

Jenny

INVITATION NO. DACW64-89-B-0005

GULF INTRACOASTAL WATERWAY, TEXAS

SPECIFICATIONS

FOR

DREDGING

SOUTH BIRD ISLAND TO MUD FLATS

IN

KLEBERG AND KENEDY COUNTIES, TEXAS



U.S. ARMY ENGINEER DISTRICT, GALVESTON

October 1988

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229

PART II
CONSTRUCTION TECHNICAL PROVISIONS

1. DESCRIPTION OF WORK

1-1. Work to be Done.

1-1.1 The Work consists of furnishing all plant, labor, materials and equipment and performing all work required by these specifications and the schedules and drawings forming parts thereof for dredging the Gulf Intracoastal Waterway, Texas as follows:

Required Depth Be- low MLT (Feet)	Required Width (Feet)	From Station	To Station	Distance Between Stations (Feet)
<u>Main Channel</u>				
14	125	96+000	218+000	122,000
14	125	225+000	248+000	23,000
<u>Cut No. 2 at Station 206+000</u>				
5	200	0+40	25+00	2,460
<u>Cut No. 3 at Station 242+500</u>				
5	200	0+40	97+00	9,660
TOTAL				157,120

1-1.2 The varying bottom widths and lengths to be dredged are shown on the drawings referred to in Construction Special Clause 2, CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS. The Contractor shall remove sufficient material to provide the limiting side and end slopes described in Construction Technical Provision 6, OVERDEPTH, SIDE AND END SLOPES.

1-2. Archeological Sites and Shipwrecks. If during the dredging and disposal operations the Contractor encounters archeological sites and/or shipwrecks of a historical nature, he shall cease work immediately pursuant to the Contract Clause entitled SUSPENSION OF WORK (1984 APR) and so notify the Contracting Officer or his Authorized Representatives by the fastest available means. After investigation by the Contracting Officer, the Contractor will be instructed on how to proceed and if an unreasonable delay is incurred or the work is changed, the contract will be modified accordingly.

1-3. Location. The two separate reaches along the Gulf Intracoastal Waterway to be dredged start at approximately 17 miles south of Corpus Christi Bay and extends approximately 29 miles in a southwesterly direction to the Mud Flats Area.

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 in such manner as to obstruct navigation as little as possible, and in case the Contractor's plant so obstructs the channel as to make difficult or endanger the passage of vessels, said plant shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage. Upon the completion of the work, the Contractor shall promptly remove his plant, including ranges, buoys, piles and other marks placed by him under the 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 or his representative at least twenty-one (21) days prior to the date that the removal or change in location of any channel markers will be required in order for the U.S. Coast Guard to perform the work, and in order that navigation interests may be informed sufficiently in advance of the proposed removal or change in location.

1-6. Estimated Quantities.

1-6.1 The total estimated quantity of material necessary to be removed from the required dredging prism, exclusive of allowable overdepth, to complete the work described in Construction Technical Provision 1-1.1, Work to be Done, is 1,506,000 cubic yards, place measurement, including anticipated shoaling occurring prior to the dates of the before dredging sections.

1-6.2 The maximum amount of allowable overdepth dredging is estimated to be 1,301,000 cubic yards, place measurement.

1-6.3 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 Construction Technical Provision 1-1.1, Work to be Done, be it more or less than the amounts above estimated. All work is to be done in accordance with the contract and at the contract price or prices, subject to the provisions of the CONSTRUCTION SPECIAL CLAUSE entitled VARIATIONS IN ESTIMATED QUANTITIES - DREDGING (1985 JAN HQ USACE).

1-7. Notification Prior to Commencement of Dredging Operations. The Contractor shall notify the Area Engineer, Corpus Christi Area Office, P.O. Box 2948, Corpus Christi, Texas 78403 in writing, at least ten (10) days prior to the 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 (1984 APR).

1-8. Quality Control.

1-8.1 The Contractor shall establish and maintain a quality control system for dredging operations to assure compliance with contract requirements and record his inspections and tests under this system including but not limited to the following: Discharge effluent. The effluent from each spillway and the corresponding receiving water shall be sampled at least daily by the Contractor. Anytime the effluent density exceeds eight (8) grams per liter more than the corresponding density of the receiving body of water, the Contractor will immediately provide additional ponding capacity by raising the spillway invert, as necessary, or he will discontinue dredge disposal operations into the disposal area until the effluent density returns to the acceptable 8 grams per liter differential. The minimum frequency of sampling at the weir shall be increased when the effluent density increases or nears the maximum specified limit. Base samples of the receiving body of water shall be taken upstream or opposite to the direction of tidal flow where the discharge effluent enters the Gulf Intracoastal Waterway. The Contractor shall report the test results on the daily report of operation and furnish copies thereof to the Contracting Officer's Representative.

1-8.2 Each sample at the weir shall be made up by partially filling, without overflow, a one-quart container with the mixture flowing over the weir at not less than 3 different places in the length of the weir and combining the mixture in a bucket or other suitable container. Each receiving water sample shall be obtained in a bucket or other suitable container submerged to a depth of not over two feet. When settled solids are not present in the weir sample, the density shall be determined by the hydrometer method. When settled solids are present in the weir sample, the density shall be determined by both the hydrometer method and the weight-volume method.

