 6 | $ 17.45 | 8.30 |
| GROUP 7 | $ 22.00 | 8.30 |
| GROUP 8 | $ 23.50 | 8.30 |

LABORERS CLASSIFICATIONS
GROUP 1: Asphalt curb sealer; Asphalt tamper; Batcherman (weigh) Blaster,Boatman, Brakeman, Change house attendant, Coffer dam, Concrete curing pitman, Puddler, Drill Runner's helper (Includes Drill Mounted on Truck, Track, or similar and Davey Drill Spots, Clean up, helps to maintain), Electric Brush and or Grinder, Fence Construction (Including

Fence Machine Operator) Form stripper and Mover, Gabion (Erectors and Placers) Hydro jet blaster nozzleman; Landscape laborer, Manually moved emulsion sprayer, Radio actuated traffic control operator Rip rap work, scaffolds and Runways, Sheeters and Shorers (includes lagging) structural concrete Top Surfacer, Walk Behind Street Sweeper, and Wood Chipper
GROUP 2: Air tool operator (all types); Asphalt, batch & concrete plant operator (manually operated) Burner, Caisson ;

men (open air); Carryable pumps; Chain saw operator including attachments, Cribbing, (concrete or steel); Curb machine operator (asphalt or concrete walk behind); Diamond head Core Drller, Drill runner's helper (tunnel) Fork Lift, (walk behind), Form Setter (Road Forms Line man) Highway Slab reinforcement placers (including joint and Basket Setters) Hydraulic pipe pusher; Liner plates (Tile or Vitrified Clay) Mechanical compacting equipment operators, Mechanical joint sealer, Dope pot and Tar Kettle, Mortar mixer (hand or machine) Muckers, Brakemen & all other Labor,(Includes installation of utility lines) Pipe Layers /Fusion /Heating Iron (Regardless of materials) Portable Single Unit Conveyor, Post Hole Auger, (2 or 4 cycle hand operated) Power wheelbarrows and buggies, Rail porter or similar; Sand blaster;Signal Man,Vibrator operator, Crown Screed Adjuster, All RAILROAD TRACK WORK TO INCLUDE THE FOLLOWING: adzing machine, ballast Router,Bolting Machine, Power Jacks, Rail Drills, Railroad Brakeman,Rail Saws, Spike Drivers (Manually or hand held tool) Spike Pullers Tamping Machine, Thermitweld GROUP 3: Asphalt Luteman/Raker,Blacksmith, Blaster, Brick, stone and block pavers and block cutters (wood, belgian and asphalt); Cement mortar lining car pusher; Cement mortar mixer (pipe relining); Cement mortar pipe reliners; concrete saw operator (walk behind); Curb cutters and setters; Elevated roadway drainage construction; erector of overhead signs,  Form setter (road forms-lead man); Grout machine operator; Gunite or dry pack gun (nozzle and machine man); Manhole or catch basin builder (Brick block concrete or any prefabrication) Miners and drillers (including lining, supporting and form workmen, setting of shields, miscellaneous equipment and jumbos); Multi-plate pipe (aligning and securing); Placing wire mesh on gunite projects; Wagon drill operators (air track or similar); Walk behind ditching machine (trencher or similar)  GROUP 4: Reinforcing Steel Placer (Bending, aligning, and securing, Cadweld)
GROUP 5:  High Burner,(Any burning not done from deck) Welder (Pipeline)
GROUP 6:  Flagperson.
GROUP 7:  Toxic/Hazardous Waste Removal Laborer Levels C and D
GROUP 8:  Toxic/Hazardous Waste Removal Laborer Levels A and B

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PAIN0021-019 05/01/2003
CLINTON COUNTY

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| Bridge | $ 22.30 | 9.00 |
| Brush & Roller | $ 21.35 | 9.00 |
| Spray | $ 22.35 | 9.00 |

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PAIN0021-024 05/01/2003
FRANKLIN COUNTY

| | Rates | Fringes |
|---|---|---|
| Painter | | |
| Brush | $ 21.00 | 5.95 |

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PAIN0057-014 06/01/2003
ALLEGHENY, FAYETTE, GREEN, WASHINGTON COUNTIES

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| Brush & Roller | $ 23.08 | 9.78 |
| Spray | $ 23.58 | 9.78 |

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PAIN0057-015 06/01/2003
ARMSTRONG, BEAVER, BEDFORD, BLAIR, BUTLER,CAMBRIA, CENTRE, CLARION, CLEARFIELD, ELK, FULTON, HUNTINGTON, INDIANA, JEFFERSON, LAWRENCE, MERCER, MIFFLIN, SOMERSET, VENANGO AND WESTMORELAND COUNTIES

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| Brush and Roller | $ 22.73 | 10.13 |
| Spray | $ 23.23 | 10.13 |

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PAIN0057-022 06/01/2003

| | Rates | Fringes |
|---|---|---|
| Painters: | | |
| Bridges,Stacks,Towers | $ 18.01 | 9.08 |
| Brush and Roller | $ 17.31 | 9.28 |
| Spray and Sandblasting | $ 18.01 | 9.28 |
| ERIE COUNTY | | |
| Brush and Roller | $ 17.05 | 8.95 |
| CAMERON, CRAWFORD, FOREST, MCKEAN, POTTER AND WARREN COUNTIE | | |

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PLAS0526-002 01/01/2004

| | Rates | Fringes |
|---|---|---|
| Cement Mason | $ 23.25 | 9.79 |

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PLUM0027-001 06/01/2003
ALLEGHENY, ARMSTRONG, GREENE (Except extreme Eastern portion) AND WASHINGTON (Except extreme Eastern portion) COUNTIES

| | Rates | Fringes |
|---|---|---|
| Plumbers and Pipefitters (Bridge Drain Pipe) | $ 28.75 | 11.16 |

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PLUM0047-005 05/01/2003
BEAVER, BUTLER, MCKEAN, MERCER, VENANGO, CLARION, LAWRENCE, FOREST, WARREN, CRAWFORD, AND ERIE COUNTIES

| | Rates | Fringes |
|---|---|---|
| Plumbers and Pipefitters (Bridge Drain Pipe) | $ 26.22 | 11.16 |

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PLUM0354-005 12/01/2003
BEDFORD, BLAIR, CAMBRIA, CAMERON, CLEARFIELD, ELK, FAYETTE, GREENE (Extreme Eastern portion), HUNTINGDON, INDIANA, JEFFERSON, SOMERSE, WASHINGTON (Extreme Eastern portion), AND WESTMORELAND COUNTIES

| | Rates | Fringes |
|---|---|---|
| Plumbers and Pipefitters (Bridge Drain Pipe) | $ 22.32 | 12.95 |

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PLUM0520-007 05/01/2003
CENTRE, CLINTON, FRANKLIN, FULTON, MIFFLIN, AND POTTER COUNTIES

| | Rates | Fringes |
|---|---|---|

Plumbers and Pipefitters
(Bridge Drain Pipe).....$ 25.31 11.89

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TEAM0040-001 01/01/2004

| | Rates | Fringes |
|---|---|---|
| Truck Driver (ALLEGHENY, ARMSTRONG, BEAVER, BLAIR, BUTLER, CAMBRIA, CENTRE, CLARFIELD, CRAWFORD, ERIE, FAYETTE, GREENE, INDIANA, JEFFERSON, LAWRENCE, MCKEAN, MERCER, SOMERSET, VENANGO, WARREN, WASHINGTON, AND WESTMORELAND) | | |
| GROUP 1 | $ 20.85 | 37%+.05+A+B |
| GROUP 2 | $ 21.00 | 37%+.05+A+B |
| GROUP 3 | $ 21.56 | 37%+.05+A+B |
| Truck drivers: (BEDFORD, CAMERON, CLAIRON, CLINTON, ELK, FOREST, FRANKLIN, FULTON, HUNTINGDON, MIFFLIN, AND POTTER COUNTIES) | | |
| GROUP 1 | $ 20.66 | 37%+.05+A+B |
| GROUP 2 | $ 20.85 | 37%+.05+A+B |
| GROUP 3 | $ 21.39 | 37%+.05+A+B |

FOOTNOTES: A. Hazardous/toxic waste material/work level A & B receive additional $2.50 per hour above classification rate

B. Hazardous/toxic waste materials/Work level C & D receive $1.00 per hour above classification

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - Single Axle (2 axles including steering axle); Includes partsman and warehoueman

GROUP 2 - Tandem - Tri-Axle - Semi-Tractor Trailer (combination) (3 axles or more including steering axle)

GROUP 3 - Specialty Vehicles; Heavy equipment whose capacity exceeds that for which state licenses are issued specifically refers to units in excess of eight (8) feet width (such as Euclids, Atley Wagon, Payloder, Tournawagons, and similar equipment when not self loaded); Tar and Asphalt Distributors Trucks, Heavy Duty Trailer, such as Low Boy, High Boy

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

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SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01100

GENERAL REQUIREMENTS

-- End of Section Table of Contents --

SECTION 01100

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

This section contains information of a general nature, and covers general requirements applicable to the performance of the work under this contract. The information provided, and the requirements specified are in addition to those specified in other sections of the contract.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION (PDT)

| | |
|---|---|
| PDT 408 | (2000) Specifications |

U.S. ARMY CORPS OF ENGINEERS (USACE)

| | |
|---|---|
| EM 385-1-1 | (2003) U.S. Army Corps of Engineers Safety and Health Requirements Manual |

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Plan of Action, Withdrawal of Equipment and Floating Plant; G RE

The Contractor shall prepare and submit a Plan of Action for withdrawal of equipment and floating plant in accordance with paragraph "PLAN OF ACTION, WITHDRAWAL OF EQUIPMENT AND FLOATING PLANT". The plan shall be submitted for the Government's review prior to the start of work. The Contractor is advised that the plan must be submitted and accepted or no work at the site will be allowed.

Propelling Unit Agreement; G RE

The written agreement between the Contractor and the lessor that documents the requirement for required propelling units to be on site at all times shall be provided to the Contracting Officer prior to beginning work.

Small Water Craft Operations Plan; G RE

The Contractor shall develop and submit a plan for operation of small water craft within the "restricted area" of the Charleroi Locks and Dam project.

SD-02 Shop Drawings

Access; G RE.

Contractor's proposed plan for accessing the site and performing the work, including constructing any trestles, and shall address all requirements or conditions given in paragraphs "WORK UNDER OTHER CONTRACTS", "ACCESS AND WORK AREAS", "CONTRACTOR'S FLOATING PLANT", "OPERATION OF PROJECT FACILITIES", "CONDITIONS OF WORK", "POOL LEVELS", and "VELOCITIES", herein.

Maintenance and Protection of Vehicular Traffic; G RE.

Contractor's proposed plan(s) for maintaining and protecting traffic, including any measures required by any permits, for all construction sites covered under this contract.

## 1.4 DRAWINGS

### 1.4.1 Contract Drawings

The contract drawings reflect the work to be performed under this contract. The Contractor shall check all drawings immediately upon receipt, and verify the figures, dimensions, and representation of the work. The Contractor shall compare all drawings and verify the figures before laying out the work. Dimensions marked on drawings shall, in general, be followed in preference to scale measurements. The Contractor shall promptly notify the Contracting Officer of any discrepancies, and shall be responsible for an errors which might have been avoided by complying with this paragraph. Any omissions from the contract drawings and Specifications or incorrect description of details of the work which are manifestly necessary to carry out the intent of the contract drawings and Specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or incorrectly described details of work, but shall be performed as if fully and correctly set forth and described in the Contract drawings and Specifications. Unless otherwise noted, dimensions and elevations, and other features shown on contract drawings are generally based on site surveys and measurements, and As-Built drawings. The Government cannot guarantee the accuracy of the dimensions, elevations, and features shown on the contract drawings which are based on the reference drawings, and it shall be the responsibility of the Contractor to verify all elevations and the dimensions shown by measurements in the field, at no additional cost to the Government.

### 1.4.2 Reference Drawings

The reference drawings show existing conditions of the site, including the original lock and dam and the existing facilities and structures at the site, to the best knowledge of the Government. Unless otherwise noted, dimensions and elevations, and other features shown are generally based on As-Built conditions. The Government cannot guarantee the accuracy of the dimensions, elevations, and features shown on the drawings, and it shall be the responsibility of the Contractor to verify all elevations and the dimensions shown by measurements in the field, at no additional cost to the

Government. The Contracting Officer shall be notified of any discrepancies prior to commencing work.

## 1.5 WORK UNDER OTHER CONTRACTS

Attention is directed to the fact that other Contractors may be employed by the Government at or in the vicinity of the work covered by these specifications. It is noted that the information provided is for the Contractor's information, and no attempt has been made to list all the work activities required under those contracts. In addition, the Contractor is advised that there are various contract requirements listed herein which are requirements of this contract. Unless specified otherwise, all Contractors shall have equal rights to the use of all roads and grounds so far as practicable, and the Contractor employed under this contract shall cooperate with other Contractors so that the work may be performed with maximum efficiency. Should a disagreement occur between Contractors as to the use of facilities or in other matters, the decision of the Contracting Officer shall govern. See also Section 00700 CONTRACT CLAUSES, paragraph "Other Contracts". Other Contract work at Charleroi Locks and Dam includes the following: "Charleroi Site Development", Awarded September 2002; and "Charleroi River Chamber Demolition", awarded in October 2003. The "Charleroi River Chamber Demolition" contract includes the removal of various features of the river chamber in preparation for the construction of the newriver wall under this contract. The "Charleroi Site Development" contract includes the construction of a new access road and bridge to the Lock downstream of the dam, and the construction of a new service building and operations building. Until the new access road and bridge are constructed, land access to the right bank area of Charleroi Locks and Dam will be through the existing access road upstream of the dam, and will be shared by all Contractors employed by the Government. After the bridge and access road are completed, the new road and bridge will be available for the use of all Contractors. See also paragraph "Protection of Existing Roads and Property".

### 1.5.1 Charleroi Site Development Contract

The "Charleroi Site Development" contract was awarded in September 2002, is scheduled for completion October 2004, and includes the construction of a new access road and bridge to the Lock downstream of the dam, and the construction of a new service building and operations building above the existing sloped paving along the land wall.

### 1.5.2 Charleroi River Chamber Demolition Contract

For the Contractor's information only, the "Charleroi River Chamber Demolition" contract has been awarded in October 2003 and is scheduled for completion in September 2005. It includes: the removal of various features of the river chamber to allow the construction of the new river chamber; the installation of various stabilization features on the existing river and middle walls to allow the demolition of the river chamber features; and the installation of instrumentation for monitoring the stability of the existing river wall and middle wall during the demolition contract and future contract work. The work included installation of instruments for monitoring lock wall stability; monitoring of the instrumentation during the contract period; relocation of river chamber operating controls to the land wall; relocation of navigation lighting to the middle wall; disconnection of river chamber hydraulic operating system from the land chamber hydraulic operating system; closing and sealing of inlet and outlet ports on the existing river and middle walls; installation of grout cutoff

walls; installation of H-piles on each side of river and lower guard walls to stabilize those walls; removal of stone protection along portions of the middle wall and lower guard wall; installation of upstream and downstream closure cells in the river chamber; installation and removal of temporary stabilization struts in the river chamber; removal of miter gates from the river chamber; removal of river chamber concrete floor paving, concrete struts, existing gate and needle beam sills and removal of existing H-piles, timber piles and sheet piling. At the completion of the River Chamber Demolition contract, the existing river chamber will be left in a flooded (at upper pool), non-operational condition, with downstream closure cell in place and upstream closure cell (breached) in place. As noted previously, the River Chamber Demolition Contractor will be responsible for the installation of instruments for monitoring lock wall stability in the existing river wall and existing middle wall, as well as the monitoring of the instrumentation during that contract.

## 1.6 FEATURES OF WORK AND SEQUENCING

### 1.6.1 General

The river wall work under this contract is located at Charleroi Locks and Dam along the Monongahela River approximately 41.5 miles upstream from the confluence of the Monongahela and Allegheny Rivers at Pittsburgh Pennsylvania. The locks are located in Westmoreland County, Pennsylvania, near the right descending bank of the Monongahela River, approximately 1 mile upstream from the town of Monessen, Pennsylvania, and directly across the river from the town of Charleroi, Pennsylvania. The work primarily involves the construction of the river wall for a new 84 ft x 720 ft lock river chamber. Additional work includes, but is not limited to: construction of Government field offices; fabrication and installation of emptying valves and bulkheads; and constructing various miscellaneous lock wall features. Concrete batching shall be conducted at a Government furnished site on the left bank (descending) of the river just downstream of the left abutment of the Charleroi Dam, and includes the construction of a concrete testing lab. The batch plant, ancillary equipment, offices and other structures and features constructed at the batch plant area shall be furnished and constructed by the Contractor and the Government will take possession of these items at the end of the contract. Dredging and underwater excavation activities shall be performed for the construction of the new river wall. Dredged and excavated materials materials shall be used to construct the off-loading site for a future disposal site (Victory Hollow Disposal Site) located in the Victory Hills area of Washington County, 34.5 river miles upstream of the Point in Pittsburgh, or approximately 7 miles downstream of Charleroi Locks and Dam. The work reflected in the plans and specifications relies on the sequencing requirements given in the drawings and as specified below. Under previous "River Chamber Demolition" contract, the river chamber has been taken out of operation and left at upper pool. It is noted that the information provided below is provided for the Contractor's information as a summary of some of the required activities, and no attempt has been made to list all the work activities required under this contract.At no time will the land chamber be permitted to be taken out of operation. It is noted that the construction of the portion of the new river wall that is to be downstream of the dam will require pre-excavation of the riverbed as a requirement of the contract. Pre-excavation for this feature will not be allowed until the inclined rock anchors are installed and accepted in the diaphragm wall as shown and as specified in Section 02490 RIVER WALL INCLINED ROCK ANCHORS, and the supporting H-piles for the rock anchors are installed and accepted as shown and as specified in Section 02457 H-PILES FOR SUPPORT OF

ROCK ANCHORS. The H-piles may be installed in the diaphragm cell wall prior to the pre-excavation. The rock anchors and their supporting H-piles will not be allowed to be constructed until the "River Chamber Demolition" contractor has finally demobilized from the work area, which is anticipated to be 30 September, 2005.

1.6.2 New River Wall Construction

1.6.2.1 General

A portion of a new future river wall was included during the construction of a new gated dam in the 1960's. This wall, consisting of 7 monoliths founded on rock, totaling 224 feet in length, was constructed in anticipation of a new river lock chamber to be constructed in the future. This existing stub river wall will be incorporated into the work, and extended upstream and downstream to form the new river wall for a new river chamber to be completed under separate contract in the future. The river wall is a combination of the existing stub wall, cast-in-place monoliths constructed in internally braced cofferboxes and tremie placed concrete monoliths in non-cofferbox wall, constructed in-the-wet using a Contractor designed reusable forming system. The concrete monolith river wall shall consist of a new 458'-6" portion upstream of the existing stub wall; the existing 224'-0" long stub wall; and a new 406'-6" portion downstream of the existing stub wall. With the exception of the upstream and downstream miter gate monoliths and emptying valve monoliths that will be constructed in cofferboxes, the new wall monoliths shall be constructed in the wet.

1.6.2.2 New Monolith Wall (Non-Cofferbox Walls)

At the non-cofferbox walls, the monoliths shall be tremie placed concrete with a portion of the top of the monoliths constructed of cast-in-place concrete. The structure shall be supported on drilled shafts set into rock. The new walls shall be constructed utilizing a Contractor designed slip or jump forming system, as indicated conceptually on the drawings.

1.6.2.3 Miter Gate and Emptying Valve Monoliths (Cofferbox Walls)

The miter gate monoliths and emptying valve monolith on the river wall shall be constructed using local cofferboxes. The non-cofferbox river wall sections immediately adjacent to these monoliths shall be utilized as the end blocks for cofferbox construction. Rectangular cofferboxes, (long axis parallel to the lock centerline) shall be constructed between two the end blocks. The cofferboxes shall be composed of king piles and Z-shaped sheet piling, and internal bracing. It is anticipated that excavation in the cofferboxes would be performed after drilled shaft casings are installed and drilled shafts are constructed. In general , tremie placed concrete shall be placed in the cofferboxes to a certain elevation, the cofferboxes shall then be dewatered, and cast-in-place concrete is then placed in-the-dry to complete these wall sections.

1.6.2.4 Related Work Specified Elsewhere

Requirements for this feature of work are as shown on the drawings and in the applicable provisions of the following sections of the Specifications:

01354 ENVIRONMENTAL PROTECTION
02261 COFFERBOXES
02325 DREDGING AND UNDERWATER EXCAVATION
02463 STEEL H-PILES AND KING PILES

02464 METAL SHEET PILING
02466 DRILLED SHAFTS
03010 CONCRETE: GENERAL REQUIREMENTS
03015 CONCRETE: FIELD DEMONSTRATIONS
03050 CONCRETE: MATERIALS
03051 CONCRETE: MIXTURE PROPORTIONING
03052 CONCRETE: PRODUCTION AND TRANSPORT
03053 CONCRETE: PLACEMENT REQUIREMENTS
03101 CONCRETE: FORMWORK
03150 CONCRETE: EXPANSION JOINTS, CONTRACTION JOINTS, AND WATERSTOPS
03201 CONCRETE: STEEL BARS AND WELDED WIRE FABRIC FOR CONCRETE REINFORCEMENT
03301 CONCRETE: CAST-IN-PLACE
03415 CONCRETE: PRECAST
03700 CONCRETE: MASS
03820 CONCRETE: DRILLED SHAFTS
03800 CONCRETE: UNDERWATER AND FLOWABLE
05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS
05502 METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS

1.6.2.5 Work Areas

In accordance with the paragraph "General Work Area Restrictions" herein, under no circumstances during construction of the new river chamber will the Contractor's floating plant or construction operations be permitted to interfere with the flow of commercial river traffic through the land chamber, the approaches to the land chamber or the navigation channel. During this phase, the Contractor will not be permitted to moor floating plant landward of the river chamber.

