SOLICITATION NO. W911WN-04-R-0003

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

AMENDMENT

NUMBER 4

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
0004	10-JUN-2004	W81ET4-4058-0100	

6. ISSUED BY CODE W911WN

US ARMY ENGR DISTRICT PGH
727 WM S MOORHEAD FEDERAL BLDG
1000 LIBERTY AVENUE
PITTSBURGH PA 15222-4186
Michele R. Hutfles C02 (412)395-7479

7. ADMINISTERED BY *(If other than Item 6)* CODE W911WN

US ARMY ENGR DISTRICT PGH
727 WM S MOORHEAD FEDERAL BLDG
1000 LIBERTY AVENUE
PITTSBURGH PA 15222-4186

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP code)*

CODE FACILITY CODE

(X) 9A. AMENDMENT OF SOLICITATION NO. W911WN-04-R-0003

X 9B. DATED *(SEE ITEM 11)* 26-APR-2004

10A. MODIFICATION OF CONTRACT/ORDER NO.

10B. DATED *(SEE ITEM 13)*

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 Offers [ ] is extended, [X] is not extended.
Offers 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 ACKNOWLEDGEMENT 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.

(X) 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 ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO 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)*	
15B. CONTRACTOR/OFFEROR _____ *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ *(Signature of Contracting Officer)*	16C. DATE SIGNED

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. 0004. Text revisions for Amendment No. 0004 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 0004".

PROPOSAL SUBMITTAL PROCEDURES.
Paragraph Volume 2. Insert the following submittal to be included with Volume II: Certified Original Quotes for the steel items listed in Section 00800, Page 00800-3, Clause 52.216-4000 Economic Price Adjustment - Steel.

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 (*) in the margin. THESE REVISED PAGES MUST BE SUBMITTED WITH YOUR OFFER.

SECTION 00100 – INSTRUCTIONS, CONDITIONS AND NOTICE TO BIDDERS.

Page 00100-2, Clause 52.215-4001, paragraph VOLUME II. Insert the following submittal to be included with Volume II: Certified Original Quotes for the steel items listed in Section 00800, Page 00800-3, Clause 52.216-4000 Economic Price Adjustment - Steel.

Table 1, Evaluation Factors.
Page Table 1-5, Factor B, Management Plan. Delete this page in its entirety and substitute the attached revised Factor B.

SECTION 00800 – SPECIAL CONTRACT REQUIREMENTS.
Page 00800-2, Clause 52.000-4020 KEY PERSONNEL. Delete this clause in its entirety and substitute the word DELETED.

Page 00800-3, Clause 52.216-4000 Economic Price Adjustment – Steel. In paragraph (a), delete the following Item Numbers: “0154” and “0158”.

Page 00800-5, Clause 52.216-4000 Economic Price Adjustment – Steel. In Example 3, add the following missing line of the example calculation:

=$5,109.03

Page 00800-13. Before Clause 52.777.4020, insert the following Clause:

52.777-4019 RAILROAD REQUIREMENT INSURANCE

In addition to the provision entitled "Required Insurance", the Contractor shall procure and maintain at his own expense, Regular Railroad Protective Liability Insurance, providing for a limit of not less than $2 million per occurrence and $ 6 million aggregate. The insurance shall be provided by a company authorized to do business in the Commonwealth of Pennsylvania and in a form and substance acceptable to the Corps and the Railroad. A Railroad Protective Liability Insurance certificate shall be provided in the name of Norfolk Southern Railroad and must be in the form approved by Norfolk Southern Railroad.

Before the Contractor or subcontractors will be permitted to enter upon the Railroad's right-of-way, the original policy, including endorsements, shall be furnished to the Corps of Engineers and approved by the Railroad.

The insurance specified above shall be with an acceptable insurance company authorized to do business in the Commonwealth of Pennsylvania and shall be taken out before work is commenced and carried until all work to be performed on rights-of-ways of the Railroads has been satisfactorily completed as evidenced by the formal acceptance thereof by the U.S. Army Engineer District, Pittsburgh.

The insurance policy specified above shall contain an endorsement that the policy shall not be changed or cancelled until after thirty (30) days written notice has been given to Norfolk Southern Railroad.

If any work is subcontracted, the Contractor shall furnish the Railroad and the Government evidence that he carries, in his own behalf, regular Contractor's Protective Public Liability and Property Damage Insurance of not less than the limits of Railroad's Protection Liability Insurance required hereinbefore.

Replace the following Specification sections with the attached revised sections:

Section 01100
Section 01270
Section 01354
Section 01451
Section 01526
Section 02720
Section 02921
Section 03015

SECTION 01100.
At the end of this section, insert the attached table titled Unconfined Compression Test Data Summary.

VOLUME 2 OF 4 - ENVIRONMENTAL PERMITS.
Draft NPDES Part I Permit No. PA0218791 for the Victory Hollow Site.
Delete the "Draft NPDES Part I Permit No. PA0218791 for the Victory Hollow Site" and replace it with the attached FINAL NPDES Part I Permit No. PA0218791 for the Victory Hollow Site.

DRAWINGS:

Offerors are urged to compare the computer displayed versions of the contract drawings on the Request For Proposal CdRom with any hard copy reproductions the Offerors produce to ensure that all features have been printed correctly.

Drawing 037-LCH-0/8. Change the drawing number to 037-LCH-0/8.2. In the index, change the drawing numbers for the following drawings as indicated:

Old Drawing Number	New Drawing Number
037-LCH-0/8	037-LCH-0/8.2
037-LCH-4/35	037-LCH-4/35.1
037-LCH-11/9	037-LCH-11/9.1
037-LCH-20/62	037-LCH-20/62.1
037-LCH-28/1	037-LCH-28/1.1
037-LCH-19/19	037-LCH-19/19.1
037-LCH-19/31	037-LCH-19/31.1
037-LCH-20/67	037-LCH-20/67.1
037-LCH-20/78	037-LCH-20/78.1

Drawing 037-LCH-4/35. Delete this drawing in its entirety and substitute the attached revised drawing 037-LCH-4/35.1.

Drawing 037-LCH-11/9.

Change the Drawing Number to 037-LCH-11/9.1.

Add a note that states: The Contractor Is Not Authorized Access To Tract 3405E.

Add a note that states: The Contractor Is Required To Obtain Railroad Insurance In Order To Use The Unguarded Railroad Crossing On Tract 3402E-2 As Required In The Specifications.

Drawing 037-LCH-19/19.

Change the Drawing Number to 037-LCH-19/19.1.

Upper Waler And Strut Framing Plan. In the callout referring to "TS14x14 Stability Strut, See Dwg 19/56 For Details (TYP)", change the drawing number from "19/56" to 19/28.

Drawing 037-LCH-19/31.

Change the Drawing Number to 037-LCH-19/31.1.

Typical Cofferbox Lower Waler Elevation. In the callout referring to “8” Dia. Waler Support Pipe See Dwg 19/56”, change the drawing number from “19/56” to 19/28.

Drawing 037-LCH-20/67.

Change the Drawing Number to 037-LCH-20/67.1.

In the callout referring to “Wall Quoin See Dwg 20/75, 20/82 And 20/83”, delete the reference to drawing “20/83”.

037-LCH-20/78. Delete this drawing in its entirety and substitute the attached revised drawing 037-LCH-20/78.1.

This amendment will be issued via the internet only.

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	$_____.____	$_____.____
*** 0029**	**CAST IN PLACE STRUCTURAL CONCRETE, LOCK WALL MONOLITHS**	**331**	**CD**	**$_____.____**	**$_____.____**
*** 0030**	**PVC WATERSTOPS**	**1,100**	**LF**	**$_____.____**	**$_____.____**
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	$_____.____	$_____.____

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
0040	CROSSHOLE SONIC LOGGING (CSL), FOUNDATION DRILLED SHAFTS	144	EA	$_____.____	$_____.____
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	$_____.____

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
0057	MITER GATE EMBEDDED ANCHORAGES	1	LS	SUM	$_____.____
0058	FLOATING MOORING BITT ANCHORAGES	1	LS	SUM	$_____.____
0059	PRECAST CONCRETE EMPTYING CULVERTS	1	LS	SUM	$_____.____
0060	CORNER PROTECTION	170	LF	$_____.____	$_____.____
*** 0061**	**WALL ARMOR AND MONOLITH JOINT PROTECTION**	**2,000**	**LF**	**$_____.____**	**$_____.____**
*** 0062**	**CORNER CASTINGS**	**10**	**EA**	**$_____.____**	**$_____.____**
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	$_____.____	$_____.____
*** 0067**	**GATE ANCHORAGE RECESS COVER**	**38**	**SF**	**$_____.____**	**$_____.____**
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	$_____.____	$_____.____

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
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	$_____.____
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	$_____.____

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
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	$_____.____	$_____.____
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	$_____.____	$_____.____

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
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	$_____.____	$_____.____
*** 0114**	**PLAIN CONCRETE CURB, INSIDE EDGE OF ACCESS RAMP, LEFT BANK BATCH PLANT AREA**	**11**	**CD**	**$_____.____**	**$_____.____**
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	$_____.____	$_____.____

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
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	$_____.____	$_____.____
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	$_____.____	$_____.____
*** 0134**	**GRAVEL ACCESS ROAD, LEFT BANK BATCH PLANT AREA**	**1,528**	**SY**	**$_____.____**	**$_____.____**
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	$_____.____	$_____.____

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
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	$_____.____
0147	ENVIRONMENTAL COMPLIANCE MEASUREMENTS, SAMPLING, TESTING AND REPORTING DURING BATCH PLANT OPERATION, LEFT BANK BATCH PLANT AREA	48	MO	$_____.____	$_____.____
*** 0148**	**ENVIRONMENTAL CONTROL REPRESENTATIVE (ECR) FOR ENVIRONMENTAL COMPLIANCE MONITORING AND EQUIPMENT OPERATION AND MAINTENANCE, LEFT BANK BATCH PLANT AREA AND GOVERNMENT FURNISHED DISPOSAL SITE**	**48**	**MO**	**$_____.____**	**$_____.____**
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	$_____.____	$_____.____

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
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	$_____.____	$_____.____
*** 0160**	**MISCELLANEOUS METALS**	**1**	**LS**	**SUM**	**$_____.____**
*** 0161**	**ENVIRONMENTAL COMPLIANCE MEASUREMENTS, SAMPLING, TESTING AND REPORTING GOVERNMENT FURNISHED DISPOSAL SITE**	**48**	**MO**	**$_____.____**	**$_____.____**

SUBTOTAL, ITEMS 0001 THROUGH **0161** INCLUSIVE $_____.____

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

ITEM	DESCRIPTION	* QUANTITY	U/M	U/P	AMOUNT
	SF	SQUARE FEET			
	SY	SQUARE YARDS			
	TN	TONS			

This page was intentionally left blank for duplex printing.

FACTOR B: MANAGEMENT PLAN (20%)	
EVALUATION CRITERIA	*CONTENT OF PROPOSAL*
Consideration will be given the contractors' overall management plan to include key positions.	Provide a management plan for the project that describes how your labor, resources, engineers, specialist, Architect-Engineer subcontractors, material suppliers and other subcontractors, will be coordinated and used to ensure successful completion of the project. Describe how you will manage, supervise and coordinate the subcontractors' work. Plan shall include who in the organization will be responsible for this management and coordination. On-site personnel and equipment must be clearly distinguished from resources that are available but not present at the site. Clearly delineate on-site from off-site personnel. Provide an organizational chart for this project showing home office support, on-site management and the responsible chain of command. Include key positions, names of all subcontractors and their areas of responsibility. Identify any key positions that will be staffed with the same individuals and describe how this will be accomplished without impacting the management of the project. Joint venture offerors must show the respective areas of responsibility for each partner.

FACTOR C: EXPERIENCE (20%)	
SUBFACTOR 1. IN-THE-WET CONSTRUCTION TECHNIQUES	
EVALUATION CRITERIA	*CONTENT OF PROPOSAL*
Consideration will be given to the experience of the Prime Contractor with in-the-wet construction techniques. In the case of Joint Ventures, experience of individual partners of the Joint Venture may be submitted. Projects of similar size, scope, and complexity to the Charleroi Locks – Contract 1 Project, and experience on more recent projects will have a greater impact than less similar projects or less recent projects.	Provide a combined total of three (3) references demonstrating the Prime contractor and/or Joint Venture's experience with large projects that involved "in-the-wet" construction techniques. This experience should be as similar as possible to the size, scope and complexity of the methods to be employed for the new river wall. For each reference identify the customer, provide a specific individual by name and telephone number as a point of contact, and describe the project.

Unconfined Compression Test Data Summary
Charleroi Locks & Dam

Boring	Date	Elev.	Description	Unit	psi q_u	ksi E_s
C-14b	6/1/93	694.9	Gray Claystone	6A	64	
L-03	6/1/93	700.0	Gray Claystone	6A	1,426	150
L-06	6/1/93	698.6	Gray Claystone	6A	234	30
L-08	6/1/93	692.4	Gray Claystone	6A	23	
L-10	6/1/93	690.0	Gray Claystone	6A	167	20
L-11	6/1/93	701.8	Gray Claystone	6A	1,480	220
L-11	6/1/93	704.2	Gray Claystone	6A	1,095	
L-13	6/1/93	691.9	Gray Claystone	6A	310	40
L-13	6/1/93	692.8	Gray Claystone	6A	136	20
L-18	11/30/97	695.8	Gray Claystone	6A	80	
L-22	11/30/97	683.8	Gray Claystone	6A	55	
L-26	11/30/97	695.2	Gray Claystone	6A	84	3
L-29	11/30/97	691.9	Gray Claystone	6A	50	7
L-31	11/30/97	683.9	Gray Claystone	6A	333	
CF-1	6/1/93	685.1	Red Clayshale	6B	874	120
L-04	6/1/93	686.6	Red Clayshale	6B	1,277	130
L-07	6/3/97	681.2	Red Clayshale	6B	1,232	240
L-09	6/1/93	680.5	Red Clayshale	6B	1,686	420
L-10	6/1/93	672.4	Red Clayshale	6B	935	100
M-02	6/1/93	687.7	Red Clayshale	6B	1,673	150
M-06	6/1/93	677.4	Red Clayshale	6B	483	40
RW-09	6/1/93	686.3	Red Clayshale	6B	457	40
RW-09	6/1/93	686.3	Red Clayshale	6B	680	160
L-01	6/1/93	678.7	Gray Claystone	8A	973	110
M-03	6/1/93	673.5	Gray Claystone	8A	342	60
M-03	6/1/93	674.7	Gray Claystone	8A	327	60
M-04	6/1/93	524.7	Gray Claystone	8A	308	60
M-06	6/1/93	668.6	Gray Claystone	8A	721	150
RW-03	6/1/93	682.6	Gray Claystone	8A	188	
RW-05	6/1/93	680.0	Gray Claystone	8A	221	40
RW-09	6/1/93	671.5	Gray Claystone	8A	257	80
RW-09	6/1/93	672.5	Gray Claystone	8A	410	170
RW-09	6/1/93	673.6	Gray Claystone	8A	952	150
L-22	11/30/97	648.7	Red Claystone	8B	80	
CF-04	6/1/93	662.9	Red Claystone	8B	220	10
CF-04	6/1/93	667.7	Red Claystone	8B	440	40
L/04	6/1/93	661.9	Red Claystone	8B	184	10
L-04	6/1/93	673.3	Red Claystone	8B	656	60
L-06	6/1/93	667.2	Red Claystone	8B	668	140
L-11	6/1/93	671.7	Red Claystone	8B	1,044	120
L-11	6/1/93	672.8	Red Claystone	8B	668	
L-18	11/30/97	666.6	Red Claystone	8B	763	
L-21	11/30/97	658.9	Red Claystone	8B	118	180
L-21	11/30/97	662.8	Red Claystone	8B	1,082	60
M-01	6/1/93	665.0	Red Claystone	8B	403	80

Unconfined Compression Test Data Summary
Charleroi Locks & Dam

Boring	Date	Elev.	Description	Unit	psi q_u	ksi E_s
M-01	6/1/93	675.9	Red Claystone	8B	469	80
M-03	6/1/93	660.0	Red Claystone	8B	399	100
M-03	6/1/93	662.6	Red Claystone	8B	461	110
M-04	6/1/93	668.0	Red Claystone	8B	545	60
CF-04	6/1/93	645.9	Siltstone	9	4,985	
CF-04	6/1/93	639.6	Siltstone	9	3,900	660
CF-04	6/1/93	630.6	Siltstone	9	5,648	
L-04	6/1/93	654.7	Siltstone	9	2,546	470
L-04	6/1/93	647.8	Siltstone	9	3,597	
L-06	6/1/93	641.9	Siltstone	9	6,595	
L-08	6/1/93	695.2	Siltstone	9	4,313	
L-08	6/1/93	649.0	Siltstone	9	1,231	420
L-11	6/1/93	654.6	Siltstone	9	2,831	530
L-18	11/30/97	652.6	Siltstone	9	2,606	590
M-01	6/1/93	654.3	Siltstone	9	4,266	
M-01	6/1/93	644.9	Siltstone	9	3,144	920
M-01	6/1/93	637.3	Siltstone	9	2,162	580
M-03	6/1/93	653.3	Siltstone	9	2,339	
M-04	6/1/93	651.5	Siltstone	9	3,279	
RW-04	6/1/93	652.1	Siltstone	9	2,679	

Averages				
	Gray Claystone	6A	396	61
	Red Clayshale	6B	1,033	156
	Gray Claystone	8A	470	98
	Red Claystone	8B	513	81
	Gray Siltstone	9	3,508	596

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01100

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS
1.2 REFERENCES
1.3 SUBMITTALS
1.4 DRAWINGS
1.4.1 Contract Drawings
1.4.2 Reference Drawings
1.5 WORK UNDER OTHER CONTRACTS
1.5.1 Charleroi Site Development Contract
1.5.2 Charleroi River Chamber Demolition Contract
1.6 FEATURES OF WORK AND SEQUENCING
1.6.1 General
1.6.2 New River Wall Construction
1.6.2.1 General
1.6.2.2 New Monolith Wall (Non-Cofferbox Walls)
1.6.2.3 Miter Gate and Emptying Valve Monoliths (Cofferbox Walls)
1.6.2.4 Related Work Specified Elsewhere
1.6.2.5 Work Areas
1.6.3 Emptying Valves and Bulkheads
1.6.3.1 Related Work Specified Elsewhere
1.6.3.2 Sequencing
1.6.4 Miscellaneous Lock Features
1.6.4.1 Related Work Specified Elsewhere
1.6.5 Left Bank Batch Plant Area
1.6.5.1 Related Work Specified Elsewhere
1.6.5.2 Sequencing
1.6.5.3 Work Areas
1.6.6 Government Furnished Disposal Site
1.6.6.1 Related Work Specified Elsewhere
1.6.6.2 Sequencing
1.6.6.3 Work Areas
1.7 ACCESS AND WORK AREAS
1.7.1 General Access to Project Site
1.7.2 General Work Area Restrictions
1.7.3 Real Estate Availability
1.7.3.1 Existing Real Estate
1.7.4 Utilization of Active Lock Chamber and Approaches
1.7.4.1 General
1.7.4.2 Requests for Lockages Through Land Chamber
1.7.5 Protection of Existing Roads and Property
1.7.5.1 General
1.7.5.2 Hauling Permits
1.7.6 Utilities
1.8 EXISTING SURVEY CONTROLS
1.8.1 Project Alignment

1.9 MAINTENANCE AND PROTECTION OF VEHICULAR TRAFFIC
1.9.1 Barricades
1.10 PROJECT SITE CONDITIONS
1.10.1 Inspection of Geologic Samples
1.10.2 Interpretation of Geologic Information, Data and Samples
1.11 DAMAGE TO WORK
1.12 PROTECTION OF UTILITIES
1.13 CONTRACTOR'S FLOATING PLANT
1.13.1 General
1.13.2 Floating Plant
1.13.3 Signal Lights
1.13.4 Maintenance of Floating Plant
1.13.5 Mooring of Floating Plant
1.13.6 Withdrawal of Equipment and Floating Plant
1.13.6.1 Plan of Action, Withdrawal of Equipment and Floating Plant
1.13.6.2 Compensation and Extension of Contract Period, Withdrawal of Equipment and Floating Plant
1.13.7 Operation of Small Water Craft
1.14 OPERATION OF PROJECT FACILITIES
1.15 CONDITIONS OF WORK
1.15.1 Charleroi Locks and Dam, Hours of Operation
1.15.2 Contractor's Work Hours
1.15.3 Coordination with Lock Operations
1.15.4 Government Access to the Site
1.15.5 Contractor Coordination and Scheduling
1.15.6 Coordination with Dam Gate Operations
1.15.6.1 Control of Flow Over Fixed Crest Weir
1.15.6.2 Operation of Dam Gates During Contract Work
1.15.6.3 Unanticipated (Emergency) Operations
1.16 POOL LEVELS
1.16.1 Hydrographs
1.16.2 Stage-Discharge
1.16.3 Stage-Duration
1.16.4 Velocities
1.17 SAFETY AND HEALTH REQUIREMENTS
1.18 INSPECTIONS AND ACCEPTANCE OF WORK
1.18.1 General
1.18.2 Access to Work

PART 2 PRODUCTS

2.1 PRODUCTS AND PARTS OF STANDARD MANUFACTURE

PART 3 EXECUTION

3.1 SEQUENCE OF WORK AND RESTRICTIONS
3.1.1 Flood-Out Provisions During Construction
3.1.1.1 Allowances for Flooding and Evacuation
3.1.1.2 Time Extensions for Flooding and Evacuation
3.2 AS-BUILT DRAWINGS
3.3 TESTING
3.4 RECORDS AND REPORTS

-- 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. In addition, attached at the end of this Section is a table titled "Unconfined Compression Test Data Summary" which lists test data for the borings shown on the 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.

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 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)	AVERAGE TOTAL	
YEAR	SINGLE	DOUBLES	TRIP-LES	QUADS	FIVE CUTS	SIX CUTS	EQUIVALENT 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

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
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 --

This page was intentionally left blank for duplex printing.

CHART OF ESTATES - Charleroi Lock, Contract One

Current Fee Owner	**Tract No.**	**Type of Estate Owned by Government**	**Expiration Date**	**Special Conditions Imposed by Current Landowner or Government**
USA	101	Fee	None	None
World Kitchen, Inc.	100E-5	Perpetual Road Easement	None	Share access with landowner
Corning Glass Works	101E-1	Perpetual Easement (cut-off wall)	None	None
Authority of Charleroi	103E	Permanent Road Easement	None	Share access with landowner
Wheeling-Pittsburgh Steel Corp.	110E-1	Perpetual Road Easement	None	Share access with landowner
Wheeling-Pittsburgh Steel Corp.	110E-2	Perpetual Road Easement	None	Share access with landowner
Wheeling-Pittsburgh Steel Corp.	110E-5	Special Access Easement	None	Share access with landowner
Pittsburgh & Lake Erie Railroad	111E-1	Perpetual Road Easement	None	Share access with landowner
Pittsburgh & Lake Erie Railroad	111E-4	Special Access Easement	None	Share access with landowner
USA	112	Fee	None	None
CSX Transportation	3902	Fee	~~*31 Mar 2004~~ 27 Jan 2012	~~Railroad Protective Insurance & CSX Regulations.~~
CSX Transportation	3902E-2	Temporary Easement	~~*31 Mar 2004~~ 27 Jan 2012	~~1. Railroad Protective Insurance & CSX Regulations.~~ ~~2. Restore Land to Condition Present Prior to Disturbance by Contractor~~
CSX Transportation	3902E-3	Permanent Sub-Surface Anchor Easement	~~*31 Mar 2004~~ 27 Jan 2012	~~1. Railroad Protective Insurance & CSX Regulations.~~ ~~2. Restore Surface Land to Condition Present Prior to Disturbance by Contractor~~
CSX Transportation	3902E-4	Permanent Bridge Easement	~~*31 Mar 2004~~ 27 Jan 2012	~~Railroad Protective Insurance & CSX Regulations.~~
CSX Transportation	3902E-5	Permanent Utility/Pipeline Easement	~~*31 Mar 2004~~ 27 Jan 2012	~~1. Railroad Protective Insurance & CSX Regulations.~~ ~~2. Restore Surface Land to Condition Present Prior to Disturbance by Contractor~~
CSX Transportation	3902E-6	Permanent Utility/Pipeline Easement	~~*31 Mar 2004~~ 27 Jan 2012	~~1. Railroad Protective Insurance & CSX Regulations.~~ ~~2. Restore Surface Land to Condition Present Prior to Disturbance by Contractor~~
Redevelopment Authority of Washington County	4004E-1	Permanent Road Easement	None	Share Access with landowner
Estate of Ursola Ripepi	4005	Fee	None	None
Estate of Ursola Ripepi	4005E-1	Temporary Easement	15 May 2010	~~Restore Land to Condition Present Prior to Disturbance by Contractor~~

~~***The CSX Estates Will Be Finalized By the Government Prior to the Expiration Date Listed**~~

Revised by Amendment 0004

Current Fee Owner	**Tract No.**	**Type of Estate Owned by Government**	**Expiration Date**	**Special Conditions Imposed by Current Landowner or Government**
USA	4006	Fee	None	None
USA	4006-1	Fee	None	None
Keystone River Properties, LTD	4006E-1	Temporary Easement	15 Aug 2010	~~Restore Land to Condition Present Prior to Disturbance by Contractor.~~
Keystone River Properties, LTD	4006E-3	Temporary Easement	15 Aug 2010	~~Restore Land to Condition Present Prior to Disturbance by Contractor~~
Keystone River Properties, LTD	4006E-4	Permanent Sub-Surface Anchor Easement	None	~~Restore Surface Land to Condition Present Prior to Disturbance by Contractor~~
Keystone River Properties, LTD	4006E-5	Permanent Utility/Pipeline Easement	None	~~Restore Surface Land to Condition Present Prior to Disturbance by Contractor.~~
USA	4007	Fee	None	None
Muriel Latchem	4001E-1	Temporary Easement	9 July 2009	~~Restore Land to Condition Present Prior to Disturbance by Contractor.~~
Muriel Latchem	4001E-2	Temporary Road Easement	9 July 2009	~~Restore Land to Condition Present Prior to Disturbance by Contractor.~~
Authority of Charleroi	4002E-1	Permanent Road Easement	None	Share access with landowner
World Kitchen, Inc.	4003E-1	Permanent Road Easement	None	Share access with landowner
World Kitchen, Inc.	4003E-2	Permanent Road Easement	None	Share access with landowner
~~Pine Oaks Land Development Inc.~~	~~3400E~~	~~Temporary Easement~~	~~4 May 2008~~	~~1. Area to be used for dredged material disposal area.~~ ~~2. Final condition of land will be as described in the Plans and Specifications.~~
~~Duquesne Slag Products Co.~~	~~3401E-1~~	~~Permanent Pipeline Easement~~	~~None~~	~~Restore Surface Land to Condition Present Prior to Disturbance by Contractor.~~
Duquesne Slag Products Co.	3401E-2	Temporary Easement	29 Nov 2008	~~Restore Land to Condition Present Prior to Disturbance by Contractor.~~
~~Consolidated Rail Corporation (now Norfolk Southern RR)~~	~~3402E-1~~	~~Permanent Pipeline Easement~~	~~None~~	~~1. Railroad Protective Insurance & Norfolk Southern Regulations.~~ ~~2. Restore Surface Land to Condition Present Prior to Disturbance by Contractor.~~
Consolidated Rail Corporation (now Norfolk Southern RR)	3402E-2	Temporary Easement	2 April 2009	1. Railroad Protective Insurance & Norfolk Southern Regulations. ~~2. Restore Land to Condition Present Prior to Disturbance by Contractor~~

Revised by Amendment 0004

~~Middle Monongahela Industrial Development Authority, Inc.~~	~~3405E~~	~~Temporary Easement~~	~~8 August 2009~~	~~1. Bridge crosses Norfolk Southern tracks and PennDOT Route 837.~~ ~~2. Railroad Protective Insurance & compliance with Norfolk Southern regulations will be required for the portion of the bridge over the Norfolk Southern railroad tracks.~~ ~~3. Coordination with PennDOT is required to insure all PennDOT safety measures are complied with for the portion of the bridge over Route 837.~~ ~~4. Restore Land to Condition Present Prior to Disturbance by Contractor.~~

Revised by Amendment 0004

This page was intentionally left blank for duplex printing.

