

US Army Corps
of Engineers
Baltimore District

CONSTRUCTION SPECIFICATIONS

MAINTENANCE DREDGING,

**CRAIGHILL ENTRANCE, CRAIGHILL
CHANNEL, CUTOFF ANGLE,
NORTHWEST BRANCH WEST CHANNEL,
BREWERTON CHANNEL EASTERN
EXTENSION AND TOLCHESTER
CHANNEL,**

**BALTIMORE HARBOR AND CHANNELS,
CHESAPEAKE BAY, MARYLAND**

INVITATION NO. **W912DR-04-B-0014**

CONTRACT NO.

DATE: **JUN 03, 2004**

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SECTION 1 - SPECIAL CLAUSES

1. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK: The Contractor will be required to commence work under this contract within 10 calendar days and to commence dredging work under this contract within 30 calendar days after the date of receipt by him of notice to proceed. The Contractor will also be required to prosecute said work diligently and to complete the entire work ready for use not later than 210 calendar days (exclusive of the time of year restriction for Hart-Miller Island and Poplar Island listed below) after the date of receipt by him of notice to proceed. Due to time of year restrictions at Hart-Miller Island and Poplar Island, the deposition of dredged material at these containment sites will not be permitted from April 1 through September 30 and April 1 through August 31, respectively. Liquidated damages will not be assessed during these periods unless the Contractor is granted permission to deposit dredged material at Hart-Miller Island or Poplar Island during these restricted times. Additional mobilization and demobilization cost if an extension is granted beyond the 210 calendar days for performance will be the responsibility of the Contractor. Should the total quantity of material to be paid for actually removed under the contract exceed the limit established in Special Clauses, PARAGRAPH: "Variation in Estimated Quantity", additional time will be allowed at the rate of one calendar day for each 15,000 cubic yards in excess of the established limit. The time stated for completion shall include final clean-up of the premises.

2. ESTIMATED QUANTITIES: The total estimated quantities of materials necessary to be removed from within the specified limits, as shown on the drawings, exclusive of allowable overdepth, to complete the work are shown below. The maximum amount of allowable overdepth dredging is also shown below.

Estimated Quantities

Cubic Yards Place Measurement

Acceptance Section	STA to STA	Required Depth	Required	Allowable Overdepth	Total
Craighill Entrance					
1	1+900 - 10+800	51	26,000	95,000	121,000
2	18+600 - 20+600	51	3,500	13,500	17,000
Total Craighill Entrance			29,500	108,500	138,000
Upper Range					
3	47+700 - 57+500	51	27,000	141,000	168,000
Cutoff Angle					
4	59+500 - 62+000	51	54,500	146,500	201,000
5	62+000 - 65+000	51	42,000	152,000	194,000
Total Cutoff Angle			96,500	298,000	395,000

Acceptance Section	STA to STA	Required Depth	Required	Allowable Overdepth	Total
Northwest Branch West Channel					
6	0+000 - 5+400	41	89,000	183,000	272,000
7	5+400 - 7+310	41	147,000	118,000	265,000
Total Northwest Branch West Channel			236,000	301,000	537,000
Brewerton Channel Eastern Extension					
8	3+700 - 14+000	37	95,000	207,000	302,000
9	14+000 - 20+300	37	131,000	171,000	302,000
10	20+300 - 31+900	37	108,800	199,200	308,000
Total Brewerton Channel Eastern Extension			334,800	577,200	912,000
Tolchester Channel					
11	2+300 - 7+700	37	84,000	84,000	168,000
Total Contract			807,800	1,510,200	2,318,000

3. PHYSICAL DATA: Information and data furnished or referred to below are furnished for information only and it is expressly understood that the Government will not be responsible for any interpretation or conclusion drawn therefore by the Contractor. (CENAB-EN 1984 APR)

3.1 Physical Conditions: The physical conditions indicated on the drawings and in the specifications are the result of site investigations by surveys and/or probings. When the indicated physical conditions are the result of site investigations by borings, the borings and locations thereof are shown on the drawings. Records of previous dredging indicate that the material to be removed by dredging consists principally of silt, mud, clay, sand, gravel, shell and combinations thereof. Prospective bidders are strongly urged to examine the material and assure themselves that they have made the best possible evaluation of the subsurface conditions. Bidders should form their own conclusions from this examination prior to submission of their bids.

3.2 The Contractor may arrange to review any available dredging reports for new work and/or maintenance dredging of the channels performed by Contractors in the past, by contacting the Baltimore District, Operations Division at (410) 962-5674.

3.3 Weather Conditions: Complete weather records and reports may be obtained from the U.S. Weather Bureau. The Contractor shall satisfy himself as to the hazards likely to arise from weather conditions during the dredging period. The site of work is exposed, and suspension of work may at times be necessary during extreme storm periods. The Contractor should expect icing of the channels and in the vicinity of the placement sites from December through February. Tidal currents are not of sufficient velocity to have a serious adverse effect on dredging operations. The mean range of tide is 1.1 feet at

Ft. McHenry and 1.0 foot at Poplar Island, with greater fluctuations occurring during storm periods.

3.4 Transportation Facilities: The areas to be dredged, the Hart-Miller Island Containment Facility and the Poplar Island Environmental Restoration Project are accessible by water only. The Baltimore Metropolitan Area is well served by railroads and primary and secondary roads. Baltimore-Washington International Airport is located just south of Baltimore. The Contractor shall make his own investigation of transportation facilities in the vicinity of the work.

3.5 Conditions of Channel: The best information available as to the present condition of the channels is shown on the drawings. The drawings show the condition of the channels at the time of the most recent surveys. The depths will be verified by surveys conducted by the Government immediately before dredging. Craighill Entrance was last dredged to a depth of 51 feet mean lower low water (MLLW) and a width of 700 feet during 2001. Craighill Upper Range was last dredged to a depth of 51 feet MLLW and a width of 700 feet during 2001. The Cutoff Angle was last dredged to a depth of 51 feet MLLW and a width of 700-1,750 feet during 2002. The Northwest Branch West Channel was last dredged to a depth of 40 feet MLLW and a width of 600-1,050 feet during 1998. The Brewerton Channel Eastern Extension was last dredged to a depth of 37 feet MLLW and a width of 600 feet during 2002. The Tolchester Channel was last dredged to a depth of 37 feet MLLW and a width of 600 feet during 2000.

3.6 Channel Traffic: Channel traffic consists of large commercial vessels, tugs, barges, commercial seafood boats, oil barges, recreational craft, etc. and may cause minor delays to the dredging operations.

3.7 Obstructions General:

3.7.1 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 shall 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 vessels to such an extent as may be necessary to afford a practicable passage. Upon completion of the work the Contractor shall promptly remove his plant, including ranges, buoys, piles, and other marks placed by him under the contract in navigable waters or on shore.

3.7.2 Obstruction Identification: Obstructions and debris which have been identified are indicated on the contract drawings. The Contractor may encounter obstructions or other debris not indicated on the contract drawings. Any obstruction or other debris, whether indicated on the contract drawings or discovered by the Contractor, shall be removed by the Contractor if such obstruction or debris lie at or above the required mean lower low water (NOS) dredging depth within the contract dredging area, in accordance with Paragraph: "3.7.3 Obstruction Removal".

3.7.3 Obstruction Removal: Obstructions and debris can be expected to be encountered during dredging and the Contractor shall remove any obstructions or

debris which lie at or above the required mean lower low water dredging depth (NOS) within the contract area, when so directed by the Contracting Officer. The Contractor shall identify, locate, and remove, at the contract unit price, those obstructions normally encountered, such as sunken navigation buoys, ground tackle (chains, cables, etc.), buoy sinkers up to 20,000 pounds in weight, tires, lumber piles, and similar obstructions. The Contractor shall be required to dispose of all debris at an approved location. The disposal of debris will not be permitted at Hart-Miller Island and Poplar Island. The Contractor shall advise the Contracting Officer of any unusual obstructions encountered, such as embedded wreckage or explosive ordnance. The Contracting Officer shall not endeavor to locate, identify, survey, sweep, or in any other way assist in the identification or removal of obstructions or debris.

3.8 Navigation Aids: The Contractor shall not relocate or move any aids to navigation that have been established by the U.S. Coast Guard. If it becomes necessary to have any aid to navigation moved by the contractor in order to complete dredging operations under this contract, the Contractor shall notify the Commanding AON, Fifth U.S. Coast Guard District, Office of Aids to Navigation, Portsmouth Virginia 23705, Attn: Mr. John Walters (757)398-6230, in writing with a copy to the Contracting Officer or his authorized representative not less than 30 days prior to such need for movement. U.S. Coast Guard, in writing with a copy furnished to the Contracting Officer not less than 30 days prior to such need for movement. The Contractor shall notify the U.S. Coast Guard of the approximate time the navigation aid may be relocated to its original position

3.9 Laying of Submerged Pipe Lines and Obstruction of Channel: Should it become necessary in the performance of this contract to use a submerged pipeline across a navigable channel the Contractor shall notify the Contracting Officer and the U.S. Coast Guard 5th District in writing to be received in the District Offices at least 21 calendar days prior to the desired closure date.

This notification shall furnish the following:

(1) Location (Channel Centerline Stationing) and depth (over the top of the pipeline) at which the submerged line will be placed.

(2) The desired length of time the channel is to be closed.

(3) The date and hour placement or removal will commence.

(4) The date and hour of anticipated completion.