1.6.3 Emptying Valves and Bulkheads

The location and configuration of the emptying valves and bulkheads are as shown on the contract drawings and as specified in Section 11295 EMPTYING VALVES AND BULKHEADS.

1.6.3.1 Related Work Specified Elsewhere

Requirements for this feature of work are as shown on the drawings and in the applicable provisions of the following sections of the Specifications:

05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS
05502 METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS
11295 EMPTYING VALVES AND BULKHEADS
09965 PAINTING: HYDRAULIC STRUCTURES.

1.6.3.2 Sequencing

Emptying valves and bulkheads shall be furnished, installed and tested prior to acceptance. After testing and any corrective action, the valve leaves shall be removed and stored, and the bulkheads left in place..

1.6.4 Miscellaneous Lock Features

Miscellaneous lock features include all grating, handrail, guard fence, check posts, ladders, planking, wall armor, mooring bitt anchoragess, and piping and electrical conduits embedded in the concrete.

1.6.4.1 Related Work Specified Elsewhere

Requirements for these features of work are as shown on the drawings and in the applicable provisions of the following sections of the Specifications:

05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS
05502 METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS.
09965 PAINTING: HYDRAULIC STRUCTURES
15480 PIPING SYSTEMS
16415 ELECTRICAL WORK

1.6.5 Left Bank Batch Plant Area

The Government has obtained an area for the Contractor to furnish and install a concrete batch plant with all ancillary facilities. In addition, a concrete testing lab shall be constructed on this site, as shown The concrete testing lab will be shared by the Government with the Contractor.

1.6.5.1 Related Work Specified Elsewhere

Requirements for this feature of work are as shown on the drawings and in the applicable provisions of the following sections of the Specifications:

01354 ENVIRONMENTAL PROTECTION
01356 STORMWATER POLLUTION PREVENTION MEASURES
01525 TEMPORARY CONSTRUCTION FACILITIES
01526 GOVERNMENT FACILITIES
02040 DISPOSAL OF MATERIALS
02300 EARTHWORK
02310 EARTHWORK FOR ROADWAYS
02500 BITUMINOUS PAVEMENT AND INCIDENTAL CONSTRUCTION
02630 STORM-DRAINAGE SYSTEM
03315 CONCRETE: PAVEMENT AND OTHER INCIDENTAL CONCRETE
02770 CONCRETE BATCH PLANT SEDIMENTATION BASINS
02821 FENCING
02921 SEEDING
03052 CONCRETE: PRODUCTION AND TRANSPORT

1.6.5.2 Sequencing

The left bank batch plant area shall be completed, including all drainage and pavement features and erosion and sedimentation controls, and the batch plant and concrete testing lab shall be approved and ready for operation prior to beginning production of concrete,including approval of trial batches, for this contract. No concrete shall be incorporated into the work under this contract until trial batches of each mix are tested and approved.

1.6.5.3 Work Areas

The limits of the left bank batch plant area are as shown on the drawings. The Contractor shall confine all operations at this location to within these limits. The Contractor may place a field office at the site.

1.6.6 Government Furnished Disposal Site

As specified in Section 02040 DISPOSAL OF MATERIALS, various excavated materials shall be used to construct the off-loading area at the Government furnished disposal site (Victory Hollow Disposal Site), located in the Victory Hills area of Washington County, 34.5 river miles upstream of the

Point in Pittsburgh, or approximately 7 miles downstream of Charleroi Locks and Dam. The site consists of an off-loading area and a future upland disposal area.

1.6.6.1 Related Work Specified Elsewhere

Requirements for this feature of work are as shown on the drawings and in the applicable provisions of the following sections of the Specifications:

01354 ENVIRONMENTAL PROTECTION
01356 STORM WATER POLLUTION PREVENTION MEASURES
02040 DISPOSAL OF MATERIALS
02145 CONSTRUCTION OF DISPOSAL SITE

1.6.6.2 Sequencing

Site preparation work including haul roads at the off-loading area, off-loading facility and erosion and sedimentation controlsat the off-loading area shall be completed under this contract .Materials shall not be disposed of at the upland disposal site under this contract. The use of the upland disposal site for disposal operations is for future contracts.

1.6.6.3 Work Areas

Development and operation of the off-loading area at the disposal site shall be confined to the areas shown.

1.7 ACCESS AND WORK AREAS

1.7.1 General Access to Project Site

Areas allowed to be used for access to the river and for on-loading and off-loading operations shall be as shown on the drawings. Areas proposed by the Contractor for access to the river and for on-loading and off-loading operations shall be existing permitted commercial marine facilities.

1.7.2 General Work Area Restrictions

As required by Section 00700 CONTRACT CLAUSES, paragraph "OPERATIONS AND STORAGE AREAS," all operations of the Contractor shall be confined to areas shown on the drawings and as authorized and approved by the Contracting Officer. The limits of the Contractor's work areas are shown on the contract drawings. In accordance with Section 00700 CONTRACT CLAUSES, paragraph "LAYOUT OF WORK", the Contractor shall maintain and preserve all existing survey control points established by the Government. Under previous contract, the river chamber has been taken out of operation. Only one chamber will be permitted to be out of operation at a time, and under no circumstances will the Contractor's floating plant or construction operations be permitted to interfere with the flow of commercial river traffic through the land chamber, the approaches to the land lock chamber or the navigation channel.No off-loading of materials or equipment will be allowed along the land wall or in the approaches to the land chamber. See also paragraph "Mooring of Floating Plant", herein.

1.7.3 Real Estate Availability

1.7.3.1 Existing Real Estate

At the end of this Section is a "Chart of Estates" listing the various

tracts of land available for the Contractor's use under this contract, as provided by the Government. The tracts are identified as indicated on the drawings. For each tract, the chart lists the tract number and type of estate owned by the Government. For Temporary easements which have expiration dates, the Contractor shall notify the Contracting Officer at least six (6) months in advance of the expiration date as to whether the temporary easement will be needed beyond the expiration date. The Contractor should note that the chart lists some temporary easements that will have expired prior to award of this contract, and information on these tracts is provided for information only, and these tracts will be unavailable for the Contractor's use. For all tracts, the Contractor shall comply with the conditions listed under "Special Conditions Imposed by Current Landowner or Government", which can be found on the "Chart of Estates" at the end of the Section.

1.7.4 Utilization of Active Lock Chamber and Approaches

1.7.4.1 General

The Contractor is directed to the fact that land chamber at Charleroi Locks and Dam will not be allowed to be taken out of operation during the performance of this contract, and the remaining land chamber cannot be subject to interruptions of commercial river traffic. Unless specifically authorized or directed, no interruption of commercial traffic through the land chamber or its approaches will be permitted.

1.7.4.2 Requests for Lockages Through Land Chamber

The Government recognizes that the Contractor may need to lock through the the land chamber, however, these lockages must be fully coordinated with the Lockmaster and kept to an absolute minimum to ensure there are no delays to commercial river traffic. All lockages shall be subject to the following:

a. The Government retains the right to determine the order and priority of lockages at the sole discretion of the Lockmaster. The Government reserves the right to supercede and delay any requested lockage for any reason (such as increased commercial river traffic, maintenance, equipment failure, emergencies etc.) at the sole discretion of the Government. The Contractor is advised that these delays will not be subject to Section 00700 CONTRACT CLAUSES, paragraph "DISPUTES", and shall not be considered as direction from the Contracting Officer. These delays will not result in any additional time extensions or payment of any delay costs, nor shall they be the basis of any claim against the Government.

b. The Contractor is not permitted to use the land chamber for long term staging of equipment.

c. All requests for lockages shall be coordinated with the Lockmaster in accordance with the following provisions:

1) Upon approval of an estimated date and estimated time for a proposed lockage, the Contractor shall be ready to perform the requested lockage. The Contractor is advised that the Government will not be liable in the event the land chamber is not available at the requested date and time, and that any resulting delay will not be subject to Section 00700 CONTRACT CLAUSES, paragraph "DISPUTES", and will not result in any additional time extensions or payment of any delay costs, nor shall they be the basis of any

claim against the Government.

2) The Contractor shall configure his floating plant, work operations and all equipment to allow safe, uninterrupted lockage through the land chamber in such a manner that no delays to the normal lockage time period will be incurred.

3) The Contractor is advised that the request for lockage may be delayed or postponed indefinitely due to unexpected conditions such as high water, lock breakdowns, or unanticipated maintenance demands, etc..

4) Requests for lockages that do not meet these criteria will not be approved. Requests for unscheduled lockages due to anticipated flooding or other emergency will considered on a case by case basis. Lockages or other interference with river traffic due to accidental breaching of closure structures or any other situation which endangers human life will be permitted as the circumstances warrant. Movement of floating plant in the approaches to the locks shall at all times be fully coordinated with the Lockmaster and Contracting Officer, but shall not delay river traffic through the active chamber.

1.7.5 Protection of Existing Roads and Property

1.7.5.1 General

The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for all damage to existing roads and property occasioned by any of his operations. When intending to transport any heavy loads on roadways, the Contractor shall investigate all weight limits for the roads he intends to use and shall secure any required bond(s) from the respective owner(s).

For the Contractor's information, the new access bridge on the right bank has a 40-ton weight limit, and any specially permitted loads shall be approved by the Contracting Officer prior to such loads crossing the new access bridge.

The Contractor shall document the existing condition of the roadways that he will be using, with the owners thereof. In the past, video recordings of the original roadway conditions have provided satisfactory documentation. Prior to beginning any construction, the Contractor shall videotape on VHS format all existing structures including, but not limited to, local roads, public and private property, and any other areas as directed by the Contracting Officer. The owners of such roadways and other property should be present at the time of the documentation. An unedited copy of all video recordings shall be given to the owners and the Contracting officer with 5 days after documented. All damage to transportation facilities, public or private property, or utilities caused by the Contractor's operations shall be repaired to the satisfaction of the owner and the Contracting Officer at no additional cost to the Government. Any damage to the roadways, caused by the Contractor's operations, shall be repaired in kind by the Contractor and at his own expense. Roads shall be kept clear of all debris generated by the Contractor's operations. Roads shall be cleaned of any spillage. Upon completion of all work requiring use of the local roads, the roadways shall be restored to their

preconstruction condition by cleaning and or reconstruction of damaged drainage facilities, base courses, and pavements as necessary. Repairs shall be made in the same manner as the original construction. No separate payment will be made for maintaining and restoring the condition of the roads, and all costs in connection therewith shall be considered as incidental to performance of the work.

1.7.5.2 Hauling Permits

The Contractor shall be responsible for acquiring all necessary oversized hauling permits and general hauling permits for any equipment or debris transported via roadways, as required. No heavy hauling on public roads will be permitted until all permits and bonds have been obtained as required. All costs associated with securing these permits shall be borne by the Contractor.

1.7.6 Utilities

The Contractor shall be responsible for coordination of all existing utilities with the work and for providing utilities for construction purposes. Utilities shall be coordinated in accordance with Section 01180 UTILITY COORDINATION.

1.8 EXISTING SURVEY CONTROLS

The locations of Corps of Engineer survey controls are shown on the drawings. Survey and alignment control requirements are specified in Section 01450 SURVEY AND ALIGNMENT CONTROL.

1.8.1 Project Alignment

All new work to be constructed under this contract shall be constructed level, plumb, and accurately from measurements made from the survey controls indicated. Additional survey control points shall be established by the Contractor as necessary to construct all work within the proper alignment. The Contractor shall verify the elevations and positions of the Corps of Engineers survey controls before using them to layout the work under this contract, and shall notify the Contracting Officer of any discrepancies prior to commencing work.

1.9 MAINTENANCE AND PROTECTION OF VEHICULAR TRAFFIC

During construction the Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by any permits or whenever the Contractor's operations interfere with the movement or safety of traffic along the public roads. Such measures shall be in accordance with the applicable provisions of PDT 408, Section 900, and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor shall submit his proposed traffic control plan for approval and shall include documentation that his proposed plan has been coordinated and approved by the local authority having jurisdiction. Where such measures are on Government property, the Contractor shall coordinate such measures with the Contracting Officer and the Lockmaster.

1.9.1 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.10 PROJECT SITE CONDITIONS

1.10.1 Inspection of Geologic Samples

Samples taken during geologic investigations by the Government are available to Contractor's and bidders for examination. Contractors and bidders may inspect these cores and samples as follows:

Pittsburgh Engineering Warehouse and Repair Shops
3510 Grand Avenue
Pittsburgh, Pa 15225

Point of Contact: Mr. Kevin Gabig, CELRP-ED-GG

Tele. (412) 395-7322

A minimum of 14 calendar days notice is required. Bidders must indicate the cores which they would like to inspect.

1.10.2 Interpretation of Geologic Information, Data and Samples

Subsurface records are included with the contract drawings. Logs of borings and test data are made available for the Contractor's information and for his interpretation. Logs and test data are not represented as a complete description of the site soil, rock, and water information, but only display what was found in borings at the indicated locations on the date holes were drilled. The soil and groundwater conditions may be different from those interpreted by the subsurface investigation. It is the Contractor's responsibility to obtain additional information, if necessary in his judgment. See also Section 00100 INSTRUCTIONS, CONDITIONS, AND NOTICES TO BIDDERS, paragraph "SITE INVESTIGATION BY THE CONTRACTOR".

1.11 DAMAGE TO WORK

The responsibility for damage to any part of the permanent work shall be as set forth in Section 00700 CONTRACT CLAUSES, paragraph "PERMITS AND RESPONSIBILITIES". However, if the construction of Government designed cofferdams has been done in accordance with plans and progress schedules approved by the Contracting Officer, but overtopped by flood and such flood causes damage to the Government designed cofferdam or if any part of the permanent work is damaged by flood or earthquake, which damage is not due to the failure of the Contractor to take reasonable precaution or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such damaged

work, an equitable adjustment pursuant to Section 00700 CONTRACT CLAUSES, paragraph "CHANGES", will be made as full compensation therefore. The Contractor may, subject to approval of the Contracting Officer, flood or breach the Government designed cofferdam during a rise prior to, and in anticipation of natural flooding due to overtopping. The Contracting Officer may order the Contractor to flood or breach the cofferdam during such an anticipated rise. Such flooding or breach will be considered the same as though the cofferdam, if constructed in accordance with plans and progress schedules approved by the Contracting Officer, had been overtopped, in which event an equitable adjustment will be made for damages to the cofferdam and/or any part of the permanent work, as provided for above.

## 1.12 PROTECTION OF UTILITIES

Utilities shall be protected as specified in Section 01180 UTILITY COORDINATION, paragraph "Protection of Utilities".

## 1.13 CONTRACTOR'S FLOATING PLANT

### 1.13.1 General

Floating plant, and the operation of such plant, shall comply with the requirements of EM 385-1-1, Section 19. Floating plant which is not being used in the performance of the work shall be secured in a manner that does not interfere with navigation on the river. Emergency plans for removing or securing floating plant and evacuating personnel in the event of severe weather shall be prepared in accordance with EM 385-1-1, Section 19.A.03. The Contractor shall provide personnel as necessary to adjust moorings to provide for fluctuations of pool level. Propelling units capable of moving the floating plant must be on site at all times. The written Propelling Unit Agreement between the Contractor and the lessor that documents this requirement shall be provided to the Contracting Officer prior to beginning work. The agreement shall also include documentation that the propelling unit operator currently possesses a U.S. Coast Guard First Class Pilot's license. The Contractor shall be fully responsible for selection of floating plant which is suitable for the performance of the work under this contract. Contractor's floating plant shall operate only within the areas of work shown on the drawings, unless such areas are modified with the approval of the Contracting Officer and Lockmaster. The Contractor will only be allowed to lock through the open lock chamber with the approval of the Contracting Officer. Except as otherwise indicated, Contractor shall utilize existing permitted commercial marine facilities for access to the river and for on-loading and off-loading operations. The loading area at the left bank batch plant may be used for loading and off-loading floating plant with concrete materials, cement, aggregates and other concrete ingredients and may be used for the temporary storage of non-erodable materials, e.g. pipe, steel, etc. The off-loading site at the Government furnished disposal site shall be used for the off-loading of excavated river sediments, and concrete rubbleand the temporary storage of non-erodable materials, e.g. pipe, steel, etc.

### 1.13.2 Floating Plant

The Contractor shall select floating plant and towboats of a size and capacity suitable for performance of the work under this contract. Towboats shall have sufficient horsepower capacity to control the floating plant used, considering the size and draft of the plant, for the expected river velocities and wind conditions. The Contractor shall refer to Tables A and

C at the end of this section for various significant river stage-discharge relationships and Tables B and D for various velocity exceedance durations for various conditions and the applicable sections of these Specifications, as well as the charts of "Velocities and Current Directions" when planning the size and capacity of the floating plant and towboats. For the Contractor's information, some of the velocity and current direction charts refer to "Auxiliary Lock Demolition". These charts represent the existing conditions at the completion of the "River Chamber Demolition" contract, as described previously in paragraph "Charleroi River Chamber Demolition Contract". The charts noted as "Land Chamber Construction" represent river conditions at the completion of the new river wall. The Contractor shall submit a plan of all floating plant, floating plant based equipment (i.e. cranes, derricks), temporary operating systems (i.e. generators, compressors, welding machines, etc.), and other appurtenant features which he will have present during the contract period for any fleet. The Contractor shall use sketches, diagrams, and narratives to indicate location of all floating plant-equipment. The Contractor shall use manufacturer's catalog information or other suitable data to describe the specific equipment to be used. The Contractor shall also indicate the methods and procedures that will be used to deliver materials, supplies and equipment via floating plant. Floating plant shall be suitably sized and arranged so that it may be efficiently withdrawn under the conditions described in paragraph "Suspension of Construction."

1.13.3 Signal Lights

The Contractor shall display signal lights and conduct his operations in accordance with the General Regulations of the Coast Guard, as set forth in Commandant, U.S. Coast Guard Instruction M16672.2 or 33 CFR 81 Appendix A (International) and 33 CFR 84 through 33 CFR 809 (inland) as applicable.

1.13.4 Maintenance of Floating Plant

The Contractor shall maintain all floating plant equipment in good working condition throughout the contract period.

1.13.5 Mooring of Floating Plant

The Contractor shall be responsible for all mooring of floating plant. When not in use, the Contractor's floating plant shall be securely moored. The Contractor shall also be solely responsible for providing personnel in order to adjust mooring lines as required by the prevailing river conditions. Under no circumstances will the Contractor's floating plant be permitted to interfere with the flow of commercial river traffic through through the active chamber, approaches to the active chamber or the navigation channel. Floating plant and barges will not be allowed to nose-into the bank or tie-off to trees on the shoreline.

