

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
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2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
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6. ISSUED BY CODE	7. ADMINISTERED BY (If other than Item 6) CODE
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8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(X)	9A. AMENDMENT OF SOLICITATION NO.
		9B. DATED (SEE ITEM 11)
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 11)

CODE	FACILITY CODE
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11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, 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 _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your 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 ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

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

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

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 (Signature of Contracting Officer)	16C. DATE SIGNED

1. The specifications and drawings for Invitation No DACW64-03-B-0002, Dredging Bolivar Roads to Pier "B," U.S. Army Corps of Engineers Boat Basin, and U.S. Coast Guard Docking Facilities in Galveston County, Texas, Galveston Harbor and Channel, Texas, advertised 15 October 2002 and for which bids were postponed, are hereby modified as follows:

BID OPENING IS HEREBY RESCHEDULED FOR 2:00 PM, LOCAL TIME IN ROOM 175C, JADWIN BUILDING, 18 DECEMBER 2002.

(a) Specifications.

(1) STANDARD FORM 1442, Item 10 - In the second sentence, delete "within 5 days after" and substitute "at."

(2) STANDARD FORM 1442, Item 12b (Issued by Amendment No. 0003, Item (2)) - Change "5" to "2."

(3) FAR 217-7 OPTION FOR INCREASED QUANTITY - SEPARATELY PRICED LINE ITEM (MAR 1999). - The following new CLAUSE shall be added to and become part of this Invitation.

"FAR 217-7 OPTION FOR INCREASED QUANTITY - SEPARATELY PRICED LINE ITEM (MAR 1999). The Government may require the delivery of the numbered line items, identified in the Schedule as an option item, in the quantity and at the price stated in the Schedule. The Contracting Officer may exercise Option No. 1 by written notice to the Contractor within 60 days of Notice To Proceed. If Option No. 1 is not executed within 60 days of Notice to Proceed Option No. 2 will be issued at a later date. Delivery of added items shall continue at the same rate that like items are called for under the contract, unless the parties otherwise agree."

(4) BIDDING SCHEDULE, Pages 00010-1 Through 00010-3. - The enclosed Bidding Schedule, Pages 00010-1 through 00010-5 supersedes that issued with this Invitation.

(5) Page 00800-2, Paragraph 1(e) (Issued by Amendment No. 0003, Item (3)). - In the second line, change "43" to "57."

(6) Page 01100-1, Paragraph 1 (Issued by Amendment No. 0003, Item (4)). - Delete this Paragraph and substitute the following therefor:

"1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (CESWG). The Contractor will be required to commence work under this contract within 5 calendar days after the date of receipt of Notice to Proceed, to prosecute said work diligently and to complete the entire work ready for use not later than 90 calendar days after date of receipt of Notice to Proceed for Schedule No. 1, and an additional 185 calendar days for Option No. 1, if Option No. 1 is awarded before 1 February 2003. If Option No. 1 is issued, the

Contractor will mobilize onsite and commence work for Option No. 2 on 1 September 2003, and complete Option No. 2 within 185 days from 1 September 2003."

(7) Page 02319-1, Subparagraph 1.4.2. - Delete this Subparagraph and substitute the following:

"1.4.2 Excavation of Interior Side Ditch Borrow Areas. The cost of excavation from interior side ditch borrow areas to obtain material for construction of uncompacted fill levees will be included in the contract lump sum price for "Levees, Drop-outlets, and Ditches For San Jacinto Placement Area" and for "Levees, Drop-outlets, and Ditches for Pelican Island Placement Area."

(8) Page 02329-2, Subparagraph 1.6.3 - At the end of this Subparagraph, insert the following new Subparagraph:

"1.6.4 Semi-compacted Fill Levee Construction Between Stations 311+64 and 318+29, Pelican Island Placement Area. Payment for the repair and restoration of Pelican Island Levee Repair - Station 311+64 to 318+29 will be made at the contract lump sum price for "Pelican Island Levee Repair Station - 311+64 to 318+29," utilizing semi-compacted fill. This price shall include the cost of labor, material, and equipment associated with the repair."

(9) Page 02329-3, Subparagraph 3.3.3, (Issued with Amendment No. 0003) - At the end of this Subparagraph, insert the following new Subparagraph:

"3.3.4. Pelican Island Placement Area Levee Repair. The repair and restoration of the Pelican Island Placement Area levee between Stations 311+64 and 318+29 shall be as specified in the Subparagraph: Semi-compacted Fill above. If available, abandoned portions of existing levee shall be utilized first to construct the new levee foundation and to build up the new levee template. In areas where existing levee material is not available, side borrow ditch excavation shall be utilized to construct and complete the levee."

(10) SECTION 02370, CELLULAR CONCRETE MATTRESSES FOR EROSION CONTROL - The enclosed new SECTION 02370 entitled CELLULAR CONCRETE MATTRESSES FOR EROSION CONTROL shall be added to and become a part of this Invitation.

(11) SECTION 02378, GEOTEXTILES USED AS FILTERS, Paragraph 1.5, (Issued with Amendment No. 0003, Item (12)) - At the end of this Paragraph add the following new Subparagraph:

"1.5.1 Geotextile installed beneath cellular concrete mattresses shall be measured in place to the nearest square yard for protected areas as shown."

(12) SECTION 02378, GEOTEXTILES USED AS FILTERS, Paragraph 1.6, (Issued with Amendment No. 0003, Item (12)). - At the end of this Paragraph add the following new Subparagraph:

“1.6.1 Geotextile. Payment for geotextile placed beneath cellular concrete mattresses will be made at the contract unit price per square yard for “Geotextile - Cellular Concrete Mattresses,” which price shall constitute full compensation for providing plant, labor, material, and equipment and performing the operations necessary for the complete and satisfactory installation of the geotextile.”

(13) SECTION 02378, GEOTEXTILES USED AS FILTERS, Paragraph 3.2, (Issued with Amendment No. 0003, Item (12)). - At the end of this Paragraph add the following new Subparagraph:

“3.2.1 Geotextile Installation For Cellular Concrete Mattresses. The geotextile shall be placed as specified and at the locations shown. At the time of installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage. The surface to receive the geotextile shall be prepared to a relatively smooth condition free of obstructions, depressions, debris, and soft or low density pockets of material. Erosion features including rills or gullies, shall be graded out of the surface before geotextile placement. The geotextile shall be placed with the long dimension perpendicular to the centerline of the top of slope and laid smooth and free of tension, stress, folds, wrinkles, or creases. The strips shall be placed to provide a minimum width of 18 inches overlap for each joint. Temporary pinning of the textile to hold it in place until placement of cellular concrete mattress will be allowed. The temporary pins shall be removed as the concrete mattress are placed to relieve high tensile stress that may occur during placement of material on the geotextile. At least two (2) temporary pins shall be submitted for approval prior to delivery of material to the work site. Damaged geotextile, during installation or placement of the cellular concrete shall be replaced by the Contractor at no cost to the Government. The work shall be scheduled to accomplish covering the geotextile with a layer of the specified material is within 3 calendar days after placement of the geotextile. Failure to comply shall require replacement of geotextile. The geotextile shall be protected from damage prior to and during the placement of the cellular concrete mattresses. Before placement of the concrete mattresses, the Contractor shall demonstrate that the placement technique will prevent damage to the geotextile. No equipment shall be allowed on the unprotected geotextile.”

(14) SECTION 02482, DREDGING - The enclosed new SECTION 02482 entitled DREDGING supersedes that issued with this Invitation.

(b) Drawings.

(1) Sheets 1 of 43 Through 3 of 43, 5 of 43 Through 20 of 43, and 29 of 43 Through 41 of 43, and 43 of 43. - These existing Sheets shall be manually changed to read Sheets 1 of 57 through 3 of 57, 5 of 57 through 20 of 57, 29 of 57 through 41 of 57, and. Sheet 43 of 43 shall be changed to read Sheet 45 of 57.

(2) Sheet 4 of 43 - The enclosed new Sheet 4 of 57 supersedes Sheet 4 of 43 issued with this Invitation.