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 LUMP SUM PAYMENT ITEMS
1.1.1 Miscellaneous, Site and Administrative
1.1.2 Government Facilities
1.1.3 Temporary Construction Facilities
1.1.4 Field Demonstrations
1.1.5 Access Tubes, Crosshole Sonic Logging
1.1.6 Dewatering
1.1.7 Exploratory Pile Driving
1.1.8 Cofferbox Piling
1.1.9 Stub Wall Modifications
1.1.10 Precast Concrete Items
1.1.11 Steel Fabrications
1.1.12 Signs
1.1.13 Compressed Air and Service Water System
1.1.14 Electrical Work
1.1.15 Government Furnished Disposal Site, Site Development
1.1.16 Left Bank Batch Plant Area, Site Development
1.1.17 Miscellaneous Metals
1.2 UNIT PRICE PAYMENT ITEMS
1.2.1 Administrative Costs
1.2.2 Concrete Testing Lab
1.2.3 Dredging and Underwater Excavation
1.2.4 H-Piles for River Wall Stabilization
1.2.5 Rock Anchors
1.2.6 Concrete Materials
1.2.7 Concrete Placement
1.2.8 Reinforcing Steel
1.2.9 Excavation and Grading
1.2.10 Temporary Disposal Stockpile
1.2.11 Rock, Stone and Riprap
1.2.12 Waterstops
1.2.13 Drilled Shafts
1.2.14 Exploratory Programs
1.2.15 Non-Cofferbox Sheet Piling, H-Piles and Appurtenant Items
1.2.16 Excavation Inside Cofferboxes
1.2.17 Corner Protection, Wall Armor and Corner Castings
1.2.18 Grating, Planking and Cover Plates
1.2.19 Check Posts and Line Hooks
1.2.20 Rock Construction Entrances
1.2.21 Silt Fences and Fabric Fences
1.2.22 Filling, Backfillling, Embankments and Berms
1.2.23 Aggregate Surfaces
1.2.24 Guiderail
1.2.25 Storm Drainage Pipes

1.2.26 Manholes and Inlets
1.2.27 Chain Link Fencing
1.2.28 Seeding and Vegetation
1.2.29 Bituminous Pavement
1.2.30 Jet Grout Columns
1.2.30.1 Jet Grouting
1.2.30.2 Jet Grout Sampling and Testing
1.2.31 Materials Costs for Selected Steel Items

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section Table of Contents --

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 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, as well as the grout brackets and steel alignmnet frames 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 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, 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 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).

1.1.17 Miscellaneous Metals

Unit price item listed in the PRICE SCHEDULE include:

0160 MISCELLANEOUS METALS

a. Payment for this item shall constitute full compensation for all costs necessary to complete this 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 this items.

b. Miscellaneous metal includes all metalwork, regardless of material type, for which payment is not specifically stated to be made elsewhere, and shall include, but is not limited to: electrical hand hole cover; precast beam supports at monolith R-*; wall quoin anchors; monorail hoist beam supports; automatic gate latches in the miter gate monoliths; and all other metalwork not specifically stated to be made elsewhere. Miscellaneous metal shall also include all anchor bolts, and other connection hardware, for which payment is not specifically stated to be made elsewhere, and which are necessary to install items on top of lock walls.

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 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 AND GOVERNMENT FURNISHED DISPOSAL SITE

0161 ENVIRONMENTAL COMPLIANCE MEASUREMENTS, SAMPLING, TESTING AND REPORTING GOVERNMENT FURNISHED DISPOSAL SITE

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~~b. 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~~c. Measurement for environmental control representative shall be the number of months this individual is working and actually performing the required duties specified in Section 01451 CONTRACTOR QUALITY CONTROL 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 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 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 ± 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: Tons (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

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. 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. 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, H-Piles and Appurtenant Items

Unit price items listed in the PRICE SCHEDULE include:

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

0051 FABRICATION AND INSTALLATION COSTS FOR H-PILES, 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. 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. 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. Unit of Measure: Linear Feet (LF).

1.2.16 Excavation Inside Cofferboxes

Unit price item 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 this item 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 support beams, 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 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 Sections 02145 CONSTRUCTION OF DISPOSAL SITE and 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 maintenance of the aggregate surfacing; 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)

0155 STEEL MATERIALS COSTS FOR REINFORCING STEEL, FOUNDATION DRILLED SHAFTS

0156 STEEL MATERIALS COSTS FOR SHEET PILE, NON-COFFERBOXES

0157 STEEL MATERIALS COSTS FOR H-PILES, 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.

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. 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.

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.

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.

f. Unit of measure: Pounds (LB).

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

This page was intentionally left blank for duplex printing.

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01354

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 REFERENCES
1.2 DEFINITIONS
1.2.1 Environmental Pollution and Damage
1.2.2 Permitted Solid Waste Disposal Facility
1.3 SUBMITTALS
1.4 AVAILABLE INFORMATION
1.4.1 Environmental Documentation
1.4.2 NPDES Permits for Stormwater/Wastewater Discharges
1.5 ENVIRONMENTAL PROTECTION REQUIREMENTS
1.5.1 Permits
1.5.2 Special Environmental Requirements
1.5.3 Environmental Assessment of Contract Deviations
1.5.4 Left Bank Batch Plant Area Development
1.5.4.1 Interim Effluent Limitations and Monitoring Requirements at Outfall 001 - Left Bank Area
1.5.4.2 Final Effluent Limitations and Monitoring Requirements at Internal Outfall 101 - Left Bank Area
1.5.5.2 Final Effluent Limitations and Monitoring Requirements at Outfall 001 - Left Bank Area
1.5.4.3 Final Effluent Limitations and Monitoring Requirements at Outfall 002 - Left Bank Area
1.5.5 Victory Hollow Offloading Area Development
1.5.5.1 Effluent Limitations and Monitoring Requirements at Outfall 001 - Victory Hollow
1.5.5.2 Effluent Limitations and Monitoring Requirements at Outfall 002 - Victory Hollow (For Information Only - Not In Contract)
1.5.6 Monitoring, Reporting and Records Keeping
1.5.6.1 Test Procedures
1.6 ENVIRONMENTAL PROTECTION PLAN
1.6.1 Environmental Certification Statement
1.6.2 Protection of Features
1.6.3 Spill Control Plan
1.6.4 Preparedness, Prevention and Contingency Plan
1.6.5 Recycling and Waste Minimization Plan
1.6.6 Contaminant Prevention Plan
1.6.7 Environmental Monitoring

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 SPECIAL ENVIRONMENTAL PROTECTION REQUIREMENTS
3.1.1 Disposal Areas on Government Property

3.1.2 Fuels and Lubricants
3.1.3 Concrete Chemical Admixtures
3.1.4 Temporary Holding Basin
3.1.5 Water and Sediment from River-Based Construction Activities
3.1.6 Other Requirements
3.1.7 Environmental Compliance Representative (ECR)
3.2 PRE-CONSTRUCTION (PREPARATORY PHASE) MEETING
3.3 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES
3.3.1 Discovered Historic, Archaeological, and Cultural Resources
3.4 PROTECTION OF WATER RESOURCES
3.4.1 Wastewater
3.4.2 Monitoring of Water Areas Affected by Construction Activities
3.4.3 Dredging Restrictions
3.4.4 Restrictions for Cleanout of Ready-Mix Concrete Trucks
3.5 PROTECTION OF AIR RESOURCES
3.5.1 Particulates
3.5.2 Hydrocarbons and Carbon Monoxide
3.5.3 Monitoring of Air Quality
3.6 INSPECTION
3.7 MAINTENANCE OF POLLUTION CONTROL FACILITIES
3.8 TRAINING OF CONTRACTOR PERSONNEL

-- End of Section Table of Contents --

SECTION 01354

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 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 CODE (PA CODE)

25 Pa. Code 287.1	Title 25. Environmental Resources; Department of Environmental Resources; Chapter 287.1 Definitions

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 136	Guidelines Establishing Test Procedures for the Analysis of Pollutants

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents that adversely affect human health or welfare; unfavorably alter ecological balances of plant or animal communities; or degrade the environment from an aesthetic, cultural or historic perspective. Environmental protection is the prevention/control of pollution and habitat disruption that may occur during construction. The control of environmental pollution and damage requires consideration of air, water, land, biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive materials; and other pollutants.

1.2.2 Permitted Solid Waste Disposal Facility

A permitted solid waste disposal facility is a landfill or other facility which is properly permitted by the Commonwealth of Pennsylvania, Department of Environmental Protection (PADEP) for the disposal of municipal, residual, or construction/demolition waste. Any such facility utilized by the Contractor for disposal of waste under this contract shall be as defined by 25 Pa. Code 287.1 and shall be permitted to accept the particular material being disposed.

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

Environmental Protection Plan; G RE.

The Environmental Protection Plan shall include, but not be limited to, the items specified in paragraph "ENVIRONMENTAL PROTECTION PLAN".

~~Environmental Compliance Representative (ECR); G RE.~~

~~The Resume and qualifications of at least two (2) Environmental Scientist shall be provided to the Government for their selection of the Contractor's ECR, as specified in paragraph "ENVIRONMENTAL COMPLIANCE REPRESENTATIVE".~~

Activity Environmental Analysis; G RE

Before starting any major phase of the work, an Activity Environmental Analysis shall be developed by the Contractor and reviewed with the Contracting Officer or his authorized representative. A major phase of the work is defined as an operation involving a type of work not previously experienced which presents possible sources of adverse environmental effects. This analysis shall evaluate potential environmental consequences of the activity and the techniques which will be utilized to accomplish the work in an acceptable manner. The analysis shall include:

a. The phase or activity of work.

b. The potential environmental consequences of the activity.

c. Precautionary actions to prevent adverse environmental impacts.

d. Actions in the event of an environmental incident.

e. The appropriate reference to Federal, state or local standards, regulations or laws.

Environmental Certification Statement

Environmental certification as specified in paragraph "Environmental Certification Statement", herein.

1.4 AVAILABLE INFORMATION

The following information is available for the Contractor's use.

1.4.1 Environmental Documentation

National Environmental Policy Act (NEPA) compliance documents that have been completed to date for the Charleroi Locks and Dam Project are available for inspection in the office of the Contracting Officer. Contractors interested in reviewing this information should contact Ms. Michele Hutfles (412) 395-7479 to arrange a date and time to come to the

office to review these documents.

NPDES Part I Permit No. PA0218502 for the Charleroi Left Bank Concrete Batch Plant Site, dated 17 September 2003 , including Amendment #1.

Part II Permit Application to the PADEP for a NPDES Industrial Wastewater Discharge Permit for the Left Bank Concrete Batch Plant Site.

1.4.2 NPDES Permits for Stormwater/Wastewater ~~Dischages~~Discharges

Copies of the following documents are included as attachments to these Specifications:

NPDES Part I Permit No. PA0218502 for the Charleroi Left Bank Concrete Batch Plant Site, dated 17 September 2003, including Amendment #1.

Part II Permit Application to the PADEP for a NPDES Industrial Wastewater Discharge Permit for the Left Bank Concrete Batch Plant Site.

~~Draft~~Final NPDES Part I Permit No. PA0218791 for the Victory Hollow Site, dated ~~19 March~~26 May 2004.

The Government intends to obtain the required NPDES Permits for both sites prior to start of work under this Contract. Copies of the currently pending permits will be furnished as they are received either by amendments to the Request for Proposal or modifications to the awarded contract.

1.5 ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor shall comply with all applicable Federal, State, and local laws and regulations. The Contractor shall provide environmental protective measures and procedures to prevent and control pollution, limit habitat disruption, and correct environmental damage that occurs during construction.

1.5.1 Permits

This section supplements the Contractor's responsibilities under Section 00700 CONTRACT CLAUSES, paragraph PERMITS AND RESPONSIBILITIES to the extent that the Government has obtained or applied for the permits and other certifications as noted under paragraph "Environmental Documentation" for the construction of the new locks. The Government has an NPDES Part I Permit No. PA0218502 (including Amendment #1) for the Charleroi Left Bank Concrete Batch Plant Site, dated 17 September 2003 and has also submitted Part II Permit Application to the PADEP for a NPDES Industrial Wastewater Discharge Permit for the Left Bank Concrete Batch Plant Site. The Government has also received a ~~Draft~~Final NPDES Part I Permit, No. PA0218791 for the Victory Hollow Site, dated ~~19 March~~26 May 2004. The Part II Wastewater Permit Application for the Victory Hollow Site is currently under preparation by the Government. Approved erosion and Sediment Control Plans for the Left Bank Concrete Batch Plant and Staging Area and the Victory Hollow Disposal Site have been incorporated into the contract drawings and Specifications . The Contractor shall be responsible for any changes or modifications to the NPDES Permits and Erosion and Sediment Control Requirements that are needed to accommodate the Contractor's proposed activities, including, but not limited to, batch plant, methods of operation, and site usage. The Contractor shall comply with the terms, and conditions of these permits. Copies of permit will be made available for viewing by bona fide bidders, as noted under paragraph "Environmental

Documentation", and will be included and considered a part of the contract to the awarded Contractor. As stated in paragraph "Environmental Certification Statement" below, the Contractor hereby agrees that he is fully aware of the terms and conditions of the permits and erosion and sedimentation control requirements, and that the terms and conditions of the permits are hereby made a part of this contract.

1.5.2 Special Environmental Requirements

The Contractor shall comply with the special environmental requirements included in paragraph SPECIAL ENVIRONMENTAL PROTECTION REQUIREMENTS at the end of this section. These special environmental protection requirements are an outgrowth of environmental commitments made by the Government during the project development.

1.5.3 Environmental Assessment of Contract Deviations

The Contract plans and specifications have been prepared to comply with the special conditions and mitigation measures of an environmental nature which were established during the planning and development of this project and incorporated into the environmental permit applications and agreements obtained for this project. The Contractor is advised that deviations from the drawings or specifications (e.g., alternate erosion and sedimentation controls, proposed alternate disposal methods, staging areas, alternate access routes, differing site uses, etc. etc.) may be considered deviations from the environmental permits obtained for this project, and will result in the requirement for the Government to reanalyze the project from an environmental standpoint to ensure its compliance with NEPA and the environmental ~~permites~~permits and agreements obtained for this ~~projcet~~ project. The Contractor shall be responsible for all costs and schedule delays that may result from the reanalysis. Deviations from the construction methods and procedures indicated by the plans and specifications which may have an environmental impact will require an extended review, processing, and approval time by the Government, and State and local agencies. This may include preparation of an Environmental Assessment and Finding Of No Significant Impact and/or Cultural Resources investigation. These deviations may also require a review by other Federal, State, and local agencies and interested parties. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact. Any delays associated with deviations from the environmental requirements shown, including delays for review of the deviations by the Government and other agencies are the sole responsibility of the Contractor and no ~~additioinal~~additional time will be granted for such delays and all expenses associated with the delays will be the responsibility of the Contractor.

1.5.4 Left Bank Batch Plant Area Development

The Contractor shall be responsible for compliance with all the terms and conditions of the approved NPDES Permits listed above in paragraph "Environmental Documentation". Under the terms of the NPDES Part I Permit No. PA0218502 for the Charleroi Left Bank Concrete Batch Plant Site, dated 17 September 2003, the Contractor may construct the river access road, asphalt pavement, treatment structure and the sedimentation basins, from beginning of construction activities at the left bank batch plant area, up to a maximum duration of ten-weeks, without directing the stormwater to treatment. Erosion and sediment control features, such as filter fabric and super silt fence, rock filters, rock-stabilized construction entrances,

and a rock-lined channel shall be used as best management practices during this 10-week grace period. If construction of the access road, asphalt pavement, treatment structure and sedimentation basin are completed within the ten-week period, no initial treatment basin will be required. During this 10-week period, the following project activities shall be completed: treatment basin; sedimentation basins; the river access road; final grading of the site; and placement of asphalt cover over the equipment and staging laydown area and the batch plant area. If all of this work is completed, stormwater will only be required to be collected from the concrete batch plant area. If these work features are not completed within the 10-week time frame during site development, all of the site stormwater shall be collected and treated thereafter per the requirements stated below in paragraph "Interim Effluent Limitations and Monitoring Requirements at Outfall 001". The Contractor shall be responsible for the collection, testing and monitoring of all effluents in accordance with the Specifications and the terms of the Part I and Part II NPDES Permits, which are attached at the end of this Section of the Specifications. After completion of the river access road, parking lots, staging areas, the following best management practice, as stipulated in the permit shall be performed: Routine (a minimum of twice per day or as often as necessary) sweeping of the river access road, parking lots, staging areas and any other area that may cause or contribute pollution to the stormwater discharges.

1.5.4.1 Interim Effluent Limitations and Monitoring Requirements at Outfall 001 - Left Bank Area

Storm water runoff from construction activities at the left bank batch plant area shall be collected, treated and monitored if the left bank batch plant access road, asphalt ~~pavment~~payment cover, treatment structure and sedimentation basin are not completed within the ten-week grace period as specified above. Storm water runoff during construction activities shall be directed to the sedimentation basin and discharged via Outfall 001. Construction activities shall be deemed complete upon commencement of operation of the batch plant. Storm water shall be collected, treated and monitored as specified herein. Sampling, testing and monitoring shall be performed at the discharge from Outfall 001. Based on the production data and anticipated waste water characteristics and flows described below, the following effluent limitations and ~~montoring~~monitoring requirements shall be performed:

WASTE WATER CHARACTERISTICS

Source	Quantity
Storm Water runoff (10 year, 24 storm event)	559,400 gpd

DISCHARGE LIMITATIONS				**MONITORING REQUIREMENTS**	
		Concentrations (mg/l)			
Discharge Parameter		Average Monthly	Instant. Max	Measurement Frequency	Sample Type
Flow (mgd)	Monitor and Report			2/month	Measured
Total ~~Supended~~Suspended Solids		35.0	70.0	2/month	Grab

DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS	
	Concentrations (mg/l)			
Discharge Parameter	Average Monthly	Instant. Max	Measurement Frequency	Sample Type
Iron	3.5	7.0	2/month	Grab
Aluminum	4.0	8.0	2/month	Grab
Manganese	2.0	4.0	2/month	Grab
pH not less than 6.0 nor greater than 9.0 standard units			2/month	Grab

1.5.4.2 Final Effluent Limitations and Monitoring Requirements at Internal Outfall 101 - Left Bank Area

Upon ~~comletion~~completion of construction ~~activites~~activities and pavement of the site, and upon commencement of operation of the batch plant, storm water runoff and process water from the left bank batch plant area shall be collected, monitored and treated as specified herein. Sampling, testing and monitoring shall be performed at the discharge from Internal Outfall 101. Based on the production data and anticipated wastewater characteristics and flows described below, the following effluent limitations and ~~montoring~~ monitoring requirements shall be performed:

WASTE WATER CHARACTERISTICS

Source	Quantity
Aggregate Rinse	210,000 gallons per day (gpd)
Truck and mix Drum Cleanout	1,000 gpd
Truck Tire Wash	1,000 gpd
Storm Water runoff (10 year, 24 storm event)	259,800 gpd

DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS	
	Concentrations (mg/l)			
Discharge Parameter	Average Monthly	Instant. Max	Measurement Frequency	Sample Type
Flow (mgd) Monitor and Report			2/month	Measured
Total ~~Supended~~Suspended Solids		50.0	2/month	Grab
Total Dissolved Solids Monitor and Report			2/month	Grab
Oil and Grease	15.0	30.0	2/month	Grab
MBAS Monitor and Report			2/month	Grab
Aluminum	4.0	8.0	2/month	Grab

DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS	
	Concentrations (mg/l)			
Discharge Parameter	Average Monthly	Instant. Max	Measurement Frequency	Sample Type
Iron	2.0	4.0	2/month	Grab
Manganese	1.0	2.0	2/month	Grab
pH not less than 6.0 nor greater than 9.0 standard units			2/month	Grab

1.5.5.2 Final Effluent Limitations and Monitoring Requirements at Outfall 001 - Left Bank Area

Uncontaminated storm water runoff at Outfall 001 at the left bank batch plant area shall be sampled, tested and monitor as specified herein. Sampling, testing and monitoring shall be performed at the discharge from Outfall 001. Based on the anticipated wastewater characteristics and flows described below, the following effluent limitations and ~~montoring~~monitoring requirements shall be performed:

WASTE WATER CHARACTERISTICS

Source	Quantity
Outfall 101	471,800 gpd
Storm Water runoff (10 year, 24 storm event)	299,600 gpd

DISCHARGE LIMITATIONS	MONITORING REQUIREMENTS	
Discharge Parameter	Measurement Frequency	Sample Type
Flow (mgd) Monitor and Report	2/month	Measured
pH not less than 6.0 nor greater than 9.0 standard units	2/month	Grab

1.5.4.3 Final Effluent Limitations and Monitoring Requirements at Outfall 002 - Left Bank Area

Uncontaminated storm water runoff at Outfall 002 at the left bank batch plant area shall be sampled, tested and monitor as specified herein. Sampling, testing and monitoring shall be performed at the discharge from Outfall 002. Based on the anticipated wastewater characteristics and flows described below, the following effluent limitations and ~~montoring~~monitoring requirements shall be performed:

WASTE WATER CHARACTERISTICS

Source	Quantity
Storm Water runoff	

WASTE WATER CHARACTERISTICS

Source	Quantity
(10 year, 24 storm event)	117,500 gpd

DISCHARGE LIMITATIONS		**MONITORING REQUIREMENTS**	
Discharge Parameter		Measurement Frequency	Sample Type
Flow (mgd)	Monitor and Report	2/month	Measured
pH	not less than 6.0 nor greater than 9.0 standard units	2/month	Grab

1.5.5 Victory Hollow Offloading Area Development

The Contractor shall be responsible for compliance with all the terms and conditions of the approved NPDES Permits listed above in paragraph "NPDES Permits for Stormwater/Wastewater Discharges". The Victory Hollow Offloading Area Site is an abandoned coal processing facility and is currently covered with acid-runoff producing coal refuse. Under the terms of the Draft NPDES Part I Permit No. PA021879, the site exceeds the permitted effluent limitations and will require ~~reclaimation~~reclamation work before site development construction within the area that coal is to be removed can start. Specifically, ~~the Contractor must remove~~reclamation activities include the Contractor removal of: 1) the acid producing coal fines (not the existing soil) from the areas shown on the contract drawings; 2) the existing sediment pond water; and, 3) existing pond sediment, before ANY stormwater discharge into the receiving waters (Monongahela River) will be permitted. The existing sediment pond outlets shall be plugged and all existing and new stormwater and sediment in the existing pond shall be removed for off-site treatment by a licensed waste treatment facility. The coal waste material shall be removed and disposed at either a coal processing facility or a licensed landfill. Dredged river sediment from areas approved by the Contracting officer shall be used to bring the reclaimed site to original grades. Separate erosion and Sediment Control features have been designed for the site ~~reclaimation~~reclamation activity as shown on the drawings. Once the site surface is free of visible coal waste, the existing sediment pond shall be reconstructed and new Erosion and Sediment Control Measures installed as shown on the contract drawings. Site stormwater discharges, via the new pond's principal spillway (Outfall 001), can resume provided the effluent limitations outlined in the Paragraph: "Effluent Limitations and Monitoring Requirements at Outfall 001 - Victory Hollow" are met.

The Contractor shall be responsible for the collection, testing and monitoring of all effluents in accordance with the Specifications and the terms of the Part I and Part II NPDES Permits, which are attached ~~at~~to the ~~end of this Section of the~~ Specifications or shall be furnished to the contractor as soon as the final Permits are obtained. A copy of the FINAL Part I NPDES permit has been obtained and has been attached to the Specficiations, and superceeds the previous DRAFT Part I NPDES Permit for Victory Hollow.

1.5.5.1 Effluent Limitations and Monitoring Requirements at Outfall 001 - Victory Hollow

Sampling, testing and monitoring shall be performed at the discharge from Outfall 001. The following effluent limitations and monitoring requirements shall be performed:

WASTE WATER CHARACTERISTICS

Source	Quantity
Storm Water runoff	325,000 gpd

DISCHARGE LIMITATIONS				**MONITORING REQUIREMENTS**	
		Concentrations (mg/l)			
Discharge Parameter		Average Monthly	Instant. Max	Measurement Frequency	Sample Type
Flow (mgd)	Monitor and Report			2/month	Measured
Total ~~Supended~~Suspended Solids		30.0	60.0	2/month	Grab
Oil and Grease	Monitor and Report			2/month	Grab
Chromium	Monitor and Report			2/month	Grab
Lead	Monitor and Report			2/month	Grab
Zinc	Monitor and Report			2/month	Grab
Iron		3.5	7.0	2/month	Grab
Manganese		2.0	4.0	2/month	Grab
Aluminum	Monitor and Report			2/month	Grab
Benzine	Monitor and Report			2/month	Grab
EthlyBenzine	Monitor and Report			2/month	Grab
Tolu~~l~~ene	Monitor and Report			2/month	Grab
pH	not less than 6.0 nor greater than 9.0 standard units			2/month	Grab

1.5.5.2 Effluent Limitations and Monitoring Requirements at Outfall 002 - Victory Hollow (For Information Only - Not In Contract)

The Government has also obtained a wastewater discharge permit for future storm water discharges from the future Victory Hollow Upland Placement Site Sediment Basin (Outfall 002) (to be constructed under future contract). This outfall is to be located across State Route 837 from Victory Hollow offloading Area. This Sediment basin is not to be constructed under this contract, so Outfall 002 Sampling and Testing requirements contained in the Permit shall not be performed under this contract.

1.5.6 Monitoring, Reporting and Records Keeping

The Contractor shall be solely responsible for complying with the "Self-Monitoring, Reporting, and Records Keeping" requirements of the approved NPDES Permits.

1.5.6.1 Test Procedures

The Contractor shall be responsible for the collection, testing and monitoring of all effluents in accordance with the Specifications and the terms of the Part I and Part II NPDES Permits, which are attached at the end of this Section of the Specifications. Unless specified otherwise, the test procedures for the analysis of pollutants shall be those contained in 40 CFR 136.

1.6 ENVIRONMENTAL PROTECTION PLAN

Within 10 calendar days of Notice to Proceed, the Contractor shall submit an Environmental Protection Plan for review and acceptance by the Contracting Officer. The Government will consider an interim plan for the first 30 days of operations. However, the Contractor shall furnish an acceptable final plan not later than 60 calendar days after receipt of the Notice to Proceed. Acceptance is conditional and is predicated upon satisfactory performance during construction. The Government reserves the right to require the Contractor to make changes in the Environmental Protection Plan or operations if the Contracting Officer determines that environmental protection requirements are not being met. The plan shall detail the actions which the Contractor shall take to comply with all applicable Federal, State, and local laws and regulations concerning environmental protection and pollution control and abatement, as well as the additional specific requirements of this contract. The Contractor's plan shall specifically identify the planned practices and means to comply with the special environmental protection requirements outlined below. No physical work at the site shall begin prior to acceptance of the Contractor's plan or an interim plan covering the work to be performed. The environmental protection plan shall include, but not be limited to, the following:

1.6.1 Environmental Certification Statement

As specified in paragraph "Permits" above, the Contractor shall provide as part of the Environmental Protection Plan a ~~statment~~stamen certifying that the Contractor is aware of the requirements of the approved permits listed above in ~~paragaph~~paragraph "Environmental Documentation" and the erosion and sediment control requirements incorporated in the Contract drawings and specifications, and the Contractor acknowledges that the terms and conditions of the approved permits will be made a part of the contract. The statement shall also certify that the Contractor is aware of Federal,

state, and local laws, regulations, and permits concerning environmental protection, pollution control, and abatement that are applicable to his proposed operations. Any discrepancies found between contract requirements and the environmental documentation or these laws, regulations and permits shall be brought to the attention of the Contracting Officer.

1.6.2 Protection of Features

This section supplements Section 00700 CONTRACT CLAUSES, paragraph PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. The Contractor shall prepare a list of features requiring protection under the provisions of the contract clause which are not specially identified on the drawings as environmental features requiring protection. The Contractor shall protect those environmental features, indicated specially on the drawings, in spite of interference which their preservation may cause to the Contractor's work under the contract, and the protection of these features shall be incorporated into the Environmental Protection Plan.

1.6.3 Spill Control Plan

The Contractor shall include as part of the environmental protection plan, a Spill Control Plan. The plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by the Emergency Response and Community Right-to-Know Act or regulated under State or local laws or regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

a. The name of the individual who will be responsible for implementing and supervising spill containment and cleanup.

b. Training requirements for Contractor's personnel and methods of accomplishing the training.

c. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

d. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

e. The methods and procedures to be used for expeditious contaminant cleanup.

f. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity spill occurs. The plan shall contain a list of the required reporting channels and telephone numbers.

1.6.4 Preparedness, Prevention and Contingency Plan

A Preparedness, Prevention and Contingency (PPC) Plan has been prepared by the Government and has been incorporated into the Part I permit application

for an NPDES Industrial Wastewater Discharge Permit for Discharges of Stormwater Associated with Construction Activities (a copy of which is available for viewing by bona fide bidders). The Contractor shall review this existing plan, and shall revise the plan according to the specific operations of the Contractor. The Contractor's PPC plan shall be submitted with the ~~Environmetal~~Environ metal protection plan to the Contacting Officer for review and approval by the Government. After approval of the PPC plan by the Government, the Contractor shall submit the final PPC plan to the Pennsylvania Department of Environmental Protection as an amendment to the NPDES Part I permit application.