1.13.6 Withdrawal of Equipment and Floating Plant

Charleroi Locks and Dam begins high-flow operations when the downstream river level (Pool 3) reaches El. 735.4. It shall be the Contractor's responsibility to determine when to withdraw equipment and floating plant as high water conditions occur. The Cotnractor shall allow for the time necessary to make a complete and safe withdrawal of equipment and floating plant with due consideration given to the location of mooring areas; amount of equipment; size of the floating plant; and capacity of towboats to operate safely and efficiently at the expected river velocities (See Tables A through D, the gate operating schedules and the velocities and current

directions at the end of this Section). It shall be the Contractor's responsibility to withdraw any land-based equipment that would be subject to damage by high river stages from such affected areas before they are subject to damage. The Contractor shall monitor the prevailing river conditions at the project site, referring to the project river gages and river forecasts issued by the National Weather Service, and shall determine when to withdraw equipment and floating plant. The withdrawal of equipment and floating plant shall ultimately be the Contractor's decision and will not be directed by the Government. All floating plant and equipment shall remain securely moored during high water away from the lock walls and the dam. The Contractor shall also be responsible for providing personnel to adjust mooring lines as required by the prevailing river conditions. The Contractor shall be responsible for determining when to resume all work. The Contractor shall submit a Plan of Action for withdrawal of equipment and floating plant. The plan shall be submitted for the Government's review prior to the start of work. The Contractor is advised that the plan must be submitted and accepted or no work at the site will be allowed. ~~All marine work at the project site shall cease when the river level is at this stage, but work from areas not affected by this river stage may continue. The Contractor's floating plant shall be moored by the time the river level reaches El. 735.4. It shall also be the Contractor's responsibility to withdraw any land-based equipment that would be subject to damage by river stages at this level from such affected areas, before they are subject to damage. The Contractor shall monitor the prevailing river conditions at the project site, referring to the upstream project river gage, river forecasts issued by the National Weather Services, and the Corps of Engineers River Forecast System, and shall determine when to withdraw equipment and floating plant. The withdrawal of equipment and floating plant shall ultimately be the Contractor's decision and will not be directed by the Government. It shall be the Contractor's responsibility to determine the time necessary to make a complete and safe withdrawal of equipment and floating plant with due consideration given to the location of mooring areas; amount of equipment; size of the floating plant, and capacity of towboats to operated safely and efficiently at the expected river velocities (See Tables A through D at the end of this Section). All floating plant and equipment shall remain securely moored during the period when river levels are at or above El. 735.4. The Contractor shall also be responsible for providing personnel to adjust mooring lines as required by the prevailing river conditions. The Contractor shall resume all work, and remobilize equipment and floating plant from its moored location when the river level reaches El. 735.4 with a falling condition forecasted. The Contractor shall submit a Plan of Action for withdrawal of equipment and floating plant. The plan shall be submitted for the Government's review prior to the start of work. The Contractor is advised that the plan must be submitted and accepted or no work at the site will be allowed.~~

1.13.6.1 Plan of Action, Withdrawal of Equipment and Floating Plant

The Contractor shall prepare and submit a Plan of Action for withdrawal of equipment and floating plant. The plan shall detail the procedures for withdrawal of equipment and floating plant in the event that ~~the river level reaches EL. 735.4~~high water prevents the safe and efficient operation of floating plant at the site. The Plan of Action shall include but is not limited to the following information:

- Withdrawal procedures for each fleet, both upstream and downstream of the dam
- Procedure(s) For Monitoring River Conditions Including River Levels, Discharges, And Velocities

- Mooring Location(s)
- Monument River Condition Which Affect Notification Actions
- Monument River Conditions Which Affect Withdraw
- Sequence and Duration of Withdraw
- Procedures for Care of Moored Floating Plant and Equipment
- Monument River Conditions Affecting Remobilization
- Sequence and Duration of Remobilization

The Plan of Action shall include a listing of key Contractor's Points of Contact and telephone numbers. The Plan of Action shall include the withdrawal of any subcontractor's equipment and floating plant. The Contractor's Plan of Action shall be consistent with the applicable requirements for Emergency Planning as described in EM 385-1-1. All key Contractor personnel including superintendents, foremen, safety officers, and QC personnel shall be given a copy of the Plan of Action and shall be thoroughly familiar with their duties under this plan. Subcontractors shall also be thoroughly familiar with their responsibilities and duties under the plan.

1.13.6.2 Compensation and Extension of Contract Period, Withdrawal of Equipment and Floating Plant

The withdrawal of floating plant and equipment is considered an incidental condition of work dictated by the nature of the work site. The Contractor's withdrawal of equipment and floating plant shall not be construed as a direction on the part of the Government or Contracting Officer, under the provisions of Section 00700 CONTRACT CLAUSES, paragraph "SUSPENSION OF WORK," which shall not apply to this work condition. No compensation will be made to the Contractor for withdrawal of this equipment nor will any delay costs be made for the period during which the equipment or floating plant are withdrawn. In accordance with Section 00700 CONTRACT CLAUSES, paragraph "DEFAULT (FIXED PRICE CONSTRUCTION)," the contract period will be extended equitably for the withdrawal of floating plant and equipment.

1.13.7 Operation of Small Water Craft

The Contractor shall develop, prepare and submit a plan addressing the operation of small water craft within the "restricted area" of Charleroi Locks and Dam. The "restricted area" includes all areas riverward of the river wall and extends from the upstream end of the upper guard wall to the downstream end of the lower guard wall. The plan shall address safe operations of small water craft and shall include; maximum river stages, maximum river flows, horsepower requirements, training, and any other items necessary to address all the hazards associated with navigating in the "restricted area" of the dam.

1.14 OPERATION OF PROJECT FACILITIES

The locks and dam shall remain in operation at all times during the contract. The Contractor shall perform his work in a manner which will not interfere with the operation of the project facilities and the duties of Government personnel. Particular care shall be taken during all operations under this contract to prevent damage to any operating equipment or facilities at the project. The Contractor shall take all necessary precautions to ensure the safety of the workers in accordance with the applicable provisions of EM 385-1-1. Contractor operations shall be performed in such a manner to ensure that project personnel, navigation industry personnel and the public are protected at all times.

## 1.15 CONDITIONS OF WORK

### 1.15.1 Charleroi Locks and Dam, Hours of Operation

Charleroi Locks and Dam operates 24 hours per day, seven (7) days per week. Lockage data is provided below:.

LOCKAGE DATA, CHARLEROI LOCKS AND DAM

| | LOCKAGES | | | | | | (TOTAL LOCKAGES) EQUIVALENT | AVERAGE TOTAL | |
|---|---|---|---|---|---|---|---|---|---|
| YEAR | SINGLE | DOUBLES | TRIP-LES | QUADS | FIVE CUTS | SIX CUTS | SINGLE LOCKAGE | April TO SEPT | REMAINDER OF YEAR |
| 2001 | 5,593 | 470 | 49 | 0 | 0 | 0 | 6,680 | 3,256 | 3,424 |
| 2000 | 5,900 | 414 | 0 | 0 | 0 | 0 | 6,728 | 3,163 | 3,565 |
| 1999 | 6,069 | 526 | 17 | 0 | 0 | 0 | 7,172 | 3,562 | 3,610 |
| 1998 | 6,753 | 398 | 40 | 0 | 0 | 0 | 7,669 | 4,602 | 3,067 |
| 1997 | 7,049 | 672 | 0 | 0 | 0 | 0 | 8,393 | 5,136 | 3,257 |
| 1996 | 5,995 | 569 | 136 | 0 | 0 | 0 | 7,541 | 4,318 | 3,223 |
| 1995 | 7,732 | 813 | 0 | 0 | 0 | 0 | 9,358 | 6,093 | 3,265 |
| 1994 | 8,696 | 843 | 0 | 0 | 0 | 0 | 10,382 | 6,421 | 3,961 |
| 1993 | 8,009 | 840 | 0 | 0 | 0 | 0 | 9,689 | 6,348 | 3,341 |
| 1992 | 8,224 | 1,076 | 0 | 0 | 0 | 0 | 10,376 | 6,286 | 4,090 |
| 1991 | 8,166 | 843 | 0 | 0 | 0 | 0 | 9,852 | 6,182 | 3,670 |
| 1990 | 7,457 | 873 | 4 | 1 | 0 | 0 | 9,219 | 5,351 | 3,868 |
| 1989 | 7,361 | 840 | 10 | 0 | 0 | 0 | 9,071 | 5,268 | 3,803 |

### 1.15.2 Contractor's Work Hours

There will be no restrictions imposed on Contractor's work hours for this project.

### 1.15.3 Coordination with Lock Operations

The Contractor shall perform all work in a manner that will not interfere with the duties of the lock personnel. Particular care shall be taken during all operations under this contract to prevent damage to any operating equipment or facilities at the project. The Contractor shall continuously maintain safe access to all areas of the lock project for lock operating personnel, during every phase of the work, unless otherwise directed by the Contracting Officer.

### 1.15.4 Government Access to the Site

Government access to the site shall be maintained at all times via the existing upstream access road and grade crossing.

### 1.15.5 Contractor Coordination and Scheduling

In accordance with Section 01320 PROJECT SCHEDULE, the Contractor shall submit a detailed project schedule for his work to the Contracting Officer. All necessary adjustments in the Contractor's work schedule shall be coordinated and approved by the Contracting Officer.

1.15.6 Coordination with Dam Gate Operations

1.15.6.1 Control of Flow Over Fixed Crest Weir

It is noted that flash boards are currently installed on top of the fixed crest weir to minimize flow over the fixed crest weir diving operations downstream of the dam. The Contractor shall be responsible for maintaining the flash boards, including the removal of accumulated debris. Downstream diving operations riverward of the lock walls will not be allowed unless these flash boards are in place. The flash boards are 2x12 boards installed on edge, and supported by 2" steel pins placed into holes in the crest of the fixed crest weir. No separate payment will be made for this work, and all costs for such work shall be considered incidental to the contract.

1.15.6.2 Operation of Dam Gates During Contract Work

At the end of this Section of the Specifications is a table showing schedule of existing gate operations, and a table showing schedule of gate operations during various phases of construction.

1.15.6.3 Unanticipated (Emergency) Operations

The Government may open restricted (closed) gates upon short notice to the contractor in order to prevent upstream flooding. Once the unrestricted (opened) gates have been open full, the lockmaster will begin opening the restricted (closed) gates if required to maintain the upper pool at or near the normal level. If any work in progress is damaged as a result of these operations, the contractor will be fairly compensated in accordance with Section 00700 CONTRACT CLAUSES, paragraph "CHANGES".

1.16 POOL LEVELS

The Government will not attempt to vary the pool levels for the convenience of the Contractor during the progress of the work. The minimum upper pool level, termed "normal pool", is El. 743.5 (Project Upper Gage = 17.5 feet) as shown on the drawings. The actual upper pool elevation will usually be within one foot above this level, except during high flow. The minimum lower (normal) pool level is elevation 726.9 and is determined by the fixed crest dam at Lock and Dam 3 in Elizabeth, PA.The lower pool fluctuates greatly. For either pool, the Contractor should refer to the hydrographs, Stage-Discharge relationships, and the Stage-Duration curves when planning the various work activities for this project. This information is shown on the drawings and Tables A through D at the end of this Section. It is noted that Charleroi Locks and Dam is closed to traffic at an upper gage reading of 13.0 feet and/or a lower gage reading of 29.0 feet.

1.16.1 Hydrographs

The stage hydrographs represent water surface elevations, and should be used by the Contractor to have knowledge of historical trends. For Charleroi L/D, the hydrographs were developed from actual Lockmaster stage records.

1.16.2 Stage-Discharge

The Contractor shall refer to the stage-discharge curves on the drawings to determine river discharge (cubic feet per second) for various river stages. Tables A and C at the end of this section also tabulate discharges corresponding to key river stages at Charleroi L/D that are significant in

relationship to this project. Table A applies to the upper pool and Table C to the lower pool.

1.16.3 Stage-Duration

The Contractor shall refer to the Stage-Duration curves on the drawings to determine the percentage of time for which various water surface elevations were equaled or exceeded during the hydrograph's period of record. Tables A and C at end of this section also tabulate monthly stage-duration relationships at Charleroi L/D upper and lower pool, respectively. To assist in determining discharge-duration relationships, obtain the relevant stage for a particular discharge from the appropriate stage-discharge relationship, and relate it to the stage-duration curve.

1.16.4 Velocities

Tables B (upper pool) and D at the end of this section provide river velocities corresponding to various discharges and the percentage of time each month that these velocities are equaled or exceeded. Tables B and D should be referred to when planning the various work activities for this project.

1.17 SAFETY AND HEALTH REQUIREMENTS

Safety and Health Requirements shall conform to Section 01105 SAFETY AND HEALTH REQUIREMENTS, EM 385-1-1, and the requirements of the Occupational Safety and Health Administration. Where provisions of EM 385-1-1 vary with OSHA requirements, the more stringent requirements shall be applied.

1.18 INSPECTIONS AND ACCEPTANCE OF WORK

1.18.1 General

Not withstanding other provisions of this contract, all materials and work to be performed under this contract shall be inspected and accepted by the Contracting Officer or his authorized representative(s). Inspections and acceptance will be performed on phases of the work, before the next definable sequential phase of work commences, OR may be performed at the completion of all of the work, as determined appropriate by the Contracting Officer. The Contracting Officer or representatives of the Contracting Officer so authorized shall be the individual(s) solely authorized to reject materials, disapprove or approve any work in progress, or order or direct any revision or change to the plans and specifications as presently shown and stated.

1.18.2 Access to Work

The Contractor shall provide safe access to all areas of work for inspection by the Government and shall provide boats for transporting Government inspectors to the various areas of work.

PART 2 PRODUCTS

2.1 PRODUCTS AND PARTS OF STANDARD MANUFACTURE

All materials, supplies and articles furnished so as to be incorporated into the work under this contract shall, whenever so specified and otherwise practicable, be standard products of recognized reputable manufacturers. Standard products of manufacturers other than those

specified will be accepted when it is proven to the satisfaction of the Contracting Officer, in accordance with the Section 00700 CONTRACT CLAUSES, paragraph "MATERIAL AND WORKMANSHIP," that they are equal in performance, strength, durability, usefulness and convenience for the purpose intended. Any changes required in the details and dimensions shown on the drawings as a result of the substitution of standard products, other than those provided for, shall be properly made as approved by the Contracting Officer, and at the expense of the Contractor. All products specified by "similar or equal to" a particular brand name are for descriptive purposes only and are not to imply that the product is available from only that source. Each major piece of equipment furnished under the contract shall be provided with a substantial nameplate securely fastened or cast in place and clearly inscribed with the manufacturer's name, year of manufacture, principal rating data and other pertinent data.

## PART 3 EXECUTION

### 3.1 SEQUENCE OF WORK AND RESTRICTIONS

The work shall be executed in accordance with the sequencing constraints and other requirements detailed on the drawings and as specified herein. The requirements and constraints given on the drawings are not an attempt to capture all work activities required under this contract, but are provided for the Contractor to identify the critical requirements and constraints which may affect the operation and stability of the existing locks. The Contractor shall be responsible to develop a construction project schedule in accordance with Section 01320 PROJECT SCHEDULE. Deviations from the requirements and constraints indicated on the drawings will not be permitted without the expressed written approval of the Contracting Officer. The Contractor is advised that any such deviation may require substantial effort to evaluate, and therefore, the Government reserves the right to take as much time as necessary beyond the minimum review period of 30 calendar days given in Section 01330 SUBMITTAL PROCEDURES, paragraph "SCHEDULING" to fully review and consider such submittals. Submission and review of deviations to the plans and specifications shall be in accordance with Section 01330 SUBMITTAL PROCEDURES, paragraph "Deviations". The Contractor shall perform all work in a diligent, effective manner, and shall schedule his operations in such a manner that the work is completed on time. In accordance with Section 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph "LIQUIDATED DAMAGES --CONSTRUCTION," the Contractor will be assessed the daily monetary damages for failure to complete the work in the allotted contract period.It is noted for the Contractor's information that the contract completion period given in Section 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph "52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK" may require the Contractor to use multiple shifts and overtime to complete the work within the allotted contract period. It is the Contractor's responsibility to develop a schedule in accordance with Section 01320 PROJECT SCHEDULE to complete the work in the allotted contract period.

#### 3.1.1 Flood-Out Provisions During Construction

While the cofferboxes are in an unwatered state, river and weather conditions may cause the cofferboxes to be flooded. When river conditions and weather indicate that a potential for flooding any cofferbox exists, the Contactor shall maintain personnel and equipment in a standby status ON-SITE on a 24 hour per day, 7 day per week basis to permit rapid removal of equipment, personnel, and securing of work in progress, should flooding of any cofferbox be predicted. The Contractor shall be responsible for

deciding when to remove equipment, personnel and to secure work in progress prior to the pool level flooding the cofferboxes. The Government will attempt to provide advance notice to the Contractor when a flood event is predicted to flood any cofferbox, however, it shall remain the Contractor's responsibility to monitor weather and river conditions to make his own decision on when to begin preparation for a flood event that may flood any cofferbox. The Government reserves the right to direct the Contractor to begin preparing for the flooding of any cofferbox at any time that such action, in the opinion of the Contracting Officer, is warranted. In the event the cofferbox is flooded, unwatering of the cofferbox shall not begin until the Contracting Officer has determined that river and weather conditions are acceptable to begin unwatering. No unwatering will be allowed to begin unless such notice is given by the Contracting Officer. For each flooding event in which the Contractor has properly executed the these flood-out provisions, an equitable adjustment pursuant to Section 00700 CONTRACT CLAUSES, paragraph "CHANGES", will be made as full compensation for the event, and the Contractor will be compensated as provided for below in paragraph "Allowances for Flooding and Evacuation", and a time extension will be granted as provided for below in paragraph "Time Extensions for Flooding and Evacuation".

3.1.1.1 Allowances for Flooding and Evacuation

In the event that work remains to be done and is actually in progress within a cofferbox, and the cofferbox is evacuated and flooded, The following allowances will be made: An allowance of $40,000 will be made to the Contractor upon full resumption of work within the Upstream (R11-R12) cofferbox, and an allowance of $60,000 will be made to the Contractor upon full resumption of work within the Downstream (R29-R32) cofferbox (or a mximum of $100,000 for both cofferboxes). In the event the Contractor chooses to stop work and evacuate the cofferbox but the cofferbox is not flooded, no allowance will be made. Payment will be subject to the following:

(1) Only one allowance will be made for flooding of the cofferbox during any one rise. Fluctuations in river stages between the time of flooding and the time at which work is fully resumed after the first flooding will be considered as incidental to the rise. The compensation for evacuation and preparation for flooding shall constitute full compensation for evacuating a single, properly built cofferbox, unwatering of the cofferbox, and the cleaning of mud, silt, gravel, debris, logs and similar materials from all parts of the work within the cofferbox, including delays and damages to the temporary work. In the event that the Contractor is directed by the Government to evacuate and prepare for a flood, and flooding of the cofferbox does not occur, an allowance of $12,000 will be made to the Contractor upon full resumption of work within either cofferbox (or maximum of $24,000 for both cofferboxes) as full compensation for all costs and delays associated with the directed evacuation. Compensation as provided for herein will not be included in any allowance or adjustment made under the provisions of paragraph "Damage to Work", herein.

(2) No allowance will be made for preparing for a flood event and unwatering of the cofferbox unless work is actually in progress in the unwatered cofferbox at the time of flooding and the cofferbox is pumped out.

(3) No allowance will be made for preparing for a flood event and unwatering of the cofferbox if the Contractor prepares for a flood event and the requirements of the flood-out provisions are not met.

(4) If the Contractor prepares for flooding of the cofferbox, but the cofferbox is not flooded no monetary allowance for flooding will be made or considered. An allowance will be made for any directed evacuation as specified above in subparagraph (1). A time extension will be considered based on the provisions of Section 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph "Time Extensions for Unusually Severe Weather".

3.1.1.2 Time Extensions for Flooding and Evacuation

For the purpose of computing extensions of time due to floods, the following provisions shall apply:

(1) If, after the cofferboxes are constructed to the heights shown and in the manner required, and work remains to be done within the cofferbox and is actually in progress, and the river rises and floods the cofferbox, the Contractor will be granted an extension of time due to the flooding of the cofferbox. The Contractor will be required to resume work as soon after the flood, as, in the opinion of the Contracting Officer, it is possible to do so. The extension of time allowed for flooding the cofferbox will be equal to the amount of days of delay due to the flooding, as determined by the Contracting Officer. The amount of time will begin on the date the cofferbox is flooded and continue until the cofferbox is unwatered and all mud, silt, sand, logs and other debris are removed and the cofferbox restored to the pre-flood conditions. The extension of time will include the length of time the cofferbox is flooded during any one rise, as defined above and determined by the Contracting Officer, plus an additional period, as determined by the Contracting Officer, but not to exceed 5 calendar days, for unwatering the cofferbox and clearing away debris. Extension of time will be determined solely by the Contracting Officer, and will not be subject to Section 00700 CONTRACT CLAUSES, paragraph "DISPUTES".

(2) If, after the cofferboxes are constructed in the manner required, and work remains to be done within the cofferbox and is actually in progress, and the Contractor begins preparing for a flood event on a rising river in anticipation of a flood, an extension of time will be made, provided the river level actually floods the cofferbox.

(3) No time extension will be granted for preparing for a flood event and unwatering of the cofferbox unless work is actually in progress in the unwatered cofferbox at the time of flooding, and the cofferbox is unwatered.

(4) No time extension will be granted for preparing for a flood event and unwatering of the cofferbox if the Contractor prepares for a flood event and the requirements of the flood-out provisions are not met.

(5) Time extension for a flood event will be considered in the analysis of unusually severe weather pursuant to Section 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph "Time Extensions for Unusually Severe Weather". Time extension for this event may reduce or eliminate any time granted for the concurrent weather delays.

(6) If the Contractor prepares for flooding of the cofferbox, but the cofferbox is not flooded, no monetary allowance will be made or considered. A time extension will be considered based on the provisions of Section 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph "Time Extensions for Unusually Severe Weather".

3.2 AS-BUILT DRAWINGS

As-built drawings shall be maintained and submitted in accordance with the applicable provisions of Section 01780 CLOSEOUT SUBMITTALS.

3.3 TESTING

Where testing is specified herein to be performed by the Government, the Government will perform the testing or will have the testing performed at a commercial laboratory at the expense of the Government. Where items or additional samples from items which have been previously tested and approved at the expense of the Government are required to be retested, the Government will bear the costs of such retesting. Where retesting is required because of the failure of previously tested samples, the expenses of all such retesting shall be borne by the Contractor at no extra expense to the Government. The Contractor shall pay for all additional retesting required due to subsequent test failures. Where so required for original testing, retesting will be performed either in the Government laboratories or at such commercial laboratories as may be approved by the Contracting Officer.