3.10 Notice To Mariners: Should the Contractor, during dredging operations, encounter any objects on the channel bottom which could be a hazard to navigation, he shall notify the Contracting Officer immediately as to the location of said object and any other pertinent information necessary for the Contracting Officer to put out a Notice to Mariners.

3.11 Bridge-to-Bridge Radio Communication:

The Contractor is required to monitor both channels 13 and 16.

Channel 13: The master, operator, or designated pilot of the vessel must maintain a listening watch on the designated bridge-to-bridge frequency while

underway on the navigable waters of the United States. The designated frequency is VHF-FM Channel 13. The person maintaining the watch also must be able to communicate in English.

Channel 16: In addition to the Channel 13 watch, vessels must keep a continuous watch on VHF-FM Channel 16 (International Distress and Calling Channel) while underway, except when transmitting or receiving traffic on other VHF-FM channels (e.g., vessels may switch to other channels to pass traffic, listen to weather reports, etc.) or when participating in and monitoring a VTS channel. While not required to have a VHF-FM radio on board (Voluntary Ship Stations), vessels not subject to the bridge-to-bridge regulations must maintain a watch on Channel 16 whenever the radio, if onboard, is operating (i.e., energized) and is not being used to communicate on other channels.

3.12 Notification of the U.S. Coast Guard: Prior to commencement of work on this contract, the Contractor shall notify the Commander, Fifth Coast Guard District in writing with a copy furnished the Contracting Officer, of his intended operations to dredge and request that it be published in the Local Notice to Mariners. This notification must be given in sufficient time so that it appears in the Notice to Mariners at least two weeks prior to the commencement of this dredging operation.

3.13 Shellfish Areas: Shellfish areas exist adjacent to the channels to be dredged and along the access route to the Hart-Miller Island Containment Facility. Oyster bars exist in the vicinity of the access route to the Poplar Island Environmental Restoration Project. Dredging and towing operations shall be conducted in such a manner as to avoid possible damage to these grounds. The Contractor shall not conduct any operations in any shellfish or crabbing areas without obtaining approval from the Maryland Department of Natural Resources. Any approved towing routes shall be properly marked and lighted with aids to navigation and coordinated with the Maryland Waterman's Association (Mr. Blair Blautus - 410-952-6249 (cell), 410-391-6277 (home)). All vessels including crew boats shall be required to use these routes when navigating through shellfish and crabbing areas. The Contractor is cautioned to exercise due care and precaution in dredging and any other operations attendant with dredging (such as the construction of trestles; the movement and anchoring of barges, vessels, or other equipment; the placing, moving or dragging of anchors, and leaking pipelines) to prevent damage to all oyster and crabbing grounds. The Contractor shall hold and save harmless the United States, its officers and employees, from all claims that may arise resulting from the Contractor's negligence in connection with the work to be performed under the contract, or from noncompliance by the Contractor with the provisions of the contract drawings and specifications and/or the instructions of the Contracting Officer.

4. LAYOUT OF WORK: (1965 APR OCE)

4.1 The Contractor shall be responsible for the layout of his work. The Government will furnish the channel centerline coordinates and bearings at the beginning point, at each point where the channel changes direction, and at the ending point; and the channel toe coordinates and bearings of both sides of the channel at the beginning point, at each point where the channel changes direction, and at the ending point. The Government will furnish the coordinates and the monument descriptions of the existing horizontal and vertical control within the project area. The Contractor shall be responsible,

by utilizing this data, for dredging within the dredging prisms that are shown on the contract drawings. The Contractor shall maintain, preserve, repair or replace, at his own expense, any gages or location markers that are lost, damaged or destroyed for any reason subsequent to their initial establishment by the Contracting Officer until authorized to remove them. The Contractor may, at his option, establish offset stakes, back-up stakes, and gages to be utilized in re-establishing any baseline, ranges and gages that are lost, damaged or destroyed. The contract completion time will not be increased due to work delays that result from the failure of the Contractor to maintain, repair or replace the Government established baselines, ranges and gages. (CENAB-EN 1984 APR)

4.2 The Contractor shall give the Contracting Officer adequate advance notice of the commencement of work in order to assure the timely completion of the immediately before dredging survey and the establishment of necessary dredging layouts. The notice shall be furnished at least 15 days prior to mobilization of the dredge plant to the work site. The Contractor shall give the Contracting Officer at least 15 days notice of the need to conduct subsequent immediately before dredging and after dredging surveys. The survey made in response to this notice shall constitute the immediately before dredging survey and any subsequent surveys occasioned through Contractor delays may be charged against the Contractor at a rate of \$2,700 per day. If the Contractor fails to provide adequate advance notice, the Contracting Officer will not be responsible for any delays in the commencement of work caused by incomplete dredging layouts.

4.3 Datum and Bench Marks: The plane of reference mean lower low water (MLLW (NOS)), as established by National Ocean Survey, will be used in these specifications and was established by the bench marks included in Appendix A. The estimated highest water level to the nearest half-foot is 7.5 feet above mean lower low water. The estimated lowest water level to the nearest half-foot is 5.0 feet below mean lower low water. Estimates are based on observed extreme water levels at the Baltimore NOAA tidal station number (857-4680) located at Ft. McHenry.

4.4 Additional horizontal and vertical control data will be provided to the Contractor upon request. This request should be made to the Navigation Support Section at telephone number (410) 962-5674.

5. SIGNAL LIGHTS:

5.1 The Contractor shall display lights and conduct his operations in accordance with the General Regulations of the Department of the Army and of the U.S. Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipelines, and day signals to be displayed by vessels of more than 65-feet in length moored or anchored in a fairway or channel, and the passing by other vessels of floating plant working in navigable channels, as set forth in Commandant U.S. Coast Guard Instruction M16672.2A, Navigation Rules: International-Inland (Comdtinst M16672.2A), or 33 CFR 81 Appendix A (International) and 33 CFR 84 through 33 CFR 89 (Inland) as applicable. (DAEN-PRP-1984 JUL)

5.2 Marking of Floating Dredge Pipeline: The Contractor shall mark the floating dredge pipeline in accordance with U.S. Coast Guard navigation rules,

inland - NX5-88.15. As a minimum the Contractor shall mark the pipeline with amber lights visible on all points of the horizon for 2 miles on a clear night. The lights shall flash at 50-70 times per minute and be placed between 1 and 3.5 meters above the water. Spacing shall be sufficient to clearly show the pipeline length and course. Where the pipeline crosses a navigable channel spacing shall be every 10 meters. Two red lights, visible on all points of the horizon, shall be displayed at each end of the floating pipeline. They shall be arranged vertically 1 meter apart with the lower light at the same elevation as the amber lights.

6. ACCOMMODATIONS AND MEALS FOR INSPECTORS: (1965 APR OCE)

6.1 The Contractor shall furnish regularly to Government inspectors on board the dredge or other craft upon which they are employed a suitable separate room for office and storage purposes. The room shall be equipped and maintained to the satisfaction of the Contracting Officer. The room shall be properly heated, locked or provided with a table (approximately 60" x 36") and file drawer (approximately 15" x 24") which can be locked, a locker capable of being locked with a padlock, a chair for the inspectors, and washing conveniences.

6.2. The Contractor shall furnish, for exclusive use by the Contracting Officer and any Government inspector, a suitable separate office trailer at Hart-Miller Island and Poplar Island and any other Contractor-furnished placement area during the entire period of the Contractor's performance under the contract. The office trailer shall be equipped and maintained to the satisfaction of the Contracting Officer. The office trailer shall be properly heated, ventilated, and lighted; and it shall have a desk which can be locked or a table (approximately 60" x 36") and file drawer (approximately 15" x 24") which can be locked, a locker capable of being locked with a padlock, a chair for the inspectors, and washing conveniences. The Contractor shall also provide a working fax machine for the exclusive use of the Government. The Contractor shall be responsible for properly anchoring the trailer, maintaining the trailer and transporting the trailer to and from the Hart-Miller Island and Poplar Island facilities and/or Contractor-furnished placement area upon commencement and completion of the contract.

6.3 The Contractor shall furnish, for exclusive use by the Contracting Officer or any inspector, a 4-wheel drive, 5 passenger vehicle for inspection of the Hart-Miller Island and Poplar Island facilities during the entire period of the Contractor's performance under the contract. The vehicle shall be equipped with Contractor radio communication. The Contractor shall ensure that the vehicle and radio are in proper working order at all times. The Contractor shall be responsible for refueling, maintaining, and insuring the vehicle; and transporting the vehicle to and from the Hart-Miller Island and Poplar Island facilities upon commencement and completion of the contract, respectively.

6.4 The entire cost to the Contractor for furnishing, equipping, and maintaining the foregoing accommodations shall be included in the contract price. If the Contractor fails to meet these requirements, the facilities referred to above will be secured by the Contracting Officer, and the cost thereof will be deducted from payments to the Contractor.

6.5 If the Contractor maintains on this work establishment for the subsistence of his own employees, he shall, when required, furnish to inspectors employed on the work and to all Government agents who may visit the work on official

business, meals of a quality satisfactory to the Contracting Officer. The meals furnished will be paid for by the Government at a rate of \$3.50 per person for each meal. (EFARS 52.2/9110 (g))

7. CONTRACTOR QUALITY CONTROL:

7.1 General: The Contractor shall establish and maintain an effective quality control system in compliance with Contract Clause paragraph INSPECTION OF CONSTRUCTION. The quality control system consists of plans, procedures, and organization necessary to provide materials, equipment, workmanship, fabrication, construction and operations which comply with contract requirements. The system shall cover construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence.

