

# 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)
-------------------------------	-------------------	----------------------------------	--------------------------------

6. ISSUED BY  CODE	7. ADMINISTERED BY (If other than Item 6)  CODE
--------------------------	-------------------------------------------------------

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	

### 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	16B. UNITED STATES OF AMERICA
15C. DATE SIGNED	16C. DATE SIGNED
(Signature of person authorized to sign)	(Signature of Contracting Officer)

1. The specifications and drawings for Invitation No. DACW64-02-B-0015, Dredging, Main Channel Aransas Bay and Tributary Channel to Aransas Pass in Nueces, Aransas, and San Patricio Counties, Texas, Gulf Intracoastal Waterway, Texas, advertised 19 February 2002, and for which bid opening is rescheduled for 2 April 2002, are hereby modified as follows:

(a) Specifications.

(1) BIDDING SCHEDULE, Pages 00010-1 Through 00010-3 (Issued by Amendment No. 0002). -The enclosed Bidding Schedule, Pages 00010-1 through 00010-3, supersedes that issued by Amendment No. 0002 to this Invitation.

(2) Page 01100-1, Paragraph 1. - In the second line, change “dredging” to “work.”

(3) SECTION 02331 (Issued by Amendment No. 0001). - On Page 2, delete Subparagraph 1.5.3 and substitute the following:

“1.5.3 Borrow Area Excavation for semi-compacted or uncompacted fill construction at Placement Areas Nos. 3 and 131 shall not be measured for payment.”

(4) SECTION 02331 (Issued by Amendment No. 0001). - On Page 2, Subparagraph 1.5.4, in the first line after the words “semi-compacted fill,” add “at Placement Area No. 5.”

(5) SECTION 02331 (Issued by Amendment No. 0001). - On Page 3, Subparagraph 1.6.4, in the third line, after the words “Area No. 5)” delete the period and add “and “Borrow Excavation (Placement Area No. 131).”

(6) SECTION 02331 (Issued by Amendment No. 0001). - On Page 4, Subparagraph 3.3.3, delete this Subparagraph and substitute the following therefore:

“3.3.3 Placement Area No 131. Levees in Placement Area No. 131 shall be raised to +25.0 MLT using suitable material borrow excavation, as shown. On the reach at Station 0+00 to 15+00, the levee shall be hauled. Material can be hauled from the adjacent abandoned training levee or from the borrow area. Levees shall have minimum 1 Vertical to 3 Horizontal slopes. Placement Area No. 131 shall be constructed to a minimum 10-foot crown width as shown, with the exception that the new spillway where a 24-foot crown is required. When borrowing material adjacent to the levees in the Placement Area, a minimum berm of 50 feet shall be provided between the toe of the levee and borrow area. Borrow areas and areas to receive fill shall be stripped of vegetation to ensure proper bonding of material. The borrow areas shall have minimum side slopes of 1 Vertical to 3 Horizontal. The levees shall be constructed utilizing satisfactory borrow materials at their natural moisture content. However, if in the Contracting Officer's opinion, the material becomes

excessively wetted or dried, the Contractor shall take the steps necessary to dry or wet the material before continuing with construction of the levees. Levees built with haul fill shall meet the requirements of Subparagraph ~~Semi-compacted~~ Fill above. Levee and Drop-outlet work required at the Placement Area shall be completed and accepted prior to commencement of placement operations in the Area. Confined areas shall be maintained in operational condition until completion and acceptance of the work under this contract. Costs for maintaining the levees once construction has been completed and accepted shall be included in the contract price for items to which it pertains.

(7) ~~SECTION 02382, STONE EROSION PROTECTION.~~ - The enclosed new SECTION 02382 entitled STONE EROSION PROTECTION shall be added to and become part of this Invitation.

(8) ~~SECTION 02482, DREDGING (Issued by Amendment No. 0001).~~ - Delete this Section and substitute the enclosed new SECTION 02482 entitled DREDGING therefore.

(9) ~~SECTION 02619, PIPE.~~ - The enclosed new SECTION 02619 entitled PIPE shall be added to and become part of this Invitation.

(10) ~~SECTION 02700, DROP-OUTLET STRUCTURES.~~ - The enclosed new SECTION entitled DROP-OUTLET STRUCTURES supersedes that issued with this Invitation.

(b) Drawings.

(1) Sheet 14. - The enclosed new Sheet 14 supersedes that issued with this Invitation.

(2) Sheets 15 and 16. - The enclosed new Sheets 15 and 16 supersede those issued with Amendment No. 0001 to this Invitation.

(3) Sheet 21. - In the PLACEMENT STRUCTURE BOX under PLACEMENT AREA NO. 131, remove all numbers and add "NEW STRUCTURE."

(4) Sheet 22, - The enclosed new Sheet 22 is to be added to and become a part of this Invitation

(5) Existing Sheets 22 and 23. - Sheets 22 and 23, issued with Amendment No. 0001, shall be renumbered to read Sheets 23 and 24.

(6) All sheets shall be manually renumbered from "1 of 23 to 23 of 23" to "1 of 24 to 24 of 24".

2. This amendment shall be attached to and become a part of the specifications.

6 Encls

1. Bd Sched, Pgs 00010-1 thru 00010-3
2. Section 02382
3. Section 02482
4. Section 02619
5. Section 02700
6. Sheets 14, 15, 16, and 22 of 24

File 7522S

INVITATION NO. DACW64-02-B-0015

**GULF INTRACOASTAL WATERWAY, TEXAS,  
MAIN CHANNEL ARANSAS BAY AND  
TRIBUTARY CHANNEL TO ARANSAS PASS  
IN NUECES, ARANSAS, AND SAN PACTICIO  
COUNTIES, TEXAS, DREDGING**

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

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<b><u>SCHEDULE NO. 1</u></b>					
0001	Levees, Drop-outlets, and Ditches	1	L.S.	\$ _____	\$ _____
0002	Borrow Excavation (Placement Area No.5)	40,000	C.Y.	\$ _____	\$ _____
0002	Borrow Excavation (Placement (Area No131)	17,000	C.Y.	\$ _____	\$ _____
0003	Stone (1 - 2,500 lbs)	20	TONS	\$ _____	\$ _____
<b>MAIN CHANNEL ARANSAS BAY</b>					
0004	Mobilization and Demobilization Sec. Nos. 1 thru 14	1	L.S.	\$ _____	\$ _____
0005	Dredging Sec. Nos. 1 thru 14	1,841,000	C.Y.	\$ _____	\$ _____
<b>TRIBUTARY CHANNEL TO ARANSAS PASS</b>					
0006	Mobilization and Demobilization Sec. Nos. 15 thru 17	1	L.S.	\$ _____	\$ _____
0007	Dredging Sec. Nos. 15 thru 17	387,000	C.Y.	\$ _____	\$ _____
<b>TOTAL SCHEDULE NO. 1</b>					\$ _____

00010-1

(To Accompany Amendment No. 0004 to Invitation No. DACW64-02-B-0015)

**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.

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

**4. SALES TAX EXEMPTION.** The following blanks are not a part of your bid price. See Block 17 on Standard Form 1442. The Texas Tax Code has changed. If you intend seeking a sales tax exemption on this contract, complete the following. Such provides the "separated contract" requirement now critical to your obtaining an exemption certificate. For information concerning tax exemptions please contact the Comptroller of Public Accounts at 1 800-252-5555.