1-8.3 Hydrometer Method. When the hydrometer method is used for density determination, a Taylor Soil Hydrometer, graduated to read in grams/liter of suspension, similar or equal to Curtin Matheson Scientific Hydrometers shall be used. The water sample shall be thoroughly mixed and transferred to a 1,000 ml laboratory cylinder and the hydrometer used as specified by the manufacturer.

1-8.4 Weight-Volume Method. When the weight-volume method is used for density determination, the total sample shall be measured to obtain volume in liters and weight in grams. Measurements shall be made with a 1,000 ml laboratory cylinder and a scale or balance capable of weighing the sample and cylinder to the nearest gram. The unit weight shall then be obtained by dividing the total weight in grams by the total volume in liters.

1-8.5 Government inspectors plan to inspect and take water samples no less than once a week. The Contractor will provide any assistance necessary to the Government inspectors. The Contractor shall construct and/or maintain a hand railed walk-way from the levee to each spillway and along the entire weir length when in use.

1-8.6 A copy of the records of inspections and tests, as well as records of corrective action taken, will be furnished the Government as directed by the Contracting Officer.

1-9. Project Bulletin Board. Unless the Contractor has a prominent place protected from the weather, readily accessible for viewing by employees of Contractor and subcontractors and to applicants for employment, suitable for the posting of the information required herein, the Contractor shall furnish, install and maintain, for the duration of this contract, a weather-tight bulletin board approximately three feet high by five feet wide having not less than two hinged or sliding glazed doors with provisions for locking. The bulletin board shall be mounted where and as approved by the Contracting Officer, in a prominent place accessible to employees of Contractor and subcontractors, and to applicants for employment. The bulletin board shall remain the property of the Contractor and shall be removed by him upon completion of the contract work. The following information which will be furnished by the Government to the Contractor (except safety posters), shall be posted in the prominent place as described or on the bulletin board and shall be maintained by the Contractor in easily readable condition at all times for the duration of the contract.

1-9.1 The Equal Employment Opportunity Poster.

1-9.2 The Wage Rate Information Poster (Form SOL-155).

1-9.3 The schedule of minimum wage rates for the contract as required by the Contract Clause entitled DAVIS-BACON ACT (1984 APR) (40 U.S.C. 276a to a-7).

1-9.4 Safety Posters.

1-9.5 "Hire the Handicapped" poster (ESA Publication 1406) pursuant to the Contract Clause entitled AFFIRMATION ACTION FOR HANDICAPPED WORKERS (1984 APR).

1-10. Environmental Control Measures. The Contractor shall comply with the following requirements to prevent degradation of the human environment.

1-10.1 The Contractor shall comply with all Federal, State and local laws, rules and regulations governing the disposal of materials and wastes in navigable waters including approval of the appropriate State Water Quality Board for the discharge of any materials and wastes in the navigable waters within its jurisdiction, and including the provisions of 33 USC 1342.

1-10.2 The Contractor shall provide and operate sanitation facilities that will adequately treat or dispose of sanitary wastes to conform with all Federal, State and local health regulations.

1-10.3 The Contractor shall comply with all Federal, State and local rules and regulations governing the control of air pollutants including those governing the burning of debris or wastes.

1-10.4 The Contractor shall perform his construction and dredging operations in a manner that will reduce turbidity to the lowest practicable level using the normal accepted dredging practices. Spillway discharges shall be controlled to confine material within the areas indicated on the drawings and in the specifications.

1-10.5 The Contractor shall take precautions in the handling or storage of hazardous materials to prevent discharges or spillages that would result in degradation of the water quality.

1-10.6 When depositing material in confined areas, the Contractor shall conduct his operations so as to reduce conditions conducive to the breeding of mosquitoes, flies and other disease-bearing insects and pests and to prevent or control the release of obnoxious odors and gases deleterious to human life and property including treatment of such gases as directed by the Contracting Officer.

1-10.7 The Contractor shall exercise precautions to prevent dredged material and dredge effluent from flowing into areas or waterways and ditches not designated for the deposit of dredged material or the flow of effluent runoff as required by Construction Technical Provision 5, DISPOSAL OF EXCAVATED MATERIAL.

1-10.8 Protection of Air Resources. The Contractor shall keep construction activities under surveillance, management and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with the State of Texas Clean Air Act implemented in 1967, and all Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained for those construction operations and activities specified in this section. Special management techniques as set out below shall be implemented to control air pollution by the construction activities which are included in the contract.

1-10.9 Particulates. Dust particles, aerosols, and gaseous byproducts from all construction activities, processing and preparation of materials, such as from asphaltic batch plants, shall be controlled at all times, including weekends, holidays and hours when work is not in progress.