3.4 RECORDS AND REPORTS

All records, test reports and similar documentation produced in connection with quality control operations shall be promptly submitted to the Contracting Officer or his authorized representative as required by the specifications.

-- End of Section --

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SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 LUMP SUM PAYMENT ITEMS

Payment items for the work of this contract for which contract lump sum payments will be made are listed in the PRICE SCHEDULE and described below. All costs for items of work, which are not specifically mentioned to be included in a particular lump sum payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.1.1 Miscellaneous, Site and Administrative

Lump Sum price items in the PRICE SCHEDULE include:

0002 MOBILIZATION AND DEMOBILIZATION

a. Payment will be made for costs associated with mobilization and demobilization, as defined in Special Clause PAYMENT FOR MOBILIZATION AND DEMOBILIZATION.

b. Unit of measure: Lump Sum (LS).

0004 CONSTRUCTION PROJECT SCHEDULE

c. Payment for this item shall constitute full compensation for preparation and periodic update of a comprehensive project construction schedule as specified in Section 01320 PROJECT SCHEDULE. Payment shall also include all costs for the initial schedule; report preparations; monthly updates; and all other incidental costs to prepare, monitor and update the construction project schedule as specified.

d. Unit of measure: Lump Sum (LS).

1.1.2 Government Facilities

Lump Sum price items in the PRICE SCHEDULE include:

0005 RELOCATE GOVERNMENT TRAILER

0006 FURNISH AND SET UP GOVERNMENT CONSTRUCTION OFFICE

0007 CONCRETE TESTING LAB

a. Payment for these items shall constitute full compensation for all labor, equipment, material and supply costs for performing the work as

shown on the contract drawings and specified in Section 01526 GOVERNMENT FACILITIES. Payment will not be made until the item of work has been satisfactorily completed and accepted, including furnishing and installing equipment as applicable. No separate payment will be made for temporary removal of the chain link fence for installation of the Government office, or the relocation of the existing slide gate as indicated.

b. "CONCRETE TESTING LAB" will include the costs of constructing both the concrete laboratory and curing room buildings.

c. Unit of measure: Lump Sum (LS).

1.1.3 Temporary Construction Facilities

Lump Sum price items in the PRICE SCHEDULE include:

0009 TEMPORARY CONSTRUCTION FACILITIES

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs for completing this item of work as specified in Section 01525 TEMPORARY CONSTRUCTION FACILITIES.

b. Unit of measure: Lump Sum (LS).

1.1.4 Field Demonstrations

Lump Sum price item in the PRICE SCHEDULE include:

0033 FIELD DEMONSTRATIONS

a. Payment for this item shall constitute full compensation for demonstrations of various concrete placements as specified in Section 03015 CONCRETE: FIELD DEMONSTRATIONS, including demonstration drilled shafts, demonstrations of river wall tremie foundation placements and underbase grouting of emptying culverts during monolith construction. No additional payment will be made for correcting any part of or replacing any deficient items, and payment will only be made after completion of successful demonstrations which are found to be acceptable by the Government.

b. Unit of measure: Lump Sum (LS).

1.1.5 Access Tubes, Crosshole Sonic Logging

Lump Sum price item in the PRICE SCHEDULE include:

0041 ACCESS TUBES, CROSSHOLE SONIC LOGGING, FOUNDATION DRILLED SHAFTS

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to furnish and install access tubes for Crosshole Sonic Testing as shown and as specified in SECTION 03820 CONCRETE: DRILLED SHAFTS, and shall also include all costs of removal of excess tubes and backfilling the holes with concrete as required.

b. Unit of measure: Lump Sum (LS).

1.1.6 Dewatering

Lump Sum price items in the PRICE SCHEDULE include:

0054 COFFERBOX DEWATERING

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs for the initial unwatering and continuous dewatering of the area, as shown on the contract drawings and specified in Section 02175 DEWATERING. Cofferbox dewatering shall include costs of dewatering all cofferboxes.

b. Payment for this item shall also include costs for all advanced planning and engineering; and all other incidental costs in connection with these aspects of the work under this contract.

c. Unit of measure: Lump Sum (LS).

1.1.7 Exploratory Pile Driving

Lump Sum price items in the PRICE SCHEDULE include:

0049 EXPLORATORY PILE DRIVING

a. Payment for these items shall constitute full compensation for all labor, equipment, material and supply costs for the required exploratory pile driving tests, as shown on the contract drawings and specified in Section 02013 EXPLORATORY PILE DRIVING. Payment will include completion of all test piles including furnishing test pile and test sheets. Payment shall also include all costs required for all advanced planning and engineering; report preparation; and all other incidental costs to complete the exploratory pile driving as shown and specified.

b. Unit of measure: Lump Sum (LS).

1.1.8 Cofferbox Piling

Lump sum price item listed in the PRICE SCHEDULE include:

0052 FURNISH, INSTALL AND REMOVE COFFERBOX PILING

a. Payment for this item shall constitute full compensation for all labor, equipment, materials and supplies for completing this item of work as shown and as specified. Payments shall include costs for furnishing z-piling, king piles, connectors and fabricated piles, and any special connectors; walers and pipe posts, internal and external struts; and connection to non-cofferbox walls (except that jet grout columns are paid for elsewhere); costs of guide templates; removal of obstructions; pile removal and redriving; cutoff and removal of cofferbox walls as shown; salvage costs for temporary items; and all other incidental costs in connection with this aspect of the work under this contract. Payment for this item shall also include costs for shop and field fabrications; testing of materials and products incorporated into the work; all advanced planning and engineering; and all other incidental costs in connection with this aspect of the work under this contract. The Contractor shall anticipate that 10% of the quantity of piles will hit obstructions, and that this cost shall be included in this item. The Contractor shall anticipate that the final tip elevations of the piling will be based on information gathered from surveys and field measurements and the results of the exploratory drilling and pile driving tests.

b. Unit of measure: Lump Sum (LS).

1.1.9 Stub Wall Modifications

Lump Sum price items in the PRICE SCHEDULE include:

0055 MODIFICATIONS TO EXISTING STUB WALL

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to complete this item of work, as shown and as specified. This item shall include all costs to modify the stub wall as shown, including infill with concrete and all other ~~modificatins~~modifications shown, and in accordance with Section 02260 STUB WALL MODIFICATIONS.

b. Unit of measure: Lump Sum (LS).

1.1.10 Precast Concrete Items

Lump Sum price items listed in the PRICE SCHEDULE include:

0059 PRECAST CONCRETE EMPTYING CULVERTS

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to fabricate, deliver and install the precast concrete items as shown on the contract drawings and specified, including, all reinforced precast concrete; steel bars and dowels integral with the items; all miscellaneous embedded items integrally cast directly into the items; and joint materials. Payment shall include the costs of furnishing and installing the structural support bracing systems required to erect the items, and for modifying the drilled shafts to support the bracing. These payments shall also include the costs of fabrication and installation of the tremie closure plates and tremie bulkheads for the precast concrete culverts. These payments shall also include all costs required for testing of materials and products incorporated into the work; temporary scaffolding and supports; all advanced planning and engineering; and all other incidental costs to complete these items of work.

b. Payment for the precast emptying culverts shall constitute full compensation for all labor, equipment, material and supply costs to fabricate, deliver and install these items, and shall include ~~fabrication and installation of the culvert liner system, including access pipes, hatches and ladders, as well as assembly~~ test on land prior to final installation.

c. Unit of measure: Lump Sum (LS).

1.1.11 Steel Fabrications

Lump Sum price items in the PRICE SCHEDULE include:

0056 ALTERNATING TREAD STAIRS

0057 MITER GATE GUDGEON EMBEDDED ANCHORAGES

0058 FLOATING MOORING BITT ANCHORAGES

0063 ACCESS HATCHES

0071 FABRICATION AND INSTALLATION COSTS FOR EMPTYING VALVES AND EMPTYING BULKHEADS

a. Payment for these items shall constitute full compensation for all labor, equipment, material and supply costs to fabricate, deliver and install and test these items as shown on the contract drawings and specified, including, all metalwork fabrication, shop assembly, delivery and field erection. These payments shall also include all costs required for testing of materials and products incorporated into the work; required shop and field tests; painting; temporary scaffolds and supports; all advanced planning and engineering; and all other incidental costs to furnish and install the items, as shown on the contract drawings and specified.

b. Payment for the miter gate embedded anchorages shall include all costs of prestressing the anchors during installation between concrete lifts.

c. Materials costs for furnishing the emptying valves and emptying bulkheads will be paid for separately. Payment for emptying valves and bulkheads will also include full compensation for the fabrication, delivery, installation, and testing of the valves and bulkheads and appurtenant items including valves, bulkheads, lifting beam, ~~liners,~~ frames and guides, bonnets, and valve shafts, and all other items associated with the valves and bulkheads, including fabrication and installation of the culvert liner system, including culvert and dewatering pump access pipes and ladders and shall also include the removal of the valves leaves after acceptance, and delivery and off-loading of the valves to the point of storage and designing and constructing a cribbing structure to support the valve leaves.

d. Unit of measure: Lump Sum (LS).

1.1.12 Signs

Lump Sum price items in the PRICE SCHEDULE include:

0088 SECURITY SIGNS, GOVERNMENT FURNISHED DISPOSAL SITE

a. Payment for signs shall constitute full compensation for all labor, equipment, material and supply costs to complete this item of work as shown and specified, including fabrication and installation.

b. Unit of measure: Lump Sum (LS).

1.1.13 Compressed Air and Service Water System

Lump Sum price items in the PRICE SCHEDULE include:

0072 COMPRESSED AIR AND SERVICE WATER LINES

a. Payment for the new compressed air and service water lines shall constitute full compensation for all labor, equipment, material and supply costs to furnish and install the lines as shown and as specified in Section 15480 PIPING SYSTEMS, and all other incidental costs in connection therewith.

b. Unit of measure: Lump Sum (LS).

1.1.14 Electrical Work

Lump Sum price items in the PRICE SCHEDULE include:

0073 ELECTRICAL WORK

a. Payment for electrical work shall include furnishing and installing the conduit, de-icing system and other electrical equipment as shown and as specified in Section 16415 ELECTRICAL WORK.

b. Unit of measure: Lump Sum (LS).

1.1.15 Government Furnished Disposal Site, Site Development

Lump Sum price items in the PRICE SCHEDULE include:

0076 OFF-LOADING DOCK IMPROVEMENTS, GOVERNMENT FURNISHED DISPOSAL SITE

0080 SEDIMENT BASIN NO. 1, GOVERNMENT FURNISHED DISPOSAL SITE

0081 CLEANING OF SEDIMENT BASIN NO. 1, GOVERNMENT FURNISHED DISPOSAL SITE

a. Payment for improving the existing off-loading dock shall constitute full compensation for all labor, equipment, material and supply costs to design and construct any needed improvements to the existing off-loading dock facility as shown on the drawings and as specified in Section 02145 CONSTRUCTION OF DISPOSAL SITE.

b. Payment for constructing the sediment basin No. 1 shall constitute full compensation for all labor, equipment, material and supply costs to construct and maintain the sediment basin, including excavation and filling, geotextile material, liner and liner sand, skimmer and riser system, reno mattress, 12" CMP outfall, and all other costs in connection with it's construction as shown and as specified.

c. Payment for sediment basin cleaning shall constitute full compensation for all labor, equipment, material and supply costs to clean the sediment basin as specified, including removal and disposal of the material, and any other costs in connection with this item of work.

d. Unit of measure: Lump Sum (LS).

1.1.16 Left Bank Batch Plant Area, Site Development

Lump Sum price items in the PRICE SCHEDULE include:

0097 SITE CLEANUP, CLEARING AND GRUBBING, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to perform site cleanup activities and clearing and grubbing activities prior to beginning work at the site, except for those items of work which are paid for separately.

b. Unit of measure: Lump Sum (LS).

0098 CONCRETE FOUNDATION SLABS DEMOLITION AND PLACEMENT, AND EXISTING DEBRIS DISPOSAL, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to demolish and remove the feature as indicated and specified to the extent shown, and to protect adjacent features to remain. Removal and disposal of debris from the ~~laft~~left bank batch plant area shall also include demolition of existing concrete slabs and foundations and incorporating the resulting rubble into the general fill for the site as specified in Section 02040 DISPOSAL OF MATERIALS.

b. Unit of measure: Lump Sum (LS).

0101 ROCK FILTER OUTLETS AND ASSOCIATED 18-INCH HIGH FILTER FABRIC FENCE, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to furnish and install the rock filter outlets and filter fabric fence as shown and specified.

b. Unit of measure: Lump Sum (LS).

0102 DIRT-BAG PUMPED SILT CONTROL SYSTEM, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to develop, furnish, maintain and remove the dirt-bag pumped silt control system as shown and as specified.

b. Unit of measure: Lump Sum (LS).

0118 TURF REINFORCEMENT MAT, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs in connection with completing this item of work as shown and specified, excluding the amount required for overlaps.

b. Unit of measure: Lump Sum (LS).

0119 SOIL-FILLED CELLULAR/GRID CONFINEMENT SYSTEM, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to complete this item of work, including furnishing, placing and installing the cellular/grid confinement system as shown and as specified.

b. Unit of measure: Lump Sum (LS).

0127 MODIFICATIONS TO EXISTING GROUNDWATER MONITORING WELLS, CBP-1 AND CBP-2, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to complete this item of work, including constructing the monitoring wells at the left bank batch plant area as shown and as specified.

b. Unit of measure: Lump Sum (LS).

0135 SEDIMENTATION BASINS NOS. 1 & 2, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for all

labor, equipment, material and supply costs to construct and maintain the sedimentation basins as shown and specified.

b. Unit of measure: Lump Sum (LS).

0136 CLEANING OF SEDIMENT BASIN NO. 1, LEFT BANK BATCH PLANT AREA

0137 CLEANING OF SEDIMENT BASIN NO. 2, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for all labor, equipment, material and supply costs to periodically clean the sedimentation basins and dispose of the accumulated sediment as shown and specified.

b. Unit of measure: Lump Sum (LS).

0138 PRECAST CONCRETE BLOCK WALL BETWEEN SEDIMENTATION BASIN NO. 1 AND NO. 2, LEFT BANK BATCH PLANT AREA

0139 OUTLET STRUCTURE FROM SEDIMENTATION BASIN NO. 2 TO pH TREATMENT SYSTEM, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to furnish and install the outlet structures as shown and as specified.

b. Unit of measure: Lump Sum (LS).

0140 OIL/CONTAINMENT BOOM (60-FT LONG), LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to furnish an oil/containment boom as shown and specified.

b. Unit of measure: Lump Sum (LS).

0143 CONCRETE BATCH PLANT, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to furnish, construct, outfit and maintain the concrete batch plant as shown and as specified, except for those items which are paid for separately.

b. Unit of measure: Lump Sum (LS).

0144 SHEET PILE BARRIER, LEFT BANK BATCH PLANT AREA

0145 BULKHEAD STRUCTURE INSTALLATION, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for all labor, equipment, material and supply costs to design and install these items as shown and as specified in Section 01526 GOVERNMENT FACILITIES, and shall also include all costs for conducting any subsurface exploration, excavation or pre-excavation, and all other incidental costs to construct these items.

b. The costs for the bulkhead structure shall also include all costs to dredge the area as determined by the Contractor to be necessary for

navigation between the Left Bank area and Charleroi Locks and Dam area.

c. Unit of measure: Lump Sum (LS).

0146 PH MONITORING AND CONTROL SYSTEM, LEFT BANK BATCH PLANT AREA

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to complete this item of work, including furnishing, installing, operating and maintaining a pH monitoring and control system; which shall include; disposal and replenishment of any consumable materials or chemicals; testing and analysis of influent and effluent as specified, and the reporting of test results.

b. Unit of measure: Lump Sum (LS).

1.2 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract progress payments will be based are listed in the PRICE SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items.

1.2.1 Administrative Costs

Unit price items in the PRICE SCHEDULE include:

0003 MONTHLY PROGRESS IMAGES

0147 ENVIRONMENTAL COMPLIANCE MEASUREMENTS, SAMPLING, TESTING AND REPORTING DURING BATCH PLANT OPERATION, LEFT BANK BATCH PLANT AREA

0148 ENVIRONMENTAL CONTROL REPRESENTATIVE (ECR) FOR ENVIRONMENTAL COMPLIANCE MONITORING AND EQUIPMENT OPERATION AND MAINTENANCE, LEFT BANK BATCH PLANT AREA

a. Payment for monthly progress images shall constitute full compensation for all labor, equipment, material and supply costs for furnishing monthly digital progress images, as specified in Section 01380 PROGRESS PHOTOGRAPHS.

a Payment for environmental compliance measurements, sampling, testing and reporting during batch plant operation shall constitute full compensation for all labor, equipment, material and supply costs for performing the specified actions within the established deadlines.

b. Measurement for environmental control representative shall be the number of months this individual is working and actually performing the required duties in a manner satisfactory to the Contracting Officer.

d. Unit of measure: Months (MO).

1.2.2 Concrete Testing Lab

Unit price items listed in the PRICE SCHEDULE include:

0008 OPERATE AND MAINTAIN CONCRETE TESTING LAB

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to operate and maintain the concrete testing lab, including maintenance and repair of all equipment and utilities.

b. Unit of measure: Months (MO).

1.2.3 Dredging and Underwater Excavation

Unit price items in the PRICE SCHEDULE include:

0010 DREDGING, LOCK AND APPURTENANCES

0087 DREDGING AT DOCK, GOVERNMENT FURNISHED DISPOSAL SITE

a. Payment for these items shall constitute full compensation for all labor, equipment, material and supply costs for performing the work including: transporting the materials to the disposal site and off-loading the material at the off-loading ramp at the Government furnished disposal site; performing measurements for payment; and all other incidental costs in connection with these aspects of the work under this contract.

Payment for for hauling and depositing the materials at the designated areas at the disposal site will be paid for separately.

b. The unit of measurement for these items of work shall be cubic yards. All measurement for payment will be based on information gathered from surveys (soundings) made at the project site prior to the commencement of excavation operations and again following the completion of excavation. Areas sounded more than 30 days prior to excavation shall be re-sounded if requested by the Government. The Contractor shall notify the Contracting Officer at least 2 days before sounding is made. No measurement will be made for removal of any materials beyond that indicated on the contract drawings and tolerances described on the plans and in the specifications. The Contractor shall sound the riverbed over the area to be excavated by a method and with equipment acceptable to the Contracting Officer. Any areas not conforming with the specified tolerances shall be corrected and resounded, at the Contractor's expense. The Contractor shall perform additional soundings as necessary during the progress of the work to verify depths. All sounding data shall be furnished to the Contracting Officer promptly after the information has been obtained and compiled. Initial soundings shall constitute the original cross sections from which all measurements will be based to calculate the quantity of excavation accomplished, without regard to any changes in the surface that may occur during the performance of the work. The second set of soundings shall constitute the final cross-sections from which measurement will be made, and shall be used to verify that the specified bottom elevations and slopes have been achieved. However, no measurement for payment will be made for any material over-dredged beyond that permitted by the allowable tolerances for the specified bottom elevation or specified side slopes. Unless otherwise specified and/or approved, quantities shall be calculated in cubic yards by the average end area method based on the initial and final soundings.

c. The Contractor is responsible for any additional dredging or excavation required to bring the area within the tolerances ~~specified~~specified or shown prior to beginning any work upon which the excavation depends at no additional cost to the Government, and no additional measurement or payment will be made for such additional dredging or excavation.

d. Unit of measure: Cubic Yards (CD).

1.2.4 H-Piles for River Wall Stabilization

Unit price items listed in the PRICE SCHEDULE include:

0011 DRILLING HOLES IN CONCRETE FOR H-PILES, RIVERWALL STABILIZATION

0012 FURNISH AND ~~INSTAL~~INSTALL H-PILES, RIVERWALL STABILIZATION

a. Payment for drilling holes in concrete for the H-piles shall constitute full compensation for all labor, equipment, material and supply costs to drill the holes through the reinforced concrete cap in the diaphragm support cells, as shown on the contract drawings. Payment shall also include costs for guide templates; disposal of cored material; performing measurements for payment; all advanced planning and engineering; and all other incidental costs in connection with these aspects of the work under this contract.

b. Payment for furnishing and installing the H-piles shall constitute full compensation for all labor, equipment, material and supply costs for the steel H-piles, as shown on the contract drawings and specified in Section 02456 STEEL H-PILES. Payment shall include test pile and production piles. Payment for this item shall also include costs for pile driving tests; pile driving points; shop and field fabrications of cover plates and beveled plates; backfilling around the H-piles in the diaphragm support cell concrete cap with tremie concrete; performing measurements for payment; testing of materials and products incorporated into the work; all advanced planning and engineering; and all other incidental costs in connection with these aspects of the work under this contract.

c. All measurements shall be made in the presence of the Contracting Officer's Authorized Representative (COAR). The Contracting Officer shall approve all methods and procedures for quantity surveys.

d. The unit of measurement for concrete drilling will be based on information gathered from surveys and field measurements. Measurements shall be the actual linear feet drilled through the diaphragm cell concrete cap and accepted by the Contracting Officer..

e. The unit of measurement for steel H-piles will be based on information gathered from surveys and field measurements. Measurements shall be the actual linear feet of H-Piles installed, and accepted by the Contracting Officer. The Contracting Officer shall approve all methods and procedures for quantity surveys. No separate measurement or payment will be made for pile cut-offs or splices. No separate measurement or payment will be made for backfilling around the H-piles with tremie concrete

f. Unit of measure: Linear Feet (LF).