Materials:     \$ \_\_\_\_\_

Services:       \$ \_\_\_\_\_

Total:         \$ \_\_\_\_\_

- - o O o - -

**SECTION TABLE OF CONTENTS****SITE WORK****SECTION 02382 - STONE EROSION PROTECTION**

<b>PARAGRAPH</b>	<b><u>TITLE</u></b>	<b><u>PAGE NOS.</u></b>
<b>PART 1 - GENERAL</b>		
1.1	SCOPE OF WORK.....	02382-01
1.2	ACCESS TO WORK SITE.....	02382-01
1.3	REFERENCES.....	02382-01
1.4	SUBMITTALS.....	02382-02
1.5	MEASUREMENT.....	02382-02
1.6	PAYMENT.....	02382-03
<b>PART 2 - PRODUCTS</b>		
2.1	MATERIALS.....	02382-04
2.2	STONE SOURCES.....	02382-04
2.3	QUALITY COMPLIANCE TESTING.....	02382-04
2.4	STONE QUALITY.....	02382-04
2.5	STONE ACCEPTANCE.....	02382-05
2.6	REJECTED STONE.....	02382-06
2.7	PERIODIC TESTING.....	02382-06
2.8	STONE SIZE.....	02382-06
<b>PART 3 - EXECUTION</b>		
3.1	PLACEMENT.....	02382-06
3.2	CONTRACTOR QUALITY CONTROL.....	02382-08

**SECTION 02382 - STONE EROSION PROTECTION****PART 1 - GENERAL**

**1.1 SCOPE OF WORK.** The work in this Section consists of furnishing and installing stone erosion.

**1.2 ACCESS TO WORK SITE.** Work site can only be accessed by waterborne transport. Access channels shall be mechanically dredged.

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

American Society for Testing and Materials (ASTM) Publications.

C 88-99A	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
C 97-96	Absorption and Bulk Specific Gravity of Dimension Stone
C 127-88 (R 1993)	Specific Gravity and Absorption of Coarse Aggregate
C 131-96	Resistance to degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
C 136-96	Sieve Analysis of Fine and Coarse Aggregates
C 170-90 (R 1999)	Compressive Strength of Dimension Stone
C 295-98	Petrographic Examination of Aggregate for Concrete
C 535-96 (E1-1996)	Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
D 75-97	Standard Practice for Sampling Aggregates

C 1141-95

Substitute Ocean Water

D 5313-92  
(R1997)

Evaluation of Durability of Rock for Erosion  
Control Under Wetting and Drying Conditions.

**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 to the Contracting Officer in accordance with the SECTION entitled SUBMITTAL PROCEDURES:

1.4.1 SD-13 Certificates.

1.4.1.1 Supplier's Certificates: GA. Certificates that demonstrate compliance with the stone quality and gradation.

**1.5 MEASUREMENT.**

1.5.1 Stone to complete the sections is as shown and shall be measured by the short ton for payment by Barge Displacement Method.

1.5.1.1 Barge Displacement Method. Stone shall be measured in short tons of 2,000 pounds each. Barge displacement measurements will be accepted for determination of the weight of stone placed in the finished section. The barge shall be gaged at a protected location near the site as approved. Each barge shall be fitted by the Contractor, at Contractor's expense, with gages graduated either to inches or tenths of a foot, located either inside or outside of the hull, as directed, and attached solidly to the hull. These gages shall be located near each end of the vessel on opposite sides and two (2) additional gages shall be located amidship. If located inside the hull, provision shall be made for the free passage of the outside water to a transparent tube placed or capable of being placed in contact with the gage. If located outside upon wooden hulls, the gages shall be protected by solid fenders or recessed into the planking, or if upon steel hulls, the gage marks may be placed directly on the plates and identified by punch marks. Gages shall be placed so that their zeros are below water when the vessel is in its normal trim, light, and free from water. In lieu of the gages in the interior of the barge, the Contractor may, at Contractor's discretion, provide an equal number of wells for determining the amount of the load. Walls shall be located as specified for interior gages and shall be constructed as approve.

1.5.1.2 Fore and Aft Displacements, due to load, shall not differ more than 10 percent from their mean for the determination of tonnage of each barge load of stone ready for placement. In determining the tonnage of cargo, the change in gage readings due to discharge of the cargo will be used.

1.5.1.3 Barge Displacement Tables. The barges shall be fitted for the work sufficiently ahead of the time fixed for commencement to enable the Contracting Officer to measure them accurately before work is started. The Contractor will be required at its expense to place the barges in dry dock for measurement and furnish materials and

facilities for taking the necessary measurements for preparing barge displacement tables. The Contractor shall pump the water from barges when so requested but no pumping of a barge shall be done between the time it is gaged loaded and light to determine the amount of a barge load.

1.5.1.4 Repairs or Additions made to the barges during the progress of the work shall be promptly reported to the Contracting Officer. During the progress of the work when the Contracting Officer deems it advisable or necessary, each barge shall be re-measured at the expense of the Contractor and under the supervision of the Contracting Officer. No barge shall be used which is not in a seaworthy condition or which leaks excessively. The barges used shall be constructed so that they do not bend or warp when loaded and make the gages unreliable. Each barge load shall contain only one (1) class of stone.

1.5.1.5 Load. To determine the load, measurements shall be taken immediately before a barge starts for its point of unloading and immediately after it returns from that point. Measurements shall be taken on lighted barges as applicable. The gages will be read by the Contracting Officer and the Contractor is invited to be present when the readings are taken. Disagreements on the part of the Contractor as to the weight of stone will be reported to the Contracting Officer in writing within 10 days of their occurrence. To ensure the use of the proper weight of surrounding water in calculating the weight of stone from the barge gage readings, the Government will take hydrometer measurements alongside each barge when it is gaged loaded and light. Other methods of measurement may be used when approved.

1.5.2 Slope Shore Protection Stone. Stone to complete the slope shore protection is as shown and shall be measured by the ton for payment.

1.5.3 Filter Fabric to complete the acceptance section is as shown and shall not be measured for payment.

1.5.4 Excavation and Disposal of Material. Slope preparation required for the placement of stone shore protection on the fill shall not be measured for payment. Material excavated shall not be wasted but placed and graded to drain as directed.

1.5.5 Sampling and Testing shall not be measured for payment.

## **1.6 PAYMENT.**

1.6.1 Shore Protection Stone. Payment for furnishing and placing the stone shore protection will be made at the applicable contract unit price per ton for "Stone" which price shall include costs of labor, plant, materials, geotextile, and equipment required to complete the work specified herein and as shown.

## **PART 2 - PRODUCTS**

**2.1 MATERIALS.** The Contractor shall make arrangements, pay royalties, and secure the permits for procurement, furnishing, and transporting stone. The Contractor shall vary the quarrying, processing, loading, and placing operations to produce the sizes and quality of stone specified. If the stone being furnished by the Contractor does not meet the requirements as specified herein, the Contractor shall furnish, at no additional cost to the Government, other stone meeting these requirements.

### **2.2 STONE SOURCES.**

2.2.1 Authorization. Before stone is produced from a source for completion of the work under this contract, the source of stone shall be approved. Approval of a stone source shall not be construed as a waiver of the right of the Government to require the Contractor to furnish stone that complies as specified herein. Materials produced from localized areas, zones, or strata will be rejected when these materials do not comply as specified herein.

2.2.2 Source Documentation. Authorization of a proposed stone source will be based on test results and service records. Current U. S. Army Corps of Engineers test results shall be required as specified in the Paragraph: QUALITY COMPLIANCE TESTING, below. The Contracting Officer may elect to use either past Corps of Engineers test results or a combination of service records along with Corps approved test results from other agencies or private laboratories. A service record is considered acceptable if stone from the proposed source has remained sound and functional after at least 10 years of exposure on a project similar to the one to be constructed under this contract.

### **2.3 QUALITY COMPLIANCE TESTING**

2.3.1 Samples. If required, samples for U. S. Army Corps of Engineers testing shall be submitted a minimum of 60 days in advance of the time when the stone will be required in the work. Stone from a proposed source or sources shall be tested by the Contractor for quality compliance.