1-10.10 Particulates Control. The Contractor shall maintain all excavations, stockpiles haul roads, permanent and temporary access roads, plant sites, disposal areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards mentioned in paragraph 1-10.8 above to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated at such intervals as to keep the disturbed area damp at all times. The Contractor must have sufficient competent equipment available to accomplish this task. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. No separate payment or direct payment will be made for the cost of the work covered under Particulates Control and such work will be considered as a subsidiary obligation of the Contractor.

1-11. Bridge-to-Bridge Radio Telephone Equipment. All 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). Multichannel equipment will also require 156.8 MHZ (Channel 16). Dredge tugs and tenders will be considered towing vessels within the meaning of the Act.

1-12. Utilities across the limits of dredging. The following submerged lines cross the area to be dredged:

<u>Approximate Station</u>	<u>Description</u>
102+298	One - 10" Pipeline Florida Gas Trans. Co.
124+100	One - 3", One - 4" & One - 12" Pipelines Houston Pipeline Co. and Exxon Oil Co.
195+115	One - 6" Pipeline Florida Gas Trans. Co.
204+155.2	One - 24" Pipeline Transcontinental Gas Corp. (Pipeline profile not available - Consult pipeline owner prior to dredging)

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 ON THE DRAWINGS: THEREFORE THE CONTRACTOR SHALL COOPERATE WITH THE RESPECTIVE OWNERS TO ESTABLISH THE ACTUAL POSITION OF THE PIPELINES. THE U.S. CORPS OF ENGINEERS PERMITS OF THE RESPECTIVE PIPELINES AND PREVIOUS SURVEYS ARE AVAILABLE IN THE AREA OFFICE.

1-13. Dredged Spill Contingency Plan for Confined Disposal Areas. The Contractor will provide and maintain an effective dredge spill contingency plan that includes the following as a minimum:

1-13.1 The Contractor will be required to have 24-hour a day monitoring of each disposal area during disposal operations. The personnel monitoring the levees will be in radio contact with the dredge. The number and qualifications of personnel to be used for this purpose should be included in the plan.

1-13.2 The Contractor will be required to identify and have available the names and phone numbers of companies having portable hydraulic dredges or vacuum pumps ready to clean up any dredge material discharged from the disposal areas.

1-13.3 The Contractor will be required to identify and have available the names and phone numbers of companies having silt curtains which can contain any dredged material discharged from the disposal area.

1-13.4 The Contractor's Dredge Spill Contingency Plan will include the following procedures to be followed in the event of a spill:

1-13.4.1 The dredge will cease operations in the disposal area. The Contractor will immediately notify the Contracting Officer who in turn will notify the U.S. Fish and Wildlife Service, the Texas Parks and Wildlife, and General Land Office.

1-13.4.2 The Contractor will submit a specific clean-up plan to the Contracting Officer for approval. No clean-up actions will commence until the plan has been approved by the Contracting Officer. The clean-up of misplaced material will be at the Contractor's expense.

1-13.5 The Contractor will be required to submit the Dredged Spill Contingency Plan to the Contracting Officer for approval.

2. SECTIONS. For purposes of acceptance, the dredging work under Item No. 2 of the Bidding Schedule is divided into Sections, as follows:

Section No.	From Station	To Station	Length of Section in Feet	(1)Prescribed (2)Depth (Cubic Yds)	(2)Allowable Overdepth (Cubic Yds)	(2)Total Estimated (Cubic Yds)
Main Channel						
1	96+000	100+000	4,000	32,000	31,000	63,000
2	100+000	105+000	5,000	78,000	46,000	124,000
3	105+000	110+000	5,000	52,000	44,000	96,000
4	110+000	115+000	5,000	46,000	40,000	86,000
5	115+000	120+000	5,000	38,000	38,000	76,000
6	120+000	125+000	5,000	17,000	33,000	50,000
7	125+000	130+000	5,000	19,000	28,000	47,000
8	130+000	135+000	5,000	32,000	42,000	74,000
9	135+000	140+000	5,000	17,000	33,000	50,000
10	140+000	145+000	5,000	56,000	45,000	101,000
11	145+000	150+000	5,000	33,000	41,000	74,000
12	150+000	155+000	5,000	38,000	45,000	83,000
13	155+000	160+000	5,000	73,000	46,000	119,000
14	160+000	165+000	5,000	101,000	46,000	147,000
15	165+000	170+000	5,000	70,000	46,000	116,000
16	170+000	175+000	5,000	77,000	46,000	123,000
17	175+000	180+000	5,000	54,000	46,000	100,000
18	180+000	185+000	5,000	110,000	46,000	156,000
19	185+000	190+000	5,000	48,000	46,000	94,000
20	190+000	195+000	5,000	17,000	45,000	62,000
21	195+000	200+000	5,000	28,000	46,000	74,000
22	200+000	205+000	5,000	63,000	46,000	109,000
23	205+000	210+000	5,000	94,000	46,000	140,000
24	210+000	218+000	8,000	62,000	69,000	131,000
25	225+000	230+000	5,000	20,000	41,000	61,000
26	230+000	235+000	5,000	28,000	46,000	74,000
27	235+000	240+000	5,000	25,000	45,000	70,000
28	240+000	248+000	8,000	39,000	53,000	92,000
Cut No. 2 at Station 206+000						
29	0+40	25+00	2,460	27,000	18,000	45,000
Cut No. 3 at Station 242+500						
30	0+40	97+00	9,660	112,000	58,000	170,000
			157,120	1,506,000	1,301,000	2,807,000

(1) The term "prescribed depth" is synonymous with the terms "required depth" and "required dredging prism" used elsewhere in these specifications.