1.2.5 Rock Anchors

Unit price items listed in the PRICE SCHEDULE include:

0013 DRILLING HOLES IN ROCK FOR ROCK ANCHORS, RIVERWALL STABILIZATION

0014 DRILLING HOLES IN CONCRETE FOR ROCK ANCHORS, RIVERWALL STABILIZATION

0015 DRILLING AND CASING HOLES IN EARTH FOR ROCK ANCHORS, RIVERWALL STABILIZATION

0016 ROCK ANCHORS, RIVERWALL STABILIZATION

0017 PERFORMANCE TESTS, ROCK ANCHORS, RIVERWALL STABILIZATION

0018 PROOF TESTS, ROCK ANCHORS, RIVERWALL STABILIZATION

0019 WATERTIGHTNESS TESTING, ROCK ANCHORS, RIVERWALL STABILIZATION

0020 PREGROUTING HOLES, ROCK ANCHORS, RIVERWALL STABILIZATION

0021 REDRILLING GROUTED HOLES, ROCK ANCHORS, RIVERWALL STABILIZATION

a. Payment for drilling will be made per linear foot for drilling in rock or concrete, regardless of the method used.

b. Drilling and casing holes in earth will be measured for payment to the nearest foot, based upon the linear feet of casing installed in accordance with the specifications.

c. Payment for pre-grouting rock anchor holes which fail the water-tightness test shall be made per actual cubic feet of cement grout that is actually injected into the anchor hole as specified.

d. Payment for redrilling will be made per actual linear feet hole actually drilled in grout from the specified pre-grout packer location to the bottom of the hole.

e. Payment for water-tightness tests of the prestressed anchor holes will be made per each test performed, including all costs in connection with performing the water-tightness tests as specified.

f. Payment for installation of production rock anchors will be made per linear foot of drill hole for each anchor and shall constitute full compensation for all costs in connection with fabricating, furnishing, and installing the rock anchors, including grouting, and stressing, and all other costs in connection therewith not covered elsewhere as shown on the drawings and as specified.

g. All measurements shall be made in the presence of the Contracting Officer's Authorized Representative (COAR).

h. Drilling holes through concrete and rock will be measured for payment in accordance with the actual number of linear feet drilled, except that length of hole over-drilled to compensate for failure to extract cuttings or length of hole drilled but rejected because of alignment failure will not be included for measurement.

i. Drilling and casing holes in earth for rock anchors will be measured for payment to the nearest foot, based upon the linear feet casing installed in accordance with the specifications.

j. Measurement of rock anchors will be made by the linear foot of hole drilled for the rock anchors as specified.

k. Performance Tests will be measured based upon the number of tests

performed on anchors which are accepted in accordance with the specifications.

l. Proof Tests will be measured based upon the number of tests performed on anchors which are accepted in accordance with the specifications.

m. Watertightness Testing will be measured for payment based upon the number of watertightness tests actually performed at the direction of the Contracting Officer and in accordance with the specifications or as otherwise required.

n. Pregrouting Holes will be measured for payment based upon the cubic feet of cement grout that were actually injected into the anchor hole as specified.

o. Redrilling holes through pre-grouted holes will be measured by the number of linear feet of hole acceptably redrilled from the packer location to the required bottom of hole.

p. Final installation of the rock anchors will require the construction of a localized dewatering box or boxes as specified in Section 02490 RIVER WALL INCLINED ROCK ANCHORS. No separate payment will be made for the dewatering box(es) and all such costs shall be included in the contract price for "ROCK ANCHORS, RIVERWALL STABILIZATION".

q. Units of measure: linear feet/cubic feet/each.

1.2.6 Concrete Materials

Unit price items listed in the PRICE SCHEDULE include:

0022 PORTLAND CEMENT

a. Payment will be made at the contract price per ton, which price will include the cost of required unloading, hauling, handling, and storage at the site, of all portland cement used in the work, except for that used in precast items, which will be included in cost of the precast items.

b. The quantity of portland cement to be paid for will be the number of tons of portland cement used unless specifically excepted, wasted, or used for the convenience of the Contractor. The quantity to be paid for will be determined by multiplying the actual (within a tolerance of $\pm$ 1% from the mix design weight) batch weight of portland cement in each type of concrete used by the number of batches of concrete types placed within the pay lines of the structure, and dividing by 2,000.

c. Unit of measure: Tons (TN).

0023 POZZOLAN

a. Payment will be made at the contract price per ton which price will include the cost of required unloading, hauling, handling, and storage at the site of all pozzolan used in the work, except for that used in precast items, which will be included in cost of the precast items.

b. The quantity of pozzolan to be paid for will be the number of tons of pozzolan used unless specifically excepted, wasted, or used for the convenience of the Contractor. The quantity to be paid for will be determined by multiplying the actual (within a cumulative weight tolerance

of ± 1% from the mix design weight if cement and pozzolan are batched cumulatively or ± 1% if weighed separately) batch weight of pozzolan in each type of concrete used by the number of batches of concrete of the types placed within the pay lines of the structure, and dividing by 2,000

c. Unit of measure: Tons (TN).

0024 GROUND GRANULATED BLAST FURNACE SLAG

a. Payment will be made at the contract price per ton, which price will include the cost of required unloading, hauling, handling, and storage at the site, of all ground granulated blast furnace slag (GGBF) used in the work, except for that used in precast items, which will be included in cost of the precast items.

b. The quantity of GGBF to be paid for will be the number of tons of ground granulated blast furnace slag (GGBF) used unless specifically excepted, wasted, or used for the convenience of the Contractor. The quantity to be paid for will be determined by multiplying the actual (within a tolerance of ± 1% from the mix design weight) batch weight of GGBF in each type of concrete used by the number of batches of concrete types placed within the pay lines of the structure, and dividing by 2,000.

c. Unit of measure: Tons (TN).

0025 SILICA FUME

a. Payment will be made at the contract price per ton, which price will include the cost of required unloading, hauling, handling, and storage at the site, of all silica fume used in the work, except for that used in precast items, which will be included in cost of the precast items.

b. The quantity of silica fume to be paid for will be the number of tons of silica fume used unless specifically excepted, wasted, or used for the convenience of the Contractor.

c. Unit of measure: ~~Gallons~~Tons (~~GL~~TN).

0026 ANTI-WASHOUT MIXTURE

a. Payment will be made at the contract price per gallon, which price will include the cost of required unloading, hauling, handling, and storage at the site, of all anti-washout mixture used in the work, except for that used in precast items, which will be included in cost of the precast items.

b. The quantity of anti-washout mixture to be paid for will be the number of gallons of anti-washout mixture used unless specifically excepted, wasted, or used for the convenience of the Contractor.

c. Unit of measure: Gallons (GL).

1.2.7 Concrete Placement

Unit price items listed in the PRICE SCHEDULE include:

0027 TREMIE CONCRETE

0028 MASS CONCRETE, LOCK WALL MONOLITHS

0029 CAST IN PLACE STRUCTURAL CONCRETE, LOCK WALL MONOLITHS

0042 CONCRETE, FOUNDATION DRILLED SHAFTS

0114 PLAIN CONCRETE CURB, INSIDE EDGE OF ACCESS RAMP, LEFT BANK BATCH PLANT AREA

0115 CONCRETE PAVEMENT, ACCESS RAMP AND LANDING AREA, LEFT BANK BATCH PLANT AREA

0143 OPEN GRATE TRENCH, LEFT BANK BATCH PLANT AREA

0144 CONCRETE SLABS, BATCH PLANT BIN AREA AND TRUCK TIRE WASH AREA, LEFT BANK BATCH PLANT AREA

a. Payment for these items will be made at the respective contract prices per cubic yard, which prices shall include the cost of all labor, materials, and the use of all equipment and tools required to complete the concrete work; except the cement, pozzolan, ground granulated blast furnace slag, silica fume, anti-washout mixture, reinforcement, and embedded parts that are specified to be paid for separately.

b. Pay lines for concrete structures are the neat lines of the structures as shown on the drawings. Measurement of concrete shall be made on the basis of the actual volume of concrete within the pay lines of the structures as indicated on the drawings. Measurement of concrete placed against the sides of any excavation without the use of intervening forms shall be made only within the pay lines of the structure, and within the tolerances specified. No measurement will be made of concrete placed outside the tolerances specified or for the excavation unless otherwise approved by the Contracting Officer. No deduction shall be made for rounded or beveled edges or space occupied by metal work, reinforcing steel, electrical conduits or other items, nor for voids or embedded items that are either less than 5 cubic feet in volume or 1 square foot in cross section.

c. Payment for the open grate trench will also include costs of constructing the concrete trench and furnishing and installing the trench grating.

d. Measurement for the open grate trench will be made by the linear feet of trench constructed and accepted. e. Unit of measure: Cubic Yards (CD) and Linear Feet (LF).

1.2.8 Reinforcing Steel

Unit price items listed in the PRICE SCHEDULE include:

0032 FABRICATION AND INSTALLATION COSTS FOR REINFORCING STEEL AND DOWELS, LOCK WALLS AND APPURTENANCES

0044 FABRICATION AND INSTALLATION COSTS FOR REINFORCING STEEL, FOUNDATION DRILLED SHAFTS

a. Payment for fabricating and installing reinforcing steel and dowels shall constitute full compensation for fabricating and installing the reinforcing as shown and specified. Materials costs for furnishing these items will be paid for separately. Payment shall include all labor,

equipment, materials and supplies to complete these items of work, including drilling and grouting holes for dowels as indicated. Payment will not include the amount of steel reinforcing used in precast concrete items.

b. Concrete reinforcing and dowels will be measured for payment by the pound in place. The measured lengths will be converted to weights for the size of bars listed by the use of the nominal weights per lineal foot specified in the respective material specifications. Steel in laps indicated on the drawings or required by the Contracting Officer will be paid for at the contract unit price. No payment will be made for the additional steel in laps which are authorized for the convenience of the Contractor.

c. Unit of measure: Pounds (LB).

1.2.9 Excavation and Grading

Unit price items listed in the PRICE SCHEDULE include:

0075 COAL FINE REMOVAL, GOVERNMENT FURNISHED DISPOSAL SITE

0082 HAUL ROAD EXCAVATION, GOVERNMENT FURNISHED DISPOSAL SITE

0099 SITE EARTHWORK, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for all costs in connection with completing these items of work.
Payment for the coal fine removal shall include all advanced planning and engineering, and all costs in connection with removal, and disposal or processing of this material at a permitted facility as specified.

b. These items shall be measured by the cubic yard within the limits shown on the drawings, or as otherwise specified. Measurement shall be made by taking cross-sections before and after excavation or grading is performed and calculating the volume by the average-end-area method. Cross sections shall be taken before and after excavation at the same stations as the sections shown on the contract drawings or as may be additionally required by the Contracting Officer, and shall be performed in the presence of the Contracting Officer or his Authorized Representative, unless otherwise waived. Volume computations shall be performed by the Contractor, and copies of all cross section data and computations shall be submitted to the Contracting Officer.

c. Unit of Measure: Cubic Yards (CD).

1.2.10 Temporary Disposal Stockpile

Unit price items in the PRICE SCHEDULE include:

0091 TEMPORARY DISPOSAL STOCKPILE

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs for performing the work including: transporting and depositing the materials from the off-loading ramp to the designated disposal area; control of effluents from the Contractor's operations; performing measurements for payment; and all other incidental costs in connection with these aspects of the work under this contract.

This item includes the material delivered to the off-loading ramp which

will not be used in the construction of confinement berm and embankments.

b. This item shall be measured by the cubic yard within the limits shown on the drawings, or as otherwise specified. The Contracting Officer shall determine the frequency of surveying and approve all methods of measurement. Measurement shall be made by taking cross-sections before and after placement and compaction is performed and calculating the volume by the average-end-area method. Cross sections shall be taken before and after placement at the same stations as the sections shown on the contract drawings or as may be additionally required by the Contracting Officer, and shall be performed in the presence of the Contracting Officer or his Authorized Representative, unless otherwise waived. Volume computations shall be performed by the Contractor, and copies of all cross section data and computations shall be submitted to the Contracting Officer.

c. Unit of measure: Cubic Yards (CD).

1.2.11 Rock, Stone and Riprap

Unit price items listed in the PRICE SCHEDULE include:

0103 OUTFALL 002, ROCK FILTER, AND RIPRAP EROSION PROTECTION, LEFT BANK BATCH PLANT AREA

0104 TRAPEZOIDAL CHANNEL, R-3 RIPRAP LINING, BULKHEAD STRUCTURE AREA, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for all costs in connection with completing these items of work including furnishing and placing the specified material to the lines and grades shown, and as specified.

b. Rock lined channels and gabion mattresses shall be measured by the linear feet of stone placed as shown and as specified. Rock filter shall be measured for payment by the number of such structures placed as shown and as specified.

c. Units of Measure: Cubic Yards (CD), Linear Feet (LF), Each (EA) and Tons (TN).

1.2.12 Waterstops

Unit price items listed in the PRICE SCHEDULE include:

0030 PVC WATERSTOPS

0031 COPPER WATERSTOPS

a. Payment for waterstops shall constitute full compensation for all labor, equipment, material and supply costs to furnish and install waterstops as shown and as specified.

b. Waterstops will be measured for payment by the linear foot in place. No allowance will be made for laps.

c. Unit of measure: Linear Feet (LF)

1.2.13 Drilled Shafts

Unit price items listed in the PRICE SCHEDULE include:

0034 FABRICATION AND INSTALLATION COSTS FOR PERMANENT CASING, 54-INCH DIAMETER FOUNDATION DRILLED SHAFTS (48-INCH ROCK SOCKET)

0035 FABRICATION AND INSTALLATION COSTS FOR PERMANENT CASING, 78-INCH DIAMETER FOUNDATION DRILLED SHAFTS (72-INCH ROCK SOCKET)

0036 SOIL EXCAVATION, 54-INCH DIAMETER FOUNDATION DRILLED SHAFTS

0037 SOIL EXCAVATION, 78-INCH DIAMETER FOUNDATION DRILLED SHAFTS (72-INCH ROCK SOCKET)

0038 ROCK EXCAVATION, 54-INCH DIAMETER FOUNDATION DRILLED SHAFTS (48-INCH ROCK SOCKET)

0039 ROCK EXCAVATION, 78-INCH DIAMETER FOUNDATION DRILLED SHAFTS (72-INCH ROCK SOCKET)

0040 CROSSHOLE SONIC LOGGING (CSL), FOUNDATION DRILLED SHAFTS

~~0041 FABRICATION AND INSTALLATION COSTS FOR ACCESS TUBES, CROSSHOLE SONIC LOGGING, FOUNDATION DRILLED SHAFTS~~

0043 CORING OF FOUNDATION DRILLED SHAFTS, VERIFICATION OF CROSSHOLE SONIC LOGGING RESULTS

a. Payment for the above items will be made for costs associated with completion of the drilled shafts, including all costs of equipment,labor, and supplies to complete the required work as indicated on the drawings. ~~Materials costs for furnishing permanent casing and access tubes for crosshole sonic logging will be paid for separately.~~ No separate payment will be made for accessories and payment shall be included in the contract unit price for the items of work to which the accessories are incidental. Payment for items measured by each shall include all costs associated with that item as installed or completed.

b. Measurements shall be based on the results of prerequisite exploratory borings.

c. Measurements for soil excavation will be to the nearest linear foot, based on the length actually drilled through overburden to the top of rock. Measurements will be made from the top surface of the riverbed to the point at which drilling in rock begins. Top of rock shall be established from the results of the exploratory borings (See Section 02012 EXPLORATORY DRILLING).

d. Measurements for rock excavation will be to the nearest linear foot, based on the length actually drilled through rock to the final tip elevation. Top of rock and final tip elevations shall be established from the results of the exploratory borings (See Section 02012 EXPLORATORY DRILLING).

e. Materials costs for furnishing permanent casing will be paid for separately. Measurements for permanent steel casing shall be to the nearest linear foot, based on the actual length of permanent casing in-place from the tip elevation to the final permanent cutoff elevation. No measurement

will be made for casing above the cutoff elevation. No separate payment will be made for cut-off or splicing of permanent steel casings. Lengths of casing shall be ordered based on the results of the exploratory borings (See Section 02012 EXPLORATORY DRILLING).

f. Measurements for crosshole sonic logging (CSL) shall be the number of shafts on which crosshole sonic logging has been performed.

~~g. Measurements for access tubes for Crosshole Sonic Testing shall be to the nearest linear foot, based on the actual linear feet of access tubes incorporated in the steel reinforcing cages.~~
g. Coring of foundation drilled shafts to verify the results of crosshole sonic logging shall include all costs of coring and backfilling the holes with concrete as required.

h. Units of measure: Linear Feet (LF) and Each (EA).

1.2.14 Exploratory Programs

Unit price items listed in the PRICE SCHEDULE include:

0045 EXPLORATORY DRILLING, SOIL DRILLING WITHOUT SAMPLING

0046 EXPLORATORY DRILLING, SOIL DRILLING WITH SAMPLING

0047 EXPLORATORY DRILLING, ROCK DRILLING, WITH CORING

0048 EXPLORATORY DRILLING, SEALING OF EXPLORATORY HOLES WITH CEMENT GROUT

a. Payment for the above items will be made for costs associated with mobilization and demobilization of all necessary drilling equipment, floating plant, labor equipment and materials, and for performing the drilling and sampling as specified. No separate payment will be made for mobilizing the drilling equipment from water access, which costs are considered incidental. Payment will be made only for the drilling of exploratory holes that are included on the contract drawings, or are directed by the Contracting Officer to be so drilled. Payment will not be made for any hole for which satisfactory records (and samples), as determined by the Contracting Officer, are not furnished.

b. All measurements shall be made in the presence of the Contracting Officer's Authorized Representative (COAR). The Contractor shall preserve all exploratory holes in good condition until final measurements are made and until the records and samples have been examined and accepted.

Soil drilling without sampling will be measured to the nearest linear foot, based on the linear feet of holes that were actually drilled through overburden in accordance with the specifications. Measurements will be made from the "original ground surface" to the point at which sampling of the boring begins. The "original ground surface" shall be interpreted as the river bottom for exploratory borings made in the river.

Soil drilling with sampling will be measured for payment to the nearest linear foot, based on the linear feet of holes that were actually drilled through the overburden in accordance with the specifications. Measurement will be made from the elevation at which drive sampling is started to the elevation at which drive sampling is completed.

Rock drilling with coring will be measured for payment to the nearest linear foot, based on the linear feet of holes that were actually cored through rock in accordance with the specifications. Measurement will be made from the elevation at which rock coring is started to the elevation at which rock coring is completed.

Sealing of exploratory holes will be measured for payment to the nearest linear foot, based on the linear feet of holes that are sealed in accordance with the specifications. Measurement will be made from the elevation of the top of the hole to the elevation at which rock drilling was completed.

c. Unit of measure: Linear Feet (LF).

1.2.15 Non-Cofferbox Sheet Piling, ~~King Piling~~H-Piles and Appurtenant Items

~~Lump sum~~Unit price items listed in the PRICE SCHEDULE include:

0050 FABRICATION AND INSTALLATION COSTS FOR SHEET PILE, ~~COFFERBOXES AND~~ NON-COFFERBOXES

0051 FABRICATION AND INSTALLATION COSTS FOR ~~KING~~ H-PILES, NON-COFFERBOXES

~~0052 FABRICATION AND INSTALLATION COSTS FOR STRUCTURAL STEEL, COFFERBOXES AND NON-COFFERBOXES~~

a. Payment for the above items shall constitute full compensation for all labor, equipment, and supplies for completing the items of work as shown and as specified. Materials costs for furnishing these items will be paid for separately. Payments shall include costs for guide templates; removal of obstructions; pile removal and redriving; performing measurements for payment; and all other incidental costs in connection with these aspects of the work under this contract. Payment for these items shall also include costs for shop and field fabrications; performing measurements for payment; testing of materials and products incorporated into the work; all advanced planning and engineering; and all other incidental costs in connection with these aspects of the work under this contract. The Contractor shall anticipate that 10% of the quantity of piles will hit obstructions, and that this cost shall be included in the cost of piling.

~~b. No separate measurment or payment will be made for special sheet piling connnectors, and all costs shall be included in the costs of the king piles.~~

~~c~~b. The actual quantity of sheet piling, and fabricated piling will be based on information gathered from surveys and field measurements and the results of the exploratory drilling and pile driving tests.

c. Payment for the H-piles at the non-cofferboxes shall also include the fabrication costs of attaching the sheet piling interlocks to the H-piles.

~~d~~d. Measurements shall be the actual linear feet of piling installed IN THE PERMANENT WORK, within the specified tolerances, and accepted by the Contracting Officer. No separate measurement or payment will be made for pile cutoffs or splices, or extra lengths provided for the convenience of the Contractor. The Contracting Officer shall approve all methods and procedures for quantity surveys.

~~e~~e. Unit of Measure: Linear Feet (LF).