### **2.4 STONE QUALITY.**

2.4.1 Stone shall meet the following test requirements:

<u>Test</u>	<u>Test Method</u>	<u>Requirements</u>
Specific Gravity (Bulk SSD)	ASTM C 127	(2.60) Minimum
Absorption	ASTM C 127	(3.0%) Maximum
Wetting and Drying	ASTM D 5313 <sup>(1)</sup>	No fracturing <sup>(2)</sup>

Abrasion Loss

ASTM C 131  
ASTM C 535

(40%) Max. loss<sup>(3)</sup>

- (1) The testing procedure used in ASTM D 5313 shall include testing each sample in potable and in salt water prepared in accordance with ASTM C1141.
- (2) Weakening and loss of individual surface particles is permissible unless bonding of the surface grains softens and causes general disintegration of the surface material.
- (3) Stone that has a loss greater than the specified limit will be accepted if the Contractor demonstrates that the stone has a satisfactory service record that exceeds 10 years.

2.4.1.1 In addition to the above tests, the stone shall be subjected to a Petrographic and X-ray Diffraction analysis in accordance with ASTM C 295. The stone shall not contain expansive clays. Test procedure for Petrographic and X-ray Diffraction is performed according to ASTM C 295, except for the following:

- (1) A colored microscope photograph shall be made of each stone type, including igneous, sedimentary, or metamorphic and the individual minerals within the stone type shall be identified by labels and arrows upon the photograph.
- (2) Detailed macroscopic and microscopic descriptions shall be made of the stone, to include the entire mineral constituents, individual sizes, their approximate percentages and mineralogical histories. A description of stone hardness, texture, weathering, and durability factors shall be discussed. Pictures of the source wall within the quarry to show any layering and lithology shall be included.
- (3) A written summary of the suitability of stone for use as armor stone based on the Petrographic and X-ray tests and the abrasion loss (L.A. Rattler) shall be presented in the final laboratory report on stone quality.

**2.5 STONE ACCEPTANCE.** Prior to placement, stone shall be subject to approval. Approval of stone shall not constitute acceptance of all stone from a source. Approved stone shall be: of the same lithology as the original stone from which test results or service records were taken as a basis for authorization of the source, sound, durable, hard; and free from laminations, weak cleavages, undesirable weathering, blasting or handling-induced fractures, or fracture zones which subtend more than 1/3 of the total circumference of the stone along the plane of fracturing. The stone shall be of good quality so that it will not disintegrate from the action of air, water, or the conditions of handling and placing; shall be clean and free from earth, clay, refuse,

or adherent coatings; shall be angular quarried material with a shape that assures interlocking with adjacent stone, and the greatest dimension of each piece shall not be greater than 3 times the least dimension.

**2.6 REJECTED STONE.** Stone of unsuitable quality or size distribution as specified will be rejected and shall be promptly removed from the project at no expense to the Government. Portions of the work specified herein containing rejected stone will be considered unacceptable and incomplete.

**2.7 PERIODIC TESTING.** Riprap taken from a particular source shall be tested and certified in terms of gradation and specific gravity for each 8,000 tons of riprap stone shipped. A copy of each certification shall be submitted 5 days before placement of that stone. Gradation testing shall be in accordance with ASTM C 136; however, due to the stone size the stone shall be individually weighed and measured. Specific gravity testing shall be in accordance with the procedures specified in the Paragraph: STONE QUALITY above. Testing shall commence prior to shipment of the material. Sampling and gradation tests performed by the Contractor shall be as indicated and the Contracting Officer shall be given 7 days notice to witness the tests. Test results shall be submitted upon completion of each test. Additional sampling and testing of a load of material delivered to the project site shall be at the Contracting Officer's discretion, randomly chosen up to a maximum of five (5) tests. Tests shall be performed by an approved testing laboratory on samples selected by the Contracting Officer. The Government reserves the right to perform the tests. Costs for this additional sampling and testing shall be at the Contractor's expense.

**2.8 STONE SIZE.**

**STONE EROSION PROTECTION**

<u>Design Stone Dimensions (inches)</u>	<u>Percent of Stone by Weight Less than Design Stone Size (%)</u>	<u>Weight of Design Stone Size (pounds)</u>
29.7	70 - 100	2,500
17.5	40 - 65	500
3.7	20 - 45	100
2.2	0 - 15	5
0.5	0 - 5	1

**PART 3 - EXECUTION**

**3.1 PLACEMENT.**

3.1.1 General. The required quantity of stone shall be placed at the discharge end of the effluent pipe as specified herein and as shown. To ensure successful erosion protection at the discharge site adjustments to the template shown will be made by the Government.

### 3.1.2 Site Preparation.

3.1.2.1 Slope Preparation shall consist of removal of debris and filling of noticeable holes and voids at the bottom of the existing mattress-protected slopes. Holes or abrupt changes in elevation within an area extending out 15 feet from the toe of the mattress and to a distance of 10 feet to either side of the discharge pipes shall be graded smooth with no elevations within this area deviating more than 0.5-foot from the mean elevation. Required borrow material for the effort shall be obtained from within submerged adjacent areas between the discharge area and the Channel.

3.1.2.2 Filter Cloth. Sections of filter cloth to be supplied by the Government shall be placed on the smooth, prepared rock foundation area using a method that will face overlapped material away from the direction of pipe discharge. Minimum overlap of 2 feet shall be required at all locations. The edges of the filter cloth shall extend a minimum of 1 or 2 feet beyond the edges of the placed rock.

3.1.3 Misplaced Material. Material that escapes or is lost while loading, transporting or placing riprap, or which is deposited other than in the area shown or a change approved in writing, shall be removed and re-deposited where directed at Contractor's expense.

3.1.4 Misplaced Equipment. If, during progress of the work, the Contractor loses, dumps, throws overboard, sinks, or misplaces material, plant, machinery or appurtenances that may be dangerous to or interfere with uses of the Waterway and cause pollution of the waters, the Contracting Officer shall be notified immediately. The Contracting Officer shall be given the description and location of these obstructions and removal by the Contractor shall be as directed. If the Contractor refuses, neglects or delays compliance with the above requirements, these obstructions may be removed by the Government and the cost of removal will be deducted from the money due or to become due to the Contractor.

3.1.5 Placement. The riprap stone shall be placed so that a reasonably well-graded mass is produced with a minimum practicable percentage of voids. Riprap shall be constructed to the lines and grades shown. Riprap shall be placed to its full course thickness in one (1) operation, using a method that will avoid damage to the geotextile. Stone shall be allowed to fall no more than 5 feet from the bottom of the clam or other bucket and top surface of the stone work for work within 5 feet of the water level. For underwater work, where the work surface is more than 5 feet below the water level, the maximum drop shall be 5 feet. In no case shall the drop be greater than that which may cause damage to the geotextile. An otherwise allowable height, using the Contractor's approved placement method, will not be permitted if it is shown to cause segregation of stone sizes, breakage of individual stones, or damage to the filter fabric. In these cases, allowable drop heights will be developed on-site, between the Contracting Officer and Contractor, based on actual performance. The Contractor shall maintain the riprap layer until accepted and if material is displaced or the surface damaged, replacement shall be made to the indicated lines and grades, at the Contractor's expense. Self-propelled equipment shall not be used on the slopes.

### **3.2 CONTRACTOR QUALITY CONTROL.**

3.2.1 Compliance Inspection. The Contractor shall inspect for compliance with the contract requirements and record the inspection of operations.