7.2 Coordination Meeting: As soon as practicable after receipt of Notice to Proceed and before start of construction, the Contractor shall meet with the Contracting Officer and discuss the Contractor's quality control (CQC) system. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the QC operations; control activities, testing, administration of the system for both onsite and offsite, and the interrelationship of Contractor and Government control and surveillance. Minutes of the meeting shall be prepared, signed by both the Contractor and the Contracting Officer, and shall become a part of the contract file. There may also be occasions when subsequent conferences will be called to reconfirm understandings.

7.3 Quality Control Plan:

7.3.1 General: Prior to the start of dredging, the Contractor shall furnish his QC plan to the Contracting Officer for acceptance. Construction or dredging will be permitted to begin only after acceptance of the QC plan, or approval of that portion of the plan applicable to the particular feature of work to be started. The QC plan the Contractor proposes to implement shall identify the personnel, procedures, instructions, records, and forms, and as a minimum, shall include:

(a) A description of the quality management organization.

(b) The number, classifications, qualifications, duties, responsibilities and authorities of personnel. A copy of the letter signed by an authorized official of the firm, which describes the responsibilities and delegates the authorities of the system manager, shall be furnished.

(c) Procedures for processing reports, shop drawings, certificates, samples and other submittals.

(d) QC activities to be performed, including those of subcontractors, off-site fabricators, and suppliers.

(e) Compliance inspections recorded on the Daily Quality Control Report and the Dredging Report, samples of which are attached at the end of the specifications.

7.3.2 Notification of Changes: After approval of the QC plan, the Contractor shall notify the Contracting Officer in writing of any proposed change.

7.3.3 Corrective Actions: At any time it is determined that the QC system, personnel, instructions, controls, tests, or records are not providing construction which conforms to contract requirements, actions shall be taken to correct the deficient management.

7.4 Quality Control Organization:

7.4.1 System Manager: The Contractor shall identify an individual within his organization at the site of the work, who shall be responsible for overall management and have the authority to act in all CQC matters for the Contractor.

7.4.2 Personnel: A staff shall be maintained under the direction of the system manager to perform all QC activities. The actual strength of the staff during any specific work period may vary to cover work phase needs, shifts, and rates of dredging. At least one quality control inspector shall be present at upland placement areas during dredging operations. For multi-celled placement areas, the quality control inspector must remain at the placement area for a minimum of eight hours after shutdown of the dredge pump. The personnel of this staff shall be fully qualified by experience and technical training to perform their assigned responsibilities.

7.5 Control: The Contractor's quality control system shall include at least the following three phases of control and management for definable features of work:

7.5.1 Initial: This phase of control must be accomplished at the time of arrival of placement area and dredging personnel on site to accomplish a definable feature of work and at any time new workmen or crews arrive for assignment to the work. The Contractor's control system must permit the transfer of information on quality requirements specified in this contract to each workman before he starts, demonstration from each workman that he can provide the specified quality of work, and motivate him to continue. It is also during this phase that control testing to prove the adequacy of the Contractor's control procedures shall be initiated and verified. The CO shall be notified at least 24 hours in advance of each initial activity.

7.5.2 Follow-up: The follow-up phase shall be performed continuously to verify that control procedures are providing an end product which complies with contract requirements. Adjustments to control procedures may be required based upon the results of this phase and compliance inspections.

7.5.3 Completion: At the completion of the work, the CQC representative shall conduct a joint completion review with the CO. During this review the work shall be examined, quality control shall be reviewed, and a list shall be developed of work not properly completed or not conforming to plans and specifications. This list shall be included in the quality control documentation with an estimated date for correction of each deficiency. The Contractor shall make sure that deficiencies have been corrected prior to the specified completion date. Payment will be withheld for defective or deficient features until they are satisfactorily corrected except as otherwise provided in the Contract Clause paragraph INSPECTION OF CONSTRUCTION.

7.6 Documentation:

7.6.1 The Contractor shall maintain current records, on an appropriate approved form, of quality control operations, activities, and tests performed including the work of suppliers and subcontractors. Separate records shall be maintained for each dredging and rehandling operation. These records shall include factual evidence that the required activities or tests have been performed, including but not limited to the following:

- (a) Type and number of control activities and compliance inspections.
- (b) Results of control activities or inspections.
- (c) Nature of defects, causes for rejection, etc.
- (d) Proposed remedial action.
- (e) Corrective actions taken.

7.6.2 These records shall cover both conforming and defective or deficient features and shall include a statement that supplies and materials incorporated in the work comply with the contract. Legible copies of these records shall be furnished in duplicate to the CO daily. The records shall cover mobilization and demobilization, development of dredged material placement areas, dredging and rehandling performed during the time period for which the records are furnished, and shall be verified by the person so designated by the Contractor. (CENAB-EN 1984 APR)

8. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (EFARS 52.0231.5000 (OCT 1995))

(a) This clause does not apply to terminations. See 52.249-5000, Basis for settlement of proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable conditions owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual costs data for each piece of equipment or groups of similar serial and services for which the government can determine both ownership and operating costs from the Contractor's accounting records. When both ownership and operating costs can not be determined for any piece of equipment or groups of similar serial or series equipment from the Contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP1110-1-8 Construction Equipment Ownership and Operating Expenses Schedule, Region East. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d) (ii) and Far 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established proactive of leasing the same or similar equipment to unaffiliated leasees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the Contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

9. SAFETY:

9.1 General: The Contractor shall comply with the Contract Clause entitled "Accident Prevention", including the manual "Safety and Health Requirements Manual, EM 385-1-1, 3 November 2003" referred to therein, in addition to the provisions of this section.

9.1.1 The Contractor shall comply with provisions of EM 385-1-1. If the Contractor is a currently accepted participant in the Dredging Contractor's of America (DCA)/United States Army Corps of Engineers (USACE) Dredging Safety Management Program (DSMP), as determined by the DCA/USACE Joint Committee, and holds a current valid Certificate of Compliance for both the Contractor Program and the Dredge(s) to be used to perform the work required under this contract, the Contractor may, in lieu of the submission of an Accident Prevention Plan (APP):

(a) make available for review, upon request, the Contractor's current Safety Management System (SMS) documentation.

(b) Submit to the Contracting Officer the current valid Company Certificate of Compliance for its SMS.

(c) submit the current dredge(s) Certificate of Compliance based on third party audit, and

(d) submit for review and acceptance, site specific addenda to the SMS as specified in the solicitation.

9.2. Safety Manager: The Contractor shall provide an individual at the site of work, whose sole duties are to control compliance with safety requirements of this contract and to carry out the provisions of the approved accident prevention plan. The safety manager must be competent and familiar with the requirements of EM 385-1-1 and industry safety standards.

9.2.1 Safety inspections of the work sites, material and equipment shall be performed daily. Identified safety and occupational health deficiencies and corrective measures shall be recorded in the Contractor's QC report.

9.2.2 A "Master Deficiency List" identifying all safety deficiencies observed by the QC staff and/or the Contracting Officer or designees will be maintained by the Contractor. The information maintained in the list shall include the following at a minimum:

(a) Description of the deficiency and the corresponding EM 385-1-1 paragraph number.

(b) Date the deficiency was noted and the identifying party.

(c) Corrective action taken and the date accomplished.

9.2.3 The updated "Master Deficiency List" shall be submitted to the CO weekly. All safety deficiencies shall be corrected promptly. Failure to promptly correct safety deficiencies will result in suspension of work, retainage of funds, or complete withholding of partial payments.

9.3 Accident Reporting:

9.3.1 ENG Form 3394: Section 1.D. of EM 385-1-1 shall be followed and the Contract Clause entitled "Accident Prevention" is amended as follows: The prime Contractor shall report on ENG Form 3394, supplied by the Contracting Officer, all injuries to his employees and employees of subcontractors that require examination and treatment by a doctor and all damage to property and/or equipment in excess of \$1,000.00 per incident. Verbal notification of such accidents shall be made to the Contracting Officer within 24 hours. A written report on the above noted form shall be submitted to the Contracting Officer's representative within 48 hours following such accidents.

9.4 Head Protection (Hard Hat): The entire work site under this contract is designated as a hard hat area. The Contractor shall post the area in accordance with the requirements of section 05.D.01, EM 385-1-1, and shall insure that all prime and subcontractor personnel, vendors and visitors utilize hard hats while within the project area.

9.5 Oil Transfer Operations: The Contractor shall assure that oil transfer operations to or from his plant comply with all federal, state, and municipal laws, codes and regulations. Particular attention is directed to 33 CFR Subchapter O, POLLUTION. The Contractor shall incorporate in his accident prevention program, submitted in compliance with Contract Clause ACCIDENT PREVENTION, sufficient information to demonstrate that all fuel transfers shall be made in accordance with 33 CFR 156 and any other applicable laws, codes and regulations. (CENAB-EN 1984 APR)

9.6. Hoisting Equipment - General

9.6.1 All hoisting equipment must be capable of satisfactorily completing a performance (operating) test before being placed in service on the project. This test shall consist of maneuvering a specified test load through maximum lift height, lift radius, and boom quadrant. Except for the test load, the anticipated load is the maximum load that can be lifted by the hoisting equipment. The test shall be repeated prior to unusual or critical lifts, and after alteration, modification, repairs or reassembly, and at least every 12 months. Test records shall be made a part of the official project file. A thorough annual inspection of hoisting machinery shall be made by a competent person.