1.6.5 Recycling and Waste Minimization Plan

The Contractor shall submit a Recycling and Waste Minimization Plan as a part of the Environmental Protection Plan. The plan shall detail the Contractor's actions to comply with the following recycling and waste minimization requirement: The Contractor shall participate in State and local government sponsored recycling programs to reduce the volume of solid waste materials at the source.

1.6.6 Contaminant Prevention Plan

As a part of the Environmental Protection Plan, the Contractor shall prepare a contaminant prevention statement identifying potentially hazardous substances to be used on the job site and intended actions to prevent accidental or intentional introduction of such materials into the air, water, or ground. The Contractor shall detail provisions to be taken to meet Federal, State, and local laws and regulations regarding the storage and handling of these materials.

1.6.7 Environmental Monitoring

The Contractor shall include in the plan the details of environmental monitoring requirements under the laws and regulations and a description of how this monitoring will be accomplished.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 SPECIAL ENVIRONMENTAL PROTECTION REQUIREMENTS

3.1.1 Disposal Areas on Government Property

Disposal operations shall be performed in accordance with Section 02040 DISPOSAL OF MATERIALS. All dredged soil and rock materials, and all excavated materials removed from the riverbed associated with construction under this project shall be used to construct the off-loading area at a Government furnished site shall be used to construct the off-loading area at the Government furnished disposal site in accordance with the applicable provisions of Section 02040 DISPOSAL OF MATERIALS. Placement operations shall be managed and controlled to prevent erosion of soil or sediment from entering nearby waters or wetlands. Placement operations shall be developed and managed in accordance with the erosion and sedimentation control and other ~~environmetal~~environmental requirements shown on the drawings or as approved by the Contracting Officer.

3.1.2 Fuels and Lubricants

Fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. Fuel storage areas shall include secondary containment provisions, as required by PADEP regulations. Lubricants and waste oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with Federal, State, and local laws and regulations.

3.1.3 Concrete Chemical Admixtures

Each admixture shall be stored in an individual, leak-proof tank or similar container. The admixture storage building shall be designed and constructed to contain a spill volume equal to the largest capacity tank/container that will be housed in the building, after accounting for the volume consumed by other building contents.

3.1.4 Temporary Holding Basin

Refer to Section 01526 GOVERNMENT FACILITIES.

3.1.5 Water and Sediment from River-Based Construction Activities

The Contractor shall implement specific environmental protection practices and measures to reasonably minimize the discharge of sediment-laden water and contact water from concrete curing activities, and prevent the redeposition of sediment, dredge material and drill cuttings into the river. Such measures shall include, but not be limited to, the following:

a. Preclude the heaping of spoil (dredged material, drill cuttings, etc.) on barges or other floating structures.

b. Employ collection hoppers or drip troughs; and fashion excavation buckets and drilling tools to minimize the loss of spoil when passing excavation tools over water.

c. Equip barges with filtered sumps to pre-filter free water before discharging the water from the barge. Ensure that the barges are in good working condition and do not leak.

d. Pass all water and water-sediment slurries from airlifting activities and from pumping activities associated with shaft dewatering, cofferbox dewatering, concrete curing and other activities through a filtered sump or similar system before discharging the water to the river.

Note that additional and/or more stringent controls might be required by the project permits or as a result of Contractor-selected means and methods.

3.1.6 Other Requirements

The Contractor shall review the governing Erosion and Sediment Control Plan documents, NPDES Permits and attachments (notably the PPC Plan), and other project permits for additional requirements.

3.1.7 Environmental Compliance Representative (ECR)

The Contractor shall hire, or designate from within their existing organization an Environmental Scientist to act as the Environmental

Compliance Representative (ECR) for the Contractor on this project. The ECR shall have ~~at least six (6) years of demonstrated successful experience in environmental compliance monitoring, including experience in water quality sampling, testing and reporting; operation and maintenance of water treatment systems; NPDES compliance monitoring of industrial and stormwater discharges; and 25 Pa Code Chapter 102 rules and regulations regarding Erosion and Sediment Control.~~ the minimum qualifications required in Section 01451 CONTRACTOR QUALITY CONTROL. ~~The ECR shall not fulfill dual functions for the Contractor, such as ECR and Health and Safety Specialist. The ECR shall have authority to act independently in implementing necessary corrective actions to effectively meet the Contractor's environmental protection responsibilities under this Contract; the project permits; and governing Federal, state, and local rules, ordinances, regulations, and laws.~~

~~The Contractor shall submit the resume and qualifications of at least two (2) prospective Environmental Scientist meeting the above requirements to the Government. The Government will determine if both Environmental Scientists are qualified. If both candidates are qualified, the Contractor shall select the ECR from the two qualified candidates.~~

3.2 PRE-CONSTRUCTION (PREPARATORY PHASE) MEETING

Prior to the start of any earth disturbance activities, the Contractor and the Government shall meet with the Washington County Conservation District and PADEP. The Pre-Construction Meeting Checklist attached to the end of this section shall be completed at this meeting.

3.3 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

3.3.1 Discovered Historic, Archaeological, and Cultural Resources

If during construction activities, items are observed that may have historic or archaeological value (e.g., Native American human remains or associated objects are discovered), such observations shall be reported immediately to the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to, or the destruction of, these resources. The Contractor shall prevent his employees from trespassing on, removing, or otherwise disturbing such resources.

3.4 PROTECTION OF WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters.

3.4.1 Wastewater

Wastewater directly derived from concrete production, preparation of concrete surfaces, dredging, and other construction activities in the river shall not be discharged before being treated to remove pollutants. Wastewater from concrete production shall be passed through sedimentation basins as shown and as specified in Section 02770 CONCRETE BATCH PLANT SEDIMENTATION BASINS, and treated at a pH ~~treament~~treatment system as shown and as specified in Section 11200 WATER TREATMENT UNITS, AND OPERATION, MONITORING & REPORTING. Wastewater from dredging and underwater excavation operations shall be collected and passed through a filtered sump before being discharged back into the river. The discharge of treated/filtered

wastewater from construction operations back into the river shall occur below the water surface. Also refer to paragraph SPECIAL ENVIRONMENTAL PROTECTION REQUIREMENTS above.

3.4.2 Monitoring of Water Areas Affected by Construction Activities

The Contractor shall perform discharge monitoring, inspections, stormwater sampling and testing, reporting, and record keeping as set forth in the contract documents and in the permit conditions which are attached to this section.

3.4.3 Dredging Restrictions

A. The following dredging activities will be prohibited from April 1 through June 30 of each year:

1. Dredging at the Victory Hollow off loading site.

2. Dredging at left bank batch plant off loading area.

3. Dredging and underwater pre-excavation downstream of Dam 4 at Charleroi.

B. The following activities are not subject to the above April 1 through June 30 restriction on dredging:

1. Underwater excavation within the cofferboxes or any coffered area. Such work shall be conducted in accordance with paragraph "Water and Sediment from River-Based Construction Activities".

2. Drilling (augering) for construction of drilled shafts. Such work shall be conducted in accordance with paragraph "Water and Sediment from River-Based Construction Activities".

3.4.4 Restrictions for Cleanout of Ready-Mix Concrete Trucks

Water for the cleanout of ready-mix concrete trucks, which deliver concrete to the project area from commercial sources, shall be used sparingly and only as necessary to remove material from the concrete chute. Water used to clean concrete tools shall also be minimized. Wastewater derived from the cleanout of ready-mix concrete trucks and tools shall be held to the absolute minimum necessary and shall not exceed 10 gallons of water per truck. Wastewater shall be discharged to a temporary holding basin until the sedimentation basins associated with the concrete batch plant are operable. The temporary holding basin shall store all cleanout water and solids until the sedimentation basins are completed, at which time water and solids shall be removed from the temporary holding basin and disposed of as specified in Section 02040 DISPOSAL OF MATERIALS. Alternative methods of collection, storage and disposal of cleanout water and solids may be approved by the Contracting Officer, provided that a plan is submitted at least 30 days prior to concrete operations and is approved in writing. On-site disposal of excess ready-mix concrete is prohibited.

3.5 PROTECTION OF AIR RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict

accordance with the Commonwealth of Pennsylvania Air Pollution Control Act and all Federal and local emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained for those construction operations and activities specified in this section. Special management techniques as set out below shall be implemented to control air pollution by the construction activities which are included in the contract.

3.5.1 Particulates

Airborne particulates, including dust particles, from construction activities and processing and preparation of materials shall be controlled at all times, including weekends, holidays, and hours when work is not in progress. The Contractor shall maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, disposal sites, borrow areas, and all other work areas free from airborne dust which would cause a hazard or nuisance.

a. Particulates Control. The Contractor shall maintain all excavations, stockpiles, permanent and temporary access roads, plant sites, spoil areas, and all other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards mentioned in paragraph PROTECTION OF AIR RESOURCES above to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. If sprinkling is used it must be repeated at such intervals as to keep the disturbed area damp at all times. The Contractor must have sufficient competent equipment available to accomplish this task. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

b. Work Area Dust Control. In addition to the general requirements for particulates control, the Contractor shall employ the following specific measures for dust control in work areas, including the batch plant area, demolition areas, disposal areas, storage areas, and haul roads.

(1) Work Practice Controls

(a) Disturbed soil areas shall be compacted or stabilized by vegetation, gravel or chemical methods.

(b) Earthmoving activities shall be phased to reduce the area subject to wind erosion.

(c) Mud and dirt shall be removed from vehicles before entering public streets and highways.

(d) Trucks shall be covered and shall have sufficient freeboard to prevent loss of material during transit.

(2) Roads

(a) Paved roads shall have curbs, paved shoulders, or lines painted near the edge of the pavement.

(b) Stormwater shall be controlled by use of vegetation and other means to stabilize surrounding areas.

(c) Trucks shall be covered and shall have sufficient freeboard to prevent loss of material during transit.

(d) Any materials spilled from the hauling equipment on paved roads shall be removed by the Contractor at his expense.

(e) Mud and loose debris shall be removed from vehicles before entering paved roads and exiting project areas.

(f) Paved areas shall be kept in a clean condition by excavating, sweeping, vacuuming, or water flushing source areas (to sediment control structures) to prevent generation of dust.

(g) Water sprinkling or regulatory-approved chemical treatment shall be used at construction sites, road grading, and land clearing sites in disturbed soil areas.

(h) Dust generation on unpaved roads shall be limited by implementation of bussing program for employees, restriction of roads to certain vehicle types, and/or establishment and strict enforcement of speed limits.

(i) Unpaved roads shall be paved, covered with material with low dust generating properties, or provided with vegetative cover.

(3) Open Area Wind Erosion

(a) Areas subject to wind erosion shall be treated by sprinkling or chemical stabilization.

(b) Effects of wind shall be reduced by construction of wind barriers, establishing vegetative cover, or limited irrigation of barren areas.

(4) Transferring of Materials

(a) All transfer points in the material handling system from stackers and storage piles to shipping surge hoppers shall be enclosed or shall be equipped with wet suppression systems that apply water or water and chemical admixtures.

(b) Adjustable height stackers shall be operated to limit the maximum free fall height of material to six feet, except when the stacker is in the lowest possible position.

3.5.2 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and state allowable limits at all times.

3.5.3 Monitoring of Air Quality

Monitoring of air quality shall be the responsibility of the Contractor. All air areas affected by the construction activities shall be kept under surveillance by the Contractor to prevent violation of the Commonwealth of

Pennsylvania Air Pollution Control Law and local regulations.

3.6 INSPECTION

If the Contracting Officer notifies the Contractor in writing of any observed noncompliance with contract requirements or Federal, State, or local laws, regulations, or permits, the Contractor shall inform the Contracting Officer of proposed corrective action and take such action to correct the noncompliance. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action is taken. No time extensions will be granted or costs or damages allowed to the Contractor for any such suspension.

3.7 MAINTENANCE OF POLLUTION CONTROL FACILITIES

The Contractor shall maintain all constructed pollution control facilities and portable pollution control devices for the duration of the Contract or for the length of time construction activities create the particular pollutant.

3.8 TRAINING OF CONTRACTOR PERSONNEL

Contractor personnel shall be trained in environmental protection and pollution control. The Contractor's ECR shall conduct environmental protection/pollution control meetings for all Contractor personnel quarterly. The training and meeting agenda shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, installation and care of facilities (vegetative covers, etc.), and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control. Anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants, shall also be discussed. Other items to be discussed shall include recognition and protection of archaeologic sites and artifacts.

PRE-CONSTRUCTION MEETING CHECKLIST

_____ Contractor has the approved copy of the E&S plan and NPDES Permit
_____ Revisions made to the plan or permit since their approval
_____ Mention that revisions are required to be submitted if there are changes during construction

_____ Contact person(s) for E&S work
_____ Phone numbers and addresses for all people involved in E&S work

_____ Review inspection procedure _____ Inspection reports _____ Deadlines (voluntary compliance vs. enforced compliance)

_____ Review Cease and Desist/Field Order; Permit suspension/revocation
_____ Discuss involvement of local municipalities

_____ Discuss E&S sequence
_____ Emphasize importance of prompt installation of sediment basin/trap, construction entrance, filter fences, perimeter controls, etc.

_____ Discuss possible related off-site activity
_____ Plan required for waste or borrow sites
_____ Locations for the disposal of dredged or excavated materials
_____ Pre-disposal testing of dredged or excavated materials

_____ Mention 5 day notification prior to start of construction
_____ Review start date

_____ Review the seeding requirements and mention that all permanent controls may be inspected before the N.O.T. is acknowledged
_____ 20 day interim stabilization requirement if earthmoving ceases temporarily

_____ Review the permit expiration date/renewal requirements

_____ Review maintenance activities (construction entrances, filter fences, basins, inspection frequency, etc.)

_____ Discuss oversight of project - person needed to make sure construction is proceeding as per plan

_____ Review co-permittee/transfer of ownership or control

_____ Discuss P.P.C. plans and other NPDES Permit components
_____ Spill prevention and control
_____ NPDES monitoring, testing and reporting
_____ pH monitoring and control system
_____ Special environmental protection requirements

_____ Discuss temporary holding basin for wastewater derived from the cleanout of ready mix concrete trucks

_____ Have all other necessary permits been obtained?

Comments:

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES
1.2 SUBMITTALS

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL
3.2 QUALITY CONTROL PLAN
3.2.1 General
3.2.2 Content of the CQC Plan
3.2.3 Acceptance of Plan
3.2.4 Notification of Changes
3.3 COORDINATION MEETING
3.4 QUALITY CONTROL ORGANIZATION
3.4.1 General
3.4.2 CQC System Manager
3.4.3 Construction Management Staff
3.4.3.1 Concrete Superintendent
3.4.3.2 Environmental Control Representative (ECR) and Field Staff
3.4.3.3 Project Safety and Health Manager
3.4.3.4 Diving Superintendent
3.4.3.5 Chief Surveyor
3.4.4 CQC Personnel
3.4.5 Additional Requirement
3.4.6 Organizational Changes
3.5 SUBMITTALS
3.6 CONTROL
3.6.1 Preparatory Phase
3.6.2 Initial Phase
3.6.3 Follow-up Phase
3.6.4 Additional Preparatory and Initial Phases
3.7 TESTS
3.7.1 Testing Agencies
3.7.2 Testing Procedure
3.7.3 Testing Laboratories
3.7.3.1 Corps of Engineers Validated Laboratories
3.7.3.2 Capability Check
3.7.3.3 Capability Recheck
3.7.4 Onsite Laboratory
3.7.5 Furnishing or Transportation of Samples for Testing
3.8 COMPLETION INSPECTION
3.8.1 Punch-Out Inspection

3.8.2 Pre-Final Inspection
3.8.3 Final Acceptance Inspection
3.9 DOCUMENTATION
3.10 NOTIFICATION OF NONCOMPLIANCE

-- End of Section Table of Contents --

SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 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 C 1077	(2000) Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
ASTM D 3740	(2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

ASTM INTERNATIONAL (ASTM)

ASTM C 143/C 143M	(2003) Slump of Hydraulic Cement Concrete
ASTM C 231	(2003) Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 31/C 31M	(2003a) Making and Curing Concrete Test Specimens in the Field
ASTM C 39/C 39M	(2003) Compressive Strength of Cylindrical Concrete Specimens

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 61	(1989A) Test Method for Determining the Resistance of Freshly Mixed Concrete to Washing Out in Water
ER 1110-1-261	(1999) Quality Assurance of Laboratory Testing Procedures

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

Quality Control Plan; G RE

The Contractor shall submit a quality control plan for approval in accordance with paragraph "QUALITY CONTROL PLAN".

Quality Control Organization; G RE

Resumes and qualifications of all proposed Contractor Quality Control personnel as specified in paragraph "QUALITY CONTROL ORGANIZATION" shall be submitted for approval by the Government.

Environmental Compliance Representative (ECR); G RE.

The Resume and qualifications of at least two (2) Environmental Scientists shall be provided to the Government for their selection of the Contractor's ECR, as specified in paragraph "Environmental Control Representative (ECR) and Field Staff". Resumes for the proposed field staff shall be submitted for approval by the Government.

SD-07 Certificates

Construction Quality Management for Contractors Training G RE

Certification of completion of "Construction Quality Management for Contractors" training shall be submitted within 90 calendar days of receipt of Notice to Proceed.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with Section 00700 CONTRACT CLAUSES, paragraph "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 30 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of Section 00700 CONTRACT CLAUSES, paragraph "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 90 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, off site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking construction deficiencies from

identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 21 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both on site and off site work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 General

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure

contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall present to the Contracting Officer the credentials of his CQC System Manager, site supervisor and supplemental staff member(s) that will be performing CQC for construction under this contract. The credentials shall clearly show that these individuals are versed in the necessary inspections, test procedures and record keeping techniques. Each CQC staff member shall have had sufficient experience and training in inspection of this type of construction. Basic requirements for CQC staff qualifications and additional requirements for Contractor Quality Control are described below. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer or a graduate of construction management, with a minimum of 10 years construction experience on construction similar to this contract. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 Construction Management Staff

The Contractor shall provide an experienced project management staff for all work under this contract. The following key individuals shall be included in this staff:

3.4.3.1 Concrete Superintendent

The Contractor shall have on staff a qualified concrete superintendent. The concrete superintendent shall be in charge of all concrete construction. The concrete superintendent shall possess the necessary specialized experience. The Contractor shall submit the qualifications of this individual for review by the Contracting Officer. The concrete superintendent shall have a minimum of 10 years experience supervising concrete placement and shall have demonstrated experience of successfully supervising the placement of at least 3 tremie pours in excess of 500 cubic yards. This individual shall possess the necessary experience for performing the work as shown and specified, and shall have specific job related experience(s) with projects similar to this contract. All listed job related experiences for this individual shall contain names and telephone numbers of the project owner's representative who can verify the

individuals participation and performance on the project. All qualifications and experience statements shall be subject to the approval of the Contracting Officer, who will retain the right to require additional information and clarifications, the right to conduct personal interviews, and the right to reject any person(s) listed by the Contractor. Failure to submit such required information and meet such relative qualifications and experience statements will be cause for rejection of that individuals participation with the work.

3.4.3.2 Environmental Control Representative (ECR) and Field Staff

The Contractor shall have on staff or shall hire a qualified Environmental Scientist to act as the Environmental Control Representative for the Contractor, with control over all environmental aspects of the work. The Environmental Control Representative shall possess specialized experience in ensuring compliance with environmental requirements for construction projects, with particular emphasis on NPDES permitted projects requiring water controls and treatment. The Environmental Control Representative shall have on site at all times, a staff of qualified personnel with the authority to act on behalf of the Environmental Control Representative.The ECR shall not fulfill dual functions for the Contractor, such as ECR and Health and Safety Specialist. The ECR shall have authority to act independently in implementing necessary corrective actions to effectively meet the Contractor's environmental protection responsibilities under this Contract; the project permits; and governing Federal, state, and local rules, ordinances, regulations, and laws. The Environmental Control Representative~~ or his designated representative(s),~~ shall have the authority to direct changes in deficient work practices with regards to environmental non-compliance over all work conducted at the site, including the work of subcontractors, and shall be responsible for the following: ensuring compliance with all environmental requirements of this contract, including those not specifically specified herein; shall be responsible for preparing all environmental protection plans and activity environmental analyses and ensuring their compliance; responsible for all environmental monitoring; ensuring compliance with all erosion and sediment control requirements; ensuring the daily monitoring and maintenance of erosion and sediment control measures; ensuring the monitoring and proper operation of the sedimentation basins; ensuring the proper design, installation and operation of the water treatment system; ensuring the monitoring, sampling and testing of effluent from the treatment system, and submission of test results; responsible for providing training to the Contractor's employees in environmental protection (See Section 01354 ENVIRONMENTAL PROTECTION, paragraph "TRAINING OF CONTRACTOR PERSONNEL"); and any other responsibilities of an environmental nature. The Contractor shall submit the qualifications of the Environmental Control Representative and his staff for review by the Contracting Officer. The Environmental Control Representative shall be a licensed professional engineer in the the Commonwealth of Pennsylvania and shall haveat least six (6) years of demonstrated successful experience in environmental compliance monitoring, including experience in water quality sampling, testing and reporting; operation and maintenance of water treatment systems; NPDES compliance monitoring of industrial and stormwater discharges; and 25 Pa Code Chapter 102 rules and regulations regarding Erosion and Sediment Control. ~~a minimum of 7 years experience with a minimum of 5 years experience working on NPDES permitted projects, and~~The ECR shall have held the same or similar responsibilities on at least one previous project of similar size and complexity. The field staff shall have a minimum of 3 years experience years experience working on NPDES permitted projects, and shall have held the same or similar responsibilities on at least one previous project of

similar size and complexity. Operators of the water treatment unit system shall meet the additional qualifications in Section 11200 WATER TREATMENT UNIT SYSTEM. The Contractor shall submit job related experiences for the Environmental Control Representative and his staff which contains names and telephone numbers of the project owner's representative who can verify the individuals' participation and performance on the project. All qualifications and experience statements shall be subject to the approval of the Contracting Officer, who will retain the right to require additional information and clarifications, the right to conduct personal interviews, and the right to reject any person(s) listed by the Contractor. Failure to submit such required information and meet such relative qualifications and experience statements will be cause for rejection of that individual's participation with the work.
The Contractor shall submit the resume and qualifications of at least two (2) prospective Environmental Scientist meeting the above requirements to the Government. The Government will determine if both Environmental Scientists are qualified. If both candidates are qualified, the Contractor shall select the ECR from the two qualified candidates.

3.4.3.3 Project Safety and Health Manager

As required by Section 01105 SAFETY AND HEALTH REQUIREMENTS, paragraph "Administrative Requirements", the Contractor shall have on staff a qualified competent person responsible for the administration of safety requirements. The Project Safety and Health Manager shall be on site, full time, whenever work is taking place. Construction activities will not be allowed to occur without this individual on site. shall not be assigned any other duties other than implementing and enforcing the approved Accident Prevention Plan. The Project Safety and Health Manager shall possess specialized experience in marine construction. The Contractor shall submit the qualifications of the Project Safety and Health Manager for review by the Contracting Officer. The Project Safety and Health Manager shall have a minimum of 7 years experience as a Safety and Health Manager with a minimum of 3 years of marine construction projects. The qualifications should cite any previous experience with Corps of Engineer projects and specifically any projects involving diving operations. Failure to submit such required information and meet such relative qualifications and experience statements will be cause for rejection of that individuals participation with the work.

3.4.3.4 Diving Superintendent

The Contractor shall have on staff a qualified diving superintendent, responsible for supervising all diving operations, and implementing and enforcing the Diving Manual and preparing all diving plans and enforcing all diving requirements as specified in Section 01105 SAFETY AND HEALTH REQUIREMENTS, paragraph "DIVING ACTIVITIES". This individual shall be on-site at all times during diving activities, or the Contracting Officer will not allow any diving operations to take place. The Contractor shall submit the qualifications of this individual for review by the Contracting Officer. The diving superintendent shall have at least 10 years of diving experience and 5 years of diving supervision. Experience with diving on past Corps of Engineers projects and familiarity with Corps of Engineers (and/or U.S. Navy) diving safety requirements should be included with the individuals qualifications. The qualifications should provide specific details of diving experience and working conditions including; 1)Project name and location; 2) water depths; 3) current velocities; 4) type of work performed underwater; and 5) diving system used. The Diving Superintendent shall possess the necessary experience for performing the work as shown and

specified, and shall have specific job related experience(s) with projects similar to this contract. All listed job related experiences for this individual shall contain names and telephone numbers of the project owner's representative who can verify the individuals participation and performance on the project. All qualifications and experience statements shall be subject to the approval of the Contracting Officer, who will retain the right to require additional information and clarifications, the right to conduct personal interviews, and the right to reject any person(s) listed by the Contractor. Failure to submit such required information and meet such relative qualifications and experience statements will be cause for rejection of that individuals participation with the work.

3.4.3.5 Chief Surveyor

The Contractor will have on staff a qualified Professional Land Surveyor in charge of all surveys for layout and installations associated with the work. The chief surveyor shall have a minimum of 10 years of survey experience, 5 of which should be survey experience on marine projects. The qualifications shall show that this individual has held the position of Chief Surveyor on at least one previous marine project of similar size and complexity.

3.4.4 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: civil, structural, materials technician, and submittals clerk. These individuals shall be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals shall have no other duties other than quality control.

Experience Matrix

Area	Qualifications
a. Civil	Graduate Civil Engineer with 2 years experience in the type of work being performed on this project or technician with 5 years related experience
b. Structural	Graduate Structural Engineer with 2 years experience or person with 5 years related experience
c. Submittals	Submittal Clerk with 1 years experience
d. Concrete	Materials Technician with 2 years experience for the appropriate area

3.4.5 Additional Requirement

In addition to the above experience and education requirements, the CQC System Manager and the alternate for the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered by the Pittsburgh District and sponsored by the Contractors Association of Western Pennsylvania. Completion of the course offered by other Corps of Engineers Districts will be accepted upon presentation of a valid certificate.

3.4.6 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS

Submittals shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications.

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work on site, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the

deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, on site production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.7 TESTS

3.7.1 Testing Agencies

The Contractor shall secure the services of independent testing agencies to provide services conforming to the requirements specified in other related technical sections. Agencies which are to perform inspection services for specialized work shall provide documentation that they are certified to perform the type of specialized inspections or tests. See paragraph "Corps of Engineers Validated Laboratories" below for requirements concerning Corps of Engineer validated laboratories.

3.7.2 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an off site or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.3 Testing Laboratories

3.7.3.1 Corps of Engineers Validated Laboratories

Any laboratory proposed by the Contractor to conduct tests of aggregate, bituminous materials, concrete, rock, soils, and other construction materials shall be inspected and validated by the Corps of Engineers Engineer Research and Development Center Materials Testing Center (MTC) in accordance with ER 1110-1-261. After construction and acceptance of the Government concrete testing lab, all concrete shall be tested at the Government concrete tesging lab. Any Contractor proposed laboratory that has not been inspected and validated by the MTC will not be approved for use unless the contractor schedules a MTC inspection and obtains MTC approval of the proposed laboratory. Work involving material testing for aggregates, concrete, rock, soils and other construction materials will not be allowed to start unless a Corps of Engineers Validated Laboratory has been submitted and approved for the testing required by the specifications for the work in question. In order to maintain validation, laboratories must be inspected by the MTC biennially. Validation and subsequent inspections will involve a full 2 to 3 man-day on-site inspection and will include a review of the laboratory's Quality Assurance and Quality Control (QA/QC) program, verification of laboratory testing equipment, and observation of the testing procedures. Scheduling of the inspections for contractor proposed laboratories shall be the responsibility of the Contractor. All costs associated with the Corps of Engineers Engineer Research and Development Center Materials Testing Center (MTC) inspections of laboratories required to perform testing of materials under this contract shall be the responsibility of the contractor. Additional information about inspection requirements, scheduling an inspection, and costs associated with obtaining validation of laboratories can be found on the Material Testing Center Inspection Requests web page at:

http://www.wes.army.mil/SL/MTC/inspection.htm

Procedures and costs for obtaining lab validation can be found by clicking on "Steps to obtain Laboratory Validation" on the referenced web page. Also, a current listing of Corps of Engineer validated laboratories can be found at:

http://www.wes.army.mil/SL/MTC/ValStatesTbl.htm

The following summary includes examples of some of the testing requirements outlined by other sections of this specification that must be performed by a Corps validated laboratory. The list is provided for the Contractor's convenience but is in no way meant to be a comprehensive list of the tests that need to be performed by a validated laboratory. Other validated laboratory testing requirements may be required by the specifications or referenced publications in order for the contractor to comply with the contract requirements.