(2) Includes anticipated shoaling.

3. WORK COVERED BY CONTRACT PRICE.

3-1. The contract price per cubic yard for "Dredging" shall include the cost of removal and disposal of all material as specified in Construction Technical Provision 5, CHARACTER OF MATERIALS, and Construction Technical Provision 6, DISPOSAL OF EXCAVATED MATERIAL. The contract price for dredging shall also include all costs for the placing and the handling of pipelines to and at the disposal areas.

3-2. The contract price for "Mobilization and Demobilization" shall include all costs in connection with the mobilization and demobilization of all plant necessary to perform the work under the various bid items. The contract price shall include all 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 all work, for the removal of the plant and the equipment from the work sites.

3-3. The contract price for "Levees, Spillways and Ditches" shall include all such costs in connection with the design, construction and maintenance of the levees, spillways, and ditches until completion and final acceptance of the work in connection with "Levees, Spillways and Ditches".

4. ORDER OF WORK. The work shall be performed in the following order:

Begin dredging with Section No. 1 and dredge sections in numerically ascending order.

5. CHARACTER OF MATERIALS

5-1. The material to be removed to restore the depths within the limits specified in Construction Technical Provision 1-1., DESCRIPTION OF WORK, is that composed of shoals that have accumulated over a period of time, however, some virgin material may be encountered in the allowable overdepth and/or side slope dredging. Bidders are expected to examine the site of the work and the records of previous dredging, which are available in the Corpus Christi Area Office and after investigation decide for themselves the character of the materials.

6. DISPOSAL OF EXCAVATED MATERIAL.

6-1. General.

6-1.1 The Contractor shall inspect all proposed disposal areas to insure that using the areas for disposal operations will not place him in violation of any applicable Federal, State, or local statutes concerning fish and wildlife. Particular statutes which the contractor should consider include, but are not limited to, the Federal Migratory Bird Treaty Act and the Endangered Species Act of 1973.

6-1.2 The material excavated shall be transported and deposited in the disposal areas shown on the contract drawings. Except as otherwise noted material will not be deposited or allowed to flow into project channels or into any bayou or stream tributary to the waterway, or into any existing drainage outlet ditch, canal, water intake, or outlet facilities, nor shall materials be allowed to flow onto any improved areas including highways and roads in or adjacent to the disposal areas. In the event any stream, bayou drainage outlet, ditch, canal, water intake or outlet facility becomes shoaled as a result of the dredging or disposal operations, the contractor shall promptly remove these shoals and the material shall be placed in the disposal areas. Dragging or washing operations to remove the shoals will not be permitted. All holes dug on the banks for deadmen or anchorage shall be filled. The Contractor shall adequately inspect his disposal operations in the disposal area daily to reduce the possibility of accidental breaching of levees and spillway with resulting spillage of dredged materials outside the area. Should levee failures occur while materials are being pumped into the disposal 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 a condition considered satisfactory by the Contracting Officer. Materials shall be deposited in such a manner that no water will be impounded and that natural drainage shall not be obstructed. Once disposal operations are completed in a confined area for which the disposal area is being used, the boards on the spillway of that disposal area shall be removed at a proper rate to allow drainage of the area. Every effort has been made to give all pertinent details on the location of utility pipelines, structures and other facilities which may be encountered in performing the levee and spillway work. The data furnished on the contract drawings are substantially correct. However, the contractor shall investigate existing conditions and satisfy himself as to the existence of any additional construction which may interfere with the work under these specifications. In confined areas all levee and spillway work required shall be completed and accepted prior to any disposal operations in that area. All confined areas shall be maintained in operational condition until completion and acceptance of all work under the contract.

6-1.3 Construction Special Clauses DAMAGE TO WORK is only applicable to damage of levees and other non-dredging items.

6-2. Disposal Areas.

6-2.1 Open Water and/or Partially Emergent Unconfined Disposal Areas Nos. 186 through 201. The limiting lines of discharge denoting the disposal areas shall be prominently marked by the contractor with conspicuous buoys or stakes at each corner. No material shall be placed outside of these limiting lines of discharge which define the disposal areas. Any material deposited beyond these limiting lines of discharge shall be removed by the contractor at no additional cost to the Government. Discharge in these disposal areas shall be made over and beyond the crest of the existing submerged or emergent mounds of previous deposits. In areas where there is sufficient water depth, the contractor shall discharge the material below the water surface. When discharging on an island or emergent mound, the Contractor shall use a spreader on the end of the discharge pipe. When the height of any deposit along the back or end limiting lines of discharge reaches an elevation of 1.5 feet above mean low tide, the point of discharge shall be relocated within the disposal areas as many times as necessary to permit uniform build-up of the area to elevation 1.5 feet above mean low tide. Then the contractor may either construct containment levees, as necessary around the perimeter of the area as shown on the drawings, and construct the necessary spillways to return the effluent to the GIWW, or he may move his point of discharge to another authorized disposal area. During the period of 1 March through 31 August the contractor shall not discharge within 1,000 feet of any island that is within the Disposal Areas.