(3) Sheets 21 of 43 Through 28 of 43 - The enclosed new Sheets 21 of 57 through 28 of 57 supersede Sheets 21 of 43 through 28 of 43 issued with this Invitation.

(4) Sheets 42A of 43 Through 42C of 43 (Issued By Amendment No. 0003, Item (b)(4)). - These existing Sheets shall be manually renumbered to read Sheets 42 of 57 through 44 of 57.

(5) Sheets 46 of 57 Through 57 of 57 - The enclosed new Sheets 46 of 57 through 57 of 57 shall be added to and become part of this Invitation.

2. This Amendment shall be attached to and become a part of the Project Manual.

4 Encls:

1. Bd Sched, Pgs 00010-1 thru 00010-5
2. Section 02370
3. Section 02482
4. Shts 4 of 57, 21 of 57 thru 28 of 57, & 46 of 57 thru 57 of 57

**GALVESTON HARBOR AND CHANNEL,
TEXAS, BOLIVAR ROADS TO PIER "B,"
U.S. ARMY CORPS OF ENGINEERS BOAT
BASIN, AND U.S. COAST GUARD DOCKING
FACILITIES IN GALVESTON COUNTY, TEXAS,
DREDGING**

**BIDDING SCHEDULE
(TO BE ATTACHED TO STANDARD FORM 1442)**

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<u>SCHEDULE NO. 1</u>					
0001	Levees, Drop-outlets, and Ditches for San Jacinto Placement Area	1	L.S.	\$ _____	\$ _____
0002	Pelican Island Levee Repair - Stations 311+64 to 318+29	1	L.S.	\$ _____	\$ _____
0003	Cellular Concrete Mattresses	47,150	S.F.	\$ _____	\$ _____
0004	Geotextile - Cellular Concrete Mattresses	5,250	S.Y.	\$ _____	\$ _____
0005	Mobilization and Demobilization Galveston Channel	1	L.S.	\$ _____	\$ _____
0006	Dredging Galveston Channel Section No 1	687,000	C.Y.	\$ _____	\$ _____
0007	Pipelines for Galveston Channel Section No 1	1	L.S.	\$ _____	\$ _____

00010-1

(To Accompany Amendment No. 0006 to Invitation No. DACW64-03-B-0002)

INVITATION NO. DACW64-03-B-0002

**BIDDING SCHEDULE (Cont'd)
(TO BE ATTACHED TO STANDARD FORM 1442)**

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<u>SCHEDULE NO. 1 (Cont'd)</u>					
0008	Mobilization and Demobilization Corps of Engineers Boat Basin and U.S. Coast Guard Docking Facilities	1	L.S.	\$ _____	\$ _____
0009	Dredging Corps of Engineers Boat Basin Sections Nos 7 and 8	2,200	C.Y.	\$ _____	\$ _____
0010	Dredging U.S. Coast Guard Docking Facilities Sections Nos 9 and 10	28,000	C.Y.	\$ _____	\$ _____
TOTAL SCHEDULE NO. 1					\$ _____

INVITATION NO. DACW64-03-B-0002

**BIDDING SCHEDULE (Cont'd)
(TO BE ATTACHED TO STANDARD FORM 1442)**

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<u>OPTION NO. 1</u>					
0011	Levees, Drop-outlets, and Ditches for Pelican Island Placement Area	1	L.S.	\$ _____	\$ _____
0012	Dredging Galveston Harbor and Channel Sections Nos. 2-6	3,292,000	C.Y.	\$ _____	\$ _____
0013	Pipelines for Galveston Channel Sections Nos 2-6	1	L.S.	\$ _____	\$ _____
TOTAL OPTION NO. 1					\$ _____
TOTAL SCHEDULE NO. 1 AND OPTION NO. 1					\$ _____

INVITATION NO. DACW64-03-B-0002

**BIDDING SCHEDULE (Cont'd)
(TO BE ATTACHED TO STANDARD FORM 1442)**

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<u>OPTION NO. 2</u>					
0014	Mobilization and Demobilization Galveston Channel Section Nos. 2-6.	1	L.S.	\$ _____	\$ _____
0015	Levees, Drop-outlets, and Ditches for Pelican Island Placement Area	1	L.S.	\$ _____	\$ _____
0016	Dredging Galveston Harbor and Channel Sections Nos. 2-6	3,292,000	C.Y.	\$ _____	\$ _____
0017	Pipelines for Galveston Channel Sections Nos 2-6	1	L.S.	\$ _____	\$ _____
TOTAL OPTION NO. 2					\$ _____
TOTAL SCHEDULE NO. 1 AND OPTION NO. 2					\$ _____

BIDDING SCHEDULE (Cont'd)
(TO BE ATTACHED TO STANDARD FORM 1442)

1. ARITHMETIC DISCREPANCIES (EFARS 52.214-5000).

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of bidding schedule as submitted by the bidder:

- (1) Obviously misplaced decimal points will be corrected;
- (2) Discrepancy between unit price and extended price, the unit price will govern;
- (3) Apparent errors in extension of unit prices will be corrected;
- (4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

2. MODIFICATIONS (CESWG). 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 of 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 pro rata basis to every unit price in the bid schedule.

3. EVALUATION OF OPTIONS (JUL 1990) (FAR 52.217-5). Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of Options will not obligate the Government to exercise the options.

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SITE WORK

SECTION 02370 - CELLULAR CONCRETE MATTRESSES FOR EROSION CONTROL

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SECTION 02370 - CELLULAR CONCRETE MATTRESSES FOR EROSION CONTROL**PART 1 - GENERAL**

1.1 SCOPE OF WORK. The work covered in this Section consists of furnishing plant, labor, equipment, and materials and performing the operations associated with the installation of cellular concrete mattresses in accordance with the lines, grades, design, and dimensions shown and as specified herein.

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) Publications.

A 36-01	Carbon Structural Steel
A 123-02	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
C 42-99	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C 140-02A	Sampling and Testing Concrete Masonry Units and Related Units
C 476-02	Grout for Masonry

1.3 DELIVERY, STORAGE, AND HANDLING OF MATERIALS.

1.3.1 Delivery and Storage. Materials shall be inspected for damage prior to and upon delivery to the site. They shall be transported with minimal handling. Materials shall not be stored directly on the ground and shall be kept free of dirt, detrimental substances, and debris.

1.3.2 Handling. Materials handling shall ensure delivery to the site in sound undamaged condition.

1.4 SUBMITTALS. Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with the SECTION entitled SUBMITTAL PROCEDURES.

1.4.1 SD-01 Data.

1.4.1.1 Materials and Equipment: GA. Descriptive technical data shall be submitted on the blocks, cables, and cable fittings. Catalog sections, technical data sheets or test data shall be submitted showing that the products meet the properties specified. A description of the equipment to be used in the proposed method of operations shall also be submitted.

1.4.2 SD-14 Samples.

1.4.2.1 Block. GA.. At the same time as the materials data submittal, the Contractor shall submit two (2) samples of the proposed block. The samples shall be typical of the size, texture, color, and finish. If the Contracting Officer is familiar with the product, this submittal may be waived.

1.4.2.2 Cable. GA.. The Contractor shall submit two 5-foot lengths of the proposed cable along with the materials data. The lengths shall be typical of the cable to be used. If the Contracting Officer is familiar with the product, this submittal may be waived.

1.4.3 SD-18 Records.

1.4.3.1 Mattress: GA. Records to demonstrate that the finished mattress will meet the quality and properties specified herein shall be submitted.

1.5 MEASUREMENT.

1.5.1 Cellular Concrete Mattress Erosion Protection shall be measured by the square foot of surface area satisfactorily covered with the cellular concrete mattresses within the limits shown.

1.5.2 Excavation for Placement of Cellular Concrete Mattresses. Foundation preparation as specified herein shall not be measured for payment.