9.6.2 Load capacities, determined by the performance test, recommended operating speeds, and special hazards, warnings or instructions shall be posted where clearly visible to the operators of the cranes and derricks.

9.6.3. Floating cranes and floating derricks in use shall meet the requirements for design, construction, testing installation, maintenance, and operation discussed in ANSI B30.8, Safety Code for Floating Cranes and Floating Derricks. Performance tests shall demonstrate the strength; stability;

capability; and adequacy of power, brakes, clutches, and controls in accordance with the following table:

PERFORMANCE TEST FOR FLOATING CRANES

SAFE WORKING LOAD	TEST LOAD
Up to 20 tons	125% of working load
20 to 50 tons	Working load plus 5 tons
Over 50 tons	110% of working load

9.7 Front End Loader - Backhoe Machines:

9.7.1 All front end loader-backhoe machines and other machines, such as tractors that utilize a backhoe attachment, should be checked for:

(1) Exposed backhoe boom swing foot pedals.

(2) Backhoe boom swing lever which can be reached by a man standing on the ground or on the outrigger support bracket.

9.7.2 Where these conditions exists, guards should be fabricated to:

(1) Cover over exposed foot pedals to prevent someone from accidentally stepping on them.

(2) Inclose the swing lever so as to preclude operation from the ground or from the outrigger support bracket.

9.8 Trailers: All covered trailers, regardless of their use, shall be anchored after spotting and blocking up by installation of four 8-way expanding anchors with rods and cable, one under each of the four corners of the trailer. The anchors shall not be less than 3 feet under the surface of the ground with anchor rod extending to the ground surface. The trailer shall be securely anchored down by installation to each anchor of a 1/2-inch cable attached to the longitudinal frame member of the trailer by passing the cable over the frame member or to an eyebolt fastened to the frame, and then tightened by use of a turnbuckle or other approved means as necessary to prevent movement. Details of the proposed method of anchorage shall be submitted to the Contracting Officer for approval.

10. CONTINUING CONTRACTS (1985 JAN HQ USACE)

a. This is a continuing contract, as authorized by Section 10 of the River and Harbor Act of September 22, 1922 (33 U. S. Code 621). The payment of some portion of the contract price is dependent upon reservations of funds from future appropriations. The responsibilities of the Government are limited by this clause notwithstanding any contrary provision of the "Payments to Contractor" clause or any other clause of this contract.

b. (1) The sum of \$200,000.00 has been reserved for this contract and is available for payment to the Contractor during the current fiscal year. It is expected that Congress will make appropriations for future fiscal years from which additional funds will be reserved for this contract.

(2) Failure to make payments in excess of the amount currently reserved,

or that may be reserved from time to time, shall not entitle the Contractor to a price adjustment under the terms of this contract except as specifically provided in paragraphs (d) and (e) below. No such failure shall constitute a breach of this contract, except that this provision shall not bar a breach-of-contract action if an amount finally determined to be due as a termination allowance remains unpaid for one year due solely to a failure to reserve sufficient additional funds therefore.

c. (1) The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purposes. The Contracting Officer will promptly notify the Contractor of any additional funds reserved for the contract by issuing an administrative change order to the contract.

(2) If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the Contractor shall give written notice to the Contracting Officer of the estimated date of exhaustion and the amount of additional funds which will be needed to meet payments due or to become due under the contract during that fiscal year. This notice shall be given not less than 45 or more than 60 days prior to the estimated date of exhaustion.

d. (1) No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. The Contractor shall be entitled to simple interest on any payment that the Contracting Officer determines was actually earned under the terms of the contract and would have been made for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97, for the Renegotiation Board, as in effect on the first day of the delay in such payment.

(2) Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall not constitute a breach of this contract and shall not entitle the Contractor to any price adjustment under the "Suspension of Work" clause or any other manner under this contract.

(3) An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds.

e. If, upon expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the Contractor, by written notice delivered to the Contracting Officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be considered a termination for the convenience of the Government.

f. If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due the Contractor because of work performed and to be performed under the contract during the fiscal year, the Government reserves the right, after notice to the Contractor, to reduce said reservation by the amount of such excess. (EFAR 52.2/9109(d)).

11. FUEL USAGE: The Contractor shall furnish the Contracting Officer a report, to be received on or before the last day of the calendar month, listing the totals of fuels consumed by the dredging plant and supporting vessels. The report shall list the quantities of different fuels separately. The report shall cover the period from the 25th of the preceding month to the 25th of the current month.

12. ENVIRONMENTAL LITIGATION (1974 NOV OCE)

a. If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

b. The term "environmental litigation", as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

13. CERF IMPLEMENTATION: (83 JUN 1 OCE) If the work specified in this contract is performed by a hopper dredge(s), the owner must have an active Basic Ordering Agreement (BOA) for the hopper dredge(s) on file with the Corps. The Contractor shall be obligated to make the hopper dredge(s) available to serve in the Corps of Engineers Reserve Fleet (CERF) at any time that the hopper dredge(s) is performing work under this contract. When the Contracting Officer is notified of the decision to activate this dredge(s) into the CERF, he shall take appropriate action to release the dredge(s). He may then extend or terminate the contract to implement whichever action is in the best interest of the Government. The CERF Contractor shall also be subject to the following conditions:

a. The Director of Civil Works may require the Contractor to perform emergency dredging at another CONUS (48 contiguous states) site for a period of time equal to the remaining time under this contract at the date of notification plus up to ninety (90) days at the previously negotiated rate which appears on the schedule of prices in the BOA.

b. The Chief of Engineers may require the Contractor to perform emergency dredging at an OCONUS (Outside CONUS which includes Alaska, Hawaii, Puerto Rico, the Virgin Islands, or U.S. Trust Territories) site for a period of time equal to the time remaining under this contract at the date of notification plus up to one hundred eighty (180) days at the negotiated rate which appears on the schedule of prices in the BOA.

c. The CERF shall be activated by the Chief of Engineers or the Director of Civil Works; then the Ordering Contracting Officer will notify the Contractor. From the time of notification, the selected hopper dredge(s) must depart for the emergency assignment within seventy-two (72) hours for CONUS or ten (10) days for OCONUS assignments.

d. A confirming delivery order will be issued pursuant to the Basic Ordering Agreement (BOA) by the Ordering Contracting Officer. Such delivery order shall utilize the schedule of rates in the BOA from the specific hopper dredge(s).

e. If during the time period specified in a, b, or c, above, a CERF vessel(s) is still required, the contract performance may be continued for additional time by mutual agreement.

14. WORK ON SUNDAYS, HOLIDAYS, AND NIGHTS: When the Contractor elects to work on Sundays, holidays, or nights, notice of his intention to do so shall be given to the Contracting Officer within a reasonable time in advance thereof. For the purpose of inspection during night operations the Contractor shall provide, at his expense, lighting sufficient enough to illuminate the end of the discharge pipeline and unloading areas with a minimum intensity of 2 foot-candles. In addition, portable lighting shall be provided as requested by the Contracting Officer for more detailed inspection of possible trouble areas.

15. RADIO COMMUNICATION: The Contractor is responsible for and required to provide any and all equipment necessary to maintain 24-hour oral communication between the dredge operators at all dredging and rehandling sites, Quality Control System Manager, and Corps of Engineers' inspectors at the dredging and dredged material placement sites. The Contractor is responsible for any and all circumstances not conforming to the plans and specifications resulting from the inadequate operation of the equipment.

16. PROGRESS SCHEDULING AND REPORTING: (JUN 1975) In accordance with the Contract Clauses, the Contractor, shall within five days or as otherwise determined by the Contracting Officer, after date of commencement of work, submit for approval a practicable progress schedule showing the manner in which he intends to prosecute the work. NADB Form 1153 ("Physical Construction Progress Chart") will be furnished upon request for use in preparing this schedule. If a Contractor form is used, the same information as shown in the NADB Form 1153 shall be provided. Preparation and updating of the schedule shall be as follows:

16.1 Preparation: The progress schedule shall be prepared in the form of time-scaled summary network diagram graphically indicating the sequence proposed to accomplish each work activity or operation, and appropriate interdependencies between the various activities. The chart shall show the starting and completion dates of all activities on a linear horizontal time scale beginning with the dates of Notice to Proceed and indicating calendar days to completion. Each activity in the construction shall be represented by an arrow and shall have a beginning and ending node (event). The entire project shall have only one beginning node and one ending node. The arrangement of arrows shall be such that they flow from left to right. Each arrow representing an activity shall be annotated to show the activity description, duration and cost. The Contractor shall indicate on the chart the

important work activities that are critical to the timely overall completion of the project. Key dates for important features or portions of work features are milestone dates and shall be so indicated on the chart. Based on this chart, the Contractor shall prepare an earnings-time curve ("S" Curve) showing the rate of progress in terms of money and percent completion. Schedule progress may not include the value of materials or equipment delivered to the job site but not yet incorporated into the work. This schedule shall be the medium through which the timeliness of the Contractor's construction effort is appraised.