- - o O o - -

**SECTION TABLE OF CONTENTS****SITE WORK****SECTION 02482 - DREDGING**

<b>PARAGRAPH</b>	<b>TITLE</b>	<b>PAGE NOS.</b>
<b>PART 1 - GENERAL</b>		
1.1	SCOPE OF WORK. . . . .	02482-01
1.2	SUBMITTALS . . . . .	02482-01
1.3	LOCATION. . . . .	02482-02
1.4	OBSTRUCTION OF CHANNEL . . . . .	02482-02
1.5	TEMPORARY REMOVAL OF AIDS TO NAVIGATION. . . . .	02482-02
1.6	NOTIFICATION PRIOR TO COMMENCEMENT OF DREDGING OPERATIONS . . . . .	02482-02
1.7	UTILITIES ACROSS THE LIMITS OF DREDGING. . . . .	02482-02
1.8	WORK COVERED BY THE CONTRACT PRICE . . . . .	02482-03
1.9	CHARACTER OF MATERIALS. . . . .	02482-03
1.10	MEASUREMENT . . . . .	02482-04
1.11	PAYMENT . . . . .	02482-05
<b>PART 2 - PRODUCTS</b>		
2.1	BRIDGE-TO-BRIDGE RADIO- TELEPHONE EQUIPMENT. . . . .	02482-05
<b>PART 3 - EXECUTION</b>		
3.1	ESTIMATED QUANTITIES. . . . .	02482-05
3.2	SECTIONS . . . . .	02482-07
3.3	ORDER OF WORK . . . . .	02482-07
3.4	PLACEMENT OF EXCAVATED MATERIAL. . . . .	02482-08
3.5	OVERDEPTH, SIDE AND END SLOPES . . . . .	02482-15
3.6	REPORTING REQUIREMENT . . . . .	02482-16

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

1.1.1 Work to be Done. The work covered 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)
<b>MAIN CHANNEL ACROSS ARANSAS BAY</b>				
16	125	830+000	833+700	3,700
16	125-238	833+700	834+000	300
16	238	834+000	836+200	2,200
16	238-125	836+200	836+500	300
16	125	836+500	900+000	63,500
			<b>SUBTOTAL</b>	<b>70,000</b>
<b>TRIBUTARY CHANNEL TO ARANSAS PASS</b>				
16	175	185+00	245+00	6,000
16	175-125	245+00	250+00	500
16	125	250+00	321+19	7,119
16	125-433	321+19	324+42	323
			<b>SUBTOTAL</b>	<b>13,942</b>
			<b>TOTAL</b>	<b>83,942</b>

1.1.2 The varying bottom width(s) and lengths to be dredged are shown on the drawings referred to in the SPECIAL CONTRACT REQUIREMENTS, STANDARD CLAUSE entitled CONTRACT DRAWINGS 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 SUBMITTALS** shall be in accordance with provisions as specified herein.

**1.3 LOCATION.** The Main Channel across Aransas Bay reach to be dredged extends from vicinity of Rockport, Texas to Aransas Pass, Texas. The Tributary Channel to Aransas Pass extends from the Aransas Pass Turning Basin in Aransas Pass, Texas to the Corpus Christi Ship Channel near Port Aransas, 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 the 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 endangers them, the 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 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, at the Southern Area Office, in writing, at least 10 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 areas to be dredged:

Approximate Station	Description	Owner
<b><u>MAIN CHANNEL ACROSS ARANSAS BAY</u></b>		
870+336	One 8-inch Pipeline	Channel Industries Gas Co.
884+863	One 6-inch Pipeline	Channel Industries Gas Co.
<b><u>TRIBUTARY CHANNEL TO ARANSAS PASS</u></b>		
230+85	One 3-inch Pipeline	Mobile Oil Corp.
231+44	One 3-inch Pipeline	Mobile Oil Corp.

**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 SOUTHERN AREA OFFICE.**

THE FOLLOWING IS FURNISHED FOR INFORMATION TO VERIFY PIPELINE OWNERSHIPS:

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 price for "Mobilization and Demobilization (Sec. Nos. 1 thru 14)" and "Mobilization and Demobilization (Sec. Nos. 15 thru 17)" 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 the completion of the work, for removal of the plant and equipment from the work sites.

1.8.2 Dredging. The contract price per cubic yard for "Dredging (Sec. Nos. 1 thru 14)" and "Dredging (Sec. Nos. 15 thru 17)" 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.

### **1.9 CHARACTER OF MATERIALS.**

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

1.9.2 Debris. Other materials, including scrap, rope, wire cable, snag, and stumps may be encountered in the specified limits and overdepth dredging. No separate payment will be made for removal and disposal of this debris.

## **1.10 MEASUREMENT.**

1.10.1 Dredging. The total amount of material removed 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: OVERDEPTH, 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 Ledge Rock. If ledge rock is present, the amount removed and to be paid for will be measured by the cubic yard in-place by computing the volume between the top surface of the rock as shown by the probings of the last survey made before drilling and blasting and the bottom surface shown by a probing survey made before drilling and blasting and the bottom surface shown by a probing survey made as soon as practicable after completion of the work and included within the limits of the overdepth, side and end slopes specified in the Subparagraph: Table of Allowable Overdepth, Side and End Slopes below, less deductions that may be required for misplaced materials specified in the Paragraph: PLACEMENT OF EXCAVATED MATERIAL, below. The quantity of material other than ledge rock removed and to be paid for will be determined by subtracting the quantity of ledge rock as measured above, from the total quantity of material removed and to be paid for.

1.10.3 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. The amount of this adjustment will be limited to a shift of plus or minus 3 meters on an azimuth from the baseline normal to the centerline 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. Coast 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 Gulf Intracoastal Waterway project is available at the Southern Area Office, Corpus Christi Location. 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.

1.10.4 Drawings. The drawings already prepared as specified in the SPECIAL CONTRACT REQUIREMENTS, STANDARD CLAUSE entitled CONTRACT DRAWINGS AND SPECIFICATIONS represent conditions existing as of the date of their preparation (average existing conditions). However, to reflect anticipated shoaling or scour occurring

between the dates of preparation of the drawings and the dates of the "before-dredging" sections, the estimated dredging quantities shown in the Bidding Schedule have been adjusted accordingly. The depths and elevations shown thereon 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 made pursuant to the conditions of the SPECIAL CONTRACT REQUIREMENTS, STANDARD CLAUSE entitled PAYMENT FOR MOBILIZATION AND DEMOBILIZATION.

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

1.11.3 Drop-outlet Structures. Costs in connection with the Drop-outlet work shall be included in the contract lump sum price for "Levees, Drop-outlets, and Ditches."

**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 quantities of material necessary to be removed from the required dredging prism, exclusive of allowable overdepth, to complete the work specified in the Paragraph: DESCRIPTION OF WORK above, in cubic yards in-place measurement, including anticipated shoaling occurring prior to the dates of the "before-dredging" sections are as follows:

MAIN CHANNEL ACROSS ARANSAS BAY	1,175,000	Cubic Yards
TRIBUTARY CHANNEL TO ARANSAS PASS	227,000	Cubic Yards
<b>TOTAL</b>	<b>1,402,000</b>	<b>Cubic Yards</b>

3.1.2 Overdepth. The maximum amount of allowable overdepth dredging is estimated in cubic yards in-place measurement, including anticipated shoaling occurring prior to the dates of the "before-dredging" sections are as follows:

MAIN CHANNEL ACROSS ARANSAS BAY	666,000 Cubic Yards
TRIBUTARY CHANNEL TO ARANSAS PASS	160,000 Cubic Yards
<b>TOTAL</b>	826,000 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: DESCRIPTION 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 Items on the Bidding Schedule are divided into Sections, as follows:

Section No.	From Station	To Station	Length of Section (Feet)	(1)(2) Prescribed Depth (CY)	(2) Allowable Overdepth (CY)	(2) Total Estimated (CY)
<b>MAIN CHANNEL ACROSS ARANSAS BAY</b>						
1	830+000	835+000	5,000	78,000	56,000	134,000
2	835+000	840+000	5,000	170,000	58,000	228,000
3	840+000	845+000	5,000	155,000	46,000	201,000
4	845+000	850+000	5,000	102,000	46,000	148,000
5	850+000	855+000	5,000	53,000	46,000	99,000
6	855+000	860+000	5,000	65,000	46,000	111,000
7	860+000	865+000	5,000	92,000	46,000	138,000
8	865+000	870+000	5,000	90,000	46,000	136,000
9	870+000	875+000	5,000	76,000	46,000	122,000
10	875+000	880+000	5,000	81,000	46,000	127,000
11	880+000	885+000	5,000	62,000	46,000	108,000
12	885+000	890+000	5,000	35,000	46,000	81,000
13	890+000	895+000	5,000	63,000	46,000	109,000
14	895+000	900+000	5,000	53,000	46,000	99,000
<b>SUBTOTAL</b>			<b>70,000</b>	<b>1,175,000</b>	<b>666,000</b>	<b>1,841,000</b>
<b>TRIBUTARY CHANNEL TO ARANSAS PASS</b>						
15	185+00	230+00	4,500	78,000	47,000	125,000
16	230+00	280+00	5,000	53,000	50,000	103,000
17	280+00	324+42	4,442	96,000	63,000	159,000
<b>SUBTOTAL</b>			<b>13,942</b>	<b>227,000</b>	<b>160,000</b>	<b>387,000</b>
<b>TOTAL</b>			<b>83,942</b>	<b>1,402,000</b>	<b>826,000</b>	<b>2,228,000</b>
<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 ORDER OF WORK.** The Contractor shall complete the work in the following order:

- (1) Construction shall commence first at the three (3) Placement Areas concurrently And shall be completed as specified.

- (2) Secondly, Dredge Sections Nos. 14 through 1 shall be completed with Sections 1 through 6 completed before 1 October 2002. Discharge of material from Section No. 1 into Placement Area No. 131 shall be done by 1 October 2002 while discharge from Sections Nos. 5 and 6 into Placement Area No. 134 shall be done from 1 September 2002 to 1 October 2002..
- (3) The Contractor may dredge Sections Nos. 15 through 17 in any order.

### **3.4 PLACEMENT OF EXCAVATED MATERIAL**

3.4.1 *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, a bayou or stream tributary to the Gulf Intracoastal Waterway, 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 Drop-outlet Structures 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 deposit of the 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 and natural drainage is not obstructed. Once placement operations are completed in a confined area for which the Placement Area is being used, the boards on the Drop-outlet Structure 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 which may be encountered in performing the levee and Drop-outlet work. 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 the work herein specified. In confined Placement Areas, levee and Drop-outlet Structure work required shall be completed and accepted prior to commencement of placement operations. Borrow material shall be clean and free of objectionable materials. 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.

### 3.4.2 Placement Areas.

3.4.2.1 Confined Placement Area No. 3. The perimeter levee and training levee of the Placement Area shall be raised and maintained to the full required constructed elevation as shown. Side slopes shall be constructed and maintained at no steeper than 1 Vertical to 3 Horizontal. Crown width of the levees shall be constructed and maintained to a 10-foot width. Construction and maintenance of levees shall conform as specified in the SECTION entitled EMBANKMENT CONSTRUCTION. Placement shall commence at the discharge points shown. Material may be mounded within the boundaries of the Discharge Zone shown without overtopping or breaching the adjacent levees. When placing material into Placement Area No. 3, the Contractor will assure at all times that a minimum 3 feet of freeboard exists above the ponded water level throughout the entire levee perimeter. No dredge slurry shall be drained or allowed to drain over or to breach the levee. Drainage shall be provided and no ponds allowed to form between the discharge mounds and the levee. Plastic liners shall be installed at the discharge points and at other areas where the water current may erode the existing levees. During placement operations, the Contractor shall take the precautions necessary to prevent erosion of the levee. Discharge points shall be placed at a sufficient distance from the Drop-outlet being utilized to ensure that the Water Quality Control requirement is met. The Drop-outlet shall be managed closely to assure proper water quality. Damage or scouring of the levees due to the Contractor's operations, shall be repaired to original condition at no additional cost to the Government. The Contractor shall inspect placement operations in the Placement Area continuously to prevent the possibility of accidental breaching of levees and Drop-outlet. If levee failure does occur while material is being pumped into the Placement Area, dredging operations into the Placement Area shall cease and placement operations shall not be resumed until the containing structure has been restored to an approved condition. The existing Drop-outlet Structure shall be raised to the elevation shown. Materials for Drop-outlet construction shall conform to the SECTION entitled DROP-OUTLET STRUCTURES. The Contractor shall furnish and install sufficient Drop-outlet boards needed to raise the weir elevations to within 2 feet of top-of-levee elevations. Drop-outlet lumber shall conform to details specified in the SECTION entitled DROP-OUTLET STRUCTURES.

3.4.2.2 Confined Placement Area No. 5. The perimeter levee and training levee of the Placement Area shall be raised and maintained to the full required constructed elevation as shown. Side slopes shall be constructed and maintained at no steeper than 1 Vertical to 3 Horizontal. The crown width of the levees shall be constructed and maintained to a 10-foot width. Construction and maintenance of levees shall conform as specified in the SECTION entitled EMBANKMENT CONSTRUCTION. Placement shall commence at the discharge points shown. Material may be mounded within the boundaries of the Discharge Zone shown without overtopping or breaching the adjacent levees. When placing material into Placement Area No. 5, the Contractor will assure at all times that a minimum 3 feet of freeboard exists above the ponded water level throughout the entire levee perimeter. No dredge slurry shall be drained or allowed to drain over or to breach the levee. Drainage shall be provided and no ponds allowed to form between the discharge mounds and the levee. Plastic liners shall be installed at the discharge points and at other areas where the water current may erode the existing levees. During placement operations, the Contractor shall take every precaution to

prevent erosion of the levees. Discharge points shall be placed at a sufficient distance from the Drop-outlet Structure being utilized to ensure that the Water Quality Control requirement is met. The Drop-outlet Structure shall be managed closely to assure proper water quality. Damage or scouring of the levees due to the Contractor's operations, shall be repaired to original condition at no additional cost to the Government. The Contractor shall inspect placement operations in the Placement Area continuously to prevent the possibility of accidental breaching of levees and Drop-outlet Structure. If levee failure does occur while material is being pumped into the Placement Area, dredging operations into the Placement Area shall cease and placement operations shall not be resumed until the containing structure has been restored to an approved condition. The existing Drop-outlet Structure shall be raised to the elevation shown. Materials for the Drop-outlet Structure rehabilitation shall conform to the SECTION entitled DROP-OUTLET STRUCTURES. The Contractor shall furnish and install sufficient Drop-outlet boards needed to raise the weir elevations to within 2 feet of top-of-levee elevations. Drop-outlet lumber shall conform to details specified in the SECTION entitled DROP-OUTLET STRUCTURES.