1.5.3 Anchors. Galvanized steel anchors shall not be measured for payment.

1.6 PAYMENT.

1.6.1 Acceptable Cellular Concrete Mattresses Placed. Payment will be made at the contract unit price per square foot for "Cellular Concrete Mattresses," which price shall include the costs of furnishing, transporting, and placing the cellular concrete mattresses; furnishing and installing the steel anchors; and clean-up as specified herein and as shown.

1.6.2 Foundation Preparation. No separate payment will be made for the foundation preparation work specified herein but will be considered a subsidiary obligation of the Contractor, the cost of which shall be included in the applicable contract price for the item to which the work pertains.

1.6.3 Anchors. No separate payment will be made for the galvanized steel anchors specified herein but will be considered a subsidiary obligation of the Contractor, the cost of which shall be included in the applicable contract price for the item to which the work pertains.

PART 2 - PRODUCTS

2.1 MATERIALS.

2.1.1 Cellular Concrete Blocks shall be precast with a minimum compressive strength of 4,000 psi, as determined by ASTM C 42 for wet cast blocks or by ASTM C 140 for dry cast blocks. The blocks shall include penetrations for revetment cables as necessary to securely bind the individual blocks into mattresses. The blocks shall be the closed-cell type and shall, as a system, be able to articulate. Conventional blocks shall have tapered sides along the longitudinal side of the mat to provide for articulation. This taper shall not be less than a combined 7 degrees between blocks. Each block shall exert an unsubmerged ground pressure of at least 40 pounds per square foot on the total unit base area circumscribing the block.

2.1.2 Polyester Revetment Cable and Fittings. Revetment cable shall be constructed of high tenacity, low elongating, continuous filament polyester fibers. Cable shall consist of a core construction comprised of parallel fibers contained within an outer jacket or cover. The weight of the parallel core shall be between 65 percent to 70 percent of the total weight of the cable. The revetment cable shall have the following physical characteristics:

Nominal Cable Diameter	Approx. Avg. Strength Lbs	Weight/100 Feet	
		Min. Lbs	Max. Lbs
5/16" (27 mm)	7,000	3.99	4.42

2.1.3 Elongation Requirements specified below are based upon stabilized new, dry cable. Relevant elongation values are as shown on the Table below. The tolerance of these values is ± 5 percent.

	% Breaking Strength		
	<u>10%</u>	<u>20%</u>	<u>30%</u>
Permanent Elongation (while working)	0.7	1.8	2.6
Elastic Elongation	0.6	1.4	2.2
Total Stretch	1.3	3.2	4.8

2.1.4 Revetment Cable. The revetment cable shall exhibit good to excellent resistance to most concentrated acids, alkalis, and solvents. Cable shall be impervious to rot, mildew, and degradation associated with marine organisms. The materials used in the construction of the cable shall not be affected by continuous immersion in fresh or salt water.

2.1.5 Cable and Fittings. Selection of cable and fittings shall ensure a safe design factor for mattresses being lifted from both ends, thereby forming a catenary. Consideration shall be taken for bending the cables around hooks or pins during lifting. Revetment cable splicing fittings shall be selected so that the resultant splice provides a minimum of 75 percent of the minimum rated cable strength. Fittings including sleeves, stops, and washers shall be in accordance with the manufacturer's recommendations.

2.1.6 Steel Anchors shall be in accordance with ASTM A 36 and shall be galvanized in accordance with ASTM A 123. The anchors shall be helical or flexible and shall be sized according to the recommendations of the manufacturer of the components of the cellular concrete mattresses.

2.2 SIZE OF CELLULAR CONCRETE MATTRESSES. The cellular concrete mattresses shall be fabricated at the manufacturer's plant or another approved location to the length shown, for each limit of new work. The mattresses shall be custom fabricated or cut on the site to fit irregular configurations.

2.2.1 Filter Fabric for the cellular concrete mattresses shall be as specified in the SECTION entitled GEOTEXTILES USED AS FILTERS.

PART 3 - EXECUTION

3.1 GENERAL. The slopes or surfaces to be protected shall be prepared as specified in the Paragraph: FOUNDATION PREPARATION below.

3.1.1 Cellular Concrete Mattresses shall be manufactured as an assembly of concrete blocks connected into mattresses by the use of revetment cables that inhibit lateral movement of the blocks. The assembled mattresses shall have an open area of between 15 and 20 percent that may be achieved by penetrations within the block and by the regular spacing of blocks. Mattresses shall be assembled as specified herein. The Contractor shall submit a description of the materials and equipment to be used in the proposed method of operations for approval and shall submit records and data to demonstrate that the finished mattress will meet the quality and properties specified herein. The Contractor shall save the Government harmless from liability arising from the use of a patented or unpatented invention used in the performance of this work.

3.1.2 Revetment Cable may extend through one (1) or more tunnels in each block to bind the mattress in both the lateral and longitudinal directions. If the blocks are staggered laterally, only provide revetment cable in the longitudinal direction. The cables shall be looped at one (1) end of the mattress and the ends of each cable spliced together at the other end of the mattress to form another set of loops. Splicing cable ends shall be with approved sleeves.

3.2 FOUNDATION PREPARATION.

3.2.1 General. The slopes upon which filter fabric and cellular concrete mattresses are to be placed shall be constructed to the lines and grades shown, and shall be as specified in the SECTION entitled EMBANKMENT CONSTRUCTION.

3.2.2 Grading. The slopes shall be graded to a smooth plane surface to ensure that intimate contact is achieved between the slope face and the filter fabric, and between the filter fabric and the entire bottom surface of the cellular concrete blocks. Slope deformities, roots, grade stakes, and stones that project more than ½ inch normal to the local slope face shall be regraded or removed. No holes, including pockmarks, slope board teeth marks, footprints, or other voids greater than 1-inch in depth shall be permitted on the local slope face. When these areas are evident they shall be brought to grade by placing tamped local soil. Adjacent slope surface shall be smoothly transitioned with minimal unevenness between them.

3.2.3 Foundation Preparation. The anchor trench hinge-point at the top of the slope shall be uniformly graded so that no dips or bumps greater than 2 inches over or under the local grade occur. The width of the anchor trench hinge-point shall also be graded uniformly to assure intimate contact between cellular concrete blocks and the underlying grade at the hinge-point. Anchor trenches and side trenches shall be backfilled after installing the mattresses and the materials tamped.

3.2.4 Inspection. The Contracting Officer will make periodic inspections of the prepared foundation area, the placement of the filter fabric and cellular concrete mattresses, and backfilling operations as the work progresses.

3.3 INSTALLATION.

3.3.1 General. Prior to the installation of filter fabric or cellular concrete mattresses the slopes shall be inspected for correctness of line and level, and shall be in compliance with the Subparagraph: Grading above. Preparation of the slopes in advance of placing the filter fabric shall be limited to 200 lineal feet and placement of the filter fabric in advance of laying the concrete cellular mattresses shall be limited to 100 lineal feet. However, the above specified lengths may be increased with approval.

3.3.2 Filter Fabric shall be installed in accordance with the SECTION entitled GEOTEXTILES USED AS FILTERS and as specified herein.

3.3.3 Cellular Concrete Mattresses shall be installed in accordance with the manufacturer's recommendations and as approved. The concrete blocks shall be placed as either prefabricated mattresses or individual blocks. Final acceptance and approval of the installation will be required.

3.3.4 Cellular Concrete Mattresses shall be placed uniformly on the slopes to the slope lines and grades in accordance with the manufacturer's recommendations, as shown or as directed. Filter cloth damaged during placement of the mattresses shall be replaced before proceeding with the work.

3.3.5 Lifting and Placing Mattresses. Cellular concrete blocks, placed as prefabricated mattresses, shall be attached to a spreader bar or other approved device to aid in the lifting and placing of the mattresses in their proper position by the use of a crane or other approved equipment.

3.3.6 Prefabricated Mattresses shall be placed side by side or end to end so that the mattresses abut each other. The maximum space or gap between mattresses shall be 2 inches. No overlapping of mattresses will be accepted and no blocks shall project vertically more than 2 inches beyond the adjacent blocks.