16.2 Updating: The Contractor shall update the schedule by entering actual progress thereon at monthly intervals. The status of activities completed or partially completed as of the end of each period shall be shown, as well as the percentage of work completed. In computing actual progress, the value of material and equipment on site but not incorporated into the work may not be considered. When changes are authorized that result in contract time extensions, the Contractor shall submit a modified chart for approval by the Contracting Officer. The Contract Clause entitled "SCHEDULES FOR CONSTRUCTION CONTRACTS" with reference to overtime, extra shifts, etc., may be invoked when the Contractor fails to start or complete work activities or portions of same by the date indicated on the approved progress chart, or when it is apparent to the Contracting Officer from the Contractor's actual progress that these dates will not be met. (CENAB-CO-E)

17. CONTINUITY OF WORK: No payment will be made for work done in any area designated by the Contracting Officer until the full depth required under the contract is secured in the whole of such area, unless prevented by ledge rock, nor will payment be made for excavation in any area not adjacent to and in prolongation of areas where full depth has been secured except by decision of the Contracting Officer. Should any such nonadjacent area be excavated to full depth during the operations carried on under the contract, payment for all work therein may be deferred until the required depth has been made in the area intervening. The Contractor may be required to suspend dredging at any time when for any reason the gages or ranges cannot be seen or properly followed.

18. MISPLACED MATERIAL: Should the Contractor during the progress of the work, lose, dump, throw overboard, sink, or misplace any material, plant machinery, or appliance, which in the opinion of the Contracting Officer may be dangerous to or obstruct navigation, the Contractor shall recover and remove the same with the utmost dispatch. The Contractor shall give immediate notice, with description and location of such obstructions, to the Contracting Officer or inspector, and when required shall mark or buoy such obstructions until the same are removed. Should he refuse, neglect, or delay compliance with the above requirements, such obstructions may be removed by the Contracting Officer, and the cost of such removal may be deducted from any money due or to become due to the Contractor, or may be recovered under his bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Section 15, 19, and 20 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 410 et seq.).

19. VARIATION IN ESTIMATED QUANTITY

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the

contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified. (FAR 52.211-18)

20. NEGOTIATED MODIFICATIONS: (OCT 84) Whenever profit is negotiated as an element of price for any modification to this contract with either prime or subcontractor, a reasonable profit shall be negotiated or determined by using the OCE Weighted Guidelines method outlined in EFARS15.902. (Sugg. CENAB 84-232)

21. GOVERNMENT QUALITY ASSURANCE: The inspectors will direct the maintenance of the gauges, ranges, location marks and limit marks in proper order and position; but the presence of the inspector shall not relieve the Contractor of responsibility for the proper execution of the work in accordance with the specifications. The Contractor shall be required:

(a) To furnish, on the request of the Contracting Officer or any inspector, the use of such boats, boatmen, laborers, and material forming a part of the ordinary and usual equipment and crew of the dredging plant as may be reasonably necessary in inspecting and supervising the work. However, the Contractor will not be required to furnish such facilities for the surveys, prescribed in the clause entitled "FINAL EXAMINATION AND ACCEPTANCE."

(b) To furnish, on the request of the Contracting Officer or any inspector, suitable transportation from all points on shore designated by the Contracting Officer to and from the various pieces of plant, and to and from the placement site. Should the Contractor refuse, neglect, or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Contracting Officer, and the cost thereof will be deducted from any amounts due or to become due the Contractor. (EFARS 52.2/9110(d) OCT 1984)

21.1. State Inspection: The Contractor shall allow state inspection personnel to be on board the operation vessel(s) during cycles of loading, traveling and placing dredged material, and to obtain dredged material and water samples.

22. FINAL EXAMINATION AND ACCEPTANCE:

(a) As soon as practicable after the completion of the entire work or any section thereof (if the work is divided into sections) and in the opinion of the Contracting Officer will not be subject to damage by further operations under the contract, such work will be thoroughly examined at the cost and expense of the Government by sounding or by sweeping, or both, as determined by the Contracting Officer. Should any shoals, lumps, or other lack of contract depth be disclosed by this examination the Contractor shall be required to remove same by dragging the bottom or by dredging at the contract rate for dredging, but if the bottom is soft and the shoal areas are small and form no

material obstruction to navigation, the removal of such shoal may be waived by the discretion of the Contracting Officer. The Contractor shall give at least 15 days advance notice to the Contracting Officer that an after-dredging survey is needed in a particular section of the work. If the Contractor fails to provide this advance notice, the Contracting Officer will not be responsible for any delays caused by incomplete surveys. The Contractor or his authorized representative will be notified when soundings and/ or sweepings are to be made, and will be permitted to accompany the survey party. When the area is found to be in a satisfactory condition, it will be accepted finally. Should more than two sounding or sweeping operations by the Government over an area be necessary by reason of work for the removal of shoals disclosed at a prior sounding or sweeping, the cost of such third and any subsequent sounding or sweeping operations will be charged against the Contractor at the rate of \$2,700.00 per day for each day in which the Government plant is engaged in sounding or sweeping and/ or is in route to or from the site or held at or near the said site for such operations.

(b) Final acceptance of the whole or a part of the work and the deductions or corrections of deductions made thereon will not be reopened after having once been made, except on evidence of collusion, fraud, or obvious error, and the acceptance of a completed section shall not change the time of payment of the retained percentages of the whole or any part of the work. (EFARS 52.2/9110(e) OCT 1984)

(c) For the purposes of acceptance, the work to be done is divided into Acceptance Sections as shown on the drawings.

23. SHOALING:

23.1. Shoaling Prior to Dredging: The drawings show the condition of the channel at the time of the most recent survey; however, the condition will be verified by a survey made immediately before dredging. Any shoaling that has developed, subsequent to the surveys indicated on the drawings and contiguous to the areas indicated to be dredged under this contract, shall be removed by the Contractor at the contract unit price for dredging at the option of the Contracting Officer. Any such shoaling within contiguous areas will be included as part of the required dredging prism for the purposes of Special Clauses paragraph 19, "VARIATION IN ESTIMATED QUANTITY."

23.2. Shoaling Subsequent to Dredging: If, before the contract is completed, shoaling occurs in any section previously accepted, including shoaling in the finished channel, because of the natural lowering of the side slopes, redredging at the contract price, within the limit of available funds, may be done if agreeable to both the Contractor and the Contracting Officer. (EFARS 52.2/9110(f) OCT 1984)

24. ENVIRONMENTAL PROTECTION

24.1 General: The Contractor shall furnish all labor, materials and equipment, to perform all work required for the prevention of environmental pollution during, and as the result of, construction/dredging operations under this contract except for those measures set forth in the Technical Clauses of these specifications. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably

alter ecological balances of importance to human life; or affect other species of importance to man. The control of environmental pollution requires consideration of air, water, and land.

24.2 Applicable Regulations: The Contractor and his subcontractors in the performance of this contract, shall comply with all applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement in effect on the date of this solicitation, as well as the specific requirements stated elsewhere in the contract specifications.

24.3 Notification: The Contracting Officer or his authorized representative will notify the Contractor of any noncompliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. If the Contractor fails or refuses to comply promptly, the Contracting Officer or his authorized representative may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of time lost due to any such stop order shall be made subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

24.4 Subcontractors: Compliance with the provisions for environmental protection by subcontractors shall be the responsibility of the Contractor.

24.5 Protection of Water Resources: The Contractor shall not pollute streams, lakes, reservoirs, rivers or bays with fuels, oils, bitumens, calcium chloride, acid construction wastes, or other harmful materials. All work under this contract shall be performed in such a manner that objectionable conditions will not be created in streams through or adjacent to the project area. The Contractor shall take special positive protective measures to prevent spillage of potential pollutant materials such as fuel, emulsion materials, chemicals, etc., from storage containers or equipment into public waters. Such positive protective measures may include, but are not limited to the following:

- (a) A berm enclosure of sufficient capacity to contain such materials.
- (b) Security measures to prevent acts of vandalism which could result in spillage of such materials (fences, guards, etc.).
- (c) Storage of such materials in an area where the terrain would preclude leakage into public waters.
- (d) Utilization of secure Government storage areas if the Contracting Officer indicates such space is available. No storage past immediate needs (2 days) without the consent of the Contracting Officer or his authorized representative.

24.6 Burning: Burning shall be in compliance with Federal, State, and local laws. The Contractor shall be responsible for obtaining all required burning permit approvals.

24.7 Dust Control: The Contractor shall maintain all work areas free from dust which would contribute to air pollution. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment or similar methods will be permitted to control dust. Sprinkling,

where used, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs.

24.8 Protection of Land Resources:

24.8.1 General: It is intended that land resources within the project boundaries and outside the limits of the permanent work performed under this contract be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the project. Insofar as possible, the Contractor shall confine his construction activities to areas defined by the plans and specifications or to be cleared for other operations. The following additional requirements are intended to supplement and clarify the requirements of the CONTRACT CLAUSES.

24.8.2 Protection of Trees Retained:

(a) The Contractor shall be responsible for the protection of the tops, trunks, and roots of all existing trees that are to be retained on the site. Protection shall be maintained until all work in the vicinity has been completed and shall not be removed without the consent of the Contracting Officer or the authorized representative of the Contracting Officer. If the Contracting Officer or his authorized representative finds that the protective devices are insufficient, additional protection devices shall be installed.

(b) Heavy equipment, vehicular traffic, or stockpiling of any materials shall not be permitted within the drip line of trees to be retained.

(c) No toxic materials shall be stored within 100 feet from the drip line of trees to be retained.

(d) Except for areas shown on the contract drawings to be cleared, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without special authority. Existing nearby trees shall not be used for anchorage unless specifically authorized by the Contracting Officer or his authorized representative. Where such special emergency use is permitted, the Contractor or his authorized representative shall first adequately protect the trunk with a sufficient thickness of burlap over which softwood cleats shall be tied.