3.4.2.3 Confined Placement Area No. 131. Construction and maintenance of levees shall conform to details specified in the SECTION entitled EMBANKMENT CONSTRUCTION. Placement shall commence at the discharge points shown. After discharging approximately one-half of the required material in Placement Area No. 131 at the initial discharge point, the Contractor shall discharge the remainder of the material at the opposite end of this Placement Area. Material may be mounded within the boundaries of the Discharge Zone shown without overtopping or breaching the adjacent levees. When placing material into Placement Area No. 131, the Contractor will assure at all times that a minimum 3 feet of freeboard exists above the ponded water level throughout the entire levee perimeter. No dredge slurry shall be drained or allowed to drain over or to breach the levees. Drainage shall be provided and no ponds allowed to form between the discharge mounds and the levees. Plastic liners shall be installed at the discharge points and at other areas where water current may erode the existing levees. During placement operations the Contractor shall take the precautions necessary to prevent erosion of the levees. Discharge points shall be placed at a sufficient distance from the Drop-outlet Structure being utilized to ensure that the Water Quality Control requirement is met. The existing Drop-outlet Structure with existing pipe shall be removed and shall become the property of the Contractor and disposed properly. The steel Drop-outlet Structure shall be cut off at the base. After the existing pipe is removed, the levee shall be replaced with the area backfilled in 8-inch layers and compacted to the density of the surrounding area. The Drop-outlet shall be managed closely to assure proper water quality. Damage or scouring of the levees due to the Contractor's operations, shall be repaired to original condition at no additional cost to the Government. The Contractor shall inspect placement operations in the Placement Area continuously to prevent the possibility of accidental breaching of levees and the Drop-outlet Structure. If levee failure does occur while material is being pumped into the Placement Area, dredging operations into the Placement Area shall cease and placement operations shall not be resumed until the containing structure has been restored to an approved condition. The existing Drop-outlet Structure shall be repaired and raised to the elevation shown. Materials for the Drop-outlet Structure repairs shall conform to details specified in the SECTION entitled DROP-OUTLET STRUCTURES.

Drop-outlet lumber shall conform to details specified in the SECTION entitled DROP-OUTLET STRUCTURES.

3.4.2.4 Open Water Placement Area No. 133. The limiting lines of discharge within this Placement Area shall be prominently marked by the Contractor with conspicuous buoys or stakes at each corner at the location shown. No material shall be placed outside of these limiting lines of discharge. Material deposited beyond these limiting lines of discharge shall be removed by the Contractor at no additional cost to the Government. The dredged material shall be deposited over or beyond the crests of existing dumping grounds wherever they exist. The Contractor shall perform operations using a method that will prevent the material from flowing back into the Channel. The discharge end of the discharge pipe shall be held at or near the bottom during placement operations to confine the material within the designated area . A spreader shall be used at the submerged end of the discharged pipe to distribute the material evenly and reduce scouring. The point of discharge shall be relocated as often as necessary to prevent a build-up of the excavated material in excess of +2 feet above MLT. Except for natural runoff, material deposited beyond the limiting lines of discharge shall be removed by the Contractor and placed within the Placement Area at no additional cost to the Government.

3.4.2.5 Partially Emergent Placement Area No. 134. Placement operations will be conducted only between 1 September thru 1 October. Initial discharge shall take place directly onto the emergent Island. Discharge shall continue on the Island until the maximum elevation at the discharge point is +6 feet above MLT. When +6 feet MLT elevation is attained at the discharge point, the end of the pipe shall be moved elsewhere on the Island. Placement will then proceed inside the cross-hatched discharge zone shown. No discharge shall take place outside this discharge corridor. This placement operation will maximize retention of the Channel material. The Government will make periodic inspections of the placement operations. The Contracting Officer may direct the Contractor to move the point of discharge. Use of a spreader on the end of the discharge pipe will be required. No personnel or equipment will be allowed on or across the emergent island at anytime. Existing brushy or woody vegetation on the Island will be preserved. Discharge of material onto this vegetation is prohibited.

3.4.2.6 Open Water Placement Area Nos. 135, 136, 137, 138, 139, and 140. The Placement areas shall be prominently marked by the Contractor with conspicuous buoys or stakes at each corner. Material will be deposited within the limiting lines of the Placement Areas. The dredged material shall be deposited over or beyond the crests of existing dumping grounds wherever they exist. The Contractor shall perform operations using a method that will prevent the material from flowing back into the Channel. Material deposited beyond the limiting lines of discharge shall be removed by the Contractor at no additional cost to the Government. The discharge end of the discharge pipe shall be held at or near the bottom during placement operations to confine the material within the designated area. A spreader shall be used at the submerged end of the discharge pipe to distribute the material evenly and reduce scouring. The point of discharge shall be relocated as often as necessary to prevent a build-up of the excavated material. Dredged material shall not be deposited beyond the limiting lines of discharge shown. Except for natural runoff, material deposited beyond the limiting lines of

discharge shall be removed by the Contractor at no additional cost to the Government.

3.4.2.7 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 an 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, or construction waste is the responsibility and decision of the Contractor. The volume figures for the various Placement Areas in this contract are as follows:

PLACEMENT AREA NO.	LEVEE VOLUMES
3	52,000 cubic yards
5	40,000 cubic yards
131	95,000 cubic yards

3.4.2.8 Distribution of Dredged Material. The material dredged from the Channel sections specified in this contract shall be distributed in the Placement Areas designated according to the TABLE OF DISTRIBUTION OF DREDGED MATERIAL below:

**TABLE OF DISTRIBUTION OF DREDGED MATERIAL**

STARTING CHANNEL STATION	ENDING CHANNEL STATION	SECTION NOS. OF CONTRACT	PLACEMENT AREA NOS
<b>MAIN CHANNEL ACROSS ARANSAS BAY</b>			
830+000	835+000	1	131
835+000	850+000	2, 3, 4	133
850+000	860+000	5, 6	134
860+000	870+000	7, 8	135
870+000	875+000	9	136
875+000	885+000	10,11	137,138
885+000	890+000	12	138
890+000	895+000	13	139
895+000	900+000	14	140
<b>TRIB. CHANNEL TO ARANSAS PASS</b>			
185+000	230+000	15	3
230+000	324+42	16,17	5

3.4.3 Pipelines.

3.4.3.1 Location Details. Every effort has been made to give pertinent details on the locations 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 the existing conditions and confirm that no additional construction exists that may interfere with the pipeline laying herein specified.

3.4.3.2 Submerged Pipeline Sections. 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 on structures in navigable waters. 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 14 feet below Mean Low Tide in the Gulf Intracoastal Waterway project. Lighted buoys, meeting the requirements of 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 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 U.S. Coast Guard Regulation 33 C.F.R. 80.23.

#### 3.4.4 Unauthorized Placement of Material.

3.4.4.1 Misplaced Excavated Material. Excavated material that is deposited other 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 without cost to the Government.

3.4.4.2 Debris Disposal. During the progress of the work, the Contractor shall not deposit worn out discharge pipe, wire rope, scrap metal, timbers, 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.

3.4.5 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 offices of the U. S. Army Corps of Engineers, Southern Area Office, 1920 North Chaparral, Corpus Christi, Texas and in the Galveston District Office, 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.

#### 3.4.6 Preservation of Public and Private Property.

3.4.6.1 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.

3.4.6.2 Liability and 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 covered 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.

#### 3.4.7 Alternate Placement Area Proposed by Contractor After Award of Contract.

3.4.7.1 Alternate Placement Area(s). If, after award of the contract, a placement area(s) other than that specified herein is proposed, its acceptance will be subject to approval. The Contractor shall furnish written permission from the owners for the use of the substitute placement area(s) and written permission from the owners of the properties involved in obtaining access to the substitute placement area(s). The Contractor shall coordinate the use of the substitute placement area(s) with Federal and State Natural Resource Agencies and shall submit, with its proposal, documentation that demonstrates compliance with the applicable laws and regulations pertinent to designation and coordination of dredged material placement area(s). The Galveston District shall be consulted for specific requirements. Expenses incurred in connection with providing and making available another placement area(s) shall be borne by the Contractor. Materials deposited thereon and operations in connection therewith shall be at the Contractor's risk.

3.4.7.2 Data Submittal. The award of the modification will be subject to the approval of the proposed Contractor-furnished placement area(s) and unless the foregoing required data are furnished with the Contractor's request, the modification for the use of the proposed substitute placement area(s) will not be considered.

### **3.5 OVERDEPTH, SIDE, AND END SLOPES.**

3.5.1. 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 Subparagraph: Table of Allowable Overdepth, Side and End Slopes below, will be estimated and paid for at contract price or prices.