6-2.2 Disposal Areas No. 205. The contractor shall deposit over and beyond the crest of the existing mounds of previous deposits. The limiting lines of discharge denoting the disposal area shall be prominently marked by the contractor with conspicuous buoys or stakes at each corner. No material shall be placed outside of these limiting lines of discharge which define the disposal area. Any material deposited beyond the limiting lines of discharge shall be removed by the contractor at no additional cost to the Government. The contractor shall use a spreader on the end of the discharge pipe when depositing into this area.

6-3. Retaining Levees.

6-3.1 General. When the material is deposited in confined areas, all embankments or bulkheads needed for confining or grading the material, with necessary waste weirs, shall be designed, constructed and maintained by the Contractor until completion and final acceptance of the work under the contract and the cost thereof shall be included in the contract price for Levees, Spillways and Ditches.

6-3.2 Disposal Area No. 202. The southerly half of this area is an existing confined disposal area. It was built to an elevation of ten feet above mean low tide, a crown width of six feet with one on three side slopes. The disposal area shall be maintained as necessary to the above dimensions throughout the contract. The existing drop inlet type spillway shall also be maintained as necessary as specified herein. For the northerly half of this area, the contractor shall deposit over and beyond the crest of the existing mounds of previous deposits. The limiting lines of discharge denoting the

disposal area shall be prominently marked by the contractor with conspicuous buoys or stakes at each corner. No material shall be placed outside of these limiting lines of discharge which define the disposal area. Any material deposited beyond the limiting lines of discharge shall be removed by the contractor at no additional cost to the Government.

6-3.3 Disposal Area Nos. 203A, 204, and 206. Levees shall be built to a minimum crown elevation of twelve feet above mean low tide, as shown on the drawings. The crown width shall be a minimum of ten feet. The levees shall be constructed with side slopes no steeper than one vertical to three horizontal. Material for construction of levees shall be obtained from within the disposal areas when borrowing material adjacent to the levee, a minimum berm of 50 feet shall be provided between the toe of the levee and borrow area. A minimum 25 foot length of undisturbed earth shall be left at the intervals of approximately 400 feet in borrow areas parallel to the levees. All borrow areas and areas to receive fill shall be stripped of vegetation in order to insure proper bonding of material. The borrow areas shall have minimum side slopes of one vertical to three horizontal. The depth of the borrow shall not be greater than 8 feet below the adjacent ground. It is the intent of these specifications to construct the levees utilizing borrow materials at its natural moisture content. However, if in the Contracting Officer's opinion, the material becomes excessively wetted or dried, the Contractor shall take whatever steps necessary to dry or wet the material before continuing with the construction of the levees. All levee and spillway work required for a disposal area shall be completed and accepted prior to any disposal operations in the area. All confined areas shall be maintained in operational condition until completion and acceptance of all work under the contract.

6-4. Spillways, Flumes and Outfall Facilities.

6-4.1 General. The location of the existing drop inlet spillway is shown on the drawings. The location of the new spillways to be constructed are shown on the drawings. All timber used in the construction and/or repair of the spillways shall conform to the requirements specified herein and as shown on the contract drawings. All construction shall be performed in accordance with the details shown on the drawings and specified herein. Three (3) sets of shop drawings of the weir spillway shall be submitted for approval of the Contracting Officer. Materials, fabrications, and construction of the spillway shall meet the following requirements.

6-4.2 Concrete shall consist of commercially available material and shall conform to the requirements of ASTM C 94-78A, "Ready-Mixed Concretes". The mixture shall be designed to produce concrete having an average compressive strength of 2500 psi at 28 days.

6-4.3 Forms shall be steel or lumber having adequate strength to hold the concrete true to line and grade and to support equipment operated from the forms. All forms shall be clean and shall be coated with form oil prior to concrete placement.

6-4.4 Anchor bolts, studs, fasteners shall meet the requirements of ASTM A 307-78. All bolts and fasteners shall be furnished with nuts and washers conforming to ANSI B 18.22.1, Type B. All fasteners, studs, and anchor bolts shall be galvanized.

6-4.5 Welding shall meet the requirements of American Welding Society (AWS) standard D1.1-75 (Rev 2-77).

6-4.6 Structural steel shapes, pipes, and plates shall conform to the requirements, of ASTM A 36-77. On new spillways, all structural steel members (vertical columns, horizontal braces, walkway supports, and hand rails) that are corroded and/or lack a protective coating (primer or topcoat) shall be sandblasted to bare metal and primed with one coat of Devoe Catha-Coat 302 zinc self-curing primer, coated with Devoe 201 Epoxy Buff Primer and painted with Devoe 221 Devtar 5A corrosion control coating or equivalent products as approved by the Contracting Officer. Surface preparation shall follow manufacturer's recommendations.