1.2.16 Excavation Inside Cofferboxes

Unit price item~~s~~ listed in the PRICE SCHEDULE include:

0053 UNDERWATER ALLUVIUM EXCAVATION INSIDE COFFERBOXES

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs excavate the alluvium overburden from inside the cofferboxes, including: excavation and transporting the materials to the disposal site and off-loading the material at the off-loading ramp at the Government furnished disposal site and all other incidental costs in connection with this item of work under this contract. It is noted that the Contractor may have to use a combination of methods to thoroughly remove all materials to the limits shown.

Payment for for hauling and depositing the materials at the designated areas at the disposal site will be paid for separately.

b. Measurement for th~~ese~~is item~~s~~ will be based on the excavation limits shown on the drawings~~,~~. Measurement will be made from the point of pre-excavation (initial dredging), within the specified tolerance of El. 699.0, to the top of rock, and will be verified by soundings or other methods approved by the Contracting Officer. No additional payment will be made for any adjustments to the Contractor's excavation operations to meet the requirements of the drawings and specifications. No payment will be made until the area excavated is accepted by the Contracting Officer.

c. Unit of measure: Cubic Yards (CD).

1.2.17 Corner Protection, Wall Armor and Corner Castings

Unit price items listed in the PRICE SCHEDULE include:

0060 CORNER PROTECTION

0061 WALL ARMOR AND MONOLITH JOINT PROTECTION

0062 CORNER CASTINGS

a. Payment for these items shall constitute full compensation for all costs necessary to complete these items of work, including fabricating, delivering, and installation, complete as shown on the contract drawings, including anchorage, welding, and painting, and all other costs associated with these items.

b. Measurement of corner protection and wall armor and monolith joint protection will be by the linear feet of corner protection, wall armor and monolith joint protection furnished and installed. No separate measurement will be made for anchorages or splices.

c. Measurement of corner castings will be by the number of corner castings actually furnished and installed. No separate measurement will be made for anchorages.

d. Unit of Measure: Linear Feet (LF) and Each (EA).

1.2.18 Grating, Planking and Cover Plates

Unit price items listed in the PRICE SCHEDULE include:

0064 GRATING

0065 ALUMINUM PLANKING

0066 EQUIPMENT ACCESS AND EMPTYING VALVE ACCESS COVERS

0067 GATE ANCHORAGE RECESS COVER

0068 ALUMINUM RABBET ANGLES

Payment for these items shall constitute full compensation for all costs necessary to complete these items of work as shown and as specified, including furnishing and installing the items , and all hardware, rubber, rabbet angles, and anchorages.

b. Measurement of the rabbet angles will be by the linear foot installed.Measurement of all other items will be by the square foot installed and accepted.

c. Unit of measure: Square Feet (SF) and Linear Feet (LF).

1.2.19 Check Posts and Line Hooks

Unit price items listed in the PRICE SCHEDULE include:

0069 CHECK POSTS

0070 LINE HOOKS AND GUARDS

a. Payment for these items shall constitute full compensation for all costs necessary to complete these items of work as shown and as specified.

Payment for installing the Government furnished check post assemblies shall include receiving and delivering the posts from the Government's PEWARS facility, and installing the check post assemblies; furnishing and installing anchorages; painting; and cement grout fill, complete, as shown on the contract drawings and as specified.

b. Measurement of these items will be by the number of each type installed and accepted.

c. Unit of Measure: Each (EA).

1.2.20 Rock Construction Entrances

Unit price items listed in the PRICE SCHEDULE include:

0074 ROCK CONSTRUCTION ENTRANCE, GOVERNMENT FURNISHED DISPOSAL SITE

0096 ROCK CONSTRUCTION ENTRANCE, LEFT BANK BATCH PLANT AREA

a. Payment for rock construction entrances shall constitute full compensation for all costs necessary to complete these items of work as shown and as specified, including construction and maintenance of the rock construction entrances.

b. Measurement for rock construction entrances shall be the number of them installed.

Unit of measure: Each (EA).

1.2.21 Silt Fences and Fabric Fences

Unit price items listed in the PRICE SCHEDULE include:

0077 SILT FENCE, GOVERNMENT FURNISHED DISPOSAL SITE

0078 SUPER SILT FENCE, GOVERNMENT FURNISHED DISPOSAL SITE

0093 FILTER FABRIC FENCE, 18-INCH HIGH, LEFT BANK BATCH PLANT AREA

0094 FILTER FABRIC FENCE, 30-INCH HIGH, LEFT BANK BATCH PLANT AREA

0095 SUPER SILT FENCE, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for providing all plant, labor, material, and equipment and performing all operations necessary to perform this work as shown and as specified, including the inspection and maintenance of these items. Payment for super silt fence shall also include all costs in connection with furnishing the chainlink fabric and posts as shown and as specified.

b. Measurement will be made by the linear foot of material installed and accepted.

c. Unit of Measure: Linear Feet (LF).

1.2.22 Filling, Backfillling, Embankments and Berms

Unit price items listed in the PRICE SCHEDULE include:

0083 CONFINEMENT BERM, GOVERNMENT FURNISHED DISPOSAL SITE

0084 HAUL ROAD EMBANKMENTS, FILL, GOVERNMENT FURNISHED DISPOSAL SITE

0100 GRANULAR FILL MATERIAL, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for all costs in connection with completing these items of work including furnishing and placing the specified material, spreading, grading and compaction.

The costs for the confinement berm and embankments at the Government furnished disposal site will include taking the material that has been delivered to the off-loading area and using it in the construction of these features. The costs will not include ~~transpost~~transport of material to the off-loading ramp, which is paid for under separate items.

b. These items shall be measured by the cubic yard within the limits shown on the drawings, or as otherwise specified. Measurement shall be made by taking cross-sections before and after placement and compaction is performed and calculating the volume by the average-end-area method. Cross sections shall be taken before and after placement at the same stations as the sections shown on the contract drawings or as may be additionally

required by the Contracting Officer, and shall be performed in the presence of the Contracting Officer or his Authorized Representative, unless otherwise waived. Volume computations shall be performed by the Contractor, and copies of all cross section data and computations shall be submitted to the Contracting Officer.

c. Unit of Measure: Cubic Yards (CD).

1.2.23 Aggregate Surfaces

Unit price items listed in the PRICE SCHEDULE include:

0085 8-INCH AGGREGATE SURFACING, GOVERNMENT FURNISHED DISPOSAL SITE

0134 GRAVEL ACCESS ROAD, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for all labor, equipment, material and supply costs to construct these items as shown and as specified in Section 02720 AGGREGATE SUBBASE AND BASE COURSES. The payment shall constitute full compensation for all labor, equipment, materials and supplies for furnishing and placing crushed aggregate material, including compaction; shall include any required field and laboratory testing; shall include performing measurements for payment; and all other incidental costs in connection with these aspects of the work under this contract.

b. Measurement shall be made on the basis of square yards of material furnished and placed as specified and as shown on the drawings.

c. Unit of measure: Square Yards (SY).

1.2.24 Guiderail

Unit price items listed in the PRICE SCHEDULE include:

0086 GUIDERAIL, GOVERNMENT FURNISHED DISPOSAL SITE

0120 GUIDERAIL, PADOT TYPE 2-SC, LEFT BANK BATCH PLANT AREA

a. Payment for guiderail shall constitute full compensation for all costs necessary to complete this item of work as shown and as specified.

b. Measurement for guiderail shall be the actual actual length of guiderail installed and accepted, including terminal ends.

Measurement for terminal ends shall be the number of terminal ends installed.

Unit of measure: Linear Feet (LF) and Each (EA).

1.2.25 Storm Drainage Pipes

Unit price items listed in the PRICE SCHEDULE include:

0089 15-INCH RCP CULVERT, GOVERNMENT FURNISHED DISPOSAL SITE

0090 18-INCH RCP CULVERT, GOVERNMENT FURNISHED DISPOSAL SITE

0106 24-INCH OUTFALL 001 PIPE & FITTINGS, REINFORCED CONCRETE PIPE

AND BACKFILL, LEFT BANK BATCH PLANT AREA

0108 GATE VALVE AND REDUCER COUPLING, LEFT BANK BATCH PLANT AREA

0109 24-INCH, SDR 21 HDPE PIPE FROM VALVE STATION MANHOLE TO INLET NO. 1, LEFT BANK BATCH PLANT AREA

0112 24-INCH PE, SMOOTH INTERIOR, STORM SEWER PIPE FROM INLET NO. 1 THROUGH NO. 4, BETWEEN INLET NO. 2 AND NO. 5 AND BETWEEN MANHOLE NO. 1 AND NO. 2, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for furnishing all materials, equipment, plant, and tools; and for labor and other incidentals necessary to complete the work as shown and as specified, including furnishing and placing the item and testing for leaks. Excavation will be paid for separately.

b. Measurement for the gate valve and reducer coupling will be by the number installed. Measurement for all other items listed above will be by the linear foot installed and accepted.

c. Unit of measure: Linear Feet (LF) and Each (EA)

1.2.26 Manholes and Inlets

Unit price items listed in the PRICE SCHEDULE include:

0105 OUTFALL 001, MANHOLE, 48-INCH DIAMETER PRECAST REINFORCED CONCRETE, LEFT BANK BATCH PLANT AREA

0107 VALVE STATION MANHOLE, 60-INCH DIAMETER PRECAST REINFORCED CONCRETE, LEFT BANK BATCH PLANT AREA

0110 INLETS NO. 1, 2 AND 5, LEFT BANK BATCH PLANT AREA

0111 INLETS NOS. 3 AND 4, PADOT TYPE M, LEFT BANK BATCH PLANT AREA

0113 MANHOLES NOS. 1 & 2, 48-INCH DIAMETER PRECAST REINFORCED CONCRETE, LEFT BANK BATCH PLANT AREA

a. Payment for these items shall constitute full compensation for furnishing all materials, equipment, plant, and tools; and for labor and other incidentals necessary to complete the work as shown and as specified, including furnishing and placing the item.

b. Measurement for these items will be by the number of structures installed.

c. Unit of Measure: Each (EA).

1.2.27 Chain Link Fencing

Unit price items listed in the PRICE SCHEDULE include:

0121 CHAIN LINK FENCING, 6-FT HIGH GENERAL SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA

0122 CHAIN LINK FENCING, 8-FT HIGH HIGH SECURITY SYSTEM, LEFT BANK

BATCH PLANT AREA

0123 MAIN ACCESS GATE, 31-FT MIN OPENING, 6-FT HIGH, GENERAL SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA

0124 SLIDING ACCESS GATE, 19-FT WIDE, 8-FT HIGH, HIGH SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA

0125 SWINGING ACCESS GATE, 4'-0" WIDE, 6-FT HIGH, GENERAL SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA

0126 SWINGING ACCESS GATE, 4'-0" WIDE, 8-FT HIGH, HIGH SECURITY SYSTEM, LEFT BANK BATCH PLANT AREA

a. Payment for new chain link fence shall constitute full compensation for furnishing all materials, equipment, plant, and tools; and for labor and other incidentals necessary to complete the work as shown and as specified.

b. Measurement for new chain link fence will be by the linear foot of fence installed and accepted

Measurement for gates shall be the number of each type and size gate furnished and installed..

c. Unit of measure: Linear Feet (LF) and Each (EA)

1.2.28 Seeding and Vegetation

Lump Sum price items in the PRICE SCHEDULE include:

0079 GRASS LINED CHANNELS, GOVERNMENT FURNISHED DISPOSAL SITE

0092 TEMPORARY SEEDING, GOVERNMENT FURNISHED DISPOSAL SITE

0116 TOPSOIL, LEFT BANK BATCH PLANT AREA

0117 SEEDING, LEFT BANK BATCH PLANT AREA

Payment for seeding operations shall constitute full compensation for all labor, equipment, material and supply costs to provide a satisfactory stand of turf over the disturbed areas and areas indicated to be seeded, including seeding and mulching and other incidental work.

Payment for the grass lined channels at the Government furnished disposal site will also include excavation of the channels to the lines and grades shown.

Measurement for the grass lined channels at the Government furnished disposal site will be made by the linear feet of channels actually constructed, and approved.

Measurement for all seeding operations will be made by the acre of area that contains a satisfactory stand of vegetation.

Measurement of topsoil will be made by the ton of material delivered and used on site.

b. Units of measure: Linear Feet (LF), Each (EA), Acre (AC), and Ton (TN).

1.2.29 Bituminous Pavement

Unit price items listed in the PRICE SCHEDULE include:

0128 BITUMINOUS CONCRETE BASE COURSE (BCBC) , LEFT BANK BATCH PLANT AREA

0129 BITUMINOUS WEARING COURSE, LEFT BANK BATCH PLANT AREA

0130 BITUMINOUS BINDER COURSE, LEFT BANK BATCH PLANT AREA

0131 TRAPEZOIDAL CHANNEL, PAVED LINING, LEFT BANK BATCH PLANT AREA

0132 ASPHALT DIVERSION BERM, LEFT BANK BATCH PLANT AREA

0133 ASPHALT WEDGE CURB, ID-2 WEARING, LEFT BANK BATCH PLANT AREA

a. Payment for these items bituminous concrete base course, binder course and bituminous wearing course shall constitute full compensation for furnishing all materials, equipment, plant, and tools; and for labor and other incidentals necessary to complete the work required as specified, including joint treatment at the interfaces of new paving with existing paving or structures.

b. Measurement for these items bituminous concrete base, binder and wearing courses will be by the square yard of bituminous pavement material in place.

c. Measurement for curbing and channel will be by the linear feet of material in place.

d. Measurement of asphalt berms will be by the number of such berms constructed.

e. Unit of Measure: Square Yards (SY), Linear Feet (LF) and Each (EA).

1.2.30 Jet Grout Columns

1.2.30.1 Jet Grouting

Unit price item in the PRICE SCHEDULE include:

0149 JET GROUT COLUMNS, COFFERBOX CLOSURES

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs, for drilling through alluvium and one-foot into rock to perform jet grouting; performing the jet grouting; and all other costs not included in other price items, for constructing the jet grout columns as specified in Section 02270 JET GROUTING. These costs will include the cost of all materials for producing the grout including cement, aggregates, and admixtures.

b. Payment for this item shall also include costs for performing measurements for payment; all advanced planning and engineering; and all other incidental costs in connection with these aspects of the work under this contract.

c. The unit of measurement for jet grouting will be based on information gathered from field measurements. Measurements shall be the actual linear

feet successfully drilled, grouted and accepted by the Contracting Officer, as measured along the axis of the hole.

d. Unit of measure: Linear Feet (LF).

1.2.30.2 Jet Grout Sampling and Testing

0150 TEST CORE SAMPLES, JET GROUT WALLS

a. Payment for this item shall constitute full compensation for all labor, equipment, material and supply costs to obtain test core samples of the soilcrete as specified in Section 02270 JET GROUTING.

b. Payment for this item shall also include costs for guide templates; drilling to obtain test core samples; in-place permeability testing; strength testing; backfilling the holes as required; performing measurements for payment; all advanced planning and engineering; and all other incidental costs in connection with these aspects of the work under this contract.

c. The unit of measurement for obtaining test core samples will be based on measurements of the actual test core sample recovered. Measurements shall be the actual linear feet of test core sample recovered.

d. Unit of measure: Linear Feet (LF).

1.2.31 Materials Costs for Selected Steel Items

0151 STEEL MATERIALS COSTS FOR REINFORCING STEEL AND DOWELS, LOCK WALLS AND APPURTENANCES

0152 STEEL MATERIALS COSTS FOR PERMANENT CASING, 54-INCH DIAMETER FOUNDATION DRILLED SHAFTS (48-INCH ROCK SOCKET)

0153 STEEL MATERIALS COSTS FOR PERMANENT CASING, 78-INCH DIAMETER FOUNDATION DRILLED SHAFTS (72-INCH ROCK SOCKET)

~~0154 STEEL MATERIALS COSTS FOR ACCESS TUBES, CROSSHOLE SONIC LOGGING, FOUNDATION DRILLED SHAFTS~~

0155 STEEL MATERIALS COSTS FOR REINFORCING STEEL, FOUNDATION DRILLED SHAFTS

0156 STEEL MATERIALS COSTS FOR SHEET PILE, ~~COFFERBOXES AND~~ NON-COFFERBOXES

0157 STEEL MATERIALS COSTS FOR ~~KING~~ H-PILES, NON-COFFERBOXES

~~0158 STEEL MATERIALS COSTS FOR STRUCTURAL STEEL, COFFERBOXES AND NON-COFFERBOXES~~

0159 STEEL MATERIALS COSTS FOR EMPTYING VALVES AND EMPTYING BULKHEADS

a. Payment for these items shall include ONLY the costs of steel materials used in the manufacture of these items. Payment for fabrication and installation, as well as measurements for payment will be made separately. Measurement and payment for these items will only be made for steel materials incorporated into the permanent work, within the specified tolerances, and no separate measurement or payment will be made for

non-steel items, cut-offs, splices, extra materials ordered for the convenience of the Contractor, welds, painting, galvanizing or other coatings, and no separate deduction will be made for holes.

b. Payment for reinforcing steel will not include the amount of steel reinforcing used in precast concrete items. Concrete reinforcing and dowels will be measured for payment by the pound in place. The measured lengths will be converted to weights for the size of bars listed by the use of the nominal weights per lineal foot specified in the respective material specifications. Steel in laps indicated on the drawings or required by the Contracting Officer will be paid for at the contract unit price. No payment will be made for the additional steel in laps which are authorized for the convenience of the Contractor.

~~e~~c. Measurements for permanent steel casing shall be based on the actual amount of permanent casing in-place from the tip elevation to the final permanent cutoff elevation, converted to pounds. No measurement will be made for casing above the cutoff elevation. No separate payment will be made for cut-off or splicing of permanent steel casings. Lengths of casing shall be ordered based on the results of the exploratory borings (See Section 02012 EXPLORATORY DRILLING).

~~c. Measurements for access tubes for Crosshole Sonic Testing shall be based on the actual amount of access tubes incorporated in the steel reinforcing cages, converted to pounds.~~

~~d. No separate measurment or payment will be made for special sheet piling connnectors, and all costs shall be included in the costs of the king piles.~~

c. Payment for the H-piles at the non-cofferboxes shall also include the materials costs of attaching the sheet piling interlocks to the H-piles.

~~e~~d. The actual quantity of sheet piling, H-piles and fabricated piling will be based on information gathered from surveys and field measurements and the results of the exploratory drilling and pile driving tests.

~~f~~e. Payment for the steel materials costs for the emptying valves and emptying bulkheads shall include only the costs of steel materials included in the fabrication of the valves and bulkheads and appurtenant items including valves, bulkheads, lifting beam, liners, frames, bonnets, and valve shafts, and all other items associated with the valves and bulkheads.

~~g~~f. Unit of measure: Pounds (LB).

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION TABLE OF CONTENTS

DIVISION 03 - CONCRETE

SECTION 03015

CONCRETE: FIELD DEMONSTRATIONS



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SECTION 03015

CONCRETE: FIELD DEMONSTRATIONS

PART 1 GENERAL

1.1 SUMMARY

The purpose of this Section of the Specifications is to require demonstrations of various concrete placements to verify that the work will be performed in an acceptable manner, and will result in an acceptable product. The Contractor shall be fully responsible for planning and performing the work under this contract in accordance with the contract drawings and the specifications. The Contractor shall be fully responsible for determining the methods to perform the work in accordance with the contract documents. The Government reserves the right to verify that the Contractor's proposed methods, equipment and materials will be acceptable. These demonstrations shall include the following:

Demonstration Drilled Shafts: The Contractor shall construct a representative small diameter demonstration drilled shaft and a representative large diameter demonstration drilled shaft.

River Wall Tremie Foundation: The Contractor shall demonstrate underwater placement of concrete in the construction of tremie foundation for the cofferboxes.

~~Underbase Grouting Of Emptying Culverts During Monolith Construction: The Contractor shall demonstrate underbase grouting of the precast culverts contained in the middle wall and the river wall.~~

For each demonstration, the Contractor shall prepare a work plan in accordance with paragraph "SUBMITTALS"; perform the required construction; and sample and test the concrete during the demonstration placement, and after the demonstration concrete has cured.

The demonstrations required under this Section of the Specifications will not relieve the Contractor from performing the work required under this contract in an acceptable manner. Any portion of work found not in compliance with the contract documents shall be cause for rejection. The Contractor shall remove the rejected work and replace it at no additional cost to the Government, if directed to do so by the Contracting Officer. Proposed corrective plans and procedures, for any work not in compliance with the contract documents, shall be submitted to the Contracting Officer, for approval, prior to proceeding with construction of the pontoon.

1.1.1 Contractor's Key Personnel

The Contractor shall use key personnel during performance of the demonstration work who will subsequently be employed in the performance of the actual work. The Contractor's CQC Management team shall be present during testing to discuss issues and solutions to problems revealed during subsequent testing.

1.1.2 Construction Methods

The Contractor shall utilize his proposed formwork, form ties, concrete placement and vibration equipment, curing system, scaffolding, walkways, and other special features and methods which he proposes using for the demonstration concrete placements. All procedures shall be as proposed for concrete production.