3.5.2. Side and End Slopes. Material actually removed from within approved limits, to provide for final side and end slopes as specified in the Paragraph: OVERDEPTHS, SIDE AND END SLOPES above, 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.

3.5.3 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 SPECIFIC PROJECT REQUIREMENTS CLAUSES entitled FINAL EXAMINATION AND ACCEPTANCE or SHOALING.

3.5.4 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		End Slope		
			Grade		Grade		
			Vertical	Horizontal	Vertical	Horizontal	
<b>MAIN CHANNEL ACROSS ARANSAS BAY</b>							
830+000	---	---	---	---	1	5	16
830+000	833+700	2	1	5	---	---	16
833+700	834+000	2	1	3-3L,5R	---	---	16
834+000	836+200	2	1	3L,5R	---	---	16
836+200	836+500	2	1	3-5L,5R	---	---	16
836+500	900+000	2	1	5	---	---	16
900+000	---	---	---	---	1	5	16
<b>TRIBUTARY CHANNEL TO ARANSAS PASS</b>							
185+00	---	---	---	---	1	2	16
1185+00	321+19	2	1	2	---	---	16
321+19	324+42	2	1	---	3L,2-OR	---	16
324+42	---	---	---	---		1	2

**3.6 REPORTING REQUIREMENTS.** The Contractor shall prepare and maintain a daily Dredging Report using the Galveston District's automated Contractor's Daily Report database. This database replaces 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, Y2K compliant. 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 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 data shall be submitted 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.

- o O o - -

**SECTION TABLE OF CONTENTS**

**SITE WORK**

**SECTION 02619 - PIPE**

<b>PARAGRAPH</b>	<b>TITLE</b>	<b>PAGE NOS.</b>
------------------	--------------	------------------

**PART 1 - GENERAL**

1.1	SCOPE OF WORK. ....	02619-01
1.2	REFERENCES. ....	02619-01
1.3	SUBMITTALS. ....	02619-01
1.4	DELIVERY, STORAGE, AND HANDLING OF MATERIALS. ....	02619-01
1.5	PAYMENT. ....	02619-01

**PART 2 - PRODUCTS**

2.1	PIPE. ....	02619-02
-----	------------	----------

**PART 3 - EXECUTION**

3.1	EXCAVATION, BACKFILLING, AND BEDDING. ....	02619-02
3.2	PLACING PIPE. ....	02619-02



## **PART 2 - PRODUCTS**

**2.1 PIPE** shall be to the diameter and length as shown and shall conform to as specified below.

2.1.1 Steel Pipe shall conform to the requirements of ASTM A 139 and be fabricated from 3/8-inch or thicker steel. Interior and exterior surfaces of the pipe shall be painted with two (2) coats of Devco 221 Devtar 5A corrosion control coating or equivalent products as approved. Surface preparation and paint application shall follow manufacturer's recommendations. Safety precautions included with the application instructions shall be observed during storage, handling, and use.

## **PART 3 - EXECUTION**

**3.1 EXCAVATION, BACKFILLING, AND BEDDING.** Excavation of trenches, bedding, and backfilling for pipes shall be as specified below.

3.1.1 Excavation for the installation of pipe shall be sufficiently sloped back or shored up with sheeting and bracing to prevent the excavation walls from caving in. Excavation shall only be carried to the extent necessary to properly join and install the pipe to the line and grade shown. Care shall be taken not to excavate below the line and grade of the pipeline as shown.

3.1.2 Removal of Unstable Material. Where wet or otherwise unstable soil incapable of properly supporting the pipe, as determined by the Contracting Officer, is encountered in the bottom of the trench, this material shall be removed to the depth directed and replaced to the proper grade with selected borrow material and thoroughly compacted.

3.1.3 Backfilling Around Pipe. Excavation for the new pipeline which has been carried below the line and grade shown shall be backfilled with select soil to establish a firm bedding for the new pipeline at the required alignment and grade. When backfilling around the pipe, care shall be taken to ensure that areas underneath the haunches of the pipe are thoroughly filled and compacted, leaving no voids.

**3.2 PLACING PIPE.** Each pipe shall be carefully examined for flaws before being laid, and if found defective or damaged shall not be used. Pipe shall be laid to the grades and alignment shown. Proper facilities shall be provided for lowering sections of pipe into the trenches. Under no circumstances shall pipe be laid in water and no pipe shall be laid when trench conditions or weather are unsuitable for this work. Pipe in place shall be inspected before backfilling.

-- o O o --

**SECTION TABLE OF CONTENTS****SITE WORK****SECTION 02700 - DROP-OUTLET STRUCTURES**

<b>PARAGRAPH</b>	<b>TITLE</b>	<b>PAGE NOS.</b>
<b>PART 1 - GENERAL</b>		
1.1	SCOPE OF WORK. . . . .	
	02700-01	
1.2	REFERENCES . . . . .	02700-01
1.3	STRUCTURES. . . . .	02700-02
1.4	SUBMITTALS . . . . .	02700-02
1.5	PROTECTION . . . . .	02700-02
1.6	PAYMENT . . . . .	02700-02
<b>PART 2 - PRODUCTS</b>		
2.1	MATERIALS . . . . .	02700-02
2.2	FABRICATION . . . . .	02700-03
<b>PART 3 - EXECUTION</b>		
3.1	INLET HEADWALLS. . . . .	02700-04
3.2	ERECTION OF STRUCTURAL STEEL . . . . .	02700-04
3.3	PILES. . . . .	02700-04
3.4	DISPOSITION OF MATERIAL . . . . .	02700-05
3.5	CONTRACTOR QUALITY CONTROL . . . . .	02700-05

**SECTION 02720 - DROP-OUTLET STRUCTURES****PART 1 - GENERAL**

**1.1 SCOPE OF WORK.** The work covered in this Section consists of furnishing plant, labor, materials, and equipment and performing the operations in connection with rehabilitation, raising of existing Drop-outlet Structures, and installation of one (1) new Drop-outlet Structure as shown. The term "Drop-outlet Structure" shall include Support Stanchions, Support Bracing, Concrete, Walkways, Handrails, and Discharge Pipe as shown.

**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 the basic designation only.

American Society for Testing and Materials (ASTM) Specifications.

A 36-01	Carbon Structural Steel
A 123-01	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
A 588-01	High Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4 in. (100 mm) Thick.

American Institute of Steel Construction (AISC) Specifications.

American Welding Society (AWS) Standard.

D1.1-02	Structural Welding Code, Steel.
---------	---------------------------------

American Wood-Preservers' Association (AWPA) Standards.

C 2-95	Lumber, Timbers, Bridge Ties and Mine Ties - Pressure Treatment
M 4-95	Care of Preservative-Treated Wood Products.

Federal Specification (Fed. Spec.).

RR-G-1602C	Grating, Metal, Other Than Bar Type (Floor, Except for Naval Vessels).
------------	------------------------------------------------------------------------

### **1.3 STRUCTURES.**

1.3.1 Placement Area 3 Drop-outlet Structure. The existing Drop-Outlet Structure shall be raised to elevations shown. Design of structural steel members shall conform to requirements specified herein.

1.3.2 Placement Area 5 Drop-outlet Structure. The existing Drop-Outlet Structure shall be raised to elevations shown. Design of structural steel members shall conform to requirements specified herein.

1.3.3 Placement Area 131 New Drop-outlet Structure. The new Drop-outlet Structure shall be constructed to the elevations and at the location shown. Drop-outlet Structure shall be entirely painted and shall conform to the details as specified herein and as shown. The new hand-railed walkway shall conform to the details specified herein

**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 SECTION entitled SUBMITTAL PROCEDURES.

1.4.1 SD-04 Drawings.

1.4.1.1 Structure Components: GA. Five (5) sets of shop drawings for the components of the structure shall be submitted.

1.4.2 SD-13 Certificates.

1.4.2.1 Suppliers Certificates: GA. Certificates which demonstrate compliance with the applicable specifications shall be submitted for structural steel, lumber treatment, grating, and paint.