3.3.7 Mattress Tie-ins shall be performed by the Contractor at specified stations where a new mattress will be tied to an existing mattress. The side of the existing mattress that is to tie to the new mattress shall be untied from existing anchors. Void areas shall then be backfilled with excavated material and compacted to a density equal to the surrounding soil before placement of new geotextile and the existing and new mattresses. The two (2) mattresses shall then be tied with the cables and fasteners to form a continuous mattress.

3.3.8 Individual Hand-placed Concrete Blocks shall be subject to the spacing and level parameters specified in the Subparagraph: Prefabricated Mattresses above.

3.3.9 Grid or Mattress Placement. As adjacent grids or mattresses are placed, each block shall be secured to the corresponding block in the adjacent mattress from the top down to the bottom by fastening with manufacturer-approved fasteners.

3.3.10 Slope Placement. Placement of blocks at the flanks, toe, and top of slope shall be as shown.

3.3.11 Anchors For Mattresses. Cellular concrete mattresses shall be anchored at the bottom and at exposed sides of the ends of the erosion protection by fastening the revetment cable loop to anchors driven into the anchor trench as shown. Anchors shall be of the helical or flexible type and shall be installed at 8-foot intervals, at mattress seams along the bottom, and at 3-foot intervals along the terminal sides. The anchors shall be sized and installed in accordance with the manufacturer's recommendation for the particular mattress used and the type of soil encountered. The cellular concrete mattress anchors shall be galvanized steel. Where the mattresses terminate, the exposed sides shall be turned down and anchored every 3 feet. The top of the mattresses shall be turned down as shown. No anchors are required for the top of the mattresses.

3.3.12 Equipment that can break or damage the blocks shall not be allowed on the installed blocks.

3.3.13 Consultation. The manufacturer of the cellular concrete mattresses shall provide design and construction advice during the installation phase of the project when required.

3.3.14 Clean-up. Once installation of the cellular concrete mattresses and backfilling is completed, as shown, the Contractor shall remove excess construction materials, debris, and other objectionable materials from the site.

3.4 CONTRACTOR QUALITY CONTROL.

3.4.1 Compliance Inspection. The Contractor shall inspect for compliance with contract requirements and record the inspection of operations, including but not limited to the following, as applicable:

- (1) Preparation of surface to receive cellular concrete mattresses.
- (2) Individual concrete blocks and filter fabric - soundness and free of defects.
- (3) Cables and fittings - breaking strength.
- (4) Assembly of cellular concrete blocks bound by cables into cellular concrete mattresses.
- (5) Placement of cellular concrete mattresses and filter fabric on the prepared surface.
- (6) Anchorage of mattresses.

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SECTION 02482 - DREDGING**PART 1 - GENERAL****1.1 SCOPE OF WORK.**

1.1.1 Work to be Done. The work in this Section consists of furnishing plant, labor, materials, and equipment and performing the work required by these specifications, schedules, and drawings forming parts thereof for dredging this project as follows:

Required Depth Below MLT (Feet)	Required Width (Feet)	From Station	To Station	Distance Between Stations (Feet)
Galveston Channel				
38 & 43	1,135	-6+600	-4+000	2,600.00
36, 38 & 43	1,170	-4+000	-2+800	1,200.00
38 & 43	1,135	-2+800	-0+175	2,625.00
38 & 43	1,085	-0+175	0+185	360.00
38 & 43	1,135	0+185	1+700	1,515.00
38 & 43	1,085	1+700	5+750	4,050.00
38 & 43	985	5+750	6+600	850.00
38 & 43	1,085	6+600	8+600	2,000.00
43	1,085	8+600	11+360	2,760.00
38 & 43	1,085	11+360	13+400	2,040.00
			Subtotal	20,000.00
Corps of Engineers Facilities				
Boat Slips				
10	20	0+00	0+40	40.00
Boat Basin				
10	120-180	0+10	2+45	235.00
			Subtotal	275.00
U.S. Coast Guard Facilities				
Work Barge/Buoy Tender Basin				
15 & 17	50.9-380	0+11.5	3+30	318.50
Small Boat Slips and Basin				
10	210-280	0+03	1+16	113.00
			Subtotal	431.50
			TOTAL	20,706.50

1.1.2 The varying bottom widths and lengths to be dredged are shown on the drawings referred to in the SPECIAL CLAUSE entitled CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS. The Contractor shall remove sufficient material to provide the limiting side and end slopes specified in the Paragraph: OVERDEPTH, SIDE AND END SLOPES, below.

1.2 ORDER OF WORK.

1.2.1 Completion of Work Under Schedule No. 1. The Contractor shall commence work at San Jacinto Placement Area and at Pelican Island Levee Repairs as stated on the Bid Schedule. Work at San Jacinto Placement Area shall be completed prior to dredging Sections Nos. 1, 7, 8, 9, and 10. The Contractor shall complete dredging operations entirely in Sections 7 through 10 prior to beginning dredging operations in Section 1 with the stipulation that the dredging of Section 1 shall commence no later than 10 days upon completion of dredging Sections 7 through 10. The work at Pelican Island Levee Repairs has to be completed before 1 March 2003.

1.2.2 Completion of Work Under Schedule No. 1 and Option No. 1. The work under Schedule No. 1 and Option No. 1 can be done simultaneously. The work in Schedule No. 1 is the same as specified in the Subparagraph: Completion of Work Under Schedule No. 1, above. Dredged materials from Sections Nos. 2 through 6 shall be placed into Cells "A" and "B" using a progressional method as specified of Pelican Island Placement Area utilizing approved source points. Dredging shall commence in an easterly direction, in order, through Section 2.

1.2.3 Completion of Work Under Option No. 2. The work in Option No. 2 will be done starting 1 September 2003. Dredged materials from Sections Nos. 2 through 6 shall be placed into Cells "A" and "B" using a progressional method as specified of Pelican Island Placement Area utilizing approved source points. Dredging shall commence in an easterly direction, in order, through Section 2.

1.3 LOCATION. The Galveston Channel is located between Galveston Island and Pelican Island in Galveston, Texas.

1.4 OBSTRUCTION OF CHANNEL. The Government will not undertake to keep the Channel free from vessels or other obstructions, except to the extent of such regulations, if any, as may be prescribed by the Secretary of the Army, in accordance with the provisions of Section 7 of the River and Harbor Act approved 8 August 1917. The Contractor will be required to conduct the work using a method that will obstruct navigation as little as possible, and if the Contractor's plant does obstruct the Channel and makes the passage of vessels difficult or endanger them, said plant shall be promptly moved on the approach of a vessel as far as may be necessary to afford a practicable passage. Upon completion of the work, the Contractor shall promptly remove its plant, including ranges, buoys, piles, and other marks placed by it under this contract.

1.5 TEMPORARY REMOVAL OF AIDS TO NAVIGATION. The temporary removal or changes in locations of channel markers may be required to facilitate dredging operations. The Contractor shall notify the Contracting Officer at least 21 days prior to the date that the removal or change in location of channel markers will be required so the U.S. Coast Guard can perform the work and so navigation interests may be informed sufficiently in advance of the proposed removal or change in location.

1.6 NOTIFICATION PRIOR TO COMMENCEMENT OF DREDGING OPERATIONS. The Contractor shall notify the Area Engineer, Northern Area Office, in writing, at least 5 days prior to commencement of dredging operations, the location or locations at which a dredge or dredges will be placed on the work. This information is required in addition to the progress charts and schedules provided for in the CONTRACT CLAUSE entitled SCHEDULE FOR CONSTRUCTION CONTRACTS.