1.1.3 Testing Requirements

Testing of concrete shall be as specified herein and as otherwise required in the actual work as specified in the applicable Sections of the Specifications. Results of all testing shall be furnished to the Contracting Officer as specified herein and as otherwise required by the testing provisions of the applicable Sections of the Specifications. The Government reserves the right to require additional testing of the demonstration placements. The cost of such inspection will be borne by the Government or the Contractor in accordance with the Contract Clause INSPECTION AND ACCEPTANCE.

1.1.4 Contractor's Records

The Contractor shall keep detailed written records, including written notes, photos and videotapes, to document all operations of the construction and testing of the demonstration concrete placements, indicating date, time, water and air ambient conditions and location of the work or test being performed. Photographic records of the demonstration concrete placements shall be considered construction progress photos, and shall be performed in accordance with Section 01380 PROGRESS PHOTOGRAPHS.

Written documentation of work shall include date and the elements of formwork and embedments, reinforcing, and concrete placement completed as of that date. Written documentation of testing performed shall be as specified herein and as specified in the testing provisions of the applicable Sections of the Specifications. Daily progress reports shall include date, weather conditions, names and positions of each crew member, equipment used, work or tests performed, problems encountered and solutions arrived at. Reports shall be prepared and submitted to the Contracting Officer on a daily basis in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Work Plans; G ED.

For each demonstration, the Contractor shall develop a work plan that depicts and specifies the construction and concrete placement procedures for the demonstration facilities, and defines the methods of sampling and testing concrete and performing other tests as specified. The work plans shall include detailed drawings and general specifications for construction of the demonstration facilities. The work plans shall contain a concrete

plan in accordance with Section 03010 CONCRETE: GENERAL REQUIREMENTS, and the other submittals listed below. The work plans shall indicate the level of Engineering and Construction support to be provided during concrete placement demonstrations and oversight of the construction of the demonstration facilities. The work plans shall be neatly organized and legible. The work plans shall include the definition of parameters to be studied and the purposes of the field demonstration. Calculations shall be checked and initialed, and contain references and assumptions.

In addition to drawings required under submittal paragraph "SD-02 Shop Drawings" below, the work plan shall contain drawings that detail the areas to be used for the demonstrations, configuration and layout of the simulated structures and the concrete placement methods to be used, including tremie pipes and support structures and equipment.

For each demonstration placement, the Contractor shall submit a listing of parameters to be tested, and the Contractor proposed methods of performing the tests, including sampling and testing. Results of all tests shall be submitted in accordance with submittal paragraph "SD-06 Test Reports" below.

Experience Records; G RE.

For each demonstration placement, the Contractor shall submit names, positions, and resumes of all key personnel that will be performing the demonstration work to the Contracting Officer for approval, before beginning work on the demonstrations. Qualifications of Contractor's quality control personnel shall be submitted in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

Demonstration Drilled Shafts; G RE.

The Contractor shall provide the submittals required by Section 02466 DRILLED SHAFTS, paragraph "SUBMITTALS", subparagraph "SD-01 Preconstruction Submittals".

SD-02 Shop Drawings

Demonstration Drilled Shafts; G ED.

The Contractor shall provide the submittals required by Section 02466 DRILLED SHAFTS, paragraph "SUBMITTALS", subparagraph "SD-02 Shop Drawings".

SD-06 Test Reports

Concrete Testing Results.

The results of all concrete tests shall be submitted in accordance with the applicable testing provisions of Division 3 - CONCRETE, of the Specifications.

Demonstration Drilled Shafts.

The Contractor shall provide the submittals required by Section 02466 DRILLED SHAFTS, paragraph "SUBMITTALS", subparagraph "SD-06 Test Reports". The test reports shall indicate the drilled shafts used for the demonstrations, and shall indicate the results of concrete integrity tests performed. The report shall indicate all corrective actions and revisions to methods that occurred during the demonstrations. The report shall be approved by the Contracting Officer before further drilled shaft

construction is permitted.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

For each demonstration concrete placement, the Contractor shall:

a. Develop a Work Plan that depicts and specifies the construction procedures for the demonstration facilities, and defines the methods of batching, transporting, placing and testing concrete, and shall include all submittals specified herein in paragraph "SUBMITTALS", subparagraphs "SD-01 Preconstruction Submittals" and "SD-02 Shop Drawings". All proposed designs and calculations shall be checked and initialed.

b. Construct required demonstration facilities.

c. Provide Engineering and Construction support during concrete placement demonstrations and oversee the construction of the demonstration facilities.

d. Sample and test concrete placed during the field demonstration and provide a report of all test results.

e. Core and test concrete after demonstration concrete has cured and provide a report of all test results.

f. Provide any other test results as specified herein and as otherwise required in the actual work as specified in the applicable Sections of the Specifications.

3.2 QUALITY CONTROL

The Contractor shall implement a process of Quality Control for the test program in accordance with Section 01451 CONTRACTOR QUALITY CONTROL.

3.3 GOVERNMENT FURNISHED INFORMATION

The Government will provide concrete mixture designs. Final mixture designs will be determined by performing trial batching and for verifying the final mixture designs in accordance with paragraph TRIAL BATCHING of Section 03051 CONCRETE: MIXTURE PROPORTIONING, prior to placement of concrete for the demonstration.

3.4 DEMONSTRATION OF DRILLED SHAFT CONSTRUCTION

The Contractor shall demonstrate the proposed procedures and methods contained within the Drilled Shaft Installation Plan, prior to any production drilling. This shall be accomplished by successfully completing one (1) full Type 2B demonstration drilled shaft, per 2B dimensions, complete with all required casing, reinforcement and concrete , while monitoring the condition of the rock socket for one (1) Type 2B drilled shaft, with 78" casing driven to rock and 72" rock socket drilled out and left open. The demonstration drilled shafts shall not be production drilled shafts, and will be paid for separately in accordance with Section 01270 MEASUREMENTS AND PAYMENT. The demonstration drilled shafts shall be

located in areas chosen by the Contractor within the allowable work and access areas of the river, and approved ~~designated~~ by the Contracting Officer. After successful completion of the demonstration drilled shafts, the Contractor may reuse them as dolphins, mooring posts, or other facilities constructed for the convenience of the Contractor. The demonstration drilled shafts shall be completed immediately prior to construction production drilled shafts. Once the approved Drilled Shaft Installation Plan is received by the Contracting Officer, the Contractor shall perform the following activities:

1) Construct Demonstration Shaft 1: Install the casing for a Type 2B drilled shaft, drill out the shaft and drill the 72" rock socket.

2) Leave Demonstration Shaft 1 open and monitor rock socket diameter twice daily (start and end of shift) to monitor rate of socket deterioration. Demonstration Shaft 1 shall be left open for a minimum of 7 days, although the Contracting Officer reserves the right to require the shaft to remain open longer.

3) Install vibration monitoring devices as required below in paragraph "B. Additional Monitoring of Demonstration Shaft 1".

4) Construct Demonstration Shaft 2: Locate the center of Demonstration Shaft 2 12 feet from the center of Demonstration Shaft 1. Install the casing for a Type 2B drilled shaft, drill out the shaft and drill the 72" rock socket.

5) Monitor the rock socket of Demonstration Shaft 1 every 2 hours as the drilling operation is conducted for Demonstration Shaft 2.

6) Set reinforcing cage, CSL tubes, etc. in Demonstration Shaft 2 and place concrete in Demonstration Shaft 2. Monitor the rock socket of Demonstration Shaft 1 during the placement of concrete in Demonstration Shaft 2 and every 2 hours thereafter for the first 6 hours (3 checks) after the concrete operation is completed.

7) Continue to monitor the condition of the rock socket of Demonstration Shaft 1 at least twice per day until all work, including concrete placement, in Demonstration Shaft 2 is complete.

8) Continue with CSL testing, coring, etc. of Demonstration Shaft 2.

9) When Demonstration Shaft 1 is no longer needed, fill only the rock socket with concrete to fill the hole and pull casing. Let alluvium fall in and fill the hole left by casing.

10) When Demonstration Shaft 2 is released, cut the casing at the top of the alluvium.

The Contractor shall use the same equipment and guides for installation of the demonstration drilled shafts as will be used for the actual work. Demonstration Shaft 2 shall include all rebar, access tubes, and embedded items as required for the production shafts. Successful completion of Demonstration Shaft 2 will be based on the following criteria:

1) Permanent casing is effectively installed with the proposed equipment and procedures to a horizontal and vertical accuracy which meets the allowable tolerances, and advanced sufficiently into the top rock layer so that an effective "seal" is achieved.

2) Alluvium is effectively drilled out of the casing, with the proposed procedures and tool(s).

3) A rock socket is effectively drilled with the proposed procedures and tool(s), and which meets the allowable tolerances.

4) The rock socket is effectively cleaned out, with the proposed method, to a degree of cleanliness that meets the allowable tolerances.

5)Excessive deterioration, in the opinion of the Contracting Officer, has not occurred in the shaft after drilling and prior to placement of concrete.

6) The reinforcing cage, including csl tubes, is fabricated and installed effectively with the proposed procedures and equipment, and meets the allowable tolerances.

7) Tremie concrete is batched, delivered and placed effectively in accordance with the proposed procedures, and Crosshole Sonic Logging and core drilling (CSL) verify that a successful placement has been in accordance with the acceptance criteria specified in Section 03820 CONCRETE: DRILLED SHAFTS.

8) Casing cut-off is effectively made with the proposed procedures and within the allowable tolerances.

9) Tremie concrete test specimens attain the minimum required compressive strengths within the required time.

10) All required reports are submitted and are acceptable to the Contracting Officer in terms of format and completeness.

A. Acceptance of Demonstration Shaft 2

Demonstration Shaft 2 must show, to the complete satisfaction of the Contracting Officer, that all of the above steps have been satisfactorily completed and in accordance with these specifications, and that Demonstration Shaft 2 is constructed to the tolerances allowed. If Demonstration Shaft 2 is not installed successfully, the Contractor's methods shall be adjusted accordingly, appropriate revisions shall be made to the Drilled Shaft Installation Plan, and the revised plan shall be submitted to the Contracting Officer for review and comment. The Contracting Officer reserves the right to require another demonstration drilled shaft, at the Contractor's expense. No production drilled shafts shall be installed until the prescribed Demonstration Shaft 2 and any additional demonstration shafts are successfully installed. All revisions to the original Drilled Shaft Installation Plan shall also be completed and reviewed by the Contracting Officer prior to releasing the production drilled shafts for construction. All production drilled shafts shall be constructed in accordance with the methods and procedures detailed in the final Drilled Shaft Installation Plan, including any revisions, following the completion of the demonstration drilled shafts.

B. Additional Monitoring of Demonstration Shaft 1

As noted above, Demonstration Shaft 1 is required to be left open so that the Government may be able to predict at what point in time excessive deterioration is likely to occur in future shafts. In addition, this

socket shall be equipped with suitable vibration monitoring devices to confirm the ability of a rock socket to remain competent if another rock socket is drilled adjacent to it. After installation of vibration monitoring devices in Demonstration Shaft 1, drilling for Demonstration Shaft 2 will be allowed to begin.

## 3.5 UNDERWATER PLACEMENT OF CONCRETE

The primary intent of the field demonstrations of the underwater concrete placement for the River Wall Tremie Foundations and drilled shafts are to study the capability of the proposed concrete mixtures and the proposed methods to perform as designed. The intended concrete placement characteristics to be demonstrated are as follows:

A. River Wall Tremie Foundations

Underwater concrete placed within the ~~cofferboxes and~~ non-cofferbox walls. This concrete must flow freely a distance of 15-20 feet. The materials must be capable of flowing around the drilled shafts, reinforcement cages, fill spaces within the z-pile sections, and around other miscellaneous items and protrusions. The concrete will be placed by gravity feed tremie pipes. Pumping will not be permitted. Also to be demonstrated shall be Contractor's proposed methods of alluvium removal from the simulated drilled shafts and cutoff walls.

B. Drilled Shaft Demonstrations

The placement of drilled shaft concrete, demonstrating that the concrete can be place with minimal washout, and that the concrete can be placed without voids or defects.

### 3.5.1 Physical Concrete Characteristics

Another intent of the field demonstrations is to study the physical characteristics of the proposed concrete mixtures, including strength, uniformity, washout loss and laitance of the concrete mixes.

The strengths, washout loss and laitance of the demonstration concrete will be evaluated by sampling and testing the concretes that are placed. In-place concrete strengths will be evaluated from cores extracted from the hardened concrete. The Contractor shall develop a sampling and testing strategy for each demonstration as specified above in paragraph "SUBMITTALS", paragraph "Work Plans".

The configuration of the demonstration facilities must permit visual inspection and evaluation of the interfaces between the concrete and the various features in the demonstration facilities.

### 3.5.2 Demonstration Facilities

#### 3.5.2.1 General

The demonstration facilities shall be designed and constructed to measure and evaluate the properties of the demonstration concretes as described herein. Configuration of the demonstration facilities shall be determined by the Contractor. The locations of the demonstrations shall be outside the navigation channel and lock approaches, and shall be coordinated with and approved by the Contracting Officer. The demonstrations shall not

cause any interference to river navigation. The Contractor shall develop procedures for execution of the concrete demonstrations. The procedures shall be coordinated with the Contracting Officer and shall be made part of the Work Plan for that demonstration placement. The contractor shall provide all necessary Engineering and Construction support for conduct of the concrete demonstrations. All underwater concrete placement demonstrations shall be performed underwater and shall be performed with equipment and personnel, including divers, as will be used in the actual work. The demonstration concrete mixes shall be placed through the tremie pipes

3.5.2.2 Production of Demonstration Concrete

The Government will provide the mixture proportions for all demonstration concrete. The Contractor shall provide all the necessary materials and produce the demonstration concrete and shall batch the concrete in the left bank batch plant. The Government shall make any adjustments to the concrete mixtures subsequent to the results of the tests. The Contractor shall transport all demonstration concrete to the demonstration facility and shall place all demonstration concrete in accordance with the applicable specification sections. The contractor shall sample and test all fresh concrete. Laboratory tests for fresh demonstration concrete shall include slump, slump flow, air content, unit weight measurements, bleed tests, washout testing, time of set, and preparation of concrete cylinders for strength evaluation at 7, 28 and 90 days.

3.5.2.3 River Wall Tremie Foundation

The Contractor shall simulate the construction of the foundation for a non-cofferbox wall section including cutoff walls. The demonstration river wall foundation shall be located upstream of the dam, within the area of the river from the left bank to the new riverwall up to Sta. 5+76.00A, at a location determined by the Contractor and approved by the Contracting Officer. The area chosen should be representative of the depth to be encountered in the actual construction. Drilled shafts for the river wall foundation may be simulated by the use of pipes or casing driven into the river bottom. The Contractor shall design and construct a box structure to simulate the cutoff wall construction for a non-cofferbox wall section, constructed of z-piling and H-piles. It is not necessary for the simulated z-piling cutoff walls be driven to rock. The simulated foundation shall have at least six drilled shafts and a full size (overall height, width and depth) reinforcing cage for a six-shaft non-cofferbox wall. The Contractor may use actual size reinforcing steel, or, at his option, may use materials such as pvc pipe, wooden dowels or other materials of the same diameter as the reinforcing steel. The reinforcing cage will be used to verify the Contractor's tremie concrete batching and placing operations. General configuration, sizes and arrangement of the drilled shafts, length of sheets, and reinforcing cage shall be as required for the actual construction. The Contractor shall demonstrate methods of removal of alluvial material from the sheets and H-piles, connections, simulated drilled shafts and other areas as required in the actual construction. With the Contractor's proposed concrete forming system in place, the Contractor shall demonstrate the placement of the tremie foundation for a non-cofferbox wall section by placing a full height lift of tremie concrete. ~~Sheet pile box structures shall be used to simulate the foundation for a non-cofferbox wall section and cutoff wall. Drilled shafts for the river wall foundation may be simulated by the use of pipes or casing driven into the river bottom. The Contractor shall design and construct a box structure to simulate the foundation construction for a non-cofferbox wall section~~

~~and a section of cutoff wall. The box shall consist of a four-sided box constructed of z piling as required in the actual construction. The simulated box shall have at least six drilled shafts and a reinforcing cage. Configuration, sizes and arrangement of the drilled shafts, sheets, and reinforcing cage shall be as required for the actual construction. The Contractor shall demonstrate methods of excavating within the cofferbox, to include removal of alluvial material from the sheets, connections, simulated drilled shafts and other areas as required in the actual construction. The Contractor shall demonstrate the construction of the tremie bulkhead, and placement of the tremie foundation. Combination wall demonstration shall consist of a four sided box constructed of pipe piles and z-piling, erected as required for the actual construction. In addition, the Contractor shall erect a wall outside the perimeter of the combination wall to simulate the face of an existing lock wall that will be encountered in the actual construction. The simulated combination wall shall have at least six drilled shafts. Configuration, sizes and arrangement of the combination wall drilled shafts, piles, and connections shall be as required for the actual construction. The Contractor shall demonstrate methods of excavating within the combination wall, to include removal of alluvial material from the piling, connections, simulated drilled shafts and other areas as required in the actual construction. The Contractor shall demonstrate the construction of the external struts between the simulated combination wall and the simulated lock wall, complete with reinforcing cage; and placement of the tremie foundation within the combination wall, complete with reinforcing cage.~~

3.6 Execution of Field Demonstrations

The concrete placement demonstrations shall be supervised by the Contractor's Concrete Superintendent and witnessed by the Contracting Officer. Concrete shall be sampled and tested at the point of placement. The Contractor shall provide a concrete technician to perform field tests on fresh concrete. The concrete technician shall record all test data at the demonstration site and provide a copy of the report to the Contracting Officer. The Contractor shall use the on site laboratory for concrete tests. The Contractor shall provide all other necessary Engineering and Construction support for conduct of the concrete demonstrations. The demonstration concrete shall be placed in accordance with the procedures contained within the approved Work Plan.

3.7 CONCRETE SAMPLING AND TESTING

3.7.1 General

The Contractor shall develop procedures for sampling, inspection and testing of the concrete mixtures placed during the demonstrations. The procedures shall be coordinated with the Contracting Officer, and shall conform to the requirements contained in the applicable concrete Sections of the Specifications for the actual work and as required herein. Testing shall include that conducted during batching of the demonstration concrete and specimens prepared in the field. The test data shall be compiled and a copy of the report provided to the Contracting Officer.

3.7.2 Core Samples

Core samples shall be taken through each of the demonstration concrete mixes placed including: 2 cores for Demonstration Shaft 2, and 20 for the river wall tremie foundation. Cores shall not be taken any sooner than 21 days, and shall be tested for strength at 28 and 90 days.

-- End of Section --

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DIVISION 11 - EQUIPMENT

SECTION 11295

EMPTYING VALVES AND BULKHEADS

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SECTION 11295

EMPTYING VALVES AND BULKHEADS

PART 1 GENERAL

1.1 SUMMARY

This Section of the Specifications outlines the requirements for the new emptying valves, bulkheads, lifting beams and culvert liners.

1.2 RELATED WORK SPECIFIED ELSEWHERE

SECTION 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS

SECTION 05502 METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS

SECTION 09965 PAINTING: HYDRAULIC STRUCTURES

1.3 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|---|---|
| ASTM A 240/A 240M | (2000) Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels |
| ASTM A 276 | (2000) Stainless Steel Bars and Shapes |
| ASTM A 36/A 36M | (2000a) Carbon Structural Steel |
| ASTM A 564/A 564M | (2001) Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes |
| ASTM A 709/A 709M | (2003) Carbon and High-Strength Low-Alloy Structural Steel Shapes, Plates, and Bars and Quenched-and-Tempered Alloy Structural Steel Plates for Bridges |
| ASTM B 148 | (1997) Aluminum-Bronze Sand Castings |
| ASTM B 21 | (1996) Naval Brass Rod, Bar, and Shapes |
| ASTM D 2240 | (2000) Rubber Property-Durometer Hardness |

| | |
|---|---|
| ASTM D 395 | (1998) Rubber Property - Compression Set |
| ASTM D 412 | (1998a) Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastometers - Tension |
| ASTM D 471 | (1998el) Rubber Property - Effect of Liquids |
| ASTM D 572 | (1988) Rubber Deterioration by Heat and Oxygen |

1.4 GENERAL DESCRIPTION

The emptying valves shall be bonneted wheel gates operated by a hydraulic cylinder. Hydraulic cylinder is not part of this contract. Each valve shall include: a vertical leaf with fixed main wheels; counterhold and guide rollers; upstream and downstream frame sections which shall be flange connected to their respective upstream and downstream culvert liners; and a bonnet and a bonnet cover which shall also act as the support for the operating cylinder. Each valve leaf shall be a welded stress relieved structural steel fabrication, with a downstream skin plate and rubber seals installed on the downstream side of the skin plate. Each valve leaf shall be provided with four main wheels (two on each side). The wheels shall have stainless steel cylindrical rims, rotating on self-lubricating and self-aligning spherical bearings. The wheel axles shall also be of stainless steel and supported on the side of the valve leaf. The main wheels are designed such that they can be removed and be replaced by slider blocks to take the place of the main wheels. Each valve leaf shall also be provided with four spring-loaded counterhold rollers (two on each side). In addition to the counterhold rollers, each valve leaf shall be provided with four spring loaded guide rollers on the sides of the leaf to center (laterally locate) the leaf in the culvert. Both the counterhold and guide rollers are designed such that they can be removed and replaced by slider blocks to take the place of the rollers and perform the same functions as the rollers. The slider blocks shall use and slide on the same roller tracks. An H-shaped link shall be used to connect (link) the operating cylinder rod to the valve leaf. The H-shaped link shall employ pin connections at both of its ends. Both ends shall be bored and fitted with self-lubricating bronze bushings for a pin connection to the valve operating cylinder rod end on the upper end and to the valve leaf on the lower end. The rod-end of the cylinder rod shall be fitted with a self-lubricating and self-aligning spherical bearing. Lifting lugs for handling of the valve leaf shall also be provided.