### **1.5 PROTECTION.**

1.5.1 Protection of Existing Work. Before beginning rehabilitation work on the existing structures, the Contractor shall carefully survey the existing work and examine the drawings and specifications to determine the extent of the work. The Contractor shall take the necessary precautions to ensure against damage to the existing work that will remain in place, and if this work is damaged it shall be repaired or replaced as approved, at no additional cost to the Government.

### **1.6 PAYMENT.**

1.6.1 Drop-outlet Structures. Payment for the work specified in this Section will be included in the contract lump sum price for "Levees, Drop-outlets, and Ditches," which will constitute full payment for material, labor, and inspection necessary to complete the work.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS.**

2.1.1 Materials for the Structure shall meet the following requirements.

2.1.1.1 Concrete shall conform to the requirements in the SECTION entitled CONCRETE.

2.1.1.2 Structural Steel shall conform to the requirements of ASTM A 588 for piles and ASTM A 36 for other steel members.

2.1.1.3 Grating shall be of plank type and shall conform to the requirements of Fed. Spec. RR-G-1602C, galvanized, Type II, serrated. The grating shall have an anti-slip surface and the depths shall be as shown.

2.1.1.4 Drainage Pipe shall meet the requirements of the SECTION entitled PIPE.

2.1.1.5 Lumber shall be southern yellow pine rough No. 2, dense, minimum allowable bending stress of 1,400 psi. Cuts in timber or abraded surfaces of new work shall receive a field treatment in accordance with AWPA M 4.

(1) Treated Lumber shall be furnished and installed by the Contractor on the sides of the structures from the top of the concrete slab or headwall to the elevations shown. Lumber thickness and length shall be as shown. Lumber shall be 8-inch nominal width. Lumber to be furnished shall be straight, even sawed, sound, and entirely free from defects which can impair its durability or its usefulness for the purpose intended. Lumber shall bear the official Grade mark of the association under whose rules it is purchased or in lieu thereof, each shipment shall be accompanied by a certificate of inspection issued by the inspection association. Lumber shall have a Chromated Copper Arsenate (CCA) preservative treatment and shall be accompanied by a certificate from a recognized treatment company certifying the amount of treatment.

(2) Preservative Treatment by pressure processes shall be in accordance with AWPA C 2. Lumber shall receive a treatment of 2.5 pcf of CCA solution.

### **2.2 FABRICATION.**

2.2.1 Structural Steel shall be fabricated in accordance with the latest specifications of the AISC.

2.2.2 Welding shall meet the requirements of the AWS Standard D1.1.

2.2.3 Galvanizing of steel handrails, grating, pipe sleeve, and headwall steel plate shall conform to the requirements of ASTM Standard A 123. Galvanizing shall be 2 ounces of hot-dip zinc coating per square foot of surface area. Galvanized areas damaged, abraded or where galvanized material has been broken by field welding, cutting, drilling, handling, storage, or by other means shall be coated with two (2) coats of Galvaweld or other material as approved.

2.2.4 Painting. Structural steel, except steel handrails, shall be painted with two (2) coats of Devoe Catha-Coat 300 zinc self-curing primer and coated with two (2) coats of Devoe 221 Devtar 5A corrosion control coating or equivalent products as approved. Surface preparation and paint application shall follow manufacturer's recommendations. Existing spillway boards shall be removed and sufficient material adjacent to structural steel shall be excavated and removed to prepare structural steel surfaces for painting. Structural steel shall be entirely painted from concrete foundation to the top of each Drop-outlet Structure. After painting, a minimum of 2 feet of material shall be backfilled over and around the Drop-outlet pipe. Safety precautions included with the application instructions shall be observed during storage, handling, and use. Steel handrails shall be galvanized, as specified above, after fabrication.

### **PART 3 - EXECUTION**

**3.1 INLET HEADWALLS** shall be constructed of 3/8-inch steel.

**3.2 ERECTION OF STRUCTURAL STEEL** shall be in accordance with the latest specifications of the AISC.

**3.3 PILES.** Sizes and locations of the steel W-piles and H-piles shall be as shown.

3.3.1 Placing. Piles shall be driven as accurately as practicable in the correct locations true to line laterally, longitudinally and vertically. The final locations of piles shall be such that the framing members may be erected without excessive straining, crimping or bending of the member or piles. Piles may be continuous from the top of the platform or they may be cut and spliced near the mid-depth of the slab with full penetration welds as shown.

3.3.2 Driving. Piles shall be driven with a hammer of the size and type suitable for the work. The hammers shall be operated at the speed and conditions recommended by the manufacturer. Power capacity shall be sufficient to operate the hammer continuously at full rated speed. A cast or structural steel driving head or mandrel shall be used to prevent upsetting the pile head. Pile drivers shall have firmly supported leads extending to the lowest point the hammer must reach. Each pile shall be driven continuously and without voluntary interruption until the required depth of penetration has been attained. Deviation from this procedure will be permitted only in case the driving is stopped by causes which reasonably could not have been anticipated. When handling and driving long piles of a high slenderness-ratio, special precautions shall be taken to ensure against overstress or leading away from a plumb or true position when driving.

3.3.2.1 Pile Obstruction. A pile which cannot be driven to the required depth because of an obstruction shall remain in place at the maximum depth attainable. The Contracting Officer shall determine by consideration of the penetration obtained for the initial pile, whether one (1) or more additional piles will be required. An additional pile may be driven vertically or on a batter as directed. It shall terminate near the mid-depth of the slab and be field cut and welded to the original pile as directed. The concrete slab shall be extended parallel and perpendicular to the main slab, sufficiently to encase the pile with a minimum of 1 foot of concrete at any point through the slab. Unless otherwise directed, the tip elevation shall be the same as that specified for the original piles. The location, spacing, and alignment of the portion of piles above the concrete slab shall be maintained as shown.

3.3.2.2 Unsatisfactory Piles. Piles which are damaged, mislocated, or driven out of alignment shall be withdrawn and replaced by new piles, or shall be cut off and abandoned and additional piles driven, as specified in Paragraph: Pile Obstruction above, or as directed, without additional cost to the Government. Relocated piles shall be located to permit framing as shown.

3.3.3 Jetting. Water jets shall not be used for driving unless specifically authorized. The Contracting Officer may require its use when satisfactory penetration is not obtained otherwise. When jetting is required, the jetting equipment shall be of an approved type and capacity. Jetted piles shall be seated by driving not less than 5 feet after jetting has been stopped.

3.3.4 Inspected Piles. The Contracting Officer may require that a pile be withdrawn for inspection. Piles found to be in suitable condition shall be re-driven. The cost for pulling and re-driving good piles shall be determined by the Contractor and Contracting Officer. The cost for pulling and re-driving good piles shall be borne by the Government. Piles found not suitable shall be replaced by new piles, at no additional cost to the Government.

### **3.4 DISPOSITION OF MATERIAL.**

3.4.1 Title to Materials. Title to the existing Drop-out Structure to be removed, is vested in the Contractor upon receipt of Notice to Proceed. The Government will not be responsible for the condition, loss, or damage to this property after Notice to Proceed.

### **3.5 CONTRACTOR QUALITY CONTROL.**

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

- (1) Materials. Certificates shall be submitted to show conformance with applicable specifications and drawings; visual and dimensional inspections.

- (2) Placement. A record shall be submitted of the hammer data, actual location, and actual length and top elevation of each pile.

3.5.2 Records. A copy of the records of inspections and tests, as well as the records of corrective action taken, will be furnished the Government as directed.

-- o O o --