1.7 UTILITIES ACROSS THE LIMITS OF DREDGING. The following bridge, tunnels, overhead lines, and submerged lines cross the area to be dredged:

<u>Approximate Station</u>	<u>Description</u>	<u>Owner</u>
12+869	One 12-inch water line One 12-inch sewer line	Pelican Island Development Corps. Permit No. 3427

EVERY EFFORT HAS BEEN MADE TO GIVE ALL PERTINENT DETAILS ON THE LOCATION OF THE PIPELINES. THE DATA FURNISHED ON THE PLANS ARE BELIEVED TO BE SUBSTANTIALLY CORRECT. HOWEVER, THE EXACT LOCATIONS MAY VARY FROM THAT SHOWN: THEREFORE THE CONTRACTOR SHALL COOPERATE WITH THE RESPECTIVE OWNERS TO ESTABLISH THE ACTUAL POSITION OF THE PIPELINES. THE U.S. ARMY CORPS OF ENGINEERS PERMITS OF THE RESPECTIVE PIPELINES AND PREVIOUS SURVEYS ARE AVAILABLE IN THE NORTHERN AREA OFFICE.

THE FOLLOWING IS FURNISHED FOR INFORMATION ON VERIFYING PIPELINE OWNERSHIPS:

Lone Star Notification Service (NOTE: Use on Houston Ship Channel Projects only)
(Texas-One-Call) 1-713-223-4567 or 1-800-669-8344

Texas Excavation Safety System
(Dig-Tess) 1-800-344-8377.

1.8 WORK COVERED BY THE CONTRACT PRICE.

1.8.1 Mobilization and Demobilization. The contract lump sum price for "Mobilization and Demobilization Galveston Channel" and "Mobilization and Demobilization Corps of Engineers Boat Basin and U.S. Coast Guard Docking Facilities" shall include the costs in connection with mobilization and demobilization of the plant necessary to perform work under the various bid items. The contract price shall include transportation and other costs incidental to delivery of the plant and other equipment to the general work area in condition ready for operation and, after completion of the work, for removal of the plant and equipment from the work sites.

1.8.2 Dredging. The contract unit price per cubic yard for "Dredging Galveston Channel Section No. 1," "Dredging Corps of Engineers Boat Basin Sections Nos. 7 and 8," and "Dredging U.S. Coast Guard Docking Facilities Sections Nos. 9 and 10" shall include the cost of removal and placement of the material as specified in Paragraphs: CHARACTER OF MATERIALS and PLACEMENT OF EXCAVATED MATERIAL below. The contract price for dredging shall also include the costs for placing and handling pipelines to and at the Placement Areas or navigation channel, as specified, and for maintenance of perimeter embankments (levees), drop-outlets, and ditches necessary to confine the dredged material within the Placement Areas.

1.8.3 Pipelines. The contract lump sum price for "Pipelines for Galveston Channel Sections Nos. 1-6" shall include the cost to place, remove, and handle shore pipelines to and at the Placement Areas and navigation channel, as specified, for procurement of materials, and for construction of ramps or installation of culvert pipes which may be necessary in connection with laying shore pipelines.

1.9 CHARACTER OF MATERIALS. The material to be removed to restore the depths within the limits specified in the Paragraph: DESCRIPTION OF WORK, above, is composed of shoals that have accumulated over a period of time; however, some virgin material may be encountered in the allowable overdepth or side slope dredging. Bidders are expected to examine the work sites and the records of previous dredging, which are available in the Northern Area Office, and after investigation decide for themselves the character of the materials.

1.9.1 Debris. Other materials including scrap, rope, wire cable, snags, and stumps may be encountered in the specific limits and overdepth dredging and no separate payment will be made for removal and placement of this debris.

1.10 MEASUREMENT

1.10.1 Dredging. The total amount of material removed and to be paid for under this Item of the Bidding Schedule shall be measured by the cubic yard in place. The measurements shall be made by computing the volume between the bottom surface shown by fathometer soundings of the last survey made before dredging and the bottom surface shown by the fathometer soundings of a survey made as soon as practicable after the entire work specified in the Paragraph: SECTIONS below, has been completed and included within the limits of the overdepth and side and end slopes specified in the

Paragraph: OVERDEPTHS, SIDE AND END SLOPES below, less deductions that may be required for misplaced material specified in the Paragraph: PLACEMENT OF EXCAVATED MATERIAL below.

1.10.2 Electronic Positioning. In using electronic positioning, the Government will make a corrective adjustment, if applicable, in the volume computation process to compensate for the repeatability tolerance of the electronic positioning equipment, between "before-dredging" and "after-dredging" surveys. However, the contractor or the government must at least perform a cross section survey at the same station in both directions and overlay the cross sections at the designated stationing for the length of the reach in question in order to show a positioning problem. If control is determined to be a problem then control shall be immediately adjusted using GPS static positioning methods. If no determination can be made, the amount of this adjustment will be limited to a shift of plus or minus 2 meters on an azimuth from the baseline normal to the center line of the cut, of the "after-dredging" survey with respect to the "before-dredging" survey. Adjustments made in "after-dredging" cross sections will also result in a similar adjustment to the "before-dredging" cross sections in the area not dredged. The horizontal control points shown are the control points the Government will use to perform electronic surveys on the waterway. The Government does not guarantee permanent access to these control points, therefore, it may be necessary for the Contractor to establish its own network of survey points from these survey points or from other U.S. Coastal and Geodetic Survey (USCGS) monuments. Location and description of the horizontal control points which the Government plans to use to perform electronic surveys on the Galveston Channel are available at the Northern Area Office, Galveston District. The Contractor shall be responsible for establishing its own reference line to conduct hydrographic surveys and dredging operations if electronic positioning equipment is not used.

1.10.3 Drawings. The drawings already prepared represent conditions existing as of the date of their preparation. However, to reflect anticipated shoaling occurring between the dates of preparation of the drawings and the dates of the "before-dredging" sections, the estimated dredging quantities specified in the Bidding Schedule have been adjusted accordingly. The depths and elevations shown will be verified and corrected by fathometer soundings taken by the Government before dredging. Determination of quantities removed and the deductions made therefrom to determine quantities by in-place measurement to be paid for in the area specified, after having once been made will not be reopened, except on evidence of collusion, fraud, or obvious error.

1.11 PAYMENT.

1.11.1 Mobilization and Demobilization. Payment for this item will be included in the contract lump sum price pursuant to the conditions of the SPECIAL CLAUSE entitled PAYMENT FOR MOBILIZATION AND DEMOBILIZATION.

1.11.2 Dredging. Payment for "Dredging" shall include the cost of removal and placement of material as specified in Paragraphs: CHARACTER OF MATERIALS above and PLACEMENT OF EXCAVATED MATERIAL below. Payment shall also include the

cost of maintaining the levees, drop-outlets, and ditches in the applicable Placement Areas.

1.11.3 Partial Payments. Monthly partial payments for "Dredging" will be based on approximate quantities determined by fathometer soundings or sweepings taken behind the dredge.

1.11.4 Pipelines. Monthly partial payments for "Pipelines" will be made based on estimates of the work completed during the period up to 80 percent of the contract price; the remaining 20 percent will be paid in the first monthly partial payment after removal of the pipeline and final clean-up of the pipeline route.

PART 2 - PRODUCTS

2.1 BRIDGE-TO-BRIDGE RADIOTELEPHONE EQUIPMENT. Dredge and self-propelled attendant floating plant shall be radiotelephone equipped to comply with the provisions of the Vessel Bridge-to-Bridge Radiotelephone Act (Public Law 92-63). This will require, as a minimum, the radiotelephone equipment capable of transmitting and receiving on 156.65 MHZ (Channel 13). Multi-channel equipment will also require 156.8 MHZ (Channel 16). Dredge tugs and tenders will be considered towing vessels within the meaning of the Act.

PART 3 - EXECUTION

3.1 ESTIMATED QUANTITIES.

3.1.1 Required Dredging Prism. The total estimated quantity of material necessary to be removed from the required dredging prism, exclusive of allowable overdepth, to complete the work specified in the Paragraph: SCOPE OF WORK above, is 2,695,000 cubic yards, in-place measurement, including anticipated shoaling occurring prior to the dates of the "before-dredging" sections.