The upstream and downstream frames, bonnet, and bonnet cover for each valve shall be a welded and stress relieved steel fabrication. Frames and bonnet halves shall be flanged, doweled and bolted together. Stainless steel seal seats shall be provided on the frames and shall be extended into the bonnet. Stainless steel wheel tracks shall be provided on both bonnet halves and shall extend into the bonnet. The counterhold rollers shall also use the same main wheel tracks on the downstream frame and bonnet half. In addition, stainless steel wheel tracks for the guide rollers shall be provided on the sides of the downstream frame and bonnet half to guide the valve leaf on the sides. The bonnet cover shall be flanged and bolted to the valve bonnet with stainless steel studs and then doweled to assure permanent alignment. A bronze stuffing box, packed with V-shaped chevron packing and a packing gland for the cylinder-operating rod, shall be

provided to control leakage past the cylinder rod. The packing gland shall be adjustable from the top. A rod scraper shall also be provided on the underside of the bonnet cover.

1.4.1 Emptying Valves

The emptying valves shall be located in the Emptying Valve Monoliths and control the emptying culverts. There are a total of four emptying valves, with one valve per culvert and two culverts per Emptying Valve Monolith. The emptying valves shall be bonneted wheel gates, and include upstream and downstream culvert liners that, together with the emptying valve, form a single piece unit that extends the full width of the monolith. Each valve has a clear opening of 12 feet wide by 10 feet high and includes a vertical leaf with fixed main wheels, counter hold and guide rollers, upstream and downstream frame sections, a bonnet, and a bonnet cover that also acts as a support for a future valve operating cylinder. The upstream culvert liner extends from the upstream flange of the emptying valve to the upstream culvert valve bulkhead and includes the slots for the valve bulkhead. The downstream culvert liner extends from the downstream flange of the emptying valve to the downstream culvert valve bulkhead and includes culvert valve bulkhead slots and access manhole for personnel access, and an access tube for lowering a future temporary dewatering pump.

1.4.2 Bulkheads and Lifting Beams

Four emptying valve bulkheads shall be provided under this contract. The emptying culverts shall be provided with bulkhead slots for the placement of bulkhead units to isolate and dewater the valve culverts for inspection and maintenance purposes. The bulkheads shall be of welded structural steel fabrication with skin plate and rubber seals. The seal seats shall be of stainless steel and are part of the bulkhead frames. Each bulkhead shall be provided with two guide shoes on each side, to guide the bulkhead in each bulkhead slot and prevent it's jamming in the slot. Two leaf springs attached on each side of the bulkhead frame shall be provided to ensure proper seating of the sealing surfaces. Emptying valve bulkheads shall be equipped with a filling valve (operated by the lifting beam for the emptying valve bulkhead) to facilitate filling of the emptying culvert prior to removal of the emptying valve bulkhead. The lifting beams shall be of welded steel construction, with stainless steel pins and keeper plates and aluminum bronze bushings.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Welding; G ED.

Schedules of welding procedures for structural steel shall be submitted as specified in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

Supplier Qualifications; G RE

Contractor shall submit evidence of experience of the fabricator of the emptying valves, showing meaningful experience successfully fabricating valves or wheel or slide gates of similar design and complexity on at least 2 projects completed within the last 5 years.

SD-02 Shop Drawings

Fabrication and Assembly Drawings; G ED.

Detail drawings shall be submitted as specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS for the bulkheads, lifting beams and culvert liners.

Detail drawings shall include fabrication drawings, assembly drawings, delivery drawings, and installation drawings..

a. Fabrication Drawings. These drawings shall show complete details of each piece of the structural unit that identifies the material(s), tolerances, connections, machined surface finishes, and proposed welding sequences which clearly differentiate shop welds and field welds. Each piece shall be mark numbered and matched to an assembly drawing showing the overall assembly of the structural unit including details of the connections. Fabrication drawings shall include drawings that present bills of materials (i.e. material schedules) that tabulates each piece, quantity and weights. Fabrication drawings shall also include general notes related to fabrication.

b. Assembly Drawings. These drawings will present plan, elevation, and detail views of the bulkhead units and pickup frame so that it is clearly understood how each (mark numbered) piece (as shown on the fabrication drawings) is incorporated into the unit.

c. Delivery Drawings. These drawings shall provide descriptions of methods of delivering components to the site, including details for supporting fabricated components during shipping to prevent distortion or other damages. Delivery drawings shall also detail methods and materials to support the valves at the project site after testing and final acceptance.

c. Installation Drawings. These drawings shall be coordinated with concrete formwork drawings to ensure adequate bracing is available to maintain specified tolerances during concrete placement. These drawings shall include details and descriptions of how the components are installed, and shall include methods of testing the valves and bulkheads for proper fit and leakage.

Detail drawings shall be submitted to the Contracting Officer for review a minimum of 60 days prior to ordering materials. No materials shall be ordered until detail drawings are approved by the Contracting Officer.

SD-03 Product Data

Materials.

Materials orders, materials lists and materials shipping bills shall be submitted as specified in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

SD-06 Test Reports

Tests, Inspections, and Verifications; G ED.

Certified test reports for material tests shall be submitted with all materials delivered to the site.

1.6 QUALIFICATION OF WELDERS AND WELDING OPERATORS

Qualification of welders and welding operators shall conform to the requirements of Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

1.7 DELIVERY, STORAGE, AND HANDLING

Delivery and handling of materials and fabricated items shall conform to the requirements specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

1.7.1 Rubber Seals

Rubber seals shall be stored in a place which permits free circulation of air, maintains a temperature of 70 degrees F or less, and prevents the rubber from being exposed to the direct rays of the sun. Rubber seals shall be kept free of oils, grease, and other materials which would deteriorate the rubber. Rubber seals shall not be distorted during handling.

PART 2 PRODUCTS

2.1 MATERIALS

Materials orders, materials lists, and materials shipping bills shall conform with the requirements of Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

2.1.1 Valve Leaf, Frames, Bonnets, Bonnet Covers and Culvert Liners

ASTM A 36/A 36M or, as applicable, ASTM A 709/A 709MASTM A 709/A 709M, Grade as indicated. ASTM A 709/A 709M steel shall comply with supplementary requirement for Zone 2 Fracture Critical material.

2.1.2 General Purpose Corrosion Resistant Steel

2.1.2.1 Plate

ASTM A 240/A 240M, UNS S30400, S40500 or S41008 as applicable. Plate finish shall be hot-rolled and annealed or heat treated, and blast cleaned or pickled.

2.1.2.2 Bars and Shapes

ASTM A 276, UNS S30400 or UNS S31600 as applicable.

2.1.3 Wheel and Roller Tracks

ASTM A 564/A 564M, UNS S17400, Type 630, Condition 1150.

2.1.4 Seal Seats

ASTM A 276, ~~UNS S31600~~UNS S30403 or UNS S31603.

2.1.5 Steel and Corrosion Resistant Steel Bolts and Nuts

See Section 05502 METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS , paragraph "Bolts, Nuts, and Washers", and paragraph "Bolts, Nuts, and Washers (Other Than High-Strength), and Cap Screws and Set Screws".

2.1.6 Wheel Axles and Roller Pins

ASTM A 564/A 564M, UNS S17400, Type 630, Condition 1150.

2.1.7 Miscellaneous Pins

ASTM A 276, UNS S41000, Type 410 Condition A.

2.1.8 Aluminum Bronze Bushings

ASTM B 148.

2.1.9 Brass or Bronze

ASTM B 21 Alloy No. 464 half hard (naval brass)

2.1.10 Wheel Rims

ASTM A 276, Nitronic 60 (UNS S21800) or Gall-Tough Stainless (UNS S20161).

2.1.11 Main, Counterhold and Guide Slider Bearing Pads

High strength fiber - reinforced phenolic bearing material, similar or equal to ~~ORKOT TXM~~the material types shown, as manufactured by ORKOT Inc., Eugene, Oregon.

2.1.12 Rubber Seals

Rubber seals shall be flouro-carbon (Teflon) clad rubber seals of the mold type only, shall be compounded of neoprene, or copolymer of butadiene and styrene, or a blend of both. Physical characteristics of the seals shall meet the following requirements:

| PHYSICAL TEST | TEST VALUE | TEST METHOD SPECIFICATION |
|---|---|---|
| Tensile Strength | 2000 psi (min.) | ASTM D 412 |
| Elongation at Break | 450% (min.) | ASTM D 412 |
| 300% Modulus | 900 psi (min.) | ASTM D 412 |
| Durometer Hardness (Shore Type A) | 50 to 60 | ASTM D 2240 |
| *Water Absorption | 5% by weight (max.) | ASTM D 471 |
| Compression Set | 30% (max.) | ASTM D 395 |
| Tensile Strength (after aging 48 hrs) | 8045744f tensile strength (min.) | ASTM D 572 |

| PHYSICAL TEST | TEST VALUE | TEST METHOD SPECIFICATION |
|---|---|---|

* The "Water Absorption" test shall be performed with distilled water. The washed specimen shall be blotted dry with filter paper or other absorbent material and suspended by means of small glass rods in the oven at a temperature of 70 degrees +/- 2 degrees C for 22 +/- 1/4 hour. The specimen shall be removed, allowed to cool to room temperature in air, and weighed. The weight shall be recorded to the nearest 1 mg as W1 (W1 is defined in ASTM D 471). The immersion temperature shall be 70 degrees +/-1 degree C and the duration of immersion shall be 166 hours.

2.1.12.1 Fabrication

Rubber seals shall have a flouro-carbon film vulcanized and bonded to the sealing surface of the bulb. The film shall be 0.060 inch thick Huntington Abrasion Resistant Flouro-Carbon Film No. 4508, or equal, and shall have the following physical properties:

Tensile strength .....2,000 psi (min.)

Elongation.....250 percent (min.)

The outside surface of the bonded film shall be flush with the surface of the rubber seal and shall be free of adhering or bonded rubber. Strips and corner seals shall be molded in lengths suitable for obtaining the finish lengths shown on the drawings and with sufficient excess length to provide test specimens for testing the adequacy of the adhesion bond between the film and bulb of the seal. At one end of each strip or corner seal to be tested, the flouro-carbon film shall be masked during bonding to prevent a bond for a length sufficient to hold the film securely during testing.

2.1.13 Spherical Bearings

Spherical bearings shall be a self-lubricating self-aligning bearing, similar or equal to Karon Marine Bearing KNR60-CSV as manufactured by Kamatics Corporation.

2.2 MISCELLANEOUS ITEMS

Miscellaneous items not otherwise specified herein shall conform to the applicable requirements of Section 05502 METALS: MISCELLANEOUS, STANDARD ARTICLES, SHOP FABRICATED ITEMS.

PART 3 EXECUTION

3.1 FABRICATION

3.1.1 Detail Drawings

Detail drawings, including fabrication drawings, shop assembly drawings, delivery drawings, and field installation drawings, shall conform to the requirements specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

3.1.1.1 Fabrication and Assembly Drawings

Fabrication drawings shall show complete details of materials, tolerances,

connections, machined surface finishes, and proposed welding sequences which clearly differentiate shop welds and field welds. Shop assembly drawings shall provide details for connecting the adjoining fabricated components in the shop to assure satisfactory field installation.

3.1.1.2 Delivery Drawings

Delivery drawings shall provide descriptions of methods of delivering components to the site, including details for supporting fabricated components during shipping to prevent distortion or other damages.

3.1.2 Structural Fabrication

Structural fabrication shall conform with the requirements shown on the drawings and specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS. Components shall be shop-fabricated of the materials specified and shown on the drawings. Dimensional tolerances shall be as specified and shown on the drawings. Splices shall occur only where shown on the drawings or approved by the Contracting Officer. Pin holes shall be bored in components after welding, straightening, stress-relieving, and threading operations are completed. Brackets and other components requiring straightening shall be straightened by methods which will not damage the material. Bronze bushings shall be press-fitted with supporting components. Bolt connections, lugs, clips, or other pick-up assembly devices shall be provided for components as shown and required for proper assembly and installation. Provisions shall be made for the installation of appurtenances as required.

3.1.3 Welding

Welding shall conform with the requirements specified herein, and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS. Welds shall be of the type shown on the contract drawings and approved detail drawings. Nondestructive examination is required on the major shop and field welds of the types as follows:

a. One hundred percent (100%) visual

At least one foot of every 10-foot length of fillet weld and 10 percent of the length of fillet welds less than 10 feet long shall be ultrasonically tested.

3.1.4 Stress-Relief Heat Treatment

Stress-relieving shall be required on all valve leaves, frames, bonnet, and bonnet cover, bulkheads and frame . Stress-Relief heat treatment shall be in accordance with Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

3.1.5 Bolted Connections

Bolted connections shall conform with the requirements specified in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

3.1.6 Machine Work

Machine work shall conform with the requirements specified in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

3.1.7 Miscellaneous Provisions

Miscellaneous provisions for fabrication shall conform with the requirements specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

3.1.8 Fabrications

3.1.8.1 Valves

Structural fabrication shall conform to the requirements as shown and specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS. Dimensional tolerances shall be as specified and as shown. Splices shall occur only where shown. Pin holes shall be bored in components after welding, straightening, stress-relieving, and threading operations are completed. Brackets, eye bar sections, and other components requiring straightening shall be straightened by methods which will not damage the material. Bushings shall be press-fitted with supporting components. Bolt connections, lugs, clips, or other pick-up assembly devices shall be provided for components as shown and required for proper assembly. Each valve shall be fabricated and assembled into a complete unit and fitted to all sealing assemblies in the shop before shipment to the site. Seal assemblies shall be attached to the gate leaf during shop assembly and match marked, and removed for shipment. All dimensions indicated on the drawings shall be rigidly adhered to. All welding of the valve proper shall be watertight. Valve shall be provided with seal assemblies and other appurtenant items as shown on the drawings.

3.1.8.2 Bulkheads

Bulkheads and embedded frames shall be of welded fabrication except for bolted appurtenances as shown on the drawings. Structural fabrication shall conform to the requirements as shown and specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS. Stress relief shall be applied to bulkhead and frame. Dimensional tolerances shall be as specified and as shown. Splices shall occur only where shown. Bulkhead units shall be shop-fabrication in one piece. Fabrication in separate segments will not be permitted. The Contractor shall prepare and execute a welding sequence for the shop welding of the bulkheads, which, in conjunction with the joint welding procedures and overall fabrication methods, will control distortion and shrinkage to produce a completed assembly meeting the quality requirements and tolerances specified. Bulkheads shall be provided with seal assemblies and other appurtenant items as shown on the drawings.

3.1.8.3 Bulkhead Leaf

The outside surfaces of skin plates welded to framing elements shall not vary from a true plane by more than 1/16 inch. Splices in skin plates shall be located only where shown. The overall width and height of the fabricated gate leaf shall not vary from the respective dimensions shown by more than 1/16 inch.

3.1.8.4 Bulkhead Frame and Guides

Exposed unmachined surfaces of bulkhead frames and guides shall match at joints between component parts, shall not depart from true planes shown by more than 1/16 inch, and shall be free of offsets or irregularities greater than 1/16 inch.. Allowable offsets or irregularities less than 1/16 inch

shall be ground to a bevel of not greater than one on twenty four. Surfaces of frames and guides to receive seal bars and wheel track bars shall be accurately machined to provide uniform bearing for the full contact dimensions. Seal bars shall be firmly butted together at corners. Bearing surfaces and sealing surfaces of seal bars shall be machined to the tolerances shown to provide uniform bearing and sealing at all points of contact. Final machining of seal bars and guide bars shall be performed after they are attached to the gate frame and guides. Installation shall maintain surface straightness to within 1/8 inch overall in both plan dimensions.

3.1.9 Shop Assembly

Shop assembly requirements for valves shall be as shown on the drawings and specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS. Rubber seals shall be fitted and drilled to match the seal clamping bars on the valve leaves, match-marked and then removed for shipment. Shop assembly shall include the attachment of all accessories to each leaf. If the leaf is out of plumb by more than 1/4 inch in the total length in a vertical plane in the upstream-downstream direction, or by more than 1/16 inch in the total width in a vertical plane perpendicular to the vertical plane in the upstream-downstream direction, it shall be balanced by counterweighting or some other method as approved at the Contractor's expense. Shop assembly shall include the insertion of the leaf in the bonnet and frame to verify proper fit and operation. A dummy operating cylinder rod and temporary means for operation of the valve shall be provided so that the leaf can be operated (raised and lowered) a sufficient number of times to demonstrate proper operation and fit, as specified, and as shown on the drawings. Shop assembly and disassembly work shall be performed in the presence of the Contracting Officer unless otherwise waived in writing by the Contracting Officer. The presence of the Contracting Officer during assembly or disassembly will not relieve the Contractor of any responsibility under this contract.

3.2 TESTS, INSPECTIONS, AND VERIFICATIONS

Tests, inspections, and verifications for materials shall conform to the requirements specified herein and in Section 05055 METALWORK FABRICATION, MACHINE WORK, AND MISCELLANEOUS PROVISIONS. Shop assembled components shall be inspected for accurate fit and compliance with dimensional tolerances. Sealing, guiding, and connecting surfaces shall be inspected to determine if their planes are true, parallel, and in uniform contact with opposing surfaces.

3.2.1 Acceptance Trial Operation

The Contracting Officer will examine the valves and bulkheads for final acceptance. The valves and bulkheads will be examined first to determine whether or not the workmanship conforms to the specification requirements. For final acceptance of the valves, after final installation, embedment and grouting of all embedded parts are completed, the Contractor shall insert the leaf in the bonnet and the frame to demonstrate and verify proper fit and operation. A dummy operating cylinder rod and temporary means for operation of the valve shall be provided so that the leaf can be operated (raised and lowered) a sufficient number of times to demonstrate proper operation and fit, as specified, and as shown on the drawings. The leaf shall then be removed for storage.The Contractor will be required toinsert the bulkheads into their frames to verify proper fit and operation. The contractor shall operate the bulkheads from the fully-raised to the

fully-lowered position a sufficient number of times to demonstrate to the Contracting Officer's satisfaction that there is no binding, and that sealing surfaces do not leak. The bulkhead shall only installed and removed in the wet, under balanced head conditions. In order to place the bulkheads is position, holes may be cut in the cofferbox wall so that the culverts can be flooded and the bulkheads then installed. The culverts shall then be dewatered using a portable pump and then entered to observe leakage past the bulkhead seals. For removal of the bulkheads, the culvert shall be filled to balance the head across the bulkheads. The culvert may be filled by using the bulkhead lifting beam to operate the filling valve that is built into the bulkheads. The workmanship shall be such that the bulkheads in the lowered position will form a watertight barrier across the opening.

Required repairs or replacements to correct defects, as determined by the Contracting Officer, shall be made at no cost to the Government. The trial operation shall be repeated after defects are corrected. The Contractor shall be responsible for all cranes, rigging, temporary supports, portable pump for filling and emptying the culverts and other equipment, materials and labor to satisfactorily operate the valves and bulkhead in their slots at no additional cost to the Government.

## 3.3 PAINTING

Exposed parts of valves and appurtenances, except machined surfaces, corrosion-resistant surfaces, surfaces of anchorages embedded in concrete, and other specified surfaces shall be painted as specified in Section 09965 PAINTING: HYDRAULIC STRUCTURES.

## 3.4 PROTECTION OF FINISHED WORK

Protection of finished work shall conform to the requirements of Section 05055 METALWORK FABRICATION, MACHINE WORK, MISCELLANEOUS PROVISIONS.

## 3.5 TRANSPORT AND STORAGE

The Contractor shall be fully responsible for transporting the the valves, bulkheads and frames and appurtenant items to the project site in an undamaged condition. The Contractor shall be responsible for any damage to the delivered items caused by the Contractor's operations. Transport and temporary storage methods shall be the Contractor's responsibility

### 3.5.1 Final Removal and Delivery

After acceptance trial operation of the valves, the valve bonnets shall be disassembled and the emptying valves shall be removed from their slots and transported to the designated storage area on the land wall esplanade as directed by the Contracting Officer. The Contractor shall be responsible for providing all necessary floating plant, equipment, materials and labor to transport and off-load the valves at no additional cost to the Government. The Contractor shall be responsible for constructing a cribbing structure to elevate the valves off the esplanade surface. After acceptance trial operation of the valves, the bonnets shall be placed back into the slots, with a temporary bonnet cap, fabricated as shown, placed on the bonnet to plug the seal opening in the bonnet.

-- End of Section --

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