1. Section 03051 CONCRETE: MIXTURE PROPORTIONING, Paragraph 1.5 require testing for compression test specimens in accordance with ASTM C 31/C 31M and ASTM C 39/C 39M. Also, Paragraphs "Air Entrainment", "Slump", and "Washout" require concrete testing for air content (ASTM C 231), slump (ASTM C 143/C 143M), and antiwashout (COE CRD-C 61)

Additional tests may be required by the specifications and the references in the specifications and it is the Contractor's responsibility to determine the tests required and ensure a validated laboratory is secured

for the referenced tests. Delays in the Contractor's schedule which result from delays in obtaining a validated laboratory to perform required testing will not be considered just cause for issuance of a time extension.

3.7.3.2 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329. Laboratories shall conform to ASTM E 329 and ASTM C 1077 for sampling, testing, inspection, and reporting with respect to concrete.

3.7.3.3 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed an appropriate charge to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.4 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.5 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Laboratory, f.o.b., at the following address:

U.S. Army Corps of Engineers
U.S. Army Engineer Research and Development Center
ATTN: CEERD-GS
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Coordination for each specific test, exact delivery location, and dates will be made through the Contracting Officer. Information on tests performed and charges is located at:
http://www.wes.army.mil/SL/MTC/inspection.htm .

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in Section 00800 SPECIAL CONTRACT REQUIREMENTS, paragraph "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a punch list of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by

which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at this inspection. Additional Government personnel may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with Section 00700 CONTRACT CLAUSES, paragraph "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals reviewed, with contract reference, by whom, and action taken.

g. Off-site surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

This page was intentionally left blank for duplex printing.

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01526

GOVERNMENT FACILITIES

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS
1.2 REFERENCES
1.3 DESCRIPTION
1.3.1 Field Office
1.3.2 Concrete Laboratory
1.3.3 Relocated Trailer
1.3.4 Other Facilities
1.4 SUBMITTALS

PART 2 PRODUCTS

2.1 HOLDING STRUCTURE
2.2 BULKHEAD STRUCTURE
2.3 SHEET PILE BARRIER
2.4 GOVERNMENT FIELD OFFICE
2.4.1 General
2.4.2 Flagpole
2.4.3 Chain Link Fence Modification
2.4.4 Office Equipment
2.4.4.1 Computer Equipment
2.4.4.2 Additional Computer Software
2.5 CONCRETE LABORATORY AND CURING ROOM
2.5.1 General
2.5.2 Concrete Laboratory
2.5.3 Concrete Curing Room
2.5.4 Laboratory Furniture and Miscellaneous Equipment
2.5.5 Laboratory Equipment
2.5.6 Field Constructed Furniture
2.6 UTILITIES
2.6.1 Utilities for Batch Plant Operation
2.6.2 Sanitary Facilities
2.6.3 Potable Water Supply
2.6.4 Telephone Service
2.6.5 Electric Service
2.7 PORTABLE SECURITY ALARM SYSTEM

PART 3 EXECUTION

3.1 WORKMANSHIP
3.2 JANITORIAL AND CUSTODIAL SERVICES
3.2.1 Government Laboratory Services
3.2.2 Right Bank Government Office And Relocated Trailer At Left Bank Batch Plant Area
3.3 TURN OVER OF GOVERNMENT FACILITIES

3.3.1 Coordination With Turn Over of Other facilitie

-- End of Section Table of Contents --

SECTION 01526

GOVERNMENT FACILITIES

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

The Government field office shall be completed and operational within 60 calendar days after receipt of Notice to Proceed. The concrete laboratory shall be completed and operational within 90 calendar days after receipt of Notice to Proceed.

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.

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO)

ICBO UBC	(1997) Uniform Building Code (3 Vol.)
ICBO UMC	(1997) Uniform Mechanical Code

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2002) National Electrical Code

1.3 DESCRIPTION

1.3.1 Field Office

The Contractor shall provide office facilities on the right bank for the exclusive use of Government inspectors and engineers as shown on the drawings. The Government field office shall consist of modular units connected and arranged as shown on the sketch attached to the end of this Section of the Specificiations on the drawings.

1.3.2 Concrete Laboratory

The concrete laboratory shall consist of a prefabricated pre-engineered metal building structure with a concrete slab floor as indicated on the drawings. A separate concrete curing room constructed of insulated concrete block or insulated concrete shall be constructed adjacent to the concrete lab.

1.3.3 Relocated Trailer

The Contractor shall relocate the existing Government trailer from the right bank field office area to the left bank batch plant area as shown. The Contractor shall be responsible for coordinating the transfer of the trailer to the left bank batch plant area with the Contracting Officer. The Contractor shall be responsible for preparing the trailer for

transport, inlcuding securing all interior furniture, disconnecting of all electric, telephone, water ans sewage utilities. The trailer shall be placed at the left bank batch plant area at the location shown or as approved by the Contracting Officer. The Contractor shall be responsible for any damage to the Government trailer until it is set up at the left bank area and accepted by the Contracting Officer. The trailer shall not be moved until the new modular field office building is constructed and accepted by the Contracting Officer.

1.3.4 Other Facilities

Parking spaces, fencing, laboratory equipment, utility services, telephone janitorial services shall also be provided as specified.

1.4 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

Modular Office Building; G RE. Office Equipment; G RE. Laboratory Equipment; GA RE.

Manufacturer's descriptive data shall be submitted for the modular office building and all office and laboratory equipment.

SD-02 Shop Drawings

Government Facilities Plan; G RE.

The Contractor shall submit detail drawings showing the layout of the facilities, location of equipment and details of construction; including layout and floor plan of the modular office building, all mechanical and electrical equipment, and location of all utility connections for electric, sewage and water service. The plan shall be coordinated with and submitted with the "Site Plan" specified in Section 01525 TEMPORARY CONSTRUCTION FACILITIES.

Material, Equipment and Fixture Lists; G RE.

Lists of material, equipment and fixtures to be furnished, along with catalog cuts and other descriptive literature shall be submitted for the equipment and fixtures to be furnished and the materials to be used in the construction.

Bulkhead Structure; G RE

The Contractor shall prepare working drawings indicating the proposed locations, dimensions, and details of all work associated with the bulkhead structure to be constructed at the left bank batch plant area. These working drawings shall accompany the submission of the Bulkhead Structure Design.

SD-05 Design Data

Bulkhead Structure; G RE. Sheet Pile Barrier; G RE.

The Contractor shall provide calculations for design of the bulkhead structure and sheet pile barrier to be constructed at the end of the access ramp at the left bank batch plant area, and working drawings for construction. The design calculations and working drawings shall be prepared by a Professional Engineer licensed in Pennsylvania and shall be certified by the Professional Engineer. The Contractor supplied design calculations and drawings shall comply with the requirements indicated on the project drawings associated with the conceptual and sheet pile barrier and the project specifications.

PART 2 PRODUCTS

2.1 HOLDING STRUCTURE

At the batch plant area, the Contractor shall install a holding structure to collect and store water from the cleanout of ready-mix concrete trucks; water used to clean concrete tools; and the residual concrete solids from the cleanup activities at the left bank batch plant area, as specified in Sections 01354 ENVIRONMENTAL PROTECTION and 02040 DISPOSAL OF MATERIALS. Upon completion and acceptance of the contract, the holding structure will become the property of the Government and shall remain in place.

2.2 BULKHEAD STRUCTURE

The Contractor shall design and furnish a bulkhead structure at the location shown on the project drawings, and in accordance with project drawings associated with the conceptual design of bulkhead structure, Section 02464 METAL SHEET PILING and working drawings prepared by the Contractor, as approved by the Government. The Contractor is responsible for conducting subsurface exploration and laboratory testing to acquire additional information deemed necessary for design of the bulkhead structure. The bulkhead structure shall be maintained by the Contractor throughout the duration of the contract. As part of the bulkhead structure construction, the Contractor shall perform any necessary pre-excavation for pile driving, and shall dredge the area as determined by the Contractor to be necessary for navigation between the Left Bank Area and Charleroi Locks and Dam area. The dredging and attendant material disposal shall be performed in accordance with Sections 02325 DREDGING AND UNDERWATER EXCAVATION and 02040 DISPOSAL OF MATERIALS. The depths, extent and quantity of dredging shall be determined by the Contractor as required to provide a navigable area. Upon completion and acceptance of the contract, the bulkhead structure will become the property of the Government and shall remain in place.

2.3 SHEET PILE BARRIER

The Contractor shall design and furnish a sheet pile barrier at the end of the access ramp at the left bank batch plant area as shown on the project drawings, and in accordance with project drawings associated with the conceptual design of sheet pile barrier, Section 02464 METAL SHEET PILING and working drawings prepared by the Contractor, as approved by the Government. The Contractor is responsible for conducting subsurface exploration and laboratory testing to acquire additional information deemed necessary for design of the sheet pile barrier. The sheet pile barrier shall be maintained by the Contractor throughout the duration of the contract. As part of the sheet pile barrier construction, the Contractor shall perform any necessary pre-excavation for pile driving. Upon

completion and acceptance of the contract, the sheet pile barrier will become the property of the Government and shall remain in place.

2.4 GOVERNMENT FIELD OFFICE

2.4.1 General

The Government field office shall be a modular office building of the floor plan indicated at the end of this Section. Modular office building shall be designed and constructed in accordance with the ICBO UBC and ICBO UMC and NFPA 70. The modular office building shall be similar or equal to those manufactured by Whitley Manufacturing Co., Inc., PO Box 496, 201 West First Street, South Whitley, IN 46787, telephone (260)723-5131. Floors, walls and roof shall be insulated with the following minimum R-values:

Floor:	R-19
Walls:	R-13
Roof:	R-22

Wall studs shall be 2x4 construction 16″ on center per ICBO UBC. Joists shall be 2x6 #2 or better SPF minimum spaced 16″ on center. Floor decking shall be single layer 5/8″ tongue and groove underlayment grade plywood. Exterior siding shall be 5/8″ thick (nominal) vertical groove plywood siding with MDO Face. Interior walls shall be 2x4 #2 or better SPF 16″ on center with 8′ wall height, and finished ceiling height shall be 7′-10 ½″. All interior partitions shall be insulated with 3-1/2″ fiberglass batt insulation to reduce sound transmission. All partitions shall be covered with ½″ minimum vinyl wrapped drywall with no exposed fasteners. All doors shall be a minimum of 32 inches wide. Drop ceiling shall be 24″x48″ fissured mina-board installed in a white aluminum grid as supplied by USG or equal. Roof shall be constructed of minimum 2x8 rafters 16″ on center per ICBO UBC. Roof sheathing shall be 1/2″ CDX plywood under 1/4″ densdeck. Roof finish shall be fully adhered black EPDM. The roof shall be designed for minimum 30 psf live load. Windows shall be a bronze aluminum frame with dual pane glass. Size shall be 24″x52″ and have a vertical sliding sash and insect screens. Interior jambs shall be painted with matching 2-1/4″ casing. All windows shall have 1″ mini blinds for privacy and light control. The office shall have private entrances secured satisfactorily with lock and key. Phone and data rough ins shall be provided in each office, and workspace, Rough in shall include an empty junction box with a conduit and pull wire extending to above the T-grid ceiling. Final wiring and devices shall be by the Contractor. Lighting shall be 75-foot candles throughout all offices and work areas. One dual-head battery-powered emergency light shall be provided at each exit. Egress lighting shall be installed per ICBO UBC. One 90 watt high pressure sodium floodlight shall be located exterior to the building at each entrance. The interiors shall be heated when necessary to at least 68 degrees F and air conditioned during warmer months to 72 degrees F. Return air system shall be fully ducted throughout the building, installed between floor joists. Restroom exhaust shall be ceiling mounted and ducted through the building roof. A 40-gallon electric hot water heater shall be provided. Water and sanitary toilet facilities consisting of, as a minimum, separate lockable rooms which have a sink with hot and cold running water, and a functional water closet shall be provided and maintained for exclusive use of Government personnel. Water closets shall be low consumption floor mount tank type construction of vitreous china. Lavatory sinks shall be drop in type with a handicap accessible high-pressure laminate counter. Supply, waste and vent piping shall be as standard with the manufacturer. All connections and miscellaneous items to provide for a complete sanitary facility at the

office shall be the responsibility of the Contractor. Bathroom supplies shall be furnished and maintained by the Contractor. The floors in the conference room and three offices as designated shall be carpeted with 18 oz. level loop, commercial grade carpet. All other floor areas shall have 1/8-inch thick vinyl composite tile. The modular units and equipment specified herein shall become the property of the Government and shall remain at the site upon completion and acceptance of all work included under the contract. All locks, including door locks on offices, shall be master keyed. Twelve sets of keys shall be furnished to the Contracting Officer. Modular office building furnished by the Contractor shall be new and not used on previous contracts. All construction shall conform to applicable state and local codes.

2.4.2 Flagpole

The Government office site shall be provided with a standard 50 foot high aluminum flagpole, with aluminum ball and two aluminum cleats, and shall include 5/16" minimum diameter braided polypropylene halyard. Pole shall be provided with suitable base plate and anchor bolts. A floodlight with dusk-to-dawn automatic control shall be provided complete with all required electrical installation. Foundation base shall be provided as recommended by the manufacturer, and the flagpole shall be installed per the manufacturer's instructions at a location as directed by the Contracting Officer.

2.4.3 Chain Link Fence Modification

Contract Drawing O-LCH-4/35 denotes the existing layout of the chain link fence at the Government office site. ~~The Contractor shall be required to relocate the existing 19 foot long slide gate as indicated on the drawings.~~ It is noted that the Contractor may have to temporarily remove the chain link fence or portions thereof in order to install the modular office building. No separate payment will be made for the work under this paragraph, and all such work will be included in the bid item "FURNISH AND SET UP GOVERNMENT CONSTRUCTION OFFICE".

2.4.4 Office Equipment

The Contractor shall provide the following minimum equipment for the field office to be located as shown on the drawings or as directed. All office equipment shall be new and current models.

a. 4 Steel tables (30" x 60").
b. 4 Steel desks (36" x 72"), with swivel chairs with arms. Desks shall be supplied with center drawer and 2 end cabinets with at least one legal size file drawer.
c. 1 Conference Table (approximately 4' x 16') with plastic laminate top.
d. 16 swivel visitor chairs, with arms.
e. 1 Refrigerator with a minimum capacity of 15 cubic feet
f. 1 1000 watt Microwave oven with a minimum capacity of 1.3 cubic feet
g. 10 4-drawer legal size non-fireproof file cabinets with locks and keys.
h. 3 Fully charged and operational fire extinguishers, 20 lb. A-B-C rated.
i. 1 plain paper facsimile machine similar or equal to Hewlett Packard Model HP 750.
j. Thirteen (13) telephones as specified in paragraph "Telephone

Service", below.

k. 1 Photocopy machine similar or equal to Konica Model 8050, with paper trays for legal size and 11" x 17" paper, and multiple copy output bin. Copier service to be maintained by the Contractor for the duration of the contract.

l. 1 waste paper basket for each office and conference room.

m. One covered trash can (13 gal) for each restroom and break area.

n. Eleven (11) IBM compatible personal computers as specified below in paragraph "Computer Equipment".

o. One (1) Dell laptop personal computer with docking station

p. Ten (10) metal bookcases with 4 shelves each.

q. 3 Wood double pedestal with center drawer desks (30"x60")

r. 3 Wood tables (30"x60")

s. 3 Wood credenzas with storage

t. 1 Metal "L" shaped workcenter (approx. 65"x65") w/center drawer & end cabinet

u. 6 Wood bookcases with 5 shelves each

v. 7 4-Drawer legal size non-fireproof lateral file cabinets with locks & keys

w. 3 Storage cabinets with 4 shelves each

x. 2 Water-resistant digital cameras, Olympus OLS-400, with 256MB capture card and carrying case, extra rechargeable batteries and charger.

y. Digital camcorder, JVC GR-90US, with carying case, extra rechargeable battery and charger.

z. Television/vcr combination unit, Panasonic PV-DF2704 DVD/VCR 27" combination unit

2.4.4.1 Computer Equipment

A. Desktop Computers

The Contractor shall furnish eleven (11) IBM-compatible personal computers and surge protectors. Exact locations of each computer shall be as directed by the Contracting Officer. All computer equipment shall remain the property of the Government. The computers shall have the following minimum features: ATX case configuration; Intel Pentium 4 processor-compatible ATX configuration motherboard with minimum of 5 PCI slots supporting UltraDMA/100; Intel Pentium 4 processor (min 2.5 GHz or better) compatible with the motherboard; minimum 768 MB SDRAM (factory installed); minimum 1 40 GB (7,200 rpm) ATA 100 IDE hard drive; NVidia 3-based 64MB AGP video card; 16 bit stereo sound card, stereo speakers; minimum 1 40X internal EIDE (ATAPI) DVD-ROM drive and 1 32X Write, 10X ReWrite, 40X Read internal EIDE (ATAPI) CD-RW drive; 17" monitor; 3.5" 1.44 MB floppy disk drive; 10/100 Ethernet LAN with RJ-45 port; 104 key keyboard with PS/2 compatible MS intellimouse 2-button, wheel mouse and Windows XP Professional operating system with latest service pack installed, and Microsoft Internet Explorer 6. All security updates shall be installed.

B. Desktop Computer with Docking Station

The Contractor shall furnish one (1) IBM-compatible personal computer with docking station feature and surge protector. Exact location of computer shall be as directed by the Contracting Officer. All computer equipment shall remain the property of the Government. The computer shall have the following minimum features: D/Dock Expansion Station with the following ports: Power input, RJ-11, RJ-45, DVI, VGA, S-Video, Parallel, Serial, 2-PS/2, SPDIF, 4 USB 2.0, external D/Bay port,

headphone, D/Module bay and 1 x PCI card expansion slot; Intel Pentium 4 processor-compatible ATX configuration motherboard with minimum of 5 PCI slots supporting UltraDMA/100; Intel® Pentium® M processor 1.7 GHz with SXGA+ LCD display with 1400 x 1050 x 16.7 million colors; external 18-inch flat panel display; minimum 768 MB Double Date Rate (DDR) SDRAM at 266MHz (PC2100) (factory installed); minimum 1 40 GB (7,200 rpm) ATA 100 IDE hard drive; ATI® MOBILITY™ RADEON™ 9000 32MB 4x AGP video controller; integrated 16 bit stereo sound and stereo speakers; module bay containing the following modules: 3.5”, 1.44MB floppy disk drive, CD-RW/DVD-ROM Combo Drive (8X/24X/10X/24X); 10/100 Ethernet LAN with RJ-45 port; 87 key keyboard and external 104-key usb keyboard; PS/2 Compatible Touch Pad and Dell Track Stick. Computer shall be furnished with Windows XP Professional operating system with latest service pack installed, and Microsoft Internet Explorer 6. Computer shall be furnished with AC adapter and carrying case and D/Monitor Stand. All security updates shall be installed.

C. Printers

In addition to the computers, the Contractor shall furnish two networkable laser printers. One printer shall be a black and white laser printer, similar or equal to Hewlett Packard LaserJet 8150DN, and shall be capable of printing on 11"x17" size paper, as well as legal (11"x14") and letter (8 1/2"x11") size paper. The printer shall have a minimum 32 pages per minute at 600 x 600 dpi print engine, and shall be equipped with HP Jetdirect EIO internal print server and with 32 MB RAM. The printer shall be furnished with a duplex attachment to print 2-sided pages. The second printer shall be a color laser printer, similar or equal to Hewlett Packard LaserJet 4600DN, and shall be capable of printing on legal (11"x14") and letter (8 1/2"x11") size paper. The printer shall be capable of printing at a minimum of 17 pages per minute at 600 x 600 dpi for both color and black and white printing, and shall be equipped with 96 MB RAM. The printer shall be furnished with HP Jetdirect EIO internal print server, and shall be furnished with a duplex attachment to print 2-sided pages.

D. Warranties and Service

The Contractor shall furnish 3 year warranty on defects in parts and workmanship for the computers and printers. If any computer or printer becomes unusable for three days or more due to defects in materials or workmanship, for the duration of this contract, the Contractor shall be responsible for furnishing a temporary replacement for the period it is out of service.

E. Software Installation

A Government point of contact will be designated to coordinate the installation of software and troubleshoot software problems on the computer equipment only. The Government will be responsible for installing any Government software packages. The Contractor shall furnish the computer equipment prior to acceptance of the Government field office.

F. Local Area Network (LAN)

A network hub shall be provided in the modular office building to provide connection of the Contractor furnished computer equipment to the Pittsburgh District LAN. The hub shall be furnished with one

uplink port for connection to a T1 line, and at least 18 ports for individual workstations and printers. Each port shall provide 10/100 Mbps auto sensing to automatically detect the speed of attached devices. Each port shall support 10BASE-T transmission over unshielded twisted-pair (UTP) Category 5 cable. Network cable to each workstation and printer shall be unshielded twisted-pair (UTP) Category 5 cable.

2.4.4.2 Additional Computer Software

In addition to the computer software to be furnished as required elsewhere in this Section, the Contractor shall furnish one copy of each of the latest versions of the following programs in Windows format: seeMIX, for concrete mixture proportioning and analysis, seeSTAT, for concrete test result reporting and statistics, and seeMAT-A, for aggregate statistics, reporting and automatic blending, all produced and available from Shilstone Companies, 9400 N. Central Expressway., #105, Dallas, TX, 75231, (214) 361-9681, http://www.shilstone.com.

2.5 CONCRETE LABORATORY AND CURING ROOM

2.5.1 General

The Contractor shall construct a concrete curing lab and a curing room building at the left bank batch plant area as shown. Floor plans for each building are included on the sketch at the end of this Section. Materials and workmanship shall conform to the applicable requirements of the following sections of this specification:

Excavation and Backfill - Section 02300 EARTHWORK and 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS
Formwork - Section 03101 CONCRETE: FORMWORK
Steel Reinforcement and Anchor Bolts - Section 03201 CONCRETE: STEEL BARS AND WELDED WIRE FABRIC FOR CONCRETE
Concrete - Section 03301 CONCRETE: CAST-IN-PLACE
Joints - Section 03150 CONCRETE: EXPANSION JOINTS, CONTRACTION JOINTS, AND WATERSTOPS

2.5.2 Concrete Laboratory

The concrete laboratory shall consist of a prefabricated/pre-engineered ~~metal~~ building structure as shown on the drawings, or of a type and design submitted and approved by the Contracting Officer. The building shall be 36 feet wide by 36 feet long, with an eave height of 10 feet. Roof shall be double slope metal or shingle roof, with a minimum slope of 4:12, and furnished with gutters and downspouts. Roof shall be constructed using roof trusses that provide additional attic storage space, and include pull-down steps for access to the attic through the ceiling and adequate lighting switched from the main floor of the Lab. The building shall be designed in accordance with the ICBO UBC, with a 30 psf snow load and 70 mph wind load, ANSI exposure category B. Floor plan for the concrete lab is included at the end of this Section. Windows, louvers and doors shall be as standard with the manufacturer, of the sizes, types and locations shown. Walls and roof shall be insulated with a minimum of 6 inches of fiberglass batt insulation. Walls and ceiling shall be furnished with interior liner panel to present a finished surface that covers the wall and ceiling insulation. Interior walls and ceiling shall be coated with two coats of enamel paint. Ceiling shall be bright white, and the walls shall be off-white, as selected by the Contracting Officer. Exterior personnel and overhead doors shall be insulated as standard with the manufacturer. Interior partition

and door at the storage area shall be as standard with the manufacturer and sound insulated. Overhead door shall be 10 feet wide by 8 feet high, of the sectional type, furnished complete with track. Overhead door shall be electrically operated by remote control, with complete controls on the interior. Opener shall be equipped with backup key operation on the exterior and provision for manual locking and manual opening from both sides. Exterior personnel door and overhead door shall be equipped with keyed locksets and shall be keyed alike. Six sets of keys shall be provided to the Contracting Officer. Piping and plumbing fixtures shall be furnished and installed as necessary to provide the water, sewage and compressed air systems as shown on the floor plan. All floor drains shall be grated, trapped and plumbed to the sewage line. All electric outlets shall be grounded GFI receptacles, and electric panelboard shall be equipped with GFCI circuit breakers. Electrical wiring for the air compressor and oven area shall be 240 VAC. All interior wiring shall be in EMT conduit. Lighting shall consist of fluorescent light fixtures of sufficient numbers and spacing to provide 50 candlepower minimum lighting at desk top level. Foundation and floor slab shall be constructed as shown, of 3,000 psi compressive strength concrete. Floor shall be steel trowel finished. An overhead exhaust fan and hood shall be provided at the location shown with a clear, flexible enclosure for collection of fumes from the capping compound pots. The flexible enclosure shall extend from the bottom of the collection hood to the top of the work bench. A roll-off box type dumpster shall be provided for the disposal of broken concrete cylinders and aggregate samples. The roll-off box shall be no more than three feet high at the sides, and shall have a swinging door gate at one end. Disposal of the waste shall be provided and paid for by the Contractor as specified in paragraph "Government Laboratory Services", herein. On the opposite side of the laboratory from the curing room, the Contractor shall construct a 12'x24' concrete slab on grade exterior storage area. The slab shall be constructed to the same requirements as the floor of the laboratory, except that a standard float finish will be acceptable. This storage area shall be covered by a shed type roof, constructed of the same roofing and at the same slope as used on the laboratory roof. The shed roof eave shall have a height of 8 feet above the concrete slab on grade. The shed roof peak shall be attached to the laboratory and supported by a series of posts along the edge of the concrete slab. The sides shall remain open to he air and roof insulation will not be required for this storage area. Gutters and down spouts for this storage area shall the same as that installed on the laboratory. Two lights for illumination of this exterior storage area shall be provided. Dusk to down lighting shall be provided at all four corners of the laboratory, and an additional exterior dusk to dawn light shall be installed above the center of the front wall. A Government furnish sign shall be installed by the Contractor over the front wall, as directed by the Contracting Officer.

2.5.3 Concrete Curing Room

The concrete curing room shall be an insulated structure, consisting of four walls constructed of standard 8-inch concrete masonry units, with an interior height of 8-feet. Inner wall surfaces shall be sealed with a suitable epoxy based masonry wall coating to prevent moisture loss. Floor plan for the curing room is included at the end of this Section. The roofing of the curing room shall be constructed of the same material and shall be built at the same slope as the laboratory building. Framing for the roof, curing room door jambs, and curing room ceiling shall be constructed from pressure treated lumber. Sheeting for the during room ceiling and the remainder of the curing room roof structure shall also be constructed from pressure treated plywood. The curing room ceiling shall be

provided with a vapor barrier and 6-inches of polyurethane insulation and the space between the roof and ceiling shall be properly vented. The interior of the curing room ceiling shall be covered with solid white vinyl siding secured to the pressure treated plywood and shall be installed with all appurtenant edge trim. Gutters and downspouts shall also be provided for the curing room. Lighting and interior wall treatment shall be as specified in other paragraphs of this Section. The curing room will be subjected to high humidity , and all electrical equipment shall be suitable for wet locations. The Contractor shall provide 1 quadplex receptacle at the "mister" location. At least two double tube fluorescent light fixtures shall be furnished, with supporting hardware. The interior surfaces of the curing room (walls floor and door) shall be painted with a standard epoxy coating system suitable for the application. Moisture control shall be provided by a "Large Room Mister" as manufactured by American Moistening Company, Pineville, NC, telephone (800) 948-5540. The mister unit shall be a self-contained device, with atomizers and pressure regulator, and shall be designed to use the combined effort of water pressure and air pressure to permit water to pass through orifices into the air stream to be atomized into a fine mist. Atomizers shall constructed of corrosion-resistant materials. Mister unit shall be sized for the size of the curing room. Air shall be supplied by the air compressor specified in paragraph "Laboratory Furniture and Miscellaneous Equipment". An atomizer free blow valve shall be furnished that will provide for the rapid exhaust of the air in the air line when the air supply is turned off. Water supply to the atomizers shall be maintained at a constant rate, from a gravity feed storage tank, whose water level is maintained at a constant level with a float valve. Water supply to the tank shall be provided by heated water supply and cold water supply, mixed at an upstream location with a manually operated mixing valve. A shut off valve shall be furnished upstream of the water supply tank and between the tank and the mister unit so that the supply line may be isolated for repair or maintenance. The air supply line shall be furnished with a 0-100 psi range pressure gauge. All equipment and hardware shall be furnished, installed and adjusted, as recommended by the manufacturer. Suitable supports shall be provided and installed for all piping and equipment.

2.5.4 Laboratory Furniture and Miscellaneous Equipment

The Contractor shall provide, as a minimum, the furniture and miscellaneous equipment listed below for the concrete laboratory.