GALVESTON HARBOR NAVIGATION CHANNEL(BASIC)	570,000 Cubic Yards
GALVESTON HARBOR NAVIGATION CHANNEL(OPTION)	2,100,000 cubic yards
CORPS OF ENGINEERS BOAT BASIN	1,000 Cubic Yards
COAST GUARD DOCKING FACILITIES	24,000 Cubic Yards
TOTAL	2,695,000 Cubic Yards

3.1.2 Overdepth. The maximum amount of allowable overdepth dredging is estimated to be 1,314,200 cubic yards, in-place measurement, including anticipated shoaling occurring prior to the dates of the "before-dredging" sections.

GALVESTON HARBOR NAVIGATION CHANNEL(BASIC)	117,000 Cubic Yards
GALVESTON HARBOR NAVIGATION CHANNEL(OPTION)	1,192,000 Cubic Yards
CORPS OF ENGINEERS BOAT BASIN	1,200 Cubic Yards
COAST GUARD DOCKING FACILITIES	4,000 Cubic Yards
TOTAL	1,314,200 Cubic Yards

3.1.3 Estimated Quantities. Within the limit of available funds, the Contractor will be required to excavate the entire quantity of material necessary to complete the work specified in the Paragraph: SCOPE OF WORK above, be it more or less than the amounts above estimated. The work is to be done in accordance with this contract and at the contract price or prices, subject to the provisions of NON-REGULATED SPECIAL CONTRACT REQUIREMENTS CLAUSE entitled VARIATIONS IN ESTIMATED QUANTITIES - DREDGING.

3.2 SECTIONS. For the purpose of acceptance, the dredging work under the Bid Items of the Bidding Schedule is divided into Sections, as follows:

BID SCHEDULE NO. 1						
Section No.	From Station	To Station	Length of Section (Feet)	(1)(2) Prescribed Depth (CY)	(2) Allowable Overdepth (CY)	(2) Total Estimated (CY)
Galveston Channel						
1	-6+600	-3+600	3,000	570,000	117,000	687,000
		Subtotal	3,000	570,000	117,000	687,000
Corps of Engineers Facilities						
7-Boat Slips	0+00	0+40	40.00	1,000	200	1,200
8-Boat Basin	0+10	2+45	235.00	0	1,000	1,000
		Subtotal	275.00	1,000	1,200	2,200
U.S. Coast Guard Facilities						
9-Work Barge/Buoy Tender Basin	0+11.5	3+30	318.50	21,000	3,000	24,000
10-Small Boat Slips and Boat Basin	0+03	1+16	113.00	3,000	1,000	4,000
		Subtotal	431.50	24,000	4,000	28,000
Total Schedule No. 1			3,706.50	595,000	122,200	717,200

OPTION NO. 1						
Section No.	From Station	To Station	Length of Section (Feet)	(1)(2) Prescribed Depth (CY)	(2) Allowable Overdepth (CY)	(2) Total Estimated (CY)
Galveston Channel						
2	-3+600	0+400	4,000	409,000	289,000	698,000
3	0+400	4+400	4,000	404,000	265,000	669,000
4	4+400	8+800	4,400	411,000	290,000	701,000
5	8+800	11+000	2,200	515,000	162,000	677,000
6	11+000	13+400	2,400	361,000	186,000	547,000
		Subtotal	17,000	2,100,000	1,192,000	3,292,000
COMBINED TOTALS		Totals	20,706.5	2,695,000	1,314,200	4,009,200
<p>(1) The term "prescribed depth" is synonymous with the term "required depth" and "required dredging prism" used elsewhere in these specifications.</p> <p>(2) Includes anticipated shoaling.</p>						

3.3 PLACEMENT OF EXCAVATED MATERIAL

3.3.1 General. The Contractor shall inspect the proposed Placement Areas to ensure that using the Areas for placement operations will not place it in violation of the applicable Federal, State, or local statutes concerning fish and wildlife. Particular statutes which the Contractor shall consider include, but are not limited to, the Federal Migratory Bird Treaty Act and the Endangered Species Act of 1973. The material excavated shall be transported and deposited in the Placement Areas shown. Except as otherwise noted, material will not be deposited or allowed to flow into project channels or into a bayou or stream tributary to the Waterway, or into an existing drainage outlet ditch, canal, water intake or outlet facility, nor shall materials be allowed to flow onto improved areas including highways and roads in or adjacent to the Placement Areas. In the event a stream, bayou drainage outlet, ditch, canal, water intake or outlet facility becomes shoaled as a result of the dredging or placement operations, the Contractor shall promptly remove these shoals and the material shall be placed in the Placement Areas. Dragging or washing operations to remove the shoals will not be permitted. Holes dug on the banks for deadmen or anchorage shall be filled. The Contractor shall adequately inspect its placement operations in the Placement Areas daily to reduce the possibility of accidental breaching of levees and spillway with resulting spillage of dredged materials outside the Area. If levee failures occur while materials are being pumped into the Placement Areas, dredging operations shall be stopped immediately, and the deposit of material in the Area shall not be resumed until the confining structures have been restored to an approved condition. Materials shall be deposited so

that no water is impounded to impede natural drainage. Once placement operations are completed in a confined area for which the Placement Area is being used, the boards on the spillway of that Placement Area shall be removed at a proper rate to allow drainage of the Area. Every effort has been made to give the pertinent details on the location of utility pipelines, structures, and other facilities that may be encountered in performing the levee and spillway work. The data shown are substantially correct. However, the Contractor shall investigate existing conditions and satisfy itself as to the existence of additional construction that may interfere with the work specified herein. In confined areas, levee and spillway work required shall be completed and accepted prior to placement operations in that Area. Confined areas shall be maintained in operational condition until completion and acceptance of the work in this contract. The NON-REGULATED SPECIAL CONTRACT REQUIREMENTS CLAUSE entitled DAMAGE TO WORK is only applicable to damage of levees and other non-dredging items.

3.3.1.1 U. S. Coast Guard Docking Facilities and Corps of Engineers Boat Basin. The material dredged from the U.S. Coast Guard Docking Facilities and Corps of Engineers Boat Basin may be deposited into the Federal (deep-draft) navigation channel, provided the discharge pipe is laid on the channel bottom so that the discharge point is submerged in a direction perpendicular to the channel alignment and the material is discharged at a point located a distance of between 300 and 400 feet measured from the centerline of the Federal (deep-draft) navigation channel.

3.3.2 Placement Areas.

3.3.2.1 Pelican Island Placement Area. The Contractor shall place materials dredged from Sections 2 through 6 into Pelican Island Placement Area. The drawings include a plan sheet of the Placement Area with typical as-built sections of the embankment. It will be the responsibility of the Contractor to maintain and control the elevation of the existing perimeter embankments (levees) as necessary to contain the materials dredged from the specified channel sections. Dredged materials shall be placed into Cells "A" and "B" only, at the "access points" shown. There are four (4) access points and two (2) discharge corridors for Cell "A", and two (2) access points and two (2) discharge corridors for Cell "B". The access points shown are located at the corners of the existing perimeter levees at the intersection of the theoretical embankment centerlines. The discharge pipelines shall be placed over the embankment (levee) crown at the access points, within a tolerance of 20 feet on either side of the intersection of the theoretical embankment centerline. The Contractor is required to deposit all dredged materials at a minimum distance of 100 feet from the access point inside the Placement Area or from the inside toe of the levee or berm, whichever is the farthest point towards the interior, so that the discharged effluent materials will not overflow the perimeter embankments. The Contractor may utilize any of the access points at any time, and may use the discharge corridors along the south levees. If the Contractor elects to use an access point where there is no discharge corridor shown, the Contractor shall be required to monitor and control the movement of the discharge point of the pipeline inside the placement area, to ensure an even build-up of materials to the interior of the Placement Area, and to prevent overflowing of the perimeter embankments. If the Contractor elects to use an access point into a discharge corridor, the Contractor shall be required to monitor and control the movement of the discharge

point of the pipeline inside the Placement Area to ensure an even build-up of material throughout the discharge corridor, and to prevent overflowing of the perimeter embankments, while progressing along the discharge corridors, as shown. If dredged material is not expected to be pumped prior to 15 March 2003, the Contractor will flood Cells A and B and maintain the flooded state until dredging commences. This action will require that work on Pelican Island Placement Area be completed in a time frame to allow the pumping of water into Cells A and B. The Contractor shall make the necessary adjustments to equipment and labor to accomplish the work to facilitate the use of this Placement Area when dredging in the reaches designated to be placed in the Area is started. There is a bird window for the Area between 15 March and 31 August and the purpose of flooding is to prevent the use of the Area for nesting and allow its use during this time period.