(e) No protective devices, signs, utility boxes or other objects shall be nailed to trees to be retained on the site.

24.9 Restoration of Landscape Damage: Any tree or other landscape feature scarred or damaged by the Contractor's operations shall be restored as nearly as possible to its original condition at the Contractor's expense. The Contracting Officer or his authorized representative will decide what method of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed of. All scars made on trees, designated on the plans to remain, and all cuts for the removal of limbs larger than 1 inch in diameter shall be coated as soon as possible with an approved tree-wound dressing. All trimmings or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted. Where tree climbing is necessary, the use of climbing spurs

will not be permitted. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the Contracting Officer or his authorized representative, shall be immediately removed and replaced with a nursery-grown tree of the same species. Replacement trees shall measure no less than 2 inches in diameter at 6 inches above the ground level.

24.10 Location of Storage and Service Facilities: The location on Government property of the Contractor's storage and service facilities, required temporarily in the performance of the work, shall be upon cleared portions of the job site or areas to be cleared. The preservation of the landscape shall be an imperative consideration in the selection of all sites.

24.11 Temporary Excavation and Embankments: If the Contractor proposes to construct temporary roads, embankments, or excavations for plant and/or work areas, he shall submit a plan for approval prior to scheduled start of such temporary work.

24.12 Waste Disposal: Placement of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., in areas adjacent to the work site shall not be permitted. If waste material is dumped in unauthorized areas, the Contractor shall remove the material and restore the area to the condition of the adjacent undisturbed area. If necessary, contaminated ground shall be excavated, disposed of as directed by the Contracting Officer, replaced with suitable fill material, compacted and planted as required to reestablish vegetation.

24.13 Toilet Facilities: The Contractor shall provide on-shore toilet facilities, in accordance with paragraph 02.B, TOILETS, of EM 385-1-1, at the dredged material placement sites. Dredge plant toilet facilities may not be substituted for on-shore facility requirements.

24.14 Corrective Action: The Contractor shall, upon receipt of a notice in writing of any noncompliance with the foregoing provisions, take immediate corrective action. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs of damages by the Contractor unless it was later determined that the Contractor was in compliance.

24.15 Measurement and Payment: No separate measurement and payment will be made for the work performed in Environmental Protection, specified herein, and all costs in connection therewith shall be considered a subsidiary obligation of the Contractor and shall be included in the overall cost of the work.

25. SUBCONTRACTS: In accordance with Section 00100, Instructions, Conditions and Notices to Bidders, NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY, the Contractor shall, within 10 working days following award of any construction subcontract by the Contractor or a Subcontractor, deliver to the Contracting Officer or his authorized representative a completed Standard Form 1413.

26. AVAILABILITY OF COMMERCIAL SPECIFICATIONS, STANDARDS, AND DESCRIPTIONS: These specifications, standards, and descriptions are not available from

Government sources. They may be obtained from the publishers listed in paragraph Section 00100, Clause 52.211-2 of the Instructions, Conditions, and Notices to Bidders for the availability of non-commercial specifications.

27. CONTRACTOR SUBMITTAL PROCEDURES: The submittal Register ENG Form 4288, listing in tabular form the technical items the Contractor shall submit to the Contracting Officer or his authorized representative as indicated in the contract requirements, is shown at the end of these specifications. Any omissions from the submittal listing shall not be construed as relieving the Contractor from the obligation of furnishing a complete submittal of all technical items specified in the contract. Within 7 calendar days after receipt of Notice to Proceed, the Contractor shall complete and submit to the Contracting Officer or his authorized representative, in duplicate, submittal register ENG Form 4288 listing all submittals and dates. In addition to those items listed on ENG Form 4288, the Contractor shall furnish submittals for any deviation from the plans or specifications. The scheduled need dates must be recorded on the document for each item for control purposes. Scheduling shall be coordinated with the approved progress schedule. The Contractor's Quality Control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective system. Copies of the updated or corrected listing shall be submitted to the Contracting Officer or his authorized representative at least every 30 days in the quantity specified. Payment will not be made for any material or equipment which does not comply with the contract requirements.

28. CONTRACTOR'S RESPONSIBILITY: (ECI, APP.A) The Contractor shall be responsible for insuring that his employees strictly comply with all Federal, State, and municipal laws that may apply to operations under the contract; and it is understood and agreed that the Contractor assumes full responsibility for the safety of his employees, plant, and materials, and for any damage or injury done by or to them from any source or cause, except damage caused to the plant or equipment by acts of the Government, its officers, agents or employees, in which event such damages will be the responsibility of the Government in accordance with applicable Federal laws. For the purpose of this clause, the terms "officers, agents or employees" of the Government shall not include persons who are employed by the Contractor and whose services have been furnished to the Government pursuant to this or any other contract.

28.1 Responsibility For Contractor Plant and Government Property: The Government will not be responsible for the dredge and attendant plant, any Government property aboard the dredge and attendant plant, or any accidental damage thereto during the period of the contract. The Contractor shall release the Government and its officers, agents, and employees from all responsibility for damages to dock facilities, submerged and aerial crossings, bridges, moored vessels, or other damages ordinarily covered by fire and marine insurance.

28.2 Warranty: The Contractor warrants to the Government the quiet and peaceable use of the aforesaid property, and in case of any disturbance, by suit or otherwise, shall defend the same free of charge to the Government in or before the proper State or United States courts.

28.3 Delays: If the Contractor refuses or fails to make delivery of the property within the time specified or any extension thereof, as provided in specifications, or to maintain the property in serviceable condition and diligently and competently to conduct the specified operations, the Government

may, by written notice terminate the right of the Contractor to proceed with delivery or with further performance under the contract or such parts or parts thereof affected by the contract or otherwise and the Contractor shall be liable to the Government for any excess cost occasioned thereby.

28.4 Disclaimer: The Contractor shall hold and save harmless the United States, its officers, agents, and employees, from all claims that may arise resulting from the Contractor's negligence in connection with the work to be performed under the contract, or from noncompliance by the Contractor with the provisions of the contract, contract drawings, and specifications and/or the instructions of the Contracting Officer or his authorized representative.

28.5 The Contractor shall maintain a log on each vessel transporting personnel between the shore and the project work sites. The Contractor shall be responsible for recording each trip between a shore station and the project site in the log. The log shall include date, time, and names of all transported persons not directly employed by the Contractor (including all corps personnel and site visitors), and the names of the operator and crew of each transporting vessel. The Contractor shall submit copies of the logs to the Contracting Officer at the end of each week during construction.

29. SPECIAL REQUIREMENTS FOR HART-MILLER ISLAND CONTAINMENT FACILITY

29.1 General Information:

29.1.1 The Maryland Port Administration is the owner-operator of the Hart-Miller Island facility. The Maryland Port Administration has contracted with the Maryland Environmental Service for the operation and maintenance of the facility.

29.1.2 Inspection of the Hart-Miller Island Containment Facility prior to the Contractor's submission of bids should be coordinated with the Maryland Port Administration, - Telephone number (410) 631-1102.

29.1.3 The Contractor's attendance will be required at biweekly and other scheduled status meetings held at Hart-Miller Island.

29.2 Docking Facilities:

29.2.1 The Contractor will not be allowed to utilize the docking facilities, including the mooring dolphins, provided at the south and north unloading sites. Use of the crane pier will be permitted on a limited basis. Any use of the crane pier shall be coordinated through the Maryland Environmental Service site manager at (410)370-7715. Use of these areas for storage of equipment and/or materials will not be permitted.

29.2.2 Mooring of the Barge Unloader: The contractor shall be responsible for providing a means of berthing the unloader and shall submit a berthing scheme which must be approved by the Contracting Officer and the Maryland Port Administration.

29.2.3 Berthing of Barges: The Contractor shall be responsible for providing a means of berthing barges or scows. The north unloading facility may not be used for the berthing or mooring of barges without specific permission from the Contracting Officer. The Contractor shall submit a proposal for consideration

of a berthing scheme, which must be approved by the Contracting Officer and the Maryland Port Administration.

29.3 Storage Areas:

29.3.1 All operations related to the storage of equipment and materials shall be confined to the areas as shown on the contract drawings with approval by the Contracting Officer. The Contractor shall include his requirements for storage space in his plan of operations submitted for approval.

29.3.2 Storage areas will be used only for equipment and materials necessary for the performance of work on the site.

29.3.3 Use of storage areas other than those shown on the contract drawings must be approved by the Contracting Officer and must not interfere with traffic or other operations. The Contractor shall not store pipe or equipment on the crown or slopes of the perimeter dikes or cross dike.

29.3.4 Temporary buildings (storage sheds, shops, offices, etc.) may be erected and utilities may be altered by the Contractor upon approval by the Contracting Officer, and shall be built with labor and materials furnished by the Contractor without expense to the Government. Such temporary buildings and utilities shall remain the property of the Contractor and shall be removed by him at his expense upon the completion of the work. Upon approval of the Contracting Officer, such buildings and utilities may be abandoned and need not be removed.

29.3.5 The Contractor shall use only established roadways or construct and use such temporary roadways as may be authorized by the Contracting Officer. Where materials are transported in the prosecution of the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross any roadways, curbs or utilities, protection against damage shall be provided by the Contractor and any damaged roadways, curbs or utilities shall be repaired promptly by, or at the expense of the Contractor.

29.3.6 The Contractor shall be responsible for any necessary maintenance or improvement, and periodic clean-up of the storage areas.