CONCRETE LABORATORY FURNITURE AND MISCELLANEOUS EQUIPMENT

Item	Quantity
Heavy Duty Lab Cart, Rubbermaid Model 4520	2 each
Water Bath, Gilson Model MSA 125	1 each
Digital Level with Slope Readout in degrees, 6 to 12 inch	1 each
12 inch Vernier Caliper with Digital Readout	1 each
Digital Scale, O Haus Model E1B120	1 each
Digital Scale, O Haus Model E1m210	1 each
Rawhide Mallet, Grainger Model 5C553	2 each
WD-40 Spray Lubricant, 16 oz. Cans	2 cases
Steel Hand Truck or Dolly, 400 lb capacity Grainger Model 2W063	1 each
Locking Steel Tool Box, 2 drawer, 21 inch, Grainger Model 32W021	1 each

CONCRETE LABORATORY FURNITURE AND MISCELLANEOUS EQUIPMENT

Item	Quantity
Portable Electric Concrete Mixer, 14/ CF Volume	1 each
Bench Top, Water Cooled Tile or Brick Saw with Diamond Blade and 6' minimum capacity	1 each
Work Bench Tables, (30" x 60"), Steel, with protective poly sheeting and bottom shelf as provided by Lyon Metal Products, Aurora, IL	4 each
Work Benches, (36" wide), constructed on site	see this Section
Desk, Steel (30" x 60") with swivel chair with arms. Desk shall be supplied with center drawer and 2 end cabinets with at least one legal size file drawer.	1 each
Double bowl, free-standing, concrete "laundry tub" type sink.	1 each
4-drawer legal size fireproof file cabinet with locks and keys.	5 each
40 gallon electric hot water heater	1 each
Heating system: hot water boiler, electric, 2 zone, with baseboard registers. One zone shall be for laboratory area, and one zone for curing room, with external adjustable control or internal waterproof thermostat	1 each
Air compressor, 2 stage, 80 gal, 240VAC, 12 scfm at 90 psi.	1 each
Metal Shelving, 12" deep	2 each
Steel storage locker with interior shelves, (3' x 3' x 6')	4 each
Hose bibs, (3/4")	5 each
Air conditioners, suitable for 13,000 cf volume space	2 each
Shelving: 6 shelves, for storage of concrete cylinders; minimum 400 lb capacity per shelf, with edge guards to prevent cylinders from rolling off shelves:	
12" deep, along inside perimeter of curing room	n/a
Double-sided, free standing, 2' wide X 10' long, field-built from pressure treated lumber and bolted to floor.	1 each
8" sieve shaker with a sound enclosure that is equal to or better than a Gilson model SS-8R Shaker combined with a Gilson model SSA-805R Sound Compartment	1 each

2.5.5 Laboratory Equipment

The Contractor shall provide, as a minimum, the equipment listed below for the concrete laboratory. The equipment shall be similar or equal to that listed which is manufactured by Forney, Inc., R.D. 2, Wampum, PA 16157.

CONCRETE LABORATORY EQUIPMENT

Item	Model No.	Quantity
Cylinder Molds (Plastic) 6" x 12" cylinder	LA 211-10	10 boxes of 20
Capping Compound	LA 150	pallet of 50 lb. bags
Capping Pads, 60 durometer	LA-0149	2 each
Capping Pads, 70 durometer	LA-0149-01	2 each
Flow Cone Base	LA-4350-10	1 each
Tamping Rods	LA-0280	6 each
Wet Wash Sieve	LA-0766	2 each
Flexural Beam Fixture, 3 pt., for Forney 500K	TA-0166	1 each
Slump Cone	LAG 0275	1 each
Stripping Tool for Plastic single use cylinder molds	LA 0214	2 each
Plastic Cylinder Mold Caps for 6" x 12" cylinder molds	LA 0213	50 each
Strike Off Bar (Steel)	LA 0267	6 each
Rubber Hammer	LA 0291	6 each
Capping Compound Melting Chamber, 12 qt., 110V/60	LA 0135	1 each
Compound Ladle, 8 oz. cap.	LA 0140	1 each
Vertical Capping Fixture, 6" sample diameter	LA 0100	1 each
Vibration Indicator with Carrying Case	LA 1450	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Cloth and Brass Frame, 3/8" mesh, 2" Deep	LA 0600	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Cloth and Brass Frame, No. 4 mesh, 2" Deep	LA 0625	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Cloth and Brass Frame, No. 8 mesh, 2" Deep	LA 0645	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Cloth and Brass Frame, No. 16 mesh, 2" Deep	LA 0665	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Cloth and Brass Frame, No. 30 mesh, 2" Deep	LA 0685	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Cloth and Brass Frame, No. 50 mesh,		

CONCRETE LABORATORY EQUIPMENT

Item	Model No.	Quantity
2" Deep	LA 0705	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Cloth and Brass Frame, No. 100 mesh, 2" Deep	LA 0725	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Cloth and Brass Frame, No. 200 mesh, 2" Deep	LA 0745	2 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter, 2" Deep Brass Sieve Pan	LA 0770	1 each
U.S. Standard Sieve, Manufacturer Certified, 8" Diameter Brass Sieve Pan with Extended Lip, 2" deep	LA 0775	1 each
Concrete Mercury Thermometer, One Degree	LA 0525	12 each
Wheel barrow, 6 cu. ft. min., steel		2 each

2.5.6 Field Constructed Furniture

The Contractor shall shall furnish a heavy duty stripping platform constructed of 4"x4" legs, 2"x4" bracing, and wooden top at least 1-1/2" thick. The stripping platform shall be 3 feet wide by 7 feet long, and the bench top shall be two feet above the floor. The Contractor shall furnish a cylinder rack for transporting cylinders in a vertical position. The rack shall be constructed of pressure treated wood. The Contractor shall construct a heavy duty ramp for access to the roll-off box from pressure treated wood. The ramp shall be at least 4 feet wide by 5 feet long, and 1 foot high. The framework shall be pressure treated 2"x4" lumber with the surface 1-1/2" thick. The surface shall be covered with expanded metal diamond mesh to provide a non-slip surface.

2.6 UTILITIES

2.6.1 Utilities for Batch Plant Operation

Utility service installation shall be coordinated with the owning utility company as specified in Sectio 01180 UTILITY COORDINATION. The Contractor shall be responsible for providing all utility services and water necessary for the operation of the batch plant. All cost for such provisions shall be borne by the Contractor. The Contractor shall procure and pay for all necessary permits that are required in conjunction with proposed utilities.

2.6.2 Sanitary Facilities

All connections and facilities necessary to provide for a complete sanitary facility at the offices shall be the responsibility of the Contractor. Sanitary system for the new Government office complex on the right bank and concrete lab and trailer at the left bank batch plant areas shall be connected to existing municipal sanitary system as shown. The sewage system shall be maintained by the Contractor until completion of all work under

this contract and shall be left in place at the completion of this contract. Point of contact for local municipal sanitary sewage for The Mon Valley Sewage Authority is listed in Section 01180 UTILITY COORDINATION. The Contractor shall be responsible for payment of all sewage bills, tap-in fee, permits and monthly sewage bills, and shall arrange for transfer of payment responsibility to the Government at the completion of this contract..

2.6.3 Potable Water Supply

All connections and facilities necessary to provide for a complete potable water supply capable of furnishing safe, potable water for the Government field offices and concrete lab buildings shall be the responsibility of the Contractor. All facilities shall comply with Federal, state and local laws and regulations. The water service shall be maintained by the Contractor until completion of all work under this contract and shall be left in place at the completion of this contract. Point of contact for local water supply for The Authority of the Borough of Charleroi is listed in Section 01180 UTILITY COORDINATION. The Contractor shall be responsible for payment of all water bills, tap-in fee, permits and monthly water bills, and shall arrange for transfer of payment responsibility to the Government at the completion of this contract.

2.6.4 Telephone Service

The Contractor shall be responsible for providing telephone service to the Government field office on the right bank, the batch plant control room, concrete lab, the Government trailer relocated to the left bank batch plant area, and the Government Laboratory. The Government field office telephone system shall have 4 outside lines, and capacity for 11 telephones. Eleven telephones shall be provided in the Government field office on the right bank. One telephone shall be provided in the concrete laboratory and one telephone shall be provided in the relocated Government trailer at the left bank batch plant area. One telephone in the right bank Field Office shall permit answering all lines. The telephone system shall have inter-office intercom capability with hold, call transfer and call conferencing capabilities. Each telephone shall be provided with programmable speed dial functions. The Contractor shall make all arrangements for installation of telephone service and transfer the service to the Government after installation. The Contractor shall be responsible for all costs in connection with installation of the telephone service and the payment of all costs of maintaining the service, and all costs related to the telephone system, including monthly telephone bills, and shall arrange for transfer of payment responsibility to the Government at the completion of this contract. The offices shall be prewired for telephone service. Telephones shall be placed where designated by the Contracting Officer. Point of contact for telephone service is listed in Section 01180 UTILITY COORDINATION.

2.6.5 Electric Service

The Contractor shall provide and maintain Electric Service as required for construction, operation of the concrete batch plant, and as necessary for the function of offices, pH monitoring and control system, other automated monitoring systems, general lighting, and overall construction activities throughout the life of this contract. The electrical service to the Government field office on the right bank and concrete lab and trailer at the left bank batch plant area shall be obtained from Allegheny Power (see Section 01180 UTILITY COORDINATION). The Contractor shall provide

electrical service as required, and maintain the electric service for the Government field office complex throughout the life of the contract and the service shall be left in place at the completion of this contract. The Contractor shall be responsible for all costs in connection with installation and maintenance of the electric service. The Contractor shall be responsible for payment of the electric utility bills until completion of all work under this contract, and shall arrange for transfer of payment responsibility to the Government at the completion of this contract. All electrical service to the government facilities and the concrete batch plant shall be left in place and turned over to the Government at the completion of this contract.

2.7 PORTABLE SECURITY ALARM SYSTEM

The new Government office on the right bank and the Government Laboratory at the left bank batch plant area shall be furnished with a wireless portable alarm system, similar or equal to TattleTale alarm system, as manufactured by Cellemetry, LLC, Columbus, OH. The alarm shall be furnished with a programmable keypad, infrared motion detector, 115 dB siren and strobe light in one unit. The alarm system shall be monitored 24 hours a day, and shall transmit an alarm signal to the monitoring service without the use of phone lines. The unit shall be suitable for 120 VAC service, and shall be equipped with battery backup. The unit shall be furnished with wireless door and window sensors for each door and window opening in the office. The existing Government field trailer to be relocated is equipped with this same portable security alarm system. The current alarm monitoring service shall be maintained. The new Government field office and laboratory shall also be subscribed to this monitoring service. The Contractor shall be responsible for all costs in connection with installation and maintenance of the security alarm system. The Contractor shall be responsible for monthly payment of the alarm monitoring service for both units.

PART 3 EXECUTION

3.1 WORKMANSHIP

Workmanship shall be of the highest grade and in accordance with the best modern practices to conform with the applicable provisions of these specifications. Skirting, blocking, tie-downs and grounding of the modular units, fire exits, and other miscellaneous items required shall be provided with the modular units.

3.2 JANITORIAL AND CUSTODIAL SERVICES

As a minimum, the Contractor shall provide the following janitorial and custodial services at no additional cost to the Government, to maintain a safe, clean, sanitary, and fully operational facility at the Government office on the right bank, and the relocated Government trailer at the left bank batch plant area, and custodial services only at the Government laboratory.

3.2.1 Government Laboratory Services

a. Daily rubbish removal of interior cans.
b. Periodic, as required, emptying or replacement of concrete cylinder waste dumpster.

3.2.2 Right Bank Government Office And Relocated Trailer At Left Bank Batch Plant Area

Daily Requirements:

a. Rubbish removal.
b. Wet mopping of floors.
c. Dusting of desks, furniture and all ledges and other surfaces that collect dust.
d. Sweeping entrance steps and landings of dirt.
e. Cleaning of sanitary facilities, utilizing acceptable chemicals for sinks, showers, toilets and urinals.
f. Snow removal of paved parking area and entrance steps and landings

Monthly Requirements

a. Strip and wax floors.
b. Cleaning of windows, inside and outside.

Miscellaneous

a. General office maintenance, including heating, air conditioning, lights and lighting fixtures and hot water heater.
b. Supplying expendable items, including paper towels, toilet paper, soap, etc.

3.3 TURN OVER OF GOVERNMENT FACILITIES

At the completion of the contract, the Government will take ownership of all Government facilities. After completion of all work, and before final payment is made to Contractor, and after approval of the Contracting Officer, the Contractor shall turn over all Government facilities to the Government. Prior to the Government taking ownership of these items, the Contractor shall be responsible for inspection of the Government facilities and repair or replacement of equipment or other features as directed by the Contracting Officer at no additional cost to the Government. Payment for such additional work shall be included in the bid item to which the work pertains. The Contractor shall schedule a Pre-Final inspection of all Government facilities with the Contracting Officer and his authorized representatives, and a punch list of items to be corrected will be developed. The Contractor shall ensure that any items noted on the Pre-Final inspection shall be corrected in a timely manner. After the deficiencies have been corrected, the Contracting Officer will schedule a final inspection of the Government facilities to ensure that the deficiencies have been corrected. In general, damage of any sort to the Government facilities due to the Contracotr's fault or negligence, or fault in the workmanship or quality of the manufacturer, and not caused by the Government will be evaluated, including the overall condition of the structures. Deficiencies caused by normal wear and tear may be directed by the Contracting Officer to be corrected at an equitable adjustment in contract price. Inspection shall also include assurance that all operating features of the structures and all utilites, are functioning properly. Specific items to be inspected shall include, but are not limited to, the following:

a. <u>ALL</u> Government facilities, furnished by the Contractor for the Government at the right bank field office and the left bank batch plant area.

b. Modular office building at the right bank field office.

c. Concrete testing lab and curing room.

d. Pavement and parking areas and all fencing at the right bank field office and the left bank batch plant area.

e. All electrical, water and sewage utilities.

f. Bulkhead structure, holding structure for washing of concrete trucks, and sheet pile barrrier at the left bank batch plant area.

3.3.1 Coordination With Turn Over of Other facilitie

The Contractor shall coordinate turn over of the Government facilities with the turn over of other equipment and facilities under this Contract, including the following:

a. All concrete batch plant equipment as specified in Section 03052 CONCRETE: PRODUCTION AND TRANSPORT.

b. All water treatment facilities and equipment specified in Sections 02770 CONCRETE BATCH PLANT SEDIMENTATION BASINS, 02775 CONCRETE BATCH PLANT TREATMENT STRUCTURE and 11200 WATER TREATMENT UNITS, AND OPERATION, MONITORING & REPORTING.

-- End of Section --

This page was intentionally left blank for duplex printing.

Pennsylvania Department of Environmental Protection

400 Waterfront Drive
Pittsburgh, PA 15222-4745

MAY 26 2004

Southwest Regional Office

412-442-4000
Fax 412-442-4328

CERTIFIED MAIL NO. 7000 1670 0004 1444 6967

Paul J. Donahue
U.S. Army Corps of Engineers
Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

Re: Industrial
Victory Hollow Site
NPDES Permit No. PA0218791
APS I.D. No. 343169
Carroll Township
Washington County

Dear Mr. Donahue:

Your permit is enclosed. Review it carefully, with special attention to the effluent limitations, monitoring requirements, and other requirements in Part C of the permit.

The discharge limitations and monitoring requirements in your NPDES permit are also typed on the original Discharge Monitoring Report (DMR) that is attached to the permit. That original DMR is provided as a master, so do not write on it but rather: (1) make copies of it; (2) after doing the sample analyses and flow measurements required by the permit, fill out all the empty blocks on one of the copies by following the instructions on the back of the original DMR; and (3) make copies of the filled out copy and send one to each of the addresses listed in Part C of the permit.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, PO Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and

procedure are also available in braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717-787-3483) FOR MORE INFORMATION.

If you have any questions, please call me at 412-442-4031.

Sincerely,

James M. Vanek

James M. Vanek, P.E.
Sanitary Engineer
Water Management

Enclosures

cc: IT Corporation

FACT SHEET/STATEMENT OF BASIS NPDES PA0218791

(ES) U.S. Army Corps of Engineers (MUN) Carroll Township

(AF) Victory Hollow Site (CO) Washington

****

The limits and conditions of this permit are adequate to protect water quality. Draft permit issuance is recommended.

ADDENDUM TO FACT SHEET – May 5, 2004

Comments were received on April 5, 2004. The U.S. Army Corps of Engineers objects to the third paragraph, Outfall 002, fifth sentence which reads: "In addition, the dredge material that is to be disposed at Victory Hollow is contaminated." The Corps believes this statement is inaccurate, misleading, and likely to be misunderstood by the general public.

The statement that the material is contaminated will remain in the fact sheet. The Department understands that only 3 of 100 samples exceeded the Act 2 standards for residential placement. The placement of dredge material at the Victory Hollow site will not adversely affect public health.

JMV:kld

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER MANAGEMENT PROGRAM

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

NPDES PERMIT NO. PA0218791

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq.,

U.S. Army Corps of Engineers, Pittsburgh District
1000 Liberty Avenue
Pittsburgh, PA 15222-4186

is authorized to discharge from a facility located at

Victory Hollow Site
Carroll Township
Washington County

to receiving waters named Monongahela River and Unnamed Tributary to the Monongahela River

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B, and C hereof.

THIS PERMIT SHALL EXPIRE AT MIDNIGHT, MAY 31 2009.

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with the terms, conditions, or effluent limitations of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal.

3. Complete application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the expiration date (unless permission has been granted by the Department for submission at a later date), using the appropriate NPDES permit application form.

   In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports, will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal.

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED MAY 26 2004

DATE EFFECTIVE JUN - 1 2004

ISSUED BY

Tim V. Dreier, P.E.
Water Management Program Manager

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALL 001 WHICH RECEIVES WASTE FROM:
Dredge material off-loading area
at Latitude 40° 11' 44" Longitude 79° 52' 48" Stream Code 37185 River Mile Index (RMI) 34.34

a. The permittee is authorized to discharge during the period from effective date through expiration date.

b. Based on the production data and/or anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply. Total (dissolved plus suspended fraction) is implied for each parameter unless otherwise indicated.

	DISCHARGE LIMITATIONS (gross unless otherwise indicated)					MONITORING REQUIREMENTS	
	Mass Units (lbs/day except flow)		Concentrations (mg/l unless otherwise indicated)				
Discharge Parameter	Average Monthly	Max. Daily	Average Monthly	Max. Daily	Instant. Max.	Measurement Frequency	Sample Type
Flow (mgd)	Monitor and Report					2/month	measured
Total Suspended Solids			30		60	2/month	grab
Oil and Grease			Monitor and Report		Monitor and Report	2/month	grab
Chromium			Monitor and Report			2/month	grab
Lead			Monitor and Report			2/month	grab
Zinc			Monitor and Report			2/month	grab
Iron			3.5		7.0	2/month	grab
Manganese			2.0		4.0	2/month	grab
Aluminum			Monitor and Report			2/month	grab
Benzene			Monitor and Report			2/month	grab
Ethylbenzene			Monitor and Report			2/month	grab
Toluene			Monitor and Report			2/month	grab
pH	not less than 6.0 nor greater than 9.0 standard units					2/month	grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at Outfall 001

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALL 002 WHICH RECEIVES WASTE FROM:
Upland disposal area sedimentation pond
at Latitude 40° 11' 36" Longitude 79° 52' 44" Stream Code 39771 River Mile Index (RMI) 0.15

a. The permittee is authorized to discharge during the period from effective date through expiration date.

b. Based on the production data and/or anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply. Total (dissolved plus suspended fraction) is implied for each parameter unless otherwise indicated.

	DISCHARGE LIMITATIONS (gross unless otherwise indicated)					MONITORING REQUIREMENTS	
	Mass Units (lbs/day except flow)		Concentrations (mg/l unless otherwise indicated)				
Discharge Parameter	Average Monthly	Max. Daily	Average Monthly	Max. Daily	Instant. Max.	Measurement Frequency	Sample Type
Flow (mgd)	Monitor and Report					2/month	measured
Total Suspended Solids			30		60	2/month	grab
Oil and Grease			Monitor and Report		Monitor and Report	2/month	grab
Fluoride			Monitor and Report			2/month	grab
Sulfates			Monitor and Report			2/month	grab
Antimony			Monitor and Report			2/month	grab
Cadmium			Monitor and Report			2/month	grab
Chromium			Monitor and Report			2/month	grab
Copper			Monitor and Report			2/month	grab
Mercury			Monitor and Report			2/month	grab
Nickel			Monitor and Report			2/month	grab
Selenium			Monitor and Report			2/month	grab
Zinc			Monitor and Report			2/month	grab

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALL 002 (CONTINUED):

	DISCHARGE LIMITATIONS (gross unless otherwise indicated)					MONITORING REQUIREMENTS	
	Mass Units (lbs/day except flow)		Concentrations (mg/l unless otherwise indicated)				
Discharge Parameter	Average Monthly	Max. Daily	Average Monthly	Max. Daily	Instant. Max.	Measurement Frequency	Sample Type
Aluminum			Monitor and Report			2/month	grab
Iron			3.5		7.0	2/month	grab
Manganese			2.0		4.0	2/month	grab
Chloroform			Monitor and Report			2/month	grab
pH	not less than 6.0 nor greater than 9.0 standard units					2/month	grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at Outfall 002

2. DEFINITIONS

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

c. "Daily discharge" means the "discharge of a pollutant" measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

d. "Average" refers to the use of an arithmetic mean, unless otherwise specified in this permit.

e. "Geometric average (mean)" means the average of a set of n sample results given by the nth root of their product.

f. "Average monthly discharge limitation" means the highest allowable average of "daily discharge" over a calendar month, calculated as the sum of all "daily discharge" measured during a calendar month divided by the number of "daily discharge" measured during that month.

g. "Average weekly discharge limitation" means the highest allowable average of "daily discharge" over a calendar week, calculated as the sum of all "daily discharge" measured during a calendar week divided by the number of "daily discharge" measured during that week.

h. "Maximum daily discharge limitation" means the highest allowable "daily discharge."

i. "Maximum any time" (or instantaneous maximum) means the concentration not to be exceeded at any time in any grab sample.

j. "Composite sample" (for all except GC/MS volatile organic analysis) means a combination of at least 8 individual samples of at least 100 milliliters collected manually or automatically at periodic intervals during the operating hours of a facility over a 24 hour period. The composite must be flow-proportional; either the volume of each individual sample is proportional to discharge flow rates, or the sampling interval (for constant volume samples) is proportional to the flow rates over the time period used to produce the composite.

"Composite sample for GC/MS volatile organic analysis" consists of at least four (rather than eight) aliquots or grab samples collected during actual hours of discharge over a 24 hour period and need not be flow proportioned. The four samples are composited in the laboratory immediately before analysis, and only one analysis performed.

The maximum time period between individual samples used for any "composite sample" shall not exceed two hours, except that for wastes of a uniform nature the samples may be collected on a frequency of at least twice per working shift and shall be equally spaced over a 24-hour period (or over the operating day if flows are of a shorter duration).

k. "Grab sample" means an individual sample of at least 100 milliliters collected at a randomly-selected time over a period not to exceed 15 minutes.

l. "i-s" means immersion stabilization - in which a calibrated device is immersed in the wastewater until the reading is stabilized.

m. "Daily average temperature" means the average of all temperature measurements made, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar day or during the operating day if flows are of a shorter duration.

n. "Measured flow" means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

o. "At outfall XXX" means a sampling location in outfall line XXX below the last point at which wastes are added to outfall line XXX, or where otherwise specified.

p. "Estimated flow" means any method of liquid volume measurement based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

q. "Non-contact cooling water" means water used to reduce temperature which does not come in direct contact with any raw material, intermediate product, waste product (other than heat), or finished product.

Such water may on occasion, as a result of corrosion, cooling system leakage or similar cooling system failures contain small amounts of process chemicals: provided, that all reasonable measures have been taken to prevent, reduce, eliminate and control to the maximum extent feasible such contamination: and provided further, that all reasonable measures have been taken that will mitigate the effects of such contamination once it has occurred.

r. "Toxic pollutant" means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator of the United States Environmental Protection Agency, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in such organisms or their offspring.

s. "Hazardous substance" means any substance designated under Title 40 Code of Federal Regulations Part 116 (40 CFR 116) pursuant to Section 311 of the Clean Water Act.

t. "Publicly Owned Treatment Works" or "POTW" means a facility as defined by Section 212 of the Clean Water Act which is owned by a State or Municipality, as defined by Section 502(4) of the Clean Water Act, including any sewers that convey wastewater to such a treatment works, but not including pipes, sewers or other conveyances not connected to a facility providing treatment. The term also means the municipality as defined in Section 502(4) of the Clean Water Act which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

u. "Industrial User" means an establishment which discharges or introduces industrial wastes into a Publicly Owned Treatment Works (POTW).

v. "Total Dissolved Solids" means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR 136.

w. "Storm water associated with industrial activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas as defined at 40 CFR 122.26(b)(14).

x. "Storm water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

y. "Best Management Practices ("BMPs")" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "Waters of the United States". BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

3. SELF-MONITORING, REPORTING, AND RECORDS KEEPING

a. Representative Sampling

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) Records Retention

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities which shall be retained for a period of at least 5 years, all records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years from the date of the sample measurement, report, or application. The three year period shall be extended as requested by the Department or the EPA Regional Administrator.

(3) Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

(i) The exact place, date, and time of sampling or measurements;

(ii) The person(s) who performed the sampling or measurements;

(iii) The date(s) the analyses were performed;

(iv) The person(s) who performed the analyses;

(v) The analytical techniques or methods used; and the associated detection level; and

(vi) The results of such analyses.

(4) Test Procedures

Unless otherwise specified in this permit, the test procedures for the analysis of pollutants shall be those contained in 40 CFR 136 (or in the case of sludge use or disposal, approved under 40 CFR 136 unless otherwise specified in 40 CFR 503), or alternate test procedures approved pursuant to those parts, unless other test procedures have been specified in the permit.

(5) Quality Assurance/Control

In an effort to assure accurate self-monitoring analyses results:

(a) Permittee or its designated laboratory shall participate in the periodic scheduled quality assurance inspections conducted by the Department and EPA.

(b) The permittee or its designated laboratory shall develop and implement a program to assure the quality and accurateness of the analyses performed to satisfy the requirements of this permit in accordance with 40 CFR 136, Appendix A

b. Reporting of Monitoring Results

(1) The permittee shall effectively monitor the operation and efficiency of all wastewater treatment and control facilities, and the quantity and quality of the discharge(s) as specified in this permit.

(2) Unless instructed otherwise in Part C of this permit, monitoring results obtained each month shall be summarized for that month and reported on a Discharge Monitoring Report (DMR).

(3) The completed DMR Form shall be signed and certified either by the following applicable person (as defined in 40 CFR 122.22(a)) or by that person's duly authorized representative (as defined in 40 CFR 122.22(b)):

- For a corporation - by a responsible corporate officer
- For a Partnership or Sole Proprietorship - by a general partner or the proprietor, respectively
- For a Municipality, State, Federal or other public agency - by a principle executive officer or ranking elected official.

If signed by other than the above, written notification of delegation of DMR signatory authority must be submitted to the Department. The DMR and any other reports required herein shall be submitted to the appropriate agency at the address listed in Part C of this permit and postmarked no later than the 28th day of the following month.

(4) If the permittee monitors any pollutant, using analytical methods described in A.3.a(4) above, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

c. Reporting Requirements

(1) Planned Changes - The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(a) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

(b) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

(c) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

(2) Anticipated Non-Compliance

The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(3) Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

(4) Twenty-Four Hour Reporting

(a) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(b) The following shall be included as information which must be reported within 24 hours under this paragraph.

(i) Any unanticipated bypass which exceeds any effluent limitation in the permit.

(ii) Any catastrophic event which causes the discharge to exceed effluent limitations in this permit.

(iii) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours.

(c) The Department may waive the written report on a case-by-case basis for reports under paragraph c (4)(a) of this section if the oral report has been received within 24 hours.

(5) Other Noncompliance

The permittee shall report all instances of noncompliance not reported under paragraphs c (3), (4) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph c (4) of this section.

Compliance with reporting requirements under A.3.c. above shall not excuse a person from immediate notification of incidents causing or threatening pollution pursuant to 25 Pa. Code, Chapter 91.33.

d. Specific Toxic Substance Notification Levels (for Manufacturing, Commercial, Mining, and Silvicultural Dischargers) The permittee shall notify the Department as soon as it knows or has reason to believe the following:

(1) That any activity has occurred, or will occur, which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge on a routine or frequent basis will exceed the highest of the following "notification levels".

(a) One hundred micrograms per liter.

(b) Two hundred micrograms per liter for acrolein and acrylonitrile.

(c) Five hundred micrograms per liter for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol.

(d) One milligram per liter for antimony.

(e) Five (5) times the maximum concentration value reported for that pollutant in the permit application.

(f) Any other notification level established by the Department.

(2) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(a) Five hundred micrograms per liter;

(b) One milligram per liter for antimony;

(c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application;

(d) Any other notification level established by the Department.

I. MANAGEMENT REQUIREMENTS

a. Compliance Schedules

(1) The permittee shall achieve compliance with the terms and conditions of this permit within the time frames specified in Part C of this permit.