6-4.7 Treated timber used in construction and repair of the spillways shall be furnished and installed by the contractor. All timber to be furnished shall be straight, even sawed, sound, and entirely free from all defects which might impair its durability or its usefulness for the purpose intended. Timbers 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, subject in either case to the requirements of Federal Specification MM-L-751H for lumber softwood." Treated timber shall be accompanied by a certificate from a recognized treatment company certifying the amount of treatment. Preservative treatment shall be in accordance with AWP standard C2-84, employing the full cell process using creosote-coal tar solution. Treated timbers shall be southern yellow pine rough no. 1, to the dimensions indicated on the drawings.

6-4.7.1 Creosote-Coal Tar Solution: There shall be a minimum solution retention of a minimum of 12 pounds per cubic foot of timber. All cuts in timber or abraded surfaces of new work shall be brush treated with two (2) coats of hot "Creosote, Technical, Wood Preservation, Brush Spray, or Open-Tank Treatment". Holes bored in timbers after treatment shall be treated with hot creosote. Hot sealing compound shall be applied to holes immediately before driving bolts home. Unused holes in timber shall be treated with creosote coal tar solution conforming to AWP standard P12-68 "Creosote-Coal Tar Solution".

6-4.7.2 Chromated Copper Arsenate Mixture: There shall be a minimum solution retention of 0.60 pounds per cubic foot of timber. All cuts in timber, abraded surfaces or holes bored in timbers will be treated with one application of a concentrated solution of the preservative.

6-4.8 Walkways and handrails shall be constructed as shown on the drawings. All handrails, walkway supports and gratings shall be galvanized. The grating material shall meet the requirements below:

<u>Material Type</u>	<u>Gauge</u>	<u>Max Span (ft)</u>	<u>Uniform Load (lb/ft</u>	<u>Concentrated Load (lb</u>	<u>Deflection (in)</u>
Grip Strut Safety Grating or approved equal-Galvanize	12	5	345	845	.22

6-4.9 Backfill or fill adjacent to the weir spillway will be suitable material from excavation or borrow and at a moisture content that will facilitate compaction. Each layer will be placed in not more than eight (8) inches and compacted with mechanical tampers or rammers. Crawler type tractors will not be permitted to operate within a minimum of four (4) feet of the structure walls.

6-4.10 Pipe Drains. The following publication of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by references thereto:

Federal Specification.

WW-P-405B (1)	Pipe, corrugated (Iron or Steel, Zinc Coated)
WWAP-402C (1)	Pipe, corrugated (Aluminum Alloy)

6-4.11 Pipe drains shall be of the size and lengths indicated and shall conform to the requirements for the following pertinent types: Corrugated steel pipe shall conform to Federal Specifications WW-P-405B, Class I, Shape (1) Coating (P), Type (C) of 14 gage, or the contractor may elect to use aluminum alloy corrugated pipe and shall conform to Federal Specifications WWAP-402C, class II, Shape (1) of 12 gage. Certified copies of test reports demonstrating conformance to the applicable pipe specifications shall be delivered to the Contracting Officer before the pipe is installed.

6-4.12 The width of trenches at any point below the top of the pipe shall be not greater than the outside diameter of the pipe plus sufficient width to permit satisfactory jointing and thorough tamping of the bedding material under and around the pipe. 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, such material shall be removed to the depth required and replaced to the proper grade with selected material and compacted. The bedding surface for the pipe shall provide a firm foundation of uniform density throughout the entire length of the pipe. When necessary, the bedding shall be tamped. Bell holes and depressions for joints shall be only of such length, depth and width as required for properly making the particular type joint.

6-4.13 Each pipe shall be carefully examined before being laid, and defective or damaged pipe shall not be used. The pipe drains shall be laid to the grades and alignment indicated. Proper facilities shall be provided for lowering section of pipe into trenches. Under no circumstances shall pipe be laid in water, and no pipe shall be laid when trench conditions or weather are unsuitable for such work. Diversion of drainage or dewatering of trenches during construction shall be provided as necessary. All pipe in place shall have been installed before backfilling.

6-4.14 Corrugated Metal Pipe shall be laid with the separate sections joined firmly together, with the outside laps of circumferential joints pointing upstream and with longitudinal laps on the sides. Any unprotected metal in the joints shall be coated with Denflex polymex touch up or approved equal. The interior coating shall be protected against damage from insertion of removal of struts or tie wires. Lifting lugs, where used, shall be placed to facilitate moving the pipe without damage to the exterior or interior coatings. During installation, pipe shall be handled with care to preclude damage to the coating. Prior to placing the backfill, damaged areas of coupling bands and pipe shall be given a coating of Denflex polymex touch up or approved equal. Pipe on which the coating has been damaged to such extent that satisfactory field repairs cannot be made shall be removed and replaced without additional cost to the government.

6-4.15 The space between the pipe and connecting bands shall be kept free from dirt and grit so that the corrugation fits snugly. The connecting band, while being tightened, shall be tapped with a softhead mallet of wood, rubber, or plastic to take up slack and insure a tight joint. Unless otherwise specified, field joints shall be made with outside bands, each band consisting of one or two pieces. The type, size, and gage of band and the size of angles and bolts shall be as indicated, or where not indicated, shall be as specified in the applicable standards or specifications for the pipe.