3.3.2.2 Coordination. Prior to dredging the channel stations or Sections specified below, the Contractor shall be required to coordinate its dredging operations as follows:

- (1) U.S. Coast Guard Docking Facilities. At least 6 weeks prior to dredging Sections 9 and 10, the Contractor shall coordinate its dredging operations with Mr. Harvey Ingram, or Chief Allen Floyd of the U.S. Coast Guard, Base Galveston. Mr. Ingram can be reached by telephone at (409) 766-5656, and Chief Floyd can be reached at the same number, or by pager at (409) 942-5732.
- (2) U.S. Army Corps of Engineers Boat Basin. Prior to dredging Sections 7 and 8, and the reach of channel adjacent to the Government Hopper Dredge Dock, the Contractor shall coordinate its dredging operations with Mr. William Hopkins of the Corps of Engineers at (409) 766-6313.

3.3.2.3 San Jacinto Placement Area. The Contractor shall place materials dredged from Section 1, including materials placed in the channel from Sections 7 through 10, into the San Jacinto Placement Area. The drawings include a plan sheet of the Placement Area with typical as-built sections of the embankment. It will be the responsibility of the Contractor to maintain and control the elevation of the existing perimeter embankments (levees) as necessary to contain the materials dredged from the specified channel sections. Dredged materials will be placed into Cell "A" only, using the "access points" shown. There are three (3) access points and one (1) discharge corridors for this Placement Area. The access points shown are located at the corners of the existing perimeter embankments (levees) at the intersection of the theoretical embankment centerlines. The discharge pipelines shall be placed over the embankment (levee) crown at the access points, within a tolerance of 20 feet on either side of the intersection of the theoretical embankment (levee) centerline. The Contractor is required to deposit all dredged materials at a minimum distance of 100 feet from the access point inside the Placement Area, so that the discharged effluent materials will not overflow the perimeter embankments. The Contractor shall utilize the access points for this Placement Area in the order shown. At access points 1 and 2, where there is no discharge corridor shown, the Contractor shall be required to monitor and control the movement of the discharge point of the pipeline inside the Placement Area for each

access point, to ensure an even build-up of materials to the interior of the Placement Area, and to prevent overflowing of the perimeter embankments. At the last access point (3), the Contractor may utilize the discharge corridor shown. If the discharge corridor is used, the Contractor shall be required to monitor and control the movement of the discharge point of the pipeline inside the Placement Area to ensure an even build-up of material throughout the discharge corridor, and to prevent overflowing of the perimeter embankments, while progressing along the discharge corridors, as shown.

3.3.2.4 Levee Volume. The following “neat-line volumes” have been used by the U.S. Army Corps of Engineers to prepare the Government estimate. The volumes are estimated only and the Contractor is responsible to interpret the volume numbers used to prepare his estimate for bid opening. “Neat-line Volumes” is defined as the unadjusted, raw quantities computed from the levee templates. The percentage for items including overbuilding, compaction, settlement, foundation displacement, construction waste, etc. is the responsibility and decision of the Contractor. The volume figures for the various Placement Areas in this contract are as follows:

PLACEMENT AREA	LEVEE VOLUMES
Pelican Island	302,228 cubic yards
Pelican Island Levee Repair Sta. 311+64 to 318+29	46,000 cubic yards
San Jacinto	118,400 cubic yards

3.3.3 Pipelines.

3.3.3.1 Routes. The dredge pipeline routes to the Placement Areas shall follow closely the locations shown. Detail right-of way drawings showing the location of the pipeline routes with respect to property lines are available for inspection at the Northern Area Office, Galveston District Office.

3.3.3.2 Location. Every effort has been made to give pertinent details on the location of utility pipelines and other facilities which may be encountered in trenching or jacking operations. The data shown are substantially correct. However, the Contractor shall investigate existing conditions and satisfy itself as to the existence of additional construction which may interfere with pipeline laying specified herein.

3.3.3.3 Submerged Dredge Pipeline. If the Contractor elects to use a submerged section in the dredge discharge pipeline for crossing a navigable channel it may do so without the formality of obtaining a Department of the Army permit for work or structures in navigable waters. The Contractor shall coordinate the submerged pipeline crossings with the U.S. Coast Guard Marine Safety Office (MSO), U.S. Coast Guard Vessel Traffic Service (VTS), and the Houston Pilots Association (HPA). At least 5 days shall be allowed for comments and their comments shall be coordinated with the Contracting Officer. Concerns regarding impact of navigation will be considered and final resolution will be made by the Contractor, Contracting Officer, MSO, VTS, and HPA. However, three (3) copies of detailed plans of the submerged section shall be

submitted and approved prior to use of the submerged section. The plans shall indicate clearly the width and depth of the navigation opening and the method used to mark it by day and by night for the safety of navigation. The minimum bottom width of the submerged section shall not be less than 200-feet wide for channels whose authorized width is greater than 200 feet. The minimum bottom width of the submerged section for channels whose authorized width is less than 200 feet shall be the width of the authorized Federal Channel. The highest point on the pipe or ball connection occurring across the bottom width of a submerged section shall not be higher than 44 feet below MLT in the Galveston Channel project. Lighted buoys, meeting the requirements of the U.S. Coast Guard Regulation 33 C.F.R. 62.25, shall be provided by the Contractor to mark the navigation opening. A red buoy exhibiting a quick flashing red light shall be used to mark the right side of the opening and a black buoy exhibiting a quick flashing green light shall be used to mark the left side of the opening. The frequency of the flashes shall be not less than 60 per minute. "Right side" and "left side" of the opening shall be in conformance with the lateral system of buoyage established by the U.S. Coast Guard. Requirements for the lighted buoys and description of the lateral system of buoyage will be found in the U.S. Coast Guard Publication CG 208 entitled "Aids to Navigation." Lights to be displayed on pipelines shall be in accordance with the U.S. Coast Guard Regulation 33 CFR 80.23.

3.3.4 Unauthorized Placement of Material.

3.3.4.1 Misplaced Material. Excavated material that is deposited elsewhere than in places designated or approved will not be paid for and the Contractor may be required to remove the misplaced excavated material and deposit it where directed at the its expense.

3.3.4.2 Debris Disposal. During the progress of the work, the Contractor shall not deposit worn out discharge pipe, wire rope, scrap metal, timbers, or other rubbish or obstructive material in the Placement Areas, except as specified herein, or along the banks of the navigable waters. This material, together with scrap, rope, wire cable, piles, pipe, or other obstructive material which may be encountered during the dredging operations, shall be disposed by the Contractor at approved locations.

3.3.5 Easements. Permits authorizing the laying of shore pipe, and for placement of dredged material in the Placement Areas, are on file and available for examination in the Northern Area Office of the U. S. Army Corps of Engineers, Jadwin Building, 2000 Fort Point Road, Galveston, Texas. The instruments authorizing the laying of shore pipelines may contain certain restrictions relative to specific route, location, and general use of the land. These instruments form a part of these specifications and the Contractor shall strictly comply with the terms thereof.

3.3.6 Preservation of Public and Private Property.

3.3.6.1 Damages. Fences, roads, ditches, private or public grounds, and other structures or improvements damaged as a result of the Contractor's operations herein specified shall be repaired or rebuilt by the Contractor at its expense. The areas used by the Contractor in laying and maintaining pipelines shall be restored to the same or as

good a condition as existed prior to commencement of the work. Upon completion of the work, the ends of culverts shall be fully closed with wooden bulkheads and trenches and bank cuts shall be backfilled to original ground level.