(2) The permittee shall submit reports of compliance or noncompliance with, or progress reports as applicable, any interim and final requirements contained in this permit. Such reports shall be submitted no later than 14 days following the applicable schedule date or compliance deadline.

b. Permit Modification, Termination, or Revocation and Reissuance

(1) This permit may be modified, terminated, or revoked in whole or in part during its term for cause including, but not limited to, any of the causes specified in 25 Pa. Code, Chapter 92.

(2) The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated non-compliance, does not stay any permit condition.

(3) In the absence of a Departmental action to modify or revoke and reissue this permit, the permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time specified in the regulations that establish those standards or prohibitions.

c. Duty to Provide Information

(1) The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

(2) The permittee shall furnish to the Department, upon request, copies of records required to be kept by this permit.

(3) Other Information - Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information to the Department.

(4) Where the permittee is a POTW, the permittee shall provide adequate notice to the Department of the following:

(a) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were otherwise discharging those pollutants.

(b) Any substantial change in the volume or character of pollutants being introduced into the POTW by an Industrial User which was discharging into the POTW at the time of issuance of this permit.

(c) Adequate notice shall include information on:

(i) the quality and quantity of the effluent introduced into the POTW, and

(ii) any anticipated impact of the change on the quantity or quality of the effluent to be discharged from the POTW.

The submission of the above information in the POTW's Annual Wasteload Management Report, required under the provisions of 25 Pa. Code Chapter 94, will normally be considered as providing adequate notice to the Department, unless a more stringent time period is required by law, regulation, or permit condition in which case the more stringent submission date shall apply.

(d) The identity of Industrial Users served by the POTW which are subject to pretreatment standards adopted under Section 307(b) of the Clean Water Act; the POTW shall also specify the total volume of discharge and estimated concentration of each pollutant discharged into the POTW by the Industrial Users.

(e) The POTW shall require all Industrial Users to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act and any regulations adopted thereunder, and the Clean Streams Law and any regulations adopted thereunder.

d. Facilities Operation

The permittee shall at all times maintain in good working order and properly operate and maintain all facilities and systems which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training, and adequate laboratory controls including appropriate quality assurance procedures. This provision also includes the operation of backup or auxiliary facilities or similar systems which are installed by the permittee, only when necessary to achieve compliance with the terms and conditions of this permit.

The permittee shall develop, install, and maintain Best Management Practices to control or abate the discharge of pollutants when the practices are reasonably necessary to achieve the effluent limitations and standards in this permit or to carry out the purposes and intent of the Clean Water Act, or when required to do so by the Department.

e. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

f. Bypassing

(1) Bypassing Not Exceeding Permit Limitations - The permittee may allow a bypass to occur which does not cause effluent limitations to be violated, but only if the bypass is essential for maintenance to assure efficient operation. This type of bypassing is not subject to the reporting and notification requirements of Part A.3.c.

(2) Other Bypassing - In all other situations bypassing is prohibited unless all of the following conditions are met:

(a) A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage";

(b) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed (in the exercise of reasonable engineering judgment) to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance;

(c) The permittee submitted the necessary reports required under Part A.3.c.

(3) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions (a through c) listed above.

2. PENALTIES AND LIABILITY

a. Violations of Permit Conditions

Any person violating Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative, and/or criminal penalties as set forth in 40 CFR 122.41(a)(2).

Any person or municipality who violates any provision of this permit, any rule, regulation, or order of the Department, or any condition or limitation of any permit issued pursuant to the Clean Streams Law is subject to criminal and/or civil penalties as set forth in Sections 602, 603 and 605 of the Clean Streams Law.

b. Falsifying Information

Any person who does any of the following:

Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit; or

Knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or non- compliance);

shall, upon conviction, be punished by a fine and/or imprisonment as set forth in 18 P.S. §4904 and 40 CFR 122.41(j)(5) and (k)(2).

c. Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance pursuant to Section 309 of the Clean Water Act or Sections 602, 603 or 605 of the Clean Streams Law.

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under the Clean Water Act and the Clean Streams Law.

d. Enforcement Proceedings

(1) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. OTHER RESPONSIBILITIES

a. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law and 25 Pa. Code, Chapter 92, the permittee shall allow the head of the Department, the EPA Regional Administrator, and/or their authorized representatives, upon the presentation of credentials and other documents as may be required by law:

(1) To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) To have access to and copy at reasonable times any records that must be kept under the conditions of this permit;

(3) To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit;

(4) To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

b. Transfer of Permits

(1) *Transfers by modification.* Except as provided in paragraph (2) of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

(2) *Automatic transfers.* As an alternative to transfers under paragraph (1) of this section, any NPDES permit may be automatically transferred to a new permittee if:

(a) The current permittee notifies the Department, at least 30 days in advance, of the proposed transfer date in paragraph (2)(b) of this section;

(b) The notice includes the appropriate Department transfer form signed by the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

(c) The Department does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph (2)(b) of this section.

(3) In the event the Department does not approve transfer of the permit, the new owner or controller must submit a new permit application.

c. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

d. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

OTHER REQUIREMENTS

1. In accordance with Part A.3.b of this permit, the permittee shall submit a copy of the Discharge Monitoring Reports to each of the following:

   Department of Environmental Protection
   Water Management
   400 Waterfront Drive
   Pittsburgh, PA 15222-4745

   Attn: Water Quality Specialist
   Department of Environmental Protection
   California District Office
   25 Technology Drive
   California Technology Park
   Coal Center, PA 15423

2. Sludges and other solids shall be handled and disposed of in compliance with the Solid Waste Management Act of 1980 (Act 97) and with 25 Pa. Code, Chapters 287, 291, and 299 (relating to residual waste generators) and 288 and 289 (relating to residual waste landfills and impoundments) and the Federal Clean Water Act and its amendments.

3. All discharges of floating materials, oil, grease, scum and substances which produce tastes, color, odors, turbidity or settle to form deposits shall be controlled at levels which will not be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life.

4. REQUIREMENTS APPLICABLE TO STORM WATER OUTFALLS

   A. Prohibition of Non-Storm Water Discharges

      1. Except as provided in A.2, all discharges to storm water outfalls listed in Part A of this permit shall be composed entirely of uncontaminated storm water.

2. The following non-storm water discharges may be authorized, provided the discharge is in compliance with D.2.b: discharges from fire fighting activities; fire hydrant flushings, potable water sources including waterline flushings, irrigation drainage, lawn watering, routine external building washdown which does not use detergents or other compounds, pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used, air conditioning condensate, springs, uncontaminated groundwater, and foundation or footing drains where flows are not contaminated with process materials such as solvents.

B. Spills

This permit does not authorize the discharge of any polluting substances resulting from an on-site spill. Such spills shall be controlled through proper implementation of a PPC Plan as stated in Section D below.

C. This permit does not authorize any discharge (storm water or non-storm water) containing any pollutant that may cause or contribute to an impact on aquatic life or pose a substantial hazard to human health or the environment due to its quantity or concentration.

D. Preparedness, Prevention and Contingency Plans

1. Development of Plan

Operators of facilities shall have developed a Preparedness, Prevention and Contingency (PPC) Plan in accordance with 25 Pa. Code § 91.34 and Document 400-2200-001, "Guidelines for the Development and Implementation of Environmental Emergency Response Plans". The PPC Plan shall identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the facility. In addition, the PPC Plan shall describe the BMPs that are to be used to reduce the pollutants in storm water discharges at the facility ensuring compliance with the terms and conditions of this permit.

2. Non-Storm Water Discharges

a. The PPC Plan shall contain a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of potential significant sources of non-storm water at the site, a

description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing methods used, the date of any testing and/or evaluation, and the on-site drainage points that were directly observed during the test. Such certification may not be feasible if the facility operating the storm water discharge does not have access to an outfall, manhole, or other point of access to the ultimate conduit that receives the discharge. In such cases, the source identification section of the PPC Plan shall indicate why the certification was not feasible. A discharger that is unable to provide the certification must notify the Department within 180 days of the effective date of this permit.

b. Except for flows from fire fighting activities, sources of non-storm water listed in A.2. (authorized non-storm water discharges) that are combined with storm water discharges must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

3. Special Requirements for SARA Title III, Section 313 Facilities

a. Facilities subject to SARA Title III, Section 313 shall include in the PPC Plan a description of releases to land or water of Section 313 water priority chemicals that have occurred within the last three years. Each of the following shall be evaluated for the reasonable potential for contributing pollutants to runoff: loading and unloading operations, outdoor storage activities, outdoor manufacturing or processing activities, significant dust or particulate generating process, and on-site waste disposal practices. Factors to consider include the toxicity of chemicals; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants.

b. Engineering Certification. No storm water PPC Plan for facilities subject to SARA Title III, Section 313 requirements for chemicals that are classified as "Section 313 water priority chemicals" shall be effective unless it has been reviewed by a Registered Professional Engineer and certified to by such Professional Engineer. A Registered Professional Engineer shall recertify the PPC Plan every

year thereafter. This certification may be combined with the required annual evaluation in D.4. By means of these certifications, the engineer, having examined the facility and being familiar with the provisions of this part, shall attest that the storm water PPC Plan has been prepared in accordance with good engineering practices. Such certification shall in no way relieve the owner or operator of a facility covered by the PPC Plan of the duty to prepare and fully implement such Plan.

4. Comprehensive Site Compliance Evaluations and Record Keeping

Qualified personnel shall conduct site compliance evaluations at least once a year. Such evaluations shall include:

a. Visual inspection and evaluation of areas contributing to a storm water discharge for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

Based on the results of the inspection, the description of potential pollutant sources identified in the PPC plan, and pollution prevention measures and controls identified in the plan shall be revised as appropriate within 15 days of such inspection and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 90 days after the inspection.

A report summarizing the scope of the inspection shall be completed and made available upon request and retained as part of the PPC Plan for at least one year after coverage under this permit terminates.

E. Storm Water Sampling and Reporting

1. If storm water samples are required by Part A of this permit, they shall be collected as grab samples during the first 30 minutes of the discharge or as soon thereafter as practicable.

2. When the discharger is unable to collect samples due to adverse climatic conditions or other circumstances beyond the permittee's control, the discharger must submit, in lieu of sampling data, an explanation with the Discharge Monitoring Report(s) (DMR) of exactly why samples could not be collected, including available documentation of the event.

3. Storm water monitoring results shall be summarized on the attached DMR and submitted to the Department.

5. Oil bearing wastewaters shall at no time cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline.

6. Best Management Practices

The permittee shall implement Best Management Practices (BMPs), and the Erosion and Sedimentation Control Plan approved by the Department and the Washington County Conservation District to restrict the rates and quantities of pollutants discharged into surface waters of the Commonwealth.

Best Management Practices (BMPs) are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution to the waters of the Commonwealth. BMPs include PPC Plans, Erosion and Sedimentation Control Plans, Storm Water Management Act Plans, and other treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

The permittee shall design, build and at all times properly operate and maintain all facilities and systems of treatment and control, including Best Management Practices (BMPs) such as PPC Plans, Erosion and Sedimentation Control (ESC) Plans, and any other storm water pollution prevention or management plans, which are installed or used by the permittee to achieve compliance with the conditions of this permit. BMPs shall be designed, implemented, and maintained to minimize or eliminate storm water runoff. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires that operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

Visual Inspections of BMPs and ESC

The permittee must ensure that visual site inspections are conducted bi-weekly, and after each precipitation event by qualified personnel, trained and experienced in erosion and sediment

control, to ascertain that the BMPs and ESC measures are operational and effective in preventing pollution to the waters of the Commonwealth. A written report of each inspection shall be kept, and include:

(1) a summary of site conditions, BMPs, ESC measures, and compliance; and

(2) the date, time, and the name of the person conducting the inspection.

Non-compliance Reporting

Where BMPs and/or ESC measures are found to be inoperative or ineffective during an inspection, or any other time, the permittee shall immediately contact the Department and the Washington County Conservation District, by phone or personal contact, followed by the submission of a written report within 5 days of the initial contact. Non-compliance reports shall include the following information:

(1) any condition on the project site which may endanger public health, safety, or the environment, or involve incidents which cause or threaten pollution;

(2) the period of non-compliance, including exact dates and times and/or anticipated time when the activity will return to compliance;

(3) steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance; and

(4) the date or schedule of dates, and identifying remedies for correcting non-compliance conditions.

Supplemental Monitoring

The Department, and the local conservation district when acting as the reviewing entity, reserve the right to require additional monitoring where a danger of water pollution is present, or water pollution is suspected to be occurring from a construction activity subject to this permit. The permittee shall commence such monitoring upon notification from the Department, or the local county conservation district when acting as the reviewing entity.

7. All storm water discharges associated with the construction of Victory Hollow Disposal Site must comply with 25 Pa. Code Chapters 91-97, 101, 102, and 105.

8. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

9. Notice of Termination

A. When all storm water discharges associated with construction activity that are authorized by this permit are eliminated, the permittee of the facility must submit a letter that is signed in accordance with Part B.1.c. (signatory requirements of this permit) stating:

"I certify under penalty of law, that all storm water discharges associated with construction activity from the identified facility and construction activities that are authorized by this NPDES permit have been eliminated. I understand that by submitting this notice of termination, that I am no longer authorized to discharge storm water associated with construction activity under this permit, and that discharging pollutants in storm water associated with construction activity to surface waters of the Commonwealth is unlawful under the Clean Water Act and Clean Streams Law where the discharge is not authorized by an NPDES permit."

B. Addresses. All letters certifying discharge termination are to be sent to the appropriate Department's Southwest Regional Office, the Greensburg District Office and the Washington County Conservation District Office.

10. The permittee must comply with all terms and conditions of this permit. Any permit non-compliance constitutes a violation of the Pennsylvania Clean Streams Law and the federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit or permit renewal.

11. The permittee may not use as a defense in an enforcement action that it would have been necessary to halt or reduce the construction activities to maintain compliance with the conditions of this permit.

12. The permittee must sample Outfalls 001 and 002 for the pollutants listed in Groups 1 and 2 of Section C of the NPDES permit application. A minimum of 3 samples per outfall are required. The sampling must be performed within 90 days from the time that Outfalls 001 and 002 begin to discharge. One influent sample for the pollutants in Groups 1 and 2 is also required for each outfall. All samples results shall be summarized and submitted to the Department within 30 days of the last sampling event.

GENERAL INSTRUCTIONS

1. If form has been partially completed by preprinting, disregard instructions directed at entry of that information already preprinted.

2. Enter "PERMITTEE NAME/MAILING ADDRESS (and facility name/location, if different)," "PERMIT NUMBER," and "DISCHARGE NUMBER" where indicated. (A separate form is required for each discharge.)

3. Enter dates beginning and ending "MONITORING PERIOD" covered by form where indicated.

4. Enter each "PARAMETER" as specified in monitoring requirements of permit.

5. Enter "SAMPLE MEASUREMENT" data for each parameter under "QUANTITY" and "QUALITY" in units specified in permit. "AVERAGE" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "MONITORING PERIOD." "MAXIMUM" and "MINIMUM" are normally extreme high and low measurements obtained during "MONITORING PERIOD." (NOTE to municipals with secondary treatment requirements, enter 30-day average of sample measurements under "AVERAGE" and enter maximum 7-day average of sample measurements obtained during monitoring period under "MAXIMUM.")

6. Enter "PERMIT REQUIREMENT" for each parameter under "QUANTITY" and "QUALITY" as specified in permit.

7. Under "NO. EX" enter number of sample measurements during monitoring period that exceeded maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "0."

8. Enter "FREQUENCY OF ANALYSIS" both as "SAMPLE MEASUREMENT" (actual frequency of sampling and analysis used during monitoring period) and as "PERMIT REQUIREMENT" specified in permit (e.g., Enter "CONT." for continuous monitoring, "1/7" for one day per week, "1/30" for one day per month, "1/90" for one day per quarter, etc.)

9. Enter "SAMPLE TYPE" both as "SAMPLE MEASUREMENT" (actual sample type used during monitoring period) and as "PERMIT REQUIREMENT." (e.g., Enter "GRAB" for individual sample, "24HC" for 24-hour composite, "N/A" for continuous monitoring, etc.)

10. WHERE VIOLATIONS OF PERMIT REQUIREMENTS ARE REPORTED, ATTACH A BRIEF EXPLANATION TO DESCRIBE CAUSE AND CORRECTIVE ACTIONS TAKEN. REFERENCE EACH VIOLATION BY DATE.

11. If "no discharge" occurs during monitoring period, enter "NO DISCHARGE" across form in place of data entry.

12. Enter "NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER" with "SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT," "TELEPHONE NUMBER" and "DATE" at bottom of form.

13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.

14. More detailed instructions for use of this DISCHARGE MONITORING REPORT (DMR) form may be obtained from Office(s) specified in permit.

LEGAL NOTICE

This report is required by law (33 U.S.C. 1318; 40 C.F.R. 122.22). Failure to report or failure to report truthfully can result in civil penalties not to exceed $10,000 per day of violation; or in criminal penalties not to exceed $25,000 per day of violation, or by imprisonment of not more than one year, or by both.

PERMITTEE NAME ADDRESS *(Include Facility Name / Location)*

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME: U.S. Army Corps of Engineers
ADDRESS: 1000 Liberty Avenue
Pittsburgh, PA 15222

FACILITY: Dredge Operations
LOCATION: Carroll Township, Washington County

(2-16)	(17-19)
PA0218791	002
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form

Parameter (32-37)		(3 Card Only) (46--53) QUANTITY OR LOADING (54-61)			(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53)	(54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
Iron	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	3.5	7.0	MG/L	•	2/MONTH	GRAB
Manganese	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	2.0	4.0	MG/L	•	2/MONTH	GRAB
Chloroform	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
pH	Sample Measurement	•	•			•					
	Permit Requirement	•	•	•	6.0	•	9.0	S.U.	•	2/MONTH	GRAB
	Sample Measurement	•	•		•	•	•			•	•
	Permit Requirement	•	•	•	•	•	•	•	•	•	•
	Sample Measurement	•	•		•	•	•			•	•
	Permit Requirement	•	•	•	•	•	•	•	•	•	•
	Sample Measurement	•	•		•	•	•			•	•
	Permit Requirement	•	•	•	•	•	•	•	•	•	•

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may includes fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years)		TELEPHONE		DATE	
TYPE OR PRINT		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NOTE: YOUR PERMIT WILL EXPIRE ON MAY 3 1 2009. PLEASE SUBMIT YOUR RENEWAL APPLICATION BY DEC - 2 2008.

PERMITTEE NAME ADDRESS *(Include Facility Name / Location)*

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME: U.S. Army Corps of Engineers
ADDRESS: 1000 Liberty Avenue
Pittsburgh, PA 15222

FACILITY: Dredge Operations
LOCATION: Carroll Township, Washington County

(2-16)	(17-19)
PA0218791	001
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form

Parameter (32-37)		(3 Card Only) (46--53) QUANTITY OR LOADING (54-61)			(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53)	(54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
Flow	Sample Measurement				•	•	•				
	Permit Requirement	MONITOR	& REPORT	MGD	•	•	•	•	•	2/MONTH	MEASURED
Total Suspended Solids	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	30	60	MG/L	•	2/MONTH	GRAB
Chromium	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Lead	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Zinc	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Iron	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	3.5	7.0	MG/L	•	2/MONTH	GRAB
Oil and Grease	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may includes fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years)		TELEPHONE		DATE	
TYPE OR PRINT		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NOTE: YOUR PERMIT WILL EXPIRE ON MAY 3 1 2009. PLEASE SUBMIT YOUR RENEWAL APPLICATION BY DEC - 2 2008.

PERMITTEE NAME ADDRESS *(Include Facility Name / Location)*

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME: U.S. Army Corps of Engineers
ADDRESS: 1000 Liberty Avenue
Pittsburgh, PA 15222

FACILITY: Dredge Operations
LOCATION: Carroll Township, Washington County

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
PA0218791	001

MONITORING PERIOD						
FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form

Parameter (32-37)		(3 Card Only) (46--53) QUANTITY OR LOADING (54-61)			(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53)	(54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
Manganese	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	2.0	4.0	MG/L	•	2/MONTH	GRAB
Benzene	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Ethyl Benzene	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Toluene	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
pH	Sample Measurement	•	•			•					
	Permit Requirement	•	•	•	6.0	•	9.0	S.U.	•	2/MONTH	GRAB
	Sample Measurement	•	•		•	•	•			•	•
	Permit Requirement	•	•	•	•	•	•	•	•	•	•
	Sample Measurement	•	•		•	•	•			•	•
	Permit Requirement	•	•	•	•	•	•	•	•	•	•

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may includes fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years)		TELEPHONE		DATE	
TYPE OR PRINT		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NOTE: YOUR PERMIT WILL EXPIRE ON MAY 3 1 2009. PLEASE SUBMIT YOUR RENEWAL APPLICATION BY DEC - 2 2008.

PERMITTEE NAME ADDRESS *(Include Facility Name / Location)*

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME: U.S. Army Corps of Engineers
ADDRESS: 1000 Liberty Avenue
Pittsburgh, PA 15222

FACILITY: Dredge Operations
LOCATION: Carroll Township, Washington County

(2-16)	(17-19)
PA0218791	002
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form

Parameter (32-37)		(3 Card Only) (46--53) QUANTITY OR LOADING (54-61)			(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53)	(54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
Flow	Sample Measurement				•	•	•				
	Permit Requirement	MONITOR	& REPORT	MGD	•	•	•	•	•	2/MONTH	MEASURED
Total Suspended Solids	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	30	60	MG/L	•	2/MONTH	GRAB
Fluoride	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Sulfates	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Antimony	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Cadmium	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Oil and Grease	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION. INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may includes fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years)		TELEPHONE		DATE	
TYPE OR PRINT		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NOTE: YOUR PERMIT WILL EXPIRE ON MAY 3 1 2009. PLEASE SUBMIT YOUR RENEWAL APPLICATION BY DEC - 2 2008.

PERMITTEE NAME ADDRESS *(Include Facility Name / Location)*

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME: U.S. Army Corps of Engineers
ADDRESS: 1000 Liberty Avenue
Pittsburgh, PA 15222

FACILITY: Dredge Operations
LOCATION: Carroll Township, Washington County

(2-16)	(17-19)
PA0218791	002
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form

Parameter (32-37)		(3 Card Only) (46--53) QUANTITY OR LOADING (54-61)			(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53)	(54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
Chromium	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Copper	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Mercury	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Nickel	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Selenium	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Zinc	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
Aluminum	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may includes fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years)		TELEPHONE		DATE	
TYPE OR PRINT		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NOTE: YOUR PERMIT WILL EXPIRE ON MAY 3 1 2009. PLEASE SUBMIT YOUR RENEWAL APPLICATION BY DEC - 2 2008.

PERMITTEE NAME ADDRESS *(Include Facility Name / Location)*

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

NAME: U.S. Army Corps of Engineers
ADDRESS: 1000 Liberty Avenue
Pittsburgh, PA 15222

FACILITY: Dredge Operations
LOCATION: Carroll Township, Washington County

(2-16)	(17-19)
PA0218791	002
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD						
FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form

Parameter (32-37)		(3 Card Only) (46--53) QUANTITY OR LOADING (54-61)			(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53)	(54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
Iron	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	3.5	7.0	MG/L	•	2/MONTH	GRAB
Manganese	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	2.0	4.0	MG/L	•	2/MONTH	GRAB
Chloroform	Sample Measurement	•	•		•						
	Permit Requirement	•	•	•	•	MONITOR	& REPORT	MG/L	•	2/MONTH	GRAB
pH	Sample Measurement	•	•			•					
	Permit Requirement	•	•	•	6.0	•	9.0	S.U.	•	2/MONTH	GRAB
	Sample Measurement	•	•		•	•	•			•	•
	Permit Requirement	•	•	•	•	•	•	•	•	•	•
	Sample Measurement	•	•		•	•	•			•	•
	Permit Requirement	•	•	•	•	•	•	•	•	•	•
	Sample Measurement	•	•		•	•	•			•	•
	Permit Requirement	•	•	•	•	•	•	•	•	•	•

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may includes fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years)		TELEPHONE		DATE	
TYPE OR PRINT		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NOTE: YOUR PERMIT WILL EXPIRE ON MAY 3 1 2009. PLEASE SUBMIT YOUR RENEWAL APPLICATION BY DEC - 2 2008.

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE CONSTRUCTION

SECTION 02720

AGGREGATE SUBBASE AND BASE COURSES

PART 1 GENERAL

1.1 SUMMARY
1.2 REFERENCES
1.3 DEFINITIONS
1.3.1 Degree of Compaction
1.4 GENERAL
1.5 SUBMITTALS
1.6 WAYBILLS AND DELIVERY TICKETS
1.7 WEATHER LIMITATIONS
1.8 EQUIPMENT
1.9 STOCKPILING MATERIALS

PART 2 PRODUCTS

2.1 SUBBASE MATERIAL, PDT 2A
2.2 AGGREGATE SUBBASE COURSE, PDT 350
2.3 AGGREGATE BASE COURSE, PDT OGS
2.4 AGGREGATE BASE COURSE, PDT NO. 57
2.5 CRUSHED AGGREGATE SHOULDER, PDT TYPE 3
2.6 AGGREGATE SURFACING MATERIALS

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS
3.2 PREPARATION OF UNDERLYING COURSE
3.2.1 General Requirements
3.2.2 Grade Control
3.3 MIXING AND PLACING
3.4 COMPACTION
3.4.1 Aggregate Surfacing
3.5 FINISHING
3.5.1 Thickness Control
3.6 FIELD QUALITY CONTROL
3.6.1 Field Density
3.6.2 Smoothness
3.6.3 Thickness
3.7 MAINTENANCE
3.8 CRUSHED AGGREGATE SHOULDER, PDT TYPE 3

-- End of Section Table of Contents --

SECTION 02720

AGGREGATE SUBBASE AND BASE COURSES

PART 1 GENERAL

1.1 SUMMARY

This section addresses the requirements for furnishing and placing aggregate base courses. It also includes requirements for aggregate surfacing at the left bank batch plant area.

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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 2922	(199el) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1996) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 698	(1998) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION (PDT)

PDT 408	(2000) Specifications

1.3 DEFINITIONS

1.3.1 Degree of Compaction

Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 698 abbreviated hereinafter as percent laboratory maximum density.

1.4 GENERAL

The work specified herein consists of the construction of aggregate subbase and base courses. The work shall be performed in accordance with this specification and shall conform to the lines, grades, notes and typical sections shown in the plans. Sources of all materials shall be selected well in advance of the time that materials will be required in the work.

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-06 Test Reports

Inspection and Test Reports.

Results of inspections, and field tests shall be submitted to the Contracting Officer.

SD-07 Certificates

Aggregates.

Certificates from the supplier attesting that the aggregate meets the specification requirements shall be submitted to the Contracting Officer.

SD-11 Closeout Submittals

Waybills and Delivery Tickets

Certified copies of waybills and delivery tickets for all materials actually used.

1.6 WAYBILLS AND DELIVERY TICKETS

Copies of waybills or delivery tickets shall be submitted during the progress of the work. Before the final payment is allowed, waybills and certified delivery tickets shall be furnished for all aggregates actually used in the construction.

1.7 WEATHER LIMITATIONS

Subbase and base shall not be constructed on subgrades that are frozen or contain frost. If the temperature falls below 35 degrees F, completed areas shall be protected against any detrimental effects of freezing.

1.8 EQUIPMENT

All plant, equipment and tools used in the work shall be subject to approval before the work is started and shall be maintained in satisfactory working condition at all times. The equipment shall be adequate and have the capability of producing the required compaction, meeting grade controls, thickness control, and smoothness requirements specified.

1.9 STOCKPILING MATERIALS

Materials shall be stockpiled in the manner and at locations approved by the Contracting Officer. Before stockpiling of material, storage sites shall be cleared, and sloped to drain. Materials obtained from different sources shall be stockpiled separately.

PART 2 PRODUCTS

2.1 SUBBASE MATERIAL, PDT 2A

Coarse aggregates for subbase material, where applicable, shall consist of clean, hard, uncoated particles meeting the requirements of PDT No. 2A, Type B quality as specified in PDT 408, Section 703-AGGREGATE, and provided

from an approved source as listed in Bulletin 14. Coarse aggregate shall consist of crushed stone. The use of slag is prohibited.

2.2 AGGREGATE SUBBASE COURSE, PDT 350

Aggregates shall consist of clean, sound durable particles of crushed limestone. Sandstone, slag or river deposited gravel will not be accepted. Coarse aggregate shall be crushed limestone meeting the requirements of PDT 408, Section 350.

2.3 AGGREGATE BASE COURSE, PDT OGS

Aggregates shall consist of clean, sound durable particles of crushed limestone. Sandstone, slag or river deposited gravel will not be accepted. Coarse aggregate shall be crushed limestone meeting the requirements of PDT 408, Section 703, Table C, size OGS coarse aggregate.