6-4.16 After the bedding has been prepared and the pipe installed, selected material from excavation or borrow, at a moisture content that will facilitate compaction, exceeding six (6) inches in compacted depth shall be brought up evenly on both sides of the pipe for the full length of the pipe. Care shall be taken to insure thorough compaction of the fill under the haunches of the pipe. Each layer shall be thoroughly compacted with mechanical tampers or rammers. This method of filling and compacting shall continue until the fill has reached an elevation of at least twelve (12) inches above the top of the pipe. The remainder of the trench shall be backfilled and compacted by spreading and rolling, or compacted by mechanical rammers or tampers in layers not exceeding eight (8) inches to a density equal to or greater than the density of the surrounding undisturbed earth.

6-4.17 All costs in connection with spillway construction, repair and maintenance shall be included in the contract price for Bid Item No. 3 "Levees, Spillways & Ditches".

6-5. Pipelines.

6-5.1 The dredge pipeline routes to the disposal areas shall follow closely the locations shown on the contract drawings. Detail right-of-way drawings showing the location of the pipeline routes with respect to property lines are available for inspection at The Corpus Christi Area Office.

6-5.2 If the Contractor elects to use a submerged section in the dredge discharge pipeline for crossing a navigable channel he may do so without the formality of obtaining a Department of the Army permit for work or structures in navigable waters. However, three (3) copies of detailed plans of the submerged section shall be submitted by the Contractor and shall be approved by the Contracting Officer prior to use of the submerged section. Such plans shall indicate clearly the width and depth of the navigation opening and the manner in which it is to be marked 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. Lighted buoys, meeting the requirements of Coast Guard Regulations (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 Coast Guard publication CG 208 entitled "Aids to Navigation". Lights to be displayed on pipelines shall be in accordance with Coast Guard Regulations. (33 CFR 80.23)

6-6. Unauthorized Disposal of Material.

6-6.1 Any excavated material that is deposited elsewhere than in places designated or approved by the Contracting Officer will not be paid for, and the Contractor may be required to remove such misplaced excavated material and deposit it where directed at his expense.

6-6.2 During the progress of the work, the Contractor shall not deposit worn out discharge pipe, wire rope, scrap metal, timbers, or any other such type of rubbish or obstructive material in the disposal areas, except as specified herein, or along the banks of the navigable waters. Such material, together with any scrap, rope, wire cable, piles, pipe, or any other obstructive material which may be encountered during the dredging operations, shall be disposed of by the Contractor at locations approved by the Contracting Officer.

6.7. Easements. Permits authorizing the laying of shore pipe, and for disposal of dredged material in the disposal areas, are on file and available for examination in the office of the Corps of Engineers, Department of the Army, at 400 Barracuda, Essayons Building, Galveston, Texas and the Corpus Christi Area Office, 101 Sisson, Corpus Christi, Texas.

6-8. Preservation of Public and Private Property.

6-8.1 All fences, roads, ditches, private or public grounds and other structures or improvements damaged as a result of the Contractor's operations under these specifications shall be repaired or rebuilt by the Contractor at his expense. The areas used by the Contractor in laying and maintaining his pipelines shall be restored to the same or as good a condition as existed prior to commencement of the work.

6-8.2 The Contractor shall preserve and protect all existing informational and directional signs, 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 by these specifications. The Contractor will be liable for and will be required to replace or restore at his own expense all signs, station markers and mooring piles damaged or destroyed as a result of dredging operations under these specifications.

6-9. Alternate Disposal Areas Proposed by Contractor with Bid

6-9.1 If disposal areas other than those provided under these plans and specifications are proposed, the Contractor shall furnish, with his bid, written permission of the owners for the use of the substitute disposal areas and written permission of the owners of the properties involved in obtaining access to the substitute disposal areas. The Contractor shall coordinate the use of the substitute disposal areas with Federal, State and local fish and wildlife, conservation and pollution control agencies and he shall submit, with his bid, the written approval of these agencies for the use of the substitute disposal areas. Substitute disposal areas proposed for use under these specifications shall be coordinated with the following agencies.

Environmental Protection Agency
Region VI
1201 Elm Street
Dallas, Texas 75270

U.S. Fish and Wildlife Service
Regional Director
P.O. Box 1306
Albuquerque, New Mexico 87103

National Marine Fisheries Service
Regional Director
Southeast Region
9450 Koger Blvd.
St. Petersburg, Florida 33702

Texas Water Commission
ATTN: Water Quality Division
P.O. Box 13087
Capitol Station
Austin, Texas 78711

Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744
ATTN: Susan Reiff

Deputy Commissioner for Land Management
General Land Office
1700 North Congress Avenue
Austin, Texas 78701

General Land Office
Land Management Division
Dredging Coordinator
1700 North Congress Ave.
Austin, Texas 78701

Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

6-9.2 The award of a contract will be subject to the acceptance of the proposed Contractor furnished disposal areas by the Contracting Officer 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 disposal areas will be considered non-responsive.