3.3.6.2 Restoration. The Contractor shall preserve and protect the existing informational and directional signs, camp facilities, water wells and tanks, station markers, mile markers, and mooring piles which have been established along either bank of the Waterway within the reaches of the dredging operations specified herein. The Contractor shall be liable for and will be required to replace or restore at its expense the signs, camp facilities, water wells and tanks, markers, and mooring piles damaged or destroyed as a result of dredging operations herein specified.

3.3.7 Alternate Placement Areas Proposed by Contractor with Bid.

3.3.7.1 Alternate Placement Areas. If placement areas other than those provided under these plans and specifications are proposed, the Contractor shall furnish, with its bid, written permission from the owners for the use of the substitute placement areas and written permission from the owners of the properties involved in obtaining access to the substitute placement areas. The Contractor shall coordinate the use of the substitute placement areas with Federal, State, and local fish and wildlife, conservation and pollution control agencies and shall submit, with its bid, documentation that demonstrates compliance with the applicable laws and regulations pertinent to designation and coordination of dredged material placement areas. The Galveston District shall be consulted for specific requirements.

3.3.7.2 Data Submittal. The award of a contract will be subject to the approval of the proposed Contractor-furnished placement areas and unless the foregoing required data are furnished with the bid at the time of bid opening, the bid for the use of the proposed substitute placement areas will be considered non-responsive.

3.3.8 Alternate Placement Areas Proposed by Contractor After Award of Contract. If, after award of the contract, a placement area other than that specified herein is proposed, its acceptance will be subject to approval. The coordination requirements of the Subparagraph: Alternate Placement Areas above, shall be met. Expenses incurred in connection with providing and making available another placement area shall be borne by the Contractor. Materials deposited thereon and operations in connection therewith shall be at the Contractor's risk.

3.4 OVERDEPTH, SIDE AND END SLOPES.

3.4.1. Overdepth. To cover inaccuracies of the dredging process, material actually removed from within the specific areas to be dredged to depths as specified in the Paragraph: Table of Allowable Overdepth, Side and End Slopes below, will be estimated and paid for at contract price or prices.

3.4.2. Side and End Slopes. Material actually removed from within limits as approved, to provide for final side and end slopes as specified in the Paragraph: Table of Allowable Overdepth, Side and End Slopes below, but not in excess of the amounts originally above these limiting side and end slopes will be estimated and paid for, whether dredged in original position or by dredging space below the pay slope plane at the bottom of the slope for upslope material capable of falling into the cut. In computing the limiting amount of side and end slopes dredging, net dimensions, without allowance for overdepth, will be used.

3.4.3 Excessive Dredging. Material taken from beyond the limits as extended in the Subparagraphs: Overdepth, and Side and End Slopes, above, will be deducted from the total amount dredged as excessive overdepth dredging or excessive side or end slope dredging, for which payment will not be made. Nothing herein shall be construed to prevent payment for the removal of shoals performed in accordance with the applicable provisions of either the NON-REGULATED SPECIAL CONTRACT REQUIREMENTS CLAUSES entitled FINAL EXAMINATION AND ACCEPTANCE or SHOALING.

3.4.4 Table of Allowable Overdepth, Side and End Slopes.

From Station	To Station	Allowable Overdepth (Feet Below Required Depth)	Final				Above Plane (Feet Below MLT)
			Side Slope Grade		End Slope Grade		
			Vertical	Horizontal	Vertical	Horizontal	
Galveston Channel							
-6+000	---	---	---	---	1	2	43
-6+000	-6+000	2	1	2	---	---	43
-6+000	-4+000	2	1	2	---	---	38 & 43
-4+000	-2+800	2	1	2	---	---	36,38 & 43
-2+800	8+600	2	1	2	---	---	38 & 43
8+600	11+360	2	1	2	---	---	43
13+360	13+400	2	1	2	---	---	38 & 43
13+400	---	---	---	---	1	2	38 & 43
Corps of Engineers Facilities							
Boat Slips							
0+00	---	---	---	---	---	---	10
0+00	0+40	1	1	0	---	---	10
0+40	---	---	---	---	---	---	10
Boat Basin							
0+10	---	---	---	---	---	---	10
0+10	2+45	1	1	0	---	---	10
2+45	---	---	---	---	---	---	10

U.S. Coast Guard Facilities							
Work Barge/Buoy Tender Basin							
0+11.5	---	---	---	---	---	---	15 & 17
0+11.5	3+30	1	1	2.5	---	---	15 & 17
3+30	---	1	---	---	1	3	15 & 17
Small Boat Slips and Boat Basin							
0+03	---	---	---	---	---	---	10
0+03	1+16	1	1	0	---	---	10
0+03	---	---	---	---	---	---	10

3.5 HOUSTON-GALVESTON VESSEL TRAFFIC SERVICE AREA. The Contractor shall comply with the following requirements while operating within the Houston-Galveston Vessel Traffic Service (VTS) area.

3.5.1 General. When a dredge or floating plant is to be operated within the Houston-Galveston VTS Area the master shall furnish the Vessel Traffic Center the following report at least 30 minutes prior to beginning operations:

- (1) Location of intended operation.
- (2) Description of intended operation including Channel obstructions.
- (3) Configuration of pipelines, if any, crossing the Channel.
- (4) Termination point of pipelines, if any, crossing the Channel.
- (5) Time required to re-open Channel or move for vessel traffic.
- (6) Operating impairments, including VHF-FM radios.

3.5.2 Report Changes. The master of a dredge or floating plant shall immediately notify the VTS of changes to the above report and at the completion of operations.

3.5.3 Vessel Traffic Service Location. The Houston-Galveston VTS Area consists of the navigable Channels between the Galveston Entrance Channel Buoy 1 and the Houston Turning Basin, Galveston Channel, Texas City Channel, Bayport Channel, the Gulf Intracoastal Waterway, and Galveston-Freeport Cutoff from mile 346 to mile 352.

3.5.4 Communications with the Vessel Traffic Center, call sign "HOUSTON TRAFFIC," shall be accomplished via VHF-FM Channel 12. The Traffic Center guards both Channel 12 and Channel 13 on a 24 hour basis.

3.5.5 Operations. The master of a dredge of floating plant shall be aware of and comply with the provisions of the Order Relating to Lightering and Bunkering Operations and Multiple Vessel Moorings and will notify the Houston-Galveston VTS when refueling operations are to be conducted.

3.6 REPORTING REQUIREMENT. The Contractor shall prepare and maintain a daily Dredging Report using the Galveston District's automated Contractor's Daily Report database. This database will replace SWG Form 89. The program will be provided to the Contractor using 3.5-inch diskettes at the pre-construction conference. Instructions and demonstration on the installation and use of this software will also be provided at the pre-construction conference. The Contractor will need an IBM compatible with a minimum of a 486/66 processor with 8 Mb of RAM running Microsoft Windows 3.11 or Microsoft Windows 95. Hard drive space needed to install the program and accommodate the data will be approximately 15 Mb. Printing will be best accomplished with either a LaserJet or Inkjet Printer on 8.5- by 11-inch paper in the portrait mode. Modem settings will be automatically handled at the point of transmission, but the Contractor is required to know what serial communications (COM) port it has used for the modem (for example: COM1, COM2, or COM3). A telephone number for transmitting the data by modem to the District server will also be provided at the pre-construction conference. The Contractor will however have the option of submitting the data either by diskette or by modem. If the Contractor elects to submit the data by modem the Contractor shall submit the data on a daily basis. If the Contractor elects to submit the reports by diskette, the data will still be submitted on a daily basis when possible. Coordination on delays shall be made with the Area Engineer or its designated representative. The Contractor will be required to print and sign reports and submit the original hard copies to the Area Engineer to verify authentication. Monthly reports will be generated by the District Office using the reporting features of the database. If technical problems arise, the point of contact for this matter will be Tim Baumer at (409) 766-3874.

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