29.4 Speed Limit: The speed limit at Hart-Miller Island is 15 miles per hour, except where lower limits are posted. Employees shall be cautioned to slow down in the vicinity of the Operations Building and for pipe crossings, and to watch out for heavy equipment and pedestrians. Vehicles shall be operated in a careful manner and any employee found to be operating his vehicle in a reckless manner will be denied the privilege of driving on the facility.

29.5 Safety and Fire Protection: All regulations regarding safety and fire protection will be complied with by the Contractor, his subcontractors, and employees. The Contractor shall familiarize himself and all personnel engaged in work under his direction, with the location of a telephone for fire reporting. Bottles, cans and other trash shall be placed in trash receptacles to eliminate safety hazards. No burning will be allowed on Hart-Miller Island.

29.6 The Contractor must provide barriers such as spill curtains, and pumps at all dredged material off-loading areas in order to contain and recover any

spilled material. No open water dumping in the rehandling basin shall be utilized. Before commencing operations, the Contractor shall obtain approval from the Contracting Officer for the Contractor's spill containment plan.

29.7 The Contractor must employ measures to prevent or control spills of fuels or lubricants from entering the waterway. The Contractor must submit a fuel spill control plan to the Contracting Officer for approval before commencing unloading operations, including plans for recovery of any spilled fuels or lubricants. Any spills of fuels, lubricants or other material must be reported immediately to the U.S. Coast Guard, National Response Center, Maryland Department of Environment, Water Resources Administration, the Contracting Officer or his representative, the Maryland Environmental Service and the Maryland Port Administration.

29.8 The Contractor shall be responsible for the maintenance and repair to roads, rights-of-way, and other access points throughout the Contractor's performance at Hart-Miller Island. This responsibility includes only those roads and areas which the Contractor actually uses in his operations. Maintenance of roadways shall include the control of dust which may occur as a result of the Contractor's activities. The Contractor may employ only those methods of dust control which have been approved by the Contracting Officer. The contractor shall be responsible for removing any spilled material or debris from the roadways.

29.9 A joint inspection of all facilities will be conducted by the Contractor, the Maryland Port Administration, the Maryland Environmental Service, and the Contracting Officer prior to commencing operations and upon completion of operations at Hart-Miller Island to ascertain any damages or deficiencies. Also, a hydrographic survey of the unloading area and the access channel to the crane pier will be conducted by the Contractor prior to and upon completion of operations. A copy of each survey along with the electronic file will be provided to the Government. Any damage attributed to the Contractor's operation will be repaired by the Contractor. If repairs are not performed in a timely manner, the Contracting Officer will cause the repairs to be made at the Contractor's expense.

29.10 The Contractor is advised that other Contractors and the Maryland Environmental Service (site operator) are likely to be performing work in adjacent unloading, storage, dredging and discharge areas. Also, the Maryland Environmental Service will be conducting crust management activities in the containment area from April 1, 2004, through September 30, 2004, and April 1, 2005 through September 30, 2005. The Contractor shall be responsible for coordinating his activities with the other Contractors and the Maryland Environmental Service to avoid interference with each other's operations.

29.11 The Contractor shall not use any mainland streets within a 5-mile radius of the site for mobilizing or transporting the equipment and/or materials required for the project. All equipment and/or materials shall be barged or brought by helicopter to the site. All helicopter traffic shall avoid residential areas and the Fort Howard facilities. No construction traffic, except construction personnel traffic, will be allowed to use Hart and Miller Island Road. The Contractor shall confine his activities to the limits of construction and shall not trespass upon, or store equipment and/or materials on Hart or Miller Islands at any time.

29.12 The Contractor shall be responsible for all electrical service associated with dredged material unloading and placement activities at Hart-Miller Island. If an electrically powered unloader is used the Contractor will be required to generate his own electricity at Hart-Miller Island or obtain electricity from the Baltimore Gas & Electric Company (BG&E). If the Contractor elects to use electricity supplied by BG&E, the contractor must request BG&E install a dedicated 34.5 kV underground extension from BG&E's Black Marsh substation, located at the intersection of North Point Road and Millers Island Road, to Cuckhold Point at the contractor's expense. The contractor will be responsible for installing his electric line from Cuckhold Point to the unloader and should contact Mr. Stephen Schneider of BG&E at (410)291-3153 concerning transformer and cable requirements as well as other questions regarding installation of the 34.5 kV extension. The contractor will be responsible for obtaining all necessary State of Maryland and Corps of Engineers permits required to install his cable from the mainland to Hart-Miller Island.

30. SPECIAL REQUIREMENTS FOR POPLAR ISLAND ENVIRONMENTAL RESTORATION PROJECT

30.1 General Information:

30.1.1 The Poplar Island Environmental Restoration Project is a cost shared project between the U.S. Army Corps of Engineers and The State of Maryland, Maryland Port Administration.

30.1.2 Inspection of the Poplar Island Environmental Restoration Project prior to the Contractor's submission of bids should be coordinated with the Baltimore District, Telephone number (410) 962-5674.

30.1.3 The Contractor's attendance will be required at biweekly and other scheduled status meetings held at Poplar Island.

30.2 Docking Facilities:

30.2.1 The Contractor will be allowed to utilize the access facilities provided at the head of the access channel but will be responsible for any costs for damages resulting from his operations and will promptly restore the facilities to their prior condition in the event of damage. The contractor will also be permitted to use the personnel pier for dropping off and picking up of personnel. Use of these areas for storage of equipment and/or materials will not be permitted. Any permanent mooring location and/or modification of the existing mooring facilities will be subject to the Contracting Officer's approval.

30.2.2 Mooring of the Barge Unloader: The unloader shall not be moored and/or operated within 500 yards of Oyster Bar N.O.B. 8-10 shown on drawing 27 of 28.

30.2.3 Berthing of Barges: The Contractor shall be responsible for providing a means of berthing barges or scows. The Station 5+30 Bulkhead may not be used for the berthing or mooring of barges without specific permission from the Contracting Officer. The Contractor shall submit a berthing scheme as part of his operations plan, which must be approved by the Contracting Officer.

30.3 Storage Areas:

30.3.1 All operations related to the storage of equipment and materials shall be confined to the areas as shown on the contract drawings with approval by the Contracting Officer. The Contractor shall include his requirements for storage space in his operations plan submitted for approval.

30.3.2 Storage areas will be used only for equipment and materials necessary for the performance of work on the site.

30.3.3 Use of storage areas other than those shown on the contract drawings must be approved by the Contracting Officer and must not interfere with traffic or other operations. The Contractor shall not store pipe or equipment on the crown or slopes of the perimeter dikes or cross dikes.

30.3.4 Temporary buildings (storage sheds, shops, offices, etc.) may be erected and utilities may be altered by the Contractor upon approval by the Contracting Officer, and shall be built with labor and materials furnished by the Contractor without expense to the Government. Such temporary buildings and utilities shall remain the property of the Contractor and shall be removed by him at his expense upon the completion of the work. Upon approval of the Contracting Officer, such buildings and utilities may be abandoned and need not be removed.

30.3.5 The Contractor shall use only established roadways or construct and use such temporary roadways as may be authorized by the Contracting Officer. Where materials are transported in the prosecution of the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross any roadways, curbs or utilities, protection against damage shall be provided by the Contractor and any damaged roadways, curbs or utilities shall be repaired promptly by, or at the expense of the Contractor.

30.3.6 The Contractor shall be responsible for any necessary maintenance or improvement, and periodic clean-up of the storage areas.

30.4 Speed Limit: The speed limit at Poplar Island is 15 miles per hour, except where lower limits are posted. Employees shall be cautioned to slow down in the vicinity of the Operations facilities and for pipe crossings, and to watch out for heavy equipment and pedestrians. Vehicles shall be operated in a careful manner and any employee found to be operating his vehicle in a reckless manner will be denied the privilege of driving on the facility.

30.5 Safety and Fire Protection: All regulations regarding safety and fire protection will be complied with by the Contractor, his subcontractors, and employees. The Contractor shall familiarize himself and all personnel engaged in work under his direction, with the communication procedures for emergency, safety and hazard reporting. Bottles, cans and other trash shall be placed in trash receptacles to eliminate safety hazards and shall be removed by the contractor. No burning will be allowed on Poplar Island.

30.6 The Contractor must provide barriers such as spill curtains, and pumps at all dredged material off-loading areas in order to contain and recover any spilled material. No open water dumping shall be permitted. Before commencing operations, the Contractor shall obtain approval from the Contracting Officer for the Contractor's dredge material spill containment plan.

30.7 The Contractor must employ measures to prevent or control spills of fuels or lubricants from entering the waterway. The Contractor must submit a fuel spill control plan to the Contracting Officer for approval before commencing unloading operations, including plans for recovery of any spilled fuels or lubricants. Any spills of fuels, lubricants or other material must be reported immediately to the U.S. Coast Guard, National Response Center, Maryland Department of the Environment, Water Resources Administration, the Contracting Officer or his representative, and the Maryland Port Administration.

30.8 The Contractor shall be responsible for the maintenance and repair to roads, rights-of-way, and other access points throughout the Contractor's performance at Poplar Island. This responsibility includes only those roads and areas which the Contractor actually uses in his operations. Maintenance of roadways shall include the control of dust which may occur as a result of the Contractor's activities. The Contractor may employ only those methods of dust control which have been approved by the Contracting Officer.