2.4 AGGREGATE BASE COURSE, PDT NO. 57

Aggregates shall consist of clean, sound durable particles of crushed limestone. Sandstone, slag or river deposited gravel will not be accepted. Coarse aggregate shall be crushed limestone meeting the requirements of PDT 408, Section 703, Table C, size No. 57 coarse aggregate.

2.5 CRUSHED AGGREGATE SHOULDER, PDT TYPE 3

Shoulders shall be constructed of materials in accordance with PDT 408, Section 653, except that slag shall not be used.

2.6 AGGREGATE SURFACING MATERIALS

Aggregate shall consist of clean, sound durable particles of crushed limestone. Sandstone, slag or river deposited gravel will not be accepted. Coarse aggregate shall be crushed limestone meeting the requirements of PDT 408, Section 703, Table C, size OGS coarse aggregate.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Adequate drainage shall be provided during the entire period of construction to prevent water from collecting or standing on the working area. Line and grade stakes shall be provided as necessary for control. Grade stakes shall be in lines parallel to the centerline of the area under construction and suitably spaced for string lining.

3.2 PREPARATION OF UNDERLYING COURSE

3.2.1 General Requirements

Before constructing aggregate subbase and base, the underlying course shall be cleaned of foreign substances. Surface of underlying course shall meet the specified compaction and surface tolerances. Subgrade shall conform to Section 02310 EARTHWORK FOR ROADWAYS. Ruts or soft, yielding spots that may appear in the underlying course, areas having inadequate compaction, and deviations of the surface from requirements specified shall be corrected. Finished underlying course shall not be disturbed by traffic or other operations and shall be maintained in a satisfactory condition until base is placed.

3.2.2 Grade Control

Underlying material shall be excavated to sufficient depth for the required thickness so that the finished base with the subsequent surface course will meet the final grade. Finished and completed area shall conform to the lines, grades, cross section, and dimensions indicated.

3.3 MIXING AND PLACING

Materials shall be placed with equipment similar to paving machine or spreader box and in such a manner as to obtain uniformity of the aggregate material and at a uniform optimum water content for compaction. The Contractor shall make such adjustments in mixing or placing procedures or in equipment to obtain the true grades, to minimize segregation and degradation, to reduce or accelerate loss or increase of water, and to ensure a satisfactory placement.

3.4 COMPACTION

Each layer of aggregate material shall be compacted. Water content shall be maintained at optimum. Density of compacted mixture shall be at least 98 percent of laboratory maximum density. Rolling shall begin at the outside edge of the surface and proceed to the center, overlapping on successive trips at least one-half the width of the roller. Alternate trips of the roller shall be slightly different lengths. Speed of the roller shall be such that displacement of the aggregate does not occur. Areas inaccessible to the rollers shall be compacted with mechanical tampers, and shall be shaped and finished by hand methods.

3.4.1 Aggregate Surfacing

Aggregate surfacing at the left bank batch plant area gravel access road shall be placed to a compacted thickness of 6 inches, sloped to drain. The aggregate surfacing shall be rolled to 100% of laboratory maximum density. The Contractor shall provide labor, equipment and materials to maintain the road in a safe drivable condition, free of excessive rutting. Aggregate surfacing shall be replaced and regraded as areas become worn and rutted. The Contractor shall immediately correct any areas were rutting exceeds 3 inches in depth, as measured relative to adjacent undisturbed areas.

3.5 FINISHING

The surface of the top layer shall be finished to grade and cross section shown. Finished surface shall be of uniform texture. Light blading during compaction may be necessary for the finished surface to conform to the lines, grades, and cross sections. Should the surface for any reason become rough, corrugated, uneven in texture, or traffic marked prior to completion, such unsatisfactory portion shall be scarified, reworked, recompacted, or replaced as directed.

3.5.1 Thickness Control

Compacted thickness of the base shall be within 1/2 inch of the thickness indicated. Where the measured thickness is more than 1/2 inch deficient, such areas shall be corrected by scarifying, adding new material of proper gradation, reblading, and recompacting as directed.

3.6 FIELD QUALITY CONTROL

3.6.1 Field Density

Field in-place density shall be determined in accordance with ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked, and adjusted if necessary, using the sand cone method as described in paragraph Calibration of the ASTM publication. ASTM D 2922 results in a wet unit weight of soil, and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with density calibration checks as described in ASTM D 3017. Calibration curves and calibration test results shall be furnished within 24 hours of the conclusion of the tests. At least one field density test shall be performed.

3.6.2 Smoothness

Measurements for deviation from grade and cross section shown shall be taken parallel and perpendicular to the longest dimension of the area covered by aggregate.

3.6.3 Thickness

Thickness of the base shall be measured at intervals in such a manner as to ensure one measurement for each 25 linear feet along the longest dimension of the area covered with aggregate by use of Contractor furnished grade stakes, string lines or other approved methods.

3.7 MAINTENANCE

The aggregate subbase and base shall be maintained in a satisfactory condition until accepted and placement of surface course. Maintenance shall include immediate repairs to any defects, and shall be repeated as often as necessary to keep the area intact until accepted and approved for covering with the next course or with pavement.

3.8 CRUSHED AGGREGATE SHOULDER, PDT TYPE 3

Shoulders shall be constructed as specified in PDT 408, Section 653. Bituminous surface treatment shall be in accordance with PDT 408, Section 480. After application of the initial coat of bituminous material, the first layer of aggregate shall be rolled into the underlying course. After curing of the bituminous material, the second applicaton of bituminous material and aggregate shall be constructed and rolled into the first layer. After curing, all loose aggregate shall be swept.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE CONSTRUCTION

SECTION 02921

SEEDING

PART 1 GENERAL

1.1 REFERENCES
1.2 SUBMITTALS
1.3 SOURCE INSPECTION
1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING
1.4.1 Delivery
1.4.1.1 Soil Test
1.4.1.2 Soil Amendments
1.4.1.3 Turf Reinforcement Mat
1.4.1.4 Cellular Confinement System
1.4.2 Inspection
1.4.3 Storage
1.4.4 Handling
1.4.5 Time Limitation

PART 2 PRODUCTS

2.1 SEED
2.1.1 Seed Classification
2.1.2 Seed Mixtures For All Areas
2.1.2.1 Seed Mixture for Permanent Vegetative Cover on Slopes 3H:1V and Gentler
2.1.2.2 Seed Mixture for Permanent Vegetative Cover on Slopes Steeper Than 3H:1V.
2.1.2.3 Temporary Seed Species
2.1.3 Seed Mixing
2.1.4 Substitutions
2.2 TOPSOIL
2.3 SOIL AMENDMENTS
2.3.1 pH Adjuster
2.3.1.1 Limestone
2.3.1.2 Hydrated Lime
2.3.1.3 Burnt Lime
2.3.2 Fertilizer
2.3.3 Nitrogen Carrier Fertilizer
2.3.4 Organic Material
2.3.4.1 Bonemeal
2.3.4.2 Rotted Manure
2.3.4.3 Decomposed Wood Derivatives
2.3.4.4 Recycled Compost
2.3.4.5 Worm Castings
2.3.5 Soil Conditioner
2.3.5.1 Sand
2.3.5.2 Super Absorbent Polymers
2.3.5.3 Calcined Clay

2.3.5.4 Gypsum
2.3.5.5 Expanded Shale, Clay, or Slate (ESCS)
2.4 MULCH
2.4.1 Straw
2.4.2 Hay
2.4.3 Wood Cellulose Fiber
2.4.4 Paper Fiber
2.5 ASPHALT ADHESIVE
2.6 WATER
2.7 SURFACE EROSION CONTROL MATERIAL
2.7.1 Turf Reinforcement Mat
2.7.2 Cellular Confinement System
2.7.2.1 Geocell Material
2.7.2.2 Cell Seam Strength
2.7.2.3 Coated Tendons
2.7.2.4 Uncoated Tendons
2.7.2.5 Anchors
2.7.3 Turf Reinforcement Mat

PART 3 EXECUTION

3.1 INSTALLING SEED TIME AND CONDITIONS
3.1.1 Seeding Time
3.1.2 Seeding Conditions
3.1.3 Soil Test
3.2 SITE PREPARATION
3.2.1 Finished Grade and Topsoil
3.2.2 Application of Soil Amendments
3.2.2.1 Applying pH Adjuster
3.2.2.2 Applying Fertilizer
3.2.2.3 Applying Soil Conditioner
3.2.2.4 Applying Super Absorbent Polymers
3.2.3 Tillage
3.2.4 Prepared Surface
3.2.4.1 Preparation
3.2.4.2 Protection
3.3 INSTALLATION
3.3.1 Installing Seed
3.3.1.1 Broadcast Seeding
3.3.1.2 Rolling
3.3.2 Hydroseeding
3.3.3 Mulching
3.3.3.1 Hay or Straw Mulch
3.3.3.2 Mechanical Anchor
3.3.3.3 Asphalt Adhesive Tackifier
3.3.3.4 Non-Asphaltic Tackifier
3.3.3.5 Asphalt Adhesive Coated Mulch
3.3.3.6 Wood Cellulose Fiber, Paper Fiber, and Recycled Paper
3.3.4 Watering Seed
3.4 SURFACE EROSION CONTROL
3.4.1 Surface Erosion Control Material
3.4.1.1 Turf Reinforcement Mat (TRM)
3.4.1.2 Cellular Confinement System
3.4.2 Temporary Seeding
3.4.2.1 Soil Amendments
3.4.2.2 Remaining Soil Amendments
3.5 RESTORATION AND CLEAN UP
3.5.1 Restoration
3.5.2 Clean Up

3.6 PROTECTION OF INSTALLED AREAS
3.7 SEED ESTABLISHMENT PERIOD
3.7.1 Commencement
3.7.2 Satisfactory Stand of Grass Plants
3.7.3 Maintenance During Establishment Period
3.7.3.1 Repair or Reinstall
3.7.3.2 Maintenance Record

-- End of Section Table of Contents --

SECTION 02921

SEEDING

PART 1 GENERAL

1.1 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.

AGRICULTURAL MARKETING SERVICE (AMS)

AMS-01	(Aug 95) Federal Seed Act Regulations Part 201

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602	(1995a) Agricultural Liming Materials
ASTM D 1505	(1998) Density of Plastics by the Density-Gradient Technique
ASTM D 1693	(2000) Environmental Stress-Cracking of Ethylene Plastics
ASTM D 2028	(1997) Cutback Asphalt (Rapid-Curing Type)
ASTM D 4972	(1995a) pH of Soils
ASTM D 5199	(1999) Measuring Nominal Thickness of Geotextiles and Geomembranes
ASTM D 5268	(1996) Topsoil Used for Landscaping Purposes
ASTM D 5883	(1996el) Use of Rotary Kiln Produced Expanded Shale, Clay or Slate (ESCS) as a Mineral Amendment in Topsoil Used for Landscaping and Related Purposes
ASTM D 977	(1998) Emulsified Asphalt

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION (PDT)

PDT 408	(2000) Specifications

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

Delivery, Topsoil Source; G RE.

Provide a delivery schedule and the source of topsoil borrow.

Seed Establishment Period; G RE.

A written calendar time period shall be furnished for the seed establishment period.

SD-02 Shop Drawings

Turf Reinforcement Mat; G RE.

Manufacturer's installation drawings showing layout and direction of installation and frequency of anchors.

Cellular Confinement System; G RE.

Manufacturer's shop drawings and fabrication drawings including section layout, direction of expansion, tendon locations, and anchor stake locations.

SD-03 Product Data

Soil Amendments; G RE. Seed Mixtures; G RE. Surface Erosion Control Material; G RE. Turf Reinforcement Mat; G RE. Geocell Material; G RE. Tendons; G RE. Anchors; G RE.

Manufacturer's literature including physical characteristics, application and installation instructions.

SD-06 Test Reports

Soil Test; G RE.

Certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

SD-07 Certificates

Seed; G RE. pH Adjuster; G RE. Fertilizer; G RE. Turf Reinforcement Mat; G RE. Geocell Material; G RE.

Prior to the delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following:

a. Seed. Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.

b. pH Adjuster. Calcium carbonate equivalent and sieve analysis.

c. Fertilizer. Chemical analysis and composition percent.

d. Turf Reinforcement Mat: Manufacturer's certification that materials comply with the requirements of PDT 408, Section 806.

e. Geocell Material: Manufacturer's certification that materials comply with the requirements of paragraph CELLULAR CONFINEMENT SYSTEM.

SD-08 Manufacturer's Instructions

Turf Reinforcement Mat. Cellular Confinement System.

Manufacturer's recommended instructions for installing turf reinforcement mat and anchors; and geocell material, tendons and anchors.

SD-11 Closeout Submittals

Maintenance Record

Written record of maintenance work performed

1.3 SOURCE INSPECTION

The source of delivered topsoil shall be subject to inspection.

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

1.4.1.1 Soil Test

Prior to the delivery of any topsoil, a soil test shall be provided for the proposed topsoil.

1.4.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.4.1.3 Turf Reinforcement Mat

Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

1.4.1.4 Cellular Confinement System

Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

1.4.2 Inspection

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Other materials shall be inspected for compliance with specified requirements. The following shall be rejected: open soil amendment containers or wet soil amendments; topsoil that contains slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter; and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the job site.

1.4.3 Storage

Materials shall be stored in designated areas. Seed, lime, and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with seeding operation materials. Store turf reinforcement mat and geocell material out of direct sunlight and in accordance with manufacture's instructions.

1.4.4 Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles. Protect geocell materials, tendons, stake anchors, geotextiles and turf reinforcement mat during handling and installation to prevent damage.

1.4.5 Time Limitation

Hydroseeding time limitation for holding seed in the slurry shall be a maximum 24 hours.

PART 2 PRODUCTS

2.1 SEED

2.1.1 Seed Classification

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS-01 and applicable state seed laws.

~~2.1.2 Seed Mixtures for Victory Hollow Offloading Area~~

~~2.1.2.3 Seed Mixture for Temporary Vegetative Cover~~

~~Quick erosion control cover mix (Ernst Conservation Seeds ERNMX-104 or similar, Seeding rate = 50 bulk pounds per acre).~~

~~50% Lolium multiflorum Annual Ryegrass~~
~~50% Lolium perenne Perennial Ryegrass, Saint~~

2.1.2 Seed Mixtures For All ~~Other~~ Areas

2.1.2.1 Seed Mixture for Permanent Vegetative Cover on Slopes 3H:1V and Gentler

Permanent seed species and mixtures shall be ~~provided as specified in the Erosion and Sediment Control Plan, included as an attachment to the specifications, and~~ proportioned by weight as follows:

Botanical Name	Common Name	Mixture Percent by Weight	Percent Pure Live Seed
LAWNS & SLOPES 3H:1V AND GENTLER (PDT Formula B)			
Poa pratensis	Kentucky Bluegrass	50	78
	Creeping Red Fescue or Chewing Fescue	30	83
Lolium perenne	Perennial Ryegrass	20	88

Weed seed shall be a maximum 0.20 percent by weight for the Kentucky Bluegrass portion, 0.15 percent by weight for the Creeping Red Fescue or Chewing Fescue portion, and 0.15 percent by weight for the Perennial Ryegrass portion of the mixture.

2.1.2.2 Seed Mixture for Permanent Vegetative Cover on Slopes Steeper Than 3H:1V.

Permanent seed species and mixtures shall be ~~provided as specified in the Erosion and Sediment Control Plan, included as an attachment to the specifications, and~~ proportioned by weight as follows:

Botanical Name	Common Name	Mixture Percent by Weight	Percent Pure Live Seed
SLOPES STEEPER THAN 3H:1V (PDT Formula C)			
Coronilla varia	Crownvetch	45	69

Botanical Name	Common Name	Mixture Percent by Weight	Percent Pure Live Seed
Lolium multiflorum	Annual Ryegrass	55	88

Weed seed shall be a maximum 0.10 percent by weight for the Crownvetch portion and 0.15 percent by weight for the Annual Ryegrass portion of the mixture.

2.1.2.3 Temporary Seed Species

Temporary seed species for surface erosion control or overseeding shall be ~~as specified in the Erosion and Sediment Control Plan, included as an attachment to the specifications and~~ proportioned by weight as follows:

Botanical Name	Common Name	Mixture Percent by Weight	Percent Pure Live Seed
	PDT Formula E		
Lolium multiflorum	Annual Ryegrass	100	88

Weed seed shall be a maximum 0.15 percent by weight of the total mixture.

2.1.3 Seed Mixing

The mixing of seed shall be done by the seed supplier prior to delivery.

2.1.4 Substitutions

Substitutions will not be allowed without written request and approval from the Contracting Officer.

2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. Topsoil shall be delivered and amended as recommended by the soil test for the seed specified. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts.

2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, organic material and soil conditioners meeting the following requirements. Vermiculite shall not be used.

2.3.1 pH Adjuster

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. These materials may be burnt lime, hydrated lime, ground limestone, sulfur, or shells. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

2.3.1.1 Limestone

Limestone material shall contain a minimum calcium carbonate equivalent of 80 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 55 percent shall pass through a No. 60 sieve. To raise soil pH, ground limestone shall be used.

2.3.1.2 Hydrated Lime

Hydrated lime shall contain a minimum calcium carbonate equivalent of 110 percent. Gradation: A minimum 100 percent shall pass through a No. 8 sieve and a minimum 97 percent shall pass through a No. 60 sieve.

2.3.1.3 Burnt Lime

Burnt lime shall contain a minimum calcium carbonate equivalent of 140 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 35 percent shall pass through a No. 60 sieve.

2.3.2 Fertilizer

Fertilizer shall be as recommended by the soil test. Fertilizer shall be controlled release commercial grade, free flowing, uniform in composition, and consist of a nitrogen-phosphorus-potassium ratio. The fertilizer shall be derived from sulphur coated urea, urea formaldehyde, plastic or polymer coated pills, or isobutylenediurea (IBDU). Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients.

2.3.3 Nitrogen Carrier Fertilizer

Nitrogen Carrier Fertilizer shall be as recommended by the soil test. Nitrogen carrier fertilizer shall be commercial grade, free flowing, and uniform in composition. The fertilizer may be a liquid nitrogen solution.

2.3.4 Organic Material

Organic Material shall be as recommended by the soil test. Organic material shall consist of either bonemeal, rotted manure, decomposed wood derivatives, recycled compost, or worm castings.

2.3.4.1 Bonemeal

Bonemeal shall be finely ground, steamed bone product containing from 2 to 4 percent nitrogen and 16 to 40 percent phosphoric acid.

2.3.4.2 Rotted Manure

Rotted manure shall be unleached horse, chicken or cattle manure containing a maximum 25 percent by volume of straw, sawdust, or other bedding materials. It shall contain no chemicals or ingredients harmful to plants. The manure shall be heat treated to kill weed seeds and be free of stones, sticks, and soil.

2.3.4.3 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, yard trimmings, or other wood waste material that is free of stones, sticks, soil, and toxic substances harmful to plants, and is fully composted or stabilized with nitrogen.

2.3.4.4 Recycled Compost

Compost shall be a well decomposed, stable, weed free organic matter source. Compost shall be derived from food; agricultural or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. The compost shall possess no objectionable odors and shall not resemble the raw material from which it was derived. The material shall not contain substances toxic to plants. Gradation: The compost material shall pass through a 3/8 inch screen, possess a pH of 5.5 to 8.0, and have a moisture content between 35-55 percent by weight. The material shall not contain more than 1 percent by weight of man-made foreign matter. Compost shall be cleaned of plastic materials larger than 2 inches in length.

2.3.4.5 Worm Castings

Worm castings shall be screened from worms and food source, and shall be commercially packaged.

2.3.5 Soil Conditioner

Soil Conditioner shall be as recommended by the soil test. Soil conditioner shall be sand, super absorbent polymers, calcined clay, or gypsum for use singly or in combination to meet the requirements of the soil test.

2.3.5.1 Sand

Sand shall be clean and free of toxic materials. Gradation: A minimum 95 percent by weight shall pass a No. 10 sieve and a minimum 10 percent by weight shall pass a No. 16 sieve. Sand shall be balanced with the inclusion of trace minerals and nutrients.

2.3.5.2 Super Absorbent Polymers

To improve water retention in soils, super absorbent polymers shall be sized and applied according to the manufacturer's recommendations. Polymers shall be added as a soil amendment and be cross-linked polyacrylamide, with an absorption capacity of 250-400 times its weight. Polymers shall also be added to the seed and be a starch grafted polyacrylonitrite, with graphite added as a tacky sticker. It shall have an absorption capacity of 100 plus times its weight.

2.3.5.3 Calcined Clay

Calcined clay shall be granular particles produced from montmorillonite clay calcined to a minimum temperature of 1200 degrees F. Gradation: A minimum 90 percent shall pass a No. 8 sieve; a minimum 99 percent shall be retained on a No. 60 sieve; and a maximum 2 percent shall pass a No. 100 sieve. Maximum bulk density: A maximum 40 pounds per cubic foot.

2.3.5.4 Gypsum

Gypsum shall be commercially packaged, free flowing, and a minimum 95 percent calcium sulfate by volume.

2.3.5.5 Expanded Shale, Clay, or Slate (ESCS)

Rotary kiln produced ESCS material shall be in conformance with ASTM D 5883.

2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.4.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.4.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

2.4.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

2.4.4 Paper Fiber

Paper fiber mulch shall be recycled news print that is shredded for the purpose of mulching seed.

2.5 ASPHALT ADHESIVE

Asphalt adhesive shall conform to the following: Emulsified asphalt, conforming to ASTM D 977, Grade SS-1; and cutback asphalt, conforming to ASTM D 2028, Designation RC-70.

2.6 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. Water shall not contain elements toxic to plant life.

2.7 SURFACE EROSION CONTROL MATERIAL

Surface erosion control material shall conform to the following:

2.7.1 Turf Reinforcement Mat

Turf Reinforcement Mat (TRM) shall be a three dimensional web of bonded nylon or polymer netting conforming to the material specifications of PDT 408, Section 806.2(b) to provide permanent slope erosion protection.

2.7.2 Cellular Confinement System

The cellular confinement system shall consist of geocell material into which soil material is placed. The complete slope protection system consists of a flexible, stable and non-erodible geocell material, soil

infill, anchorage devices, polymer tendons, seed and surface erosion control blanket. The geocell material is an assembly of polyethylene sheet strips with welded seams, which when expanded form the walls of a flexible, 3-dimensional, cellular confinement system. The cellular confinement system will be installed directly over the subgrade and anchored to the slope, as necessary, to resist sliding due to gravitational and/or hydraulic forces. The geocells shall be infilled with natural soil, revegetated utilizing Formula C seed mixture, and covered with a surface erosion control blanket, in accordance with the specifications herein.

2.7.2.1 Geocell Material

Geocell material shall be perforated textured strip/cell type, manufactured from polyethylene , which is stabilized with carbon black in accordance with the following:

a. Density. ASTM D 1505: 58.4 to 60.2 pounds per cubic foot.

b. Environmental Stress Crack Resistance (ESCR). ASTM D 1693: 2000 hours.

c. Carbon Black Content. 1.5 to 2 percent by weight, through addition of a carrier with a certified carbon black content, and homogeneously distributed throughout the material.

d. Strip Sheet Thickness. ASTM D 5199: 50 mil minus 5 percent plus 10 percent.

e. Individual Cells. Uniform in shape and size when expanded, having an open area of 153.6 square inches.

f. Depth. 6.0 inches.

2.7.2.2 Cell Seam Strength

Strips shall be welded together to form the geocell material. Short-Term Seam Peel-Strength Test:

a. US Army Corps of Engineers Technical Report GL-86-19, Appendix A.

b. Cell Seam Strength: Uniform over full depth of cell.

c. Minimum Seam Peel Strength: 320 pounds for 6.0 inch depth.

2.7.2.3 Coated Tendons

Bright, high-tenacity, industrial-continuous-filament, polyester yarn woven into a round braided cord, consisting of a parallel filament inner core covered with 32 strands of braided polyester, as follows:

a. Mass. 8.1 pounds per 1000 feet.

b. Elongation. Approximately 10 percent at 1,000 pound-force load.

c. Coating. Low-density polyethylene with a thickness of 15 to 25 mils.

2.7.2.4 Uncoated Tendons

Bright, high-tenacity, industrial-continuous-filament, polyester yarn woven into a braided strap, having an elongation of 9 to 15 percent at break.

2.7.2.5 Anchors

a. Steel J-Pin Stakes as follows:

(1) Material. Mid steel or reinforcing steel rod.

(2) Galvanizing. AASHTO M 218.

(3) Rod Diameter. 0.50 inch.

(4) Stake Length. As required by manufacture's design.

b. Straight Steel Stakes as follows:

(1) Material. Mid steel or reinforcing steel rod.

(2) Galvanizing. AASHTO M 218.

(3) Rod Diameter. 0.50 inch.

(4) Stake Length. As required by manufacture's design.

c. Other Steel Stakes designed to transfer load from the infilled geocell to the tendon, as approved:

2.7.3 Turf Reinforcement Mat

Turf reinforcement mat anchors shall be as recommended by the manufacturer.

PART 3 EXECUTION

3.1 INSTALLING SEED TIME AND CONDITIONS

3.1.1 Seeding Time

PADOT Formula B seed mixture shall be sown from March 15 to June 1 for spring establishment and from August 1 to October 15 for fall establishment Ryegrass portion of PDT Formula C seed mixture shall be sown from March 1 to October 15 and the crownvetch portion will be sown any time except September and October. PDT Formula E seed mixture shall be sown from March 15 to October 15. When conditions are not appropriate for applying seed mixtures, mulch shall be temporarily applied at the rate of 2 tons per acre until a time when the seeding can be properly sown.

3.1.2 Seeding Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the seeding operations, proposed alternate times shall be submitted for approval.

3.1.3 Soil Test

Delivered topsoil, existing soil in smooth graded areas, and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, and mechanical analysis. Sample collection on site shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local growing conditions for the seed species specified.

3.2 SITE PREPARATION

3.2.1 Finished Grade and Topsoil

The Contractor shall verify that finished grades are as indicated on drawings, and the placing of topsoil, smooth grading, and compaction requirements have been completed , as specified herein, prior to the commencement of the seeding operation.

3.2.2 Application of Soil Amendments

3.2.2.1 Applying pH Adjuster

The pH adjuster shall be applied as recommended by the soil test. The pH adjuster shall be incorporated into the soil to a maximum 4 inch depth or may be incorporated as part of the tillage operation.

3.2.2.2 Applying Fertilizer

The fertilizer shall be applied as recommended by the soil test. Fertilizer shall be incorporated into the soil to a maximum 4 inch depth or may be incorporated as part of the tillage or hydroseeding operation.

3.2.2.3 Applying Soil Conditioner

The soil conditioner shall be applied as recommended by the soil test. The soil conditioner shall be spread uniformly over the soil a minimum 1 inch depth and thoroughly incorporated by tillage into the soil to a maximum 4 inch depth.

3.2.2.4 Applying Super Absorbent Polymers

Polymers shall be applied as recommended by the soil test. Polymers shall be spread uniformly over the soil as recommended by the manufacturer and thoroughly incorporated by tillage into the soil to a maximum 4 inch depth.

3.2.3 Tillage

Soil on slopes up to a maximum 3-horizontal-to-1-vertical shall be tilled to a minimum 4 inch depth. On slopes between 3-horizontal-to-1-vertical and 1-horizontal-to-1 vertical, the soil shall be tilled to a minimum 2 inch depth by scarifying with heavy rakes, or other method. Rototillers shall be used where soil conditions and length of slope permit. On slopes 1-horizontal-to-1 vertical and steeper, no tillage is required. Drainage patterns shall be maintained as indicated on the drawings. Areas compacted by construction operations shall be completely pulverized by tillage. Soil

used for repair of surface erosion or grade deficiencies shall conform to topsoil requirements. The pH adjuster, fertilizer, and soil conditioner may be applied during this procedure.

3.2.4 Prepared Surface

3.2.4.1 Preparation

The prepared surface shall be a maximum 1 inch below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas. The prepared surface shall be completed with a light raking to remove debris.

3.2.4.2 Protection

Areas with the prepared surface shall be protected from compaction or damage by vehicular or pedestrian traffic and surface erosion.

3.3 INSTALLATION

Prior to installing seed, any previously prepared surface compacted or damaged shall be reworked to meet the requirements of paragraph SITE PREPARATION. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

3.3.1 Installing Seed

Seeding method shall be Broadcast Seeding or Hydroseeding. Seeding procedure shall ensure even coverage. Gravity feed applicators, which drop seed directly from a hopper onto the prepared soil, shall not be used because of the difficulty in achieving even coverage, unless otherwise approved. Absorbent polymer powder shall be mixed with the dry seed at the rate recommended by the manufacturer. Seeding rates shall be as specified in the Erosion and Sediment Control Plan, included as an attachment to the specifications, and as follows:

SEED MIXTURE	RATE, pounds per 1000 square yards
PADOT Formula B	21
PADOT Formula C	9
PADOT Formula E	10

3.3.1.1 Broadcast Seeding

Seed shall be uniformly broadcast at the specified rate for each mixture using broadcast seeders. Half the total rate of seed application shall be broadcast in 1 direction, with the remainder of the seed rate broadcast at 90 degrees from the first direction. Seed shall be covered a maximum 1/4 inch depth by disk harrow, steel mat drag, cultipacker, or other approved device.