6-9.3. Alternate Disposal Areas Proposed by Contractor After Award of Contract. If, after award of the contract, a disposal area other than that stipulated in these specifications is proposed, its acceptance will be subject to the approval of the Contracting Officer. The Contractor shall obtain the written consent of the owners of the substituted grounds and furnish evidence thereof to the Contracting Officer before proceeding with the work. All expenses incurred in connection with providing and making available such disposal area shall be borne by the Contractor, and all materials deposited thereon, and all operations in connection therewith shall be at the Contractor's risk.

7. OVERDEPTH, SIDE AND END SLOPES.

7-1. Overdepth. To cover inaccuracies of the dredging process, material actually removed from within the specific areas to be dredged to depths as specified in Construction Technical Provision 7-4, Table of Allowable Overdepths, Side and End Slopes, will be estimated and paid for at contract price or prices.

7-2. Side and End Slopes. Material actually removed, within limits approved by the Contracting Officer, to provide for final side and end slopes as specified in Construction Technical Provision 7-4, Table of Allowable Overdepths, Side and End Slopes, 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.

7-3. Excessive Dredging. Material taken from beyond the limits as extended in Construction Technical Provision 7-1, Overdepth, and Construction Technical Provision 7-2, 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 Construction Special Clause 11, FINAL EXAMINATION AND ACCEPTANCE, or Construction Special Clause 12, SHOALING.

7-4. Table of Allowable Overdepths, Side and End Slopes.

From Station	To Station	Allowable Overdepth (Feet Below Required Depth)	Final				Above Plane (Feet Below MLT)
			Side Slope		End Slope		
			Ver-tical	Hori-zontal	Ver-tical	Hori-zontal	
Main Channel							
96+000	---	---	---	---	1	5	14
96+000	218+000	2	1	5	---	---	14
218+000	---	---	---	---	1	5	14
225+000	---	---	---	---	1	5	14
225+000	247+000	2	1	5	---	---	14
247+000	248+000	2	1	6	---	---	14
248+000	---	---	---	---	1	5	14
Cut No. 2 at Station 206+000							
0+40	---	---	---	---	1	2	5
0+40	25+00	1	1	2	---	---	5
25+00	---	---	---	---	1	2	5
Cut No. 3 at Station 242+500							
0+40	---	---	---	---	1	2	5
0+40	97+00	1	1	2	---	---	5
97+00	---	---	---	---	1	2	5

8. MEASUREMENT AND PAYMENT.

8-1. Mobilization and Demobilization, Payment Item No. 1. Payment for this item will be made pursuant to the conditions of Construction Special Clause 6, MOBILIZATION AND DEMOBILIZATION, PAYMENT ITEM NO. 1 (1985 DEC).

8-2. Dredging Payment Item No. 2. The total amount of material removed and to be paid for under Item No. 2 of the Bidding Schedule of the contract, will be measured by the cubic yard in place 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 work specified in each Section in Construction Technical Provision. 2-1., SECTIONS has been completed and included within the limits of the overdepth and side and end slopes described in Construction Technical Provision 7-4, Table of Allowable Overdepths, Side and End Slopes, less any deductions that may be required for misplaced material described in Construction Technical Provision 6, DISPOSAL OF EXCAVATED MATERIAL.

8-3. In using electronic positioning the Government will make a corrective adjustment, if applicable, in the volume computation process in order 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 a azimuth from the baseline normal to the center line of the cut, of the "after-dredging" survey with respect to the "before-dredging" survey. Any adjustment 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 on the contract drawings 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 his own network of survey points from these survey points or from other U.S.C.G.S. monuments. Location and description of the additional horizontal control points which the Government plans to use to perform electronic surveys on the GIWW are available at the Corpus Christi Area Office. The contractor will be responsible for establishing his own reference line in order to conduct hydrographic surveys and dredging operations if he elects not to use electronic positioning equipment.

8-4. The maps and/or drawings already prepared (Construction Special Clause 2, CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS) are believed to represent conditions existing as of the date of their preparation. However in order to reflect anticipated shoaling occurring between the dates of preparation of such maps and/or 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 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.

8-5. Monthly partial payments for "Dredging" will be based on approximate quantities determined by fathometer soundings or sweepings taken behind the dredge.

8-6. Monthly partial payments for "Levees, Spillways, and Ditches" up to eighty percent (80%) of the contract price based on estimates of work completed during the period; the remaining twenty percent (20%) will be included in the final estimate after completion and final acceptance of the work in the contract.

9. REPORTING REQUIREMENT. The Contractor will be required to prepare and maintain a daily and a monthly summary report of operations and furnish copies thereof to the Contracting Officer's Representative. The daily and monthly summary reports shall be submitted in a manner which will render legible copies. A copy of the form prescribed for recording the required information is attached. Further instructions on the preparation of the report will be furnished at a preconstruction conference. (NOTE: Cost data items or items pertaining to performance characteristics of the dredge, such as pump pressures, pump speed and discharge velocities, indicated on the accompanying SWG Form 89, will not be required.)