3.3.1.2 Rolling

The entire area shall be firmed with a roller not exceeding 90 pounds per

foot roller width. Slopes over a maximum 3-horizontal-to-1 vertical shall not be rolled.

3.3.2 Hydroseeding

Seed shall be mixed to ensure broadcast at the specified rate for each mixture. Seed and fertilizer shall be added to water and thoroughly mixed to meet the rates specified. The time period for the seed to be held in the slurry shall be a maximum 24 hours. Wood cellulose fiber mulch and tackifier shall be added at the rates recommended by the manufacturer after the seed, fertilizer, and water have been thoroughly mixed to produce a homogeneous slurry. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled. Slopes protected with Turf Reinforcement Mat shall not be seeded by hydraulic placement.

3.3.3 Mulching

3.3.3.1 Hay or Straw Mulch

Hay or straw mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the ground surface. All areas installed with seed shall be mulched on the same day as the seeding. Mulch temporary seeded areas with hay. Mulch shall be anchored immediately following spreading.

3.3.3.2 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

3.3.3.3 Asphalt Adhesive Tackifier

Asphalt adhesive tackifier shall be sprayed at a rate between 10 to 13 gallons per 1000 square feet. Sunlight shall not be completely excluded from penetrating to the ground surface.

3.3.3.4 Non-Asphaltic Tackifier

Hydrophilic colloid shall be applied at the rate recommended by the manufacturer, using hydraulic equipment suitable for thoroughly mixing with water. A uniform mixture shall be applied over the area.

3.3.3.5 Asphalt Adhesive Coated Mulch

Hay or straw mulch may be spread simultaneously with asphalt adhesive applied at a rate between 10 to 13 gallons per 1000 square feet, using power mulch equipment which shall be equipped with suitable asphalt pump and nozzle. The adhesive-coated mulch shall be applied evenly over the surface. Sunlight shall not be completely excluded from penetrating to the ground surface.

3.3.3.6 Wood Cellulose Fiber, Paper Fiber, and Recycled Paper

Wood cellulose fiber, paper fiber, or recycled paper shall be applied as part of the hydroseeding operation. The mulch shall be mixed and applied in accordance with the manufacturer's recommendations.

3.3.4 Watering Seed

Watering shall be started immediately after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over turf areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

3.4 SURFACE EROSION CONTROL

3.4.1 Surface Erosion Control Material

Where indicated or as directed, surface erosion control material shall be installed in accordance with manufacturer's instructions. Placement of the material shall be accomplished without damage to installed material or without deviation to finished grade.

3.4.1.1 Turf Reinforcement Mat (TRM)

Turf Reinforcement Mat (TRM) shall be unrolled, placed and anchored evenly and smoothly without stretching on prepared subgrade to conform to the shape of and be in contact with the soil surface. The TRM shall be anchored with appropriate anchor devices in accordance with the recommendations of the mat manufacturer. Staples or anchor pins shall be driven flush with the soil surface. Broadcast seed mixture into the mat matrix in accordance with paragraph INSTALLATION. After placing seed, uniformly place 0.5 inch to 0.75 inch of topsoil over the TRM. Work the topsoil into the TRM voids to completely fill until flush with the top of the TRM and remove excess topsoil.

3.4.1.2 Cellular Confinement System

Cellular confinement system shall be installed on prepared subgrade in accordance with manufacture's instructions. Geocell material shall be anchored at the crest of slopes as shown on the drawings. At least 3 anchor tendons shall be installed per 8 foot wide section of geocell and the geocells shall be anchored with steel stakes at a minimum 3 foot intervals along each tendon, unless closer spacings are required by the manufacturer's instructions or are indicated on the shop/fabrication drawings. Topsoil infill shall be placed in expanded cells with suitable equipment, such as an excavator, grader, front-end loader, conveyor or crane-mounted skip, in a manner which will minimize displacement of the geocell material. Cells shall be overfilled with topsoil between 1 to 2 inches and lightly tamped or rolled to leave soil flush with top edge of cell walls.

3.4.2 Temporary Seeding

The application rate shall be 10 pounds per 1000 square yards. When directed during contract delays affecting the seeding operation or when a quick cover is required to prevent surface erosion, the areas designated

shall be seeded in accordance with temporary seed species listed under paragraph SEED. At times when temporary seeding can not be properly sown, apply mulch at the rates specified above. Subsequently, temporary seeding shall be sown as soon as practical during the seeding time specified herein.

3.4.2.1 Soil Amendments

When soil amendments have not been applied to the area, the quantity of 1/2 of the required soil amendments shall be applied and the area tilled in accordance with paragraph SITE PREPARATION. The area shall be watered in accordance with paragraph Watering Seed.

3.4.2.2 Remaining Soil Amendments

The remaining soil amendments shall be applied in accordance with the paragraph TILLAGE when the surface is prepared for installing seed.

3.5 RESTORATION AND CLEAN UP

3.5.1 Restoration

Existing turf areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.

3.5.2 Clean Up

Excess and waste material shall be removed from the seeded areas and shall be disposed offsite. Adjacent paved areas shall be cleaned.

3.6 PROTECTION OF INSTALLED AREAS

Immediately upon completion of the seeding operation in an area, the area shall be protected against traffic or other use by erecting barricades, providing signage, or as directed.

3.7 SEED ESTABLISHMENT PERIOD

3.7.1 Commencement

The seed establishment period to obtain a healthy stand of grass plants shall begin on the first day of work under this contract and shall end 3 months after the last day of the seeding operation. Written calendar time period shall be furnished for the seed establishment period. When there is more than 1 seed establishment period, the boundaries of the seeded area covered for each period shall be described. The seed establishment period shall be modified for inclement weather, shut down periods, or for separate completion dates of areas.

3.7.2 Satisfactory Stand of Grass Plants

Grass plants shall be evaluated for species and health when the grass plants are a minimum 1 inch high. A satisfactory stand of grass plants from the seeding operation for permanent stabilization of all vegetated areas shall be a minimum 70 percent uniform vegetative cover.

3.7.3 Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects

and diseases; protecting embankments and ditches from surface erosion; maintaining erosion control materials and mulch; protecting installed areas from traffic; mowing; watering; and post-fertilization.

3.7.3.1 Repair or Reinstall

Unsatisfactory stand of grass plants and mulch shall be repaired or reinstalled, and eroded areas shall be repaired in accordance with paragraph SITE PREPARATION.

3.7.3.2 Maintenance Record

A record of each site visit shall be furnished, describing the maintenance work performed; areas repaired or reinstalled; and diagnosis for unsatisfactory stand of grass plants.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 03 - CONCRETE

SECTION 03015

CONCRETE: FIELD DEMONSTRATIONS

PART 1 GENERAL

1.1 SUMMARY
1.1.1 Contractor's Key Personnel
1.1.2 Construction Methods
1.1.3 Testing Requirements
1.1.4 Contractor's Records
1.2 SUBMITTALS

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL
3.2 QUALITY CONTROL
3.3 GOVERNMENT FURNISHED INFORMATION
3.4 DEMONSTRATION OF DRILLED SHAFT CONSTRUCTION
3.5 RIVER WALL TREMIE FOUNDATION DEMONSTRATION
3.6 UNDERWATER PLACEMENT OF CONCRETE
3.6.1 Physical Concrete Characteristics
3.6.2 Demonstration Facilities
3.6.2.1 General
3.6.2.2 Production of Demonstration Concrete
3.7 Execution of Field Demonstrations
3.8 CONCRETE SAMPLING AND TESTING
3.8.1 General
3.8.2 Core Samples
3.8.2.1 Demonstration Drilled Shaft
3.8.2.2 River Wall Tremie Foundation Demonstration

-- End of Section Table of Contents --

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~~two representative large diameter demonstration drilled shafts. One shaft shall be fully constructed. The other shaft will remain open and will be used to monitor the long term stability of the shaft prior to concrete placement, and will not include concrete placement.

River Wall Tremie Foundation: The Contractor shall demonstrate underwater placement of concrete in the construction of tremie foundation for the ~~cofferboxes~~non-cofferbox wall sections.

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~~a replacement demonstration shall be performed 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~~with any concrete placement.

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~~reinforcement, 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, foundation preparation, 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, a drilled shaft installation plan in accordance with Section 02466 DRILLED SHAFTS, 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". the work plan shall include methods for monitoring and reporting the open shaft.

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".

River Wall Tremie Foundation Demonstration

Drawings and narrative depicting the layout and configuration of the proposed demonstration non-cofferbox wall section, and shall include proposed methods and equipment for tremie concrete placement.

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. Test reports shall include open shaft monitoring data, and vibration monitoring data.

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~~the drilled shaft installation plan and the concrete plan, 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 that represent the feature being demonstrated, including preparation for concrete placement.

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

d. Produce concrete at the approved on-site batch plant. 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, and perform quality control in accordance with the applicable sections of the Specifications.

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 and concrete 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~~and 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~~an area chosen by the Contractor within the allowable work and access areas of the river, and approved 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 and concrete plan are ~~is received~~approved by the Contracting Officer, the Contractor shall perform the following activities:

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

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

~~2~~3) 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, and as directed by the Contracting Officer.

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

CSL testing shall be conducted at concrete ages of 3 days, 5 days and 7 days.

9) When Demonstration Shaft 1 is ~~no longer needed~~release, 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 of the rock socket, 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~~meets the fresh and hardened concrete property requirements.

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 or concrete plan as appropriate, and the revised plans 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 and concrete plan shall also be completed and ~~reviewed~~approved 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 approved 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.~~

C. Vibration Monitoring

The Contractor shall devise and install a vibration monitoring system to identify the amount of vibration created by the drilled shaft installation. The vibration shall be monitored during the drilling operations for both shafts. The system shall identify the peak particle velocity occurring in the alluvium and in the rock in at least three locations outside the drilling operation. Therefore a minimum of six monitoring devices shall be installed (3 locations for rock and alluvium). The three locations shall be selected to monitor the rate that the vibration dissipates over distance, and shall be placed to maximize the information provided during the drilling of the two shafts.

3.5 RIVER WALL TREMIE FOUNDATION DEMONSTRATION

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. To provide full representation of the project feature, the demonstration shall be located in the upper pool as close as practical to the river wall, but shall not interfere with existing facilities or intended construction. 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. 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 monolith.

The Contractor may use actual size reinforcing steel, or, at his option, may use materials to represent the steel bar, such as pvc pipe, wooden dowels or other materials of the same diameter as the reinforcing steel. The simulated reinforcing cage shall be adequately fixed and rigid, and the individual elements secured to prevent displacement during concrete placement. 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, including placement of geomembrane. 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.

3.6 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 non-cofferbox walls. This concrete must flow freely a minimum 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, as well as installation of the geomembrane covering the alluvium.

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.

3.6.1 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~~bleed control 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 concrete and the interfaces between the concrete and the various features in the demonstration facilities.

3.6.2 Demonstration Facilities

3.6.2.1 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 at representative depths 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

3.6.2.2 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~~trial batching 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, slump and slump flow changes with time, 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. Testing shall be in accordance with Section 03051 CONCRETE: MIXTURE PROPORTIONING.

~~3.5.6.1 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.~~

3.7 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 batch plant and at the point of placement. The Contractor shall provide ~~a~~adequate concrete technicians to perform all field tests on fresh concrete. The concrete technicians shall record all test data at the bath plant and 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.

3.8 CONCRETE SAMPLING AND TESTING

3.8.1 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. CSL testing shall be conducted for the demonstration shaft in accordance with Section 02466 DRILLED SHAFTS, except that CSL testing shall be conducted at concrete ages of 3 days, 5 days, and 7 days.

3.8.2 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.~~The quality of the in-place concrete shall be visually inspected by means of core extraction. Cores shall be extracted in accordance with the following subparagraphs. Coring shall not be performed until the concrete is a minimum of 21 days old, and the concrete shall have gained adequate strength to allow the cores to be extracted without damage. The Government reserves the right to order additional coring and coring of larger or smaller diameter. Additional coring required to investigate defects resulting from the Contractor's methods and procedures shall be at no cost to the Government. All cores extracted are the property of the Government. The cores shall be logged and placed in core boxes, and shall be turned over to the Government.

3.8.2.1 Demonstration Drilled Shaft

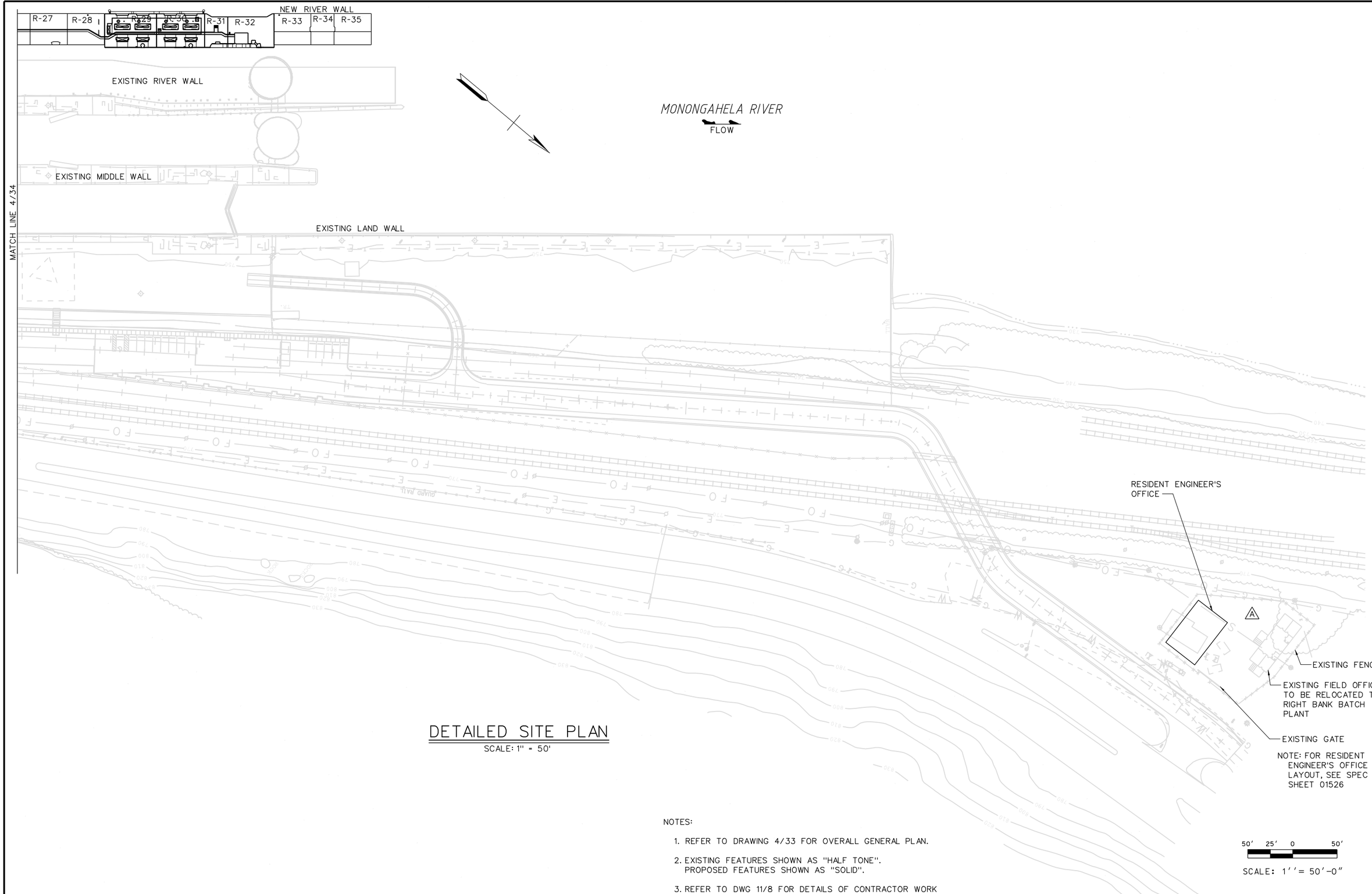
The demonstration drilled shaft shall be inspected by extracting six cores.

The location of the cores shall be one in the center of the shaft and three cores located 120 degree apart, inside the reinforcement cage, as close to the reinforcement as practical. These four cores shall have a minimum nominal diameter of 2.5 inches. The cores shall be extended into rock and shall recover a minimum of 3 feet of rock to allow for inspection of the concrete/rock interface. The remaining two cores shall be extracted from the area located between the casing and the reinforcement cage. For these two cores, the core diameter shall be an adequate size to retrieve representative samples of concrete, but shall not be greater than 2 inches. The cores shall be located 180 degrees apart and shall be taken to the tip of the casing. Drilling may be terminated if steel is encountered and prevents advancement of the drill bit.

3.8.2.2 River Wall Tremie Foundation Demonstration

The river wall tremie foundation demonstration shall be inspected by extracting a minimum of 20 cores. The location of the cores shall be as designated by the Contracting Officer, however shall target, but will not be limited to, such areas as: 1)the farthest distance from a tremie pipe, 2)the corners of the placement, 3)areas around the shafts, 4)areas at heavy reinforcement, and 5)areas within the z-pile sections. The cores shall be extended to the depth of the alluvium. Of these 20 cores, sixteen shall have a nominal diameter of 2.5 inches or larger. The remaining four cores shall have a minimum diameter of 4 inches. These four cores will be used to evaluate in-place concrete strength as well as for visual inspection. The Government will be responsible for preparing and testing specimens from the cores, however the contractor shall provide the necessary labor to assist the Government Materials Technician.

-- End of Section --



DETAILED SITE PLAN

SCALE: 1" = 50'

NOTES:

1. REFER TO DRAWING 4/33 FOR OVERALL GENERAL PLAN.
2. EXISTING FEATURES SHOWN AS "HALF TONE". PROPOSED FEATURES SHOWN AS "SOLID".
3. REFER TO DWG 11/8 FOR DETAILS OF CONTRACTOR WORK AREA LIMITS.

US Army Corps of Engineers
Pittsburgh District

Submitted by: /s/STEPHEN R. FRITZ, P.E. SECTION CHIEF
FB NO.: W911WN
Sheet 1 of 1

Design by: JOHN LOUGHRAN
Dwn by: JT/JWF
Ckd by: BLS
Submission Date: 2 APR 04
Revision Date: 9 JUN 04

User: leroy.p.boselli
Date: 08-JUN-2004 10:14
Plot Scale: 0.166667:1.000000
Pen Table:
Color Table

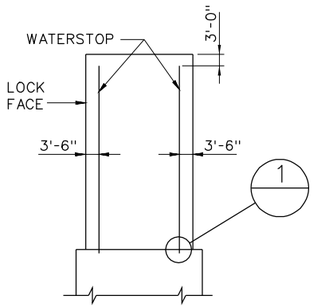
Symbol	Description	Date	Appr.
A	AMENDMENT NO. 0004	7 JUN 04	LPB

f:\M-Char Lock-C1\sheet\04035a-C-1.s01

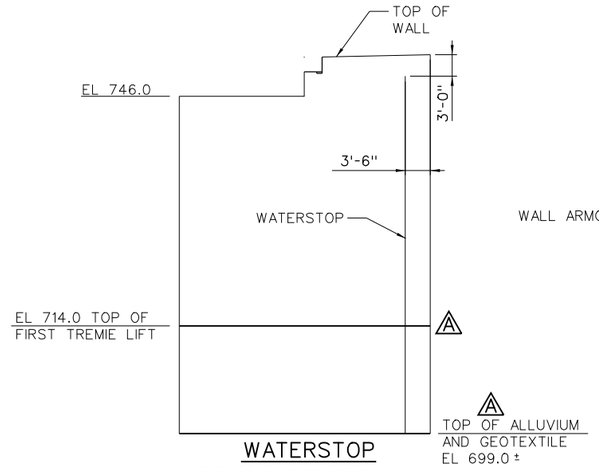
MONONGAHELA RIVER
CHARLEROI LOCKS AND DAM
LOCKS - CONTRACT #1
LOWER LOCK
DETAILED SITE PLAN
MAIN FEATURES OF WORK

Drawing Number: 037-LCH-4/35.1

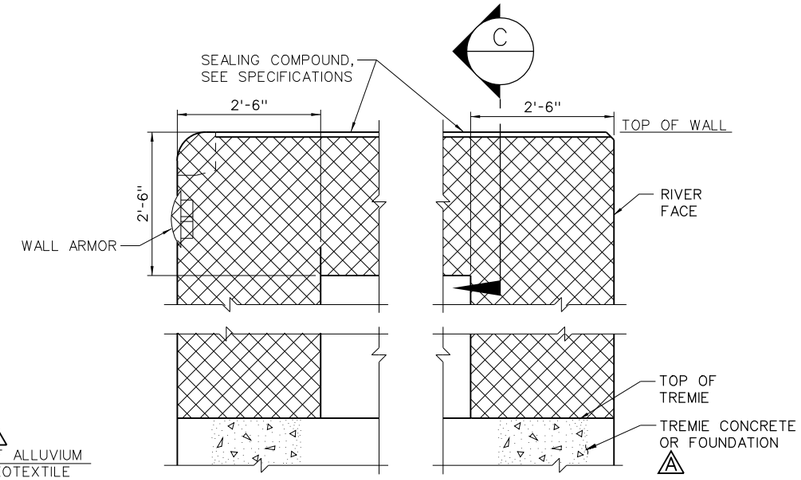
This page was intentionally left blank for duplex printing.



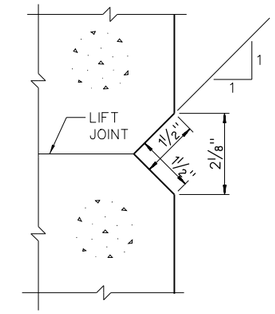
WATERSTOP
R-11 & R-12,
R-29 TO R-32
N.T.S.



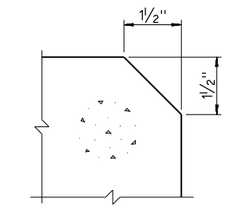
WATERSTOP
R-8 TO R-10, R-13 TO R-18,
R-26 TO R-28 AND R-33 TO R-35
SCALE: 3/32" = 1'-0"



SECTION A
(TYPICAL RIVER WALL)
SCALE: 3/4" = 1'-0"

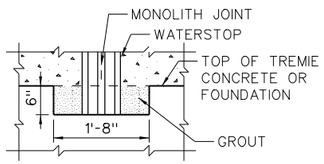


V STRIP

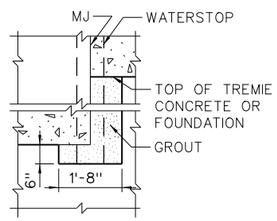


CORNER CHAMFER

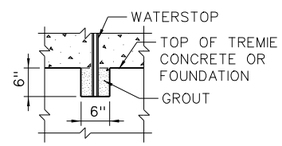
LIFT JOINT DETAILS
SCALE 3" = 1'-0"



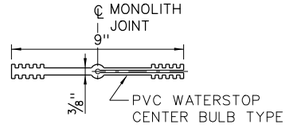
ELEVATION
SCALE: 3/4" = 1'-0"



ELEVATION
SCALE: 1/2" = 1'-0"

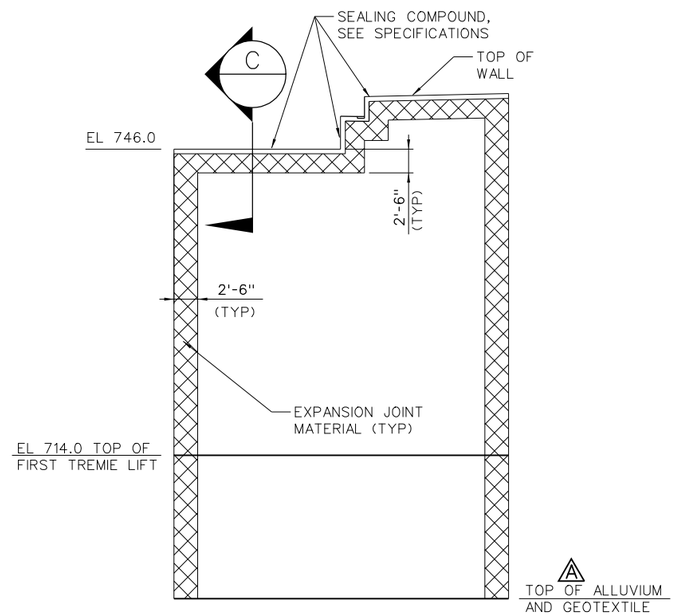


DETAIL 1
SCALE: 3/4" = 1'-0"

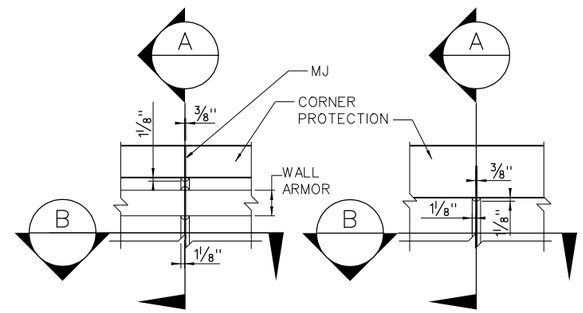


SPLIT WATERSTOP
SCALE: 3" = 1'-0"

WATERSTOP DETAILS

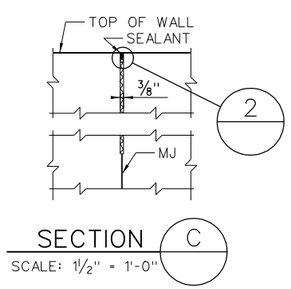


EXPANSION JOINT
R-8 TO R-10, R-13 TO R-18,
R-26 TO R-28 AND R-33 TO R-35
N.T.S.

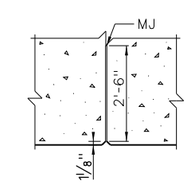


ELEVATION
WALL ARMOR
SCALE: 1/2" = 1'-0"

ELEVATION
NO WALL ARMOR
SCALE: 1/2" = 1'-0"

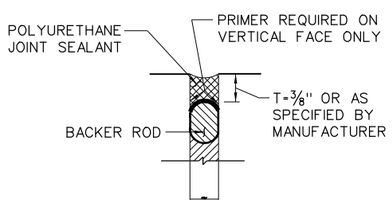


SECTION C
SCALE: 1 1/2" = 1'-0"



SECTION B
SCALE: 1/2" = 1'-0"

MONOLITH JOINT DETAILS



DETAIL 2
N.T.S.

NOTES:
1. FOR LOCATIONS OF MONOLITHS, SEE DWG 20/1.
2. PROVIDE 1 1/2" CHAMFERS ON ALL CONCRETE EDGES NOT COVERED BY BACKFILL UNLESS OTHERWISE DIRECTED BY THE CONTRACTING OFFICER.
3. PROVIDE V-STRIP (HORIZONTAL CHAMFER) AT ALL LIFT LINES NOT COVERED BY BACKFILL OR INUNDATED AT ALL TIMES BY MINIMUM POOL LEVELS UNLESS OTHERWISE DIRECTED BY THE CONTRACTING OFFICER.

SCALE: 3/4" = 1'-0"
12" 0 1' 2' 3'

SCALE: 1" = 1'-0"
12" 0 1' 2'

SCALE: 1 1/2" = 1'-0"
12" 6" 0 1'

SCALE: 12" = 1'-0"
3" 2" 1" 0

SCALE: 1/2" = 1'-0"
12" 0 1' 2' 3' 4' 5'

SCALE: 1/8" = 1'-0"
12" 0 5' 10' 15'

US Army Corps of Engineers
Pittsburgh District

Submitted by: /s/JEANINE HOEY, P.E. SECTION CHIEF
FB NO.: W911WN
Sheet 1 of 1

Design by: S. STOLTZ, P.E.
Dwn by: BEH
Ckd by: SRS
Submission Date: 14 APR 04
Revision Date: 9 JUN 04

User: leroy.p.bosetti
Date: 09-JUN-2004 12:46
Plot Scale: 0.166667:1.000000
Pen Table: Color Table

Symbol	Description	Date	Appr.
A	REV. WATERSTOP & EXP. JT. DETAILS - AMEND. NO. 4	6/9/04	BEM

F:\M-Char Lock-C1\sheet\AM4\20078-s-5.s01

MONONGAHELA RIVER
CHARLEROI LOCKS AND DAM
LOCKS - CONTRACT #1
MASONRY DETAILS
MONOLITH JOINT
JOINT MATERIAL AND WATER STOPS

Drawing Number:
037-LCH-20/78.1

This page was intentionally left blank for duplex printing.