30.9 A joint inspection of all facilities will be conducted by the Contractor, the Maryland Port Administration, Maryland Environmental Service, and the Contracting Officer prior to commencing operations and upon completion of operations at Poplar Island to ascertain any damages or deficiencies. Also, a hydrographic survey of the unloading area and the access channel to the unloading area will be conducted by the Contractor prior to and upon completion of operations. Any damage attributed to the Contractor's operation will be repaired by the Contractor. If repairs are not performed in a timely manner, the Contracting Officer will cause the repairs to be made at the Contractor's expense.

30.10 The Contractor is advised that other Contractors and the Maryland Environmental Service are likely to be performing work in adjacent unloading, storage, dredging, and discharge areas. Such work may include but not be limited to dike maintenance and stockpiling. The Contractor shall be responsible for coordinating his activities with the other Contractors and the Maryland Environmental Service to avoid interference with each other's operations.

30.11 The contractor shall be responsible for all electrical service associated with dredged material unloading and placement activities at Poplar Island. If an electrically powered unloader is used the Contractor will be required to generate his own electricity at Poplar Island or obtain electricity from the local utility Company. The contractor will be responsible for obtaining all necessary State of Maryland and Corps of Engineers permits required to install his cable from the mainland to Poplar Island.

31. ENDANGERED SPECIES

31.1 Protection Of Marine Animals, Wildlife And Vegetation

The Contractor is informed that the dredging areas are in a portion of Maryland frequented by shortnose sturgeon, which are endangered species protected by federal law. If, in the performance of this contract, evidence of the possible disturbance to any such shortnose sturgeon may occur, the Contractor shall notify the Contracting Officer immediately, giving the location and nature of the findings. The Contractor shall advise all personnel associated with the operation of the vessels and plant of the civil

and criminal provisions of the Endangered Species Act. The Contractor shall comply with all laws and regulations governing the work and the provisions set forth in this section. In the event that endangered or protected species are affected by this work, the work under this contract may be suspended or terminated as determined by the Contracting Officer. All crew members of the clamshell dredge, hydraulic unloader, attendant vessels, and those employed on the placement site fill work shall be required to read and certify in writing they are aware of the contents of this specification and the Contractor's Environmental Protection Plan. Copies of this Section and the Environmental Protection Plan, including a posting warning of the civil and criminal liabilities that violators are subject to for non-compliance to the requirements of them, shall be clearly posted with other required postings on-site for employees.

31.2 Special Precautions For Shortnose Sturgeon During Dredging Operations

The Contractor shall develop a written Operational Plan to Minimize Shortnose Sturgeon Takes. This Plan shall be prepared to meet the requirements included as a part of this SECTION, and requirements of the National Marine Fisheries Service Northeast Regional Office, Protected Resources Division (Points of Contact: Ms. Carrie McDaniel Upite, telephone 978-281-9388, or Ms. Kimberly Damon-Randall, telephone 978-281-9112), 1 Blackburn Drive, Gloucester, Massachusetts 01930 for obtaining the services of qualified Endangered Species Observers to be employed by the Contractor during dredging work that is performed from December 1 until completion of dredging work. In the event of a conflict in standards for conducting the work, the most stringent as determined by the Contracting Officer shall prevail. The Contractor shall submit this Operational Plan as part of the Environmental Protection Plan. The Contractor shall ensure the adequate instruction and training of all personnel associated with the operation of the dredging and unloading equipment and his shore plant regarding the possible presence of endangered shortnose sturgeon and the need to avoid contact and damage to these animals.

31.2.1 Endangered Species Observers on Bridge Watch

The Contractor shall be required to provide a National Marine Fisheries Service approved Endangered Species Observer on bridge watch on all clamshell dredges to monitor the dredging operations seven (7) days per week, from December 1 until completion of dredging work. In the event that Endangered Species Observer bridge watch personnel observe endangered species, they shall inform the master of the vessel and appropriate action shall be taken to avoid damage to these animals. A list of potential contractors that may be able to provide Endangered Species Observers is attached (Attachment No. 1).

31.2.2 Endangered Species Observer Requirements

Endangered Species Observers shall be National Marine Fisheries Service approved observers with demonstrated abilities to identify shortnose sturgeon. A minimum of one observer shall be on-board each dredge seven (7) days per week, for a minimum of 12 hours each day during dredging operations.

If two dredges are operating, the observers on each dredge shall work different shifts so that an observer is on duty for 24 hours each day. Sufficient time as approved by the Contracting Officer must be allotted between each loading cycle to allow the Endangered Species Observer to

inspect the loaded scows and to document and record findings of inspections on Endangered Species Observer Forms and Incident Reports.

31.2.3 Endangered Species Observer Forms, Incident Reports, and Weekly/Final Reports

The Contractor shall prepare and submit a Weekly Report listing all Endangered Species Observer Forms and Incident Reports prepared by the Endangered Species Observer in the covered period to the National Marine Fisheries Service, Northeast Regional Office, Protected Resources Division (attention: Ms. Carrie McDaniel Upite or Ms. Kimberly Damon-Randall, fax 978-281-9394), One Blackburn Drive, Gloucester, Massachusetts 01930. The Contractor shall include copies of all load observation sheets, record of findings for inspections of clamshell buckets and scows, and any other data compiled by the Endangered Species Observer in preparing the Endangered Species Observer Forms and Incident Reports during the covered period. This Weekly Report shall be signed and dated by the Endangered Species Observer when complete, with a copy of the report and a documented postal receipt verifying report as sent within seven calendar days of the conclusion of the covered period provided to the Contracting Officer. The Endangered Species Observer Forms and Incident Reports shall be in the National Marine Fisheries Service format to be provided by the Contracting Officer. An Endangered Species Observer Form (Attachment No. 2) and an Incident Report of Shortnose Sturgeon Take form (Attachment No. 3) are attached.

a. The Endangered Species Observer shall complete an Endangered Species Observer Form for each loading cycle, whether listed species are present or not. All forms completed by an Endangered Species Observer during their 12 hour duty shall be listed on the Endangered Species Observer Form and submitted to the Contractor at the end of each daily shift. At the same time, a copy shall be provided to the Contracting Officer. The Contractor shall record time of receipt of the Endangered Species Observer Form and all associated data in his Daily Report of Operations.

b. The Endangered Species Observer shall complete an Incident Report when live or dead shortnose sturgeon, or shortnose sturgeon parts are discovered in the clamshell buckets, scows, or placement area. The Contractor shall immediately stop operations of the dredge or unloader upon discovery of shortnose sturgeon or shortnose sturgeon parts and notify the Endangered Species Observer. The Contractor shall take all measures and actions as may be directed by the Endangered Species Observer to search for and verify the condition of the shortnose sturgeon, release the animal to prevent future or further injury, and if injured or killed, recover the shortnose sturgeon. If shortnose sturgeon or sturgeon parts are taken incidental to the work and discovered in the clamshell bucket, scows, or placement area by the Endangered Species Observer, the location of discovery and remains shall be photographed and nature of the findings fully described in an Incident Report. Disposal of remains shall be as specified below in paragraph Endangered Species Disposition. The Contractor shall complete and submit a Final Report for the entire work listing all Endangered Species Observer Forms and Incident Reports prepared by the Endangered Species Observer during the entire contract period to the National Marine Fisheries Service, Northeast Regional Office, Protected Resources Division (attention: Ms. Carrie McDaniel Upite or Ms. Kimberly Damon-Randall), One Blackburn Drive, Gloucester, Massachusetts 01930, fax 978-281-9394. This Final Report shall be

signed and dated by the Endangered Species Observer when complete, with a copy of the report and a documented postal receipt verifying report as sent within twenty calendar days of the conclusion of dredging provided to the Contracting Officer.

31.2.4 Clamshell Dredge Special Recording Requirements

All clamshell dredges shall be equipped with real time positioning equipment capable of locating the dredge by electronic means during the entire dredging cycle and determining the areas dredged. In the event that shortnose sturgeon or sturgeon parts are encountered, the Contractor shall provide the time and location that the sturgeon or parts were encountered. If the sturgeon or parts are encountered in the scows after the scows have left the dredging area, or encountered in the placement site, the contractor will provide the range of time and dredging area during which the sturgeon is estimated to have been picked up by the dredge. Data shall be furnished to the Contracting Officer for each day's operation on a daily basis. A written plan of the method the Contractor intends to use in order to satisfy these requirements shall be included with the Contractor's Quality Control Plan.

31.2.5 Endangered Species Disposition

Immediately upon discovering shortnose sturgeon or sturgeon parts, the Endangered Species Observer shall notify Mr. Michael Mangold of the U.S. Fish & Wildlife Service, telephone 410-573-4509. After completing an Incident Report, the Endangered Species Observer shall notify Ms. Carrie McDaniel Upite telephone 978-281-9388, or Ms. Kimberly Damon-Randall, telephone 978-281-9112, at the National Marine Fisheries Service within 24 hours of the incident. The Endangered Species Observer identifying any dead shortnose sturgeon shall photograph and place the remains in plastic bags, labeled to show the contract title and location, time, date, specific location taken, load number, and placed in cold storage. In addition, the remains of any sturgeon shall be labeled to indicate if the remains appear to be recent or old, based on fresh blood, odor, and length of time estimated to have been dead in water at the time when they were discovered. Final disposition of these sturgeon will be as directed by the National Marine Fisheries Service or U.S. Fish & Wildlife Service. Any other dead sturgeon or sturgeon parts taken incidental to the work shall be photographed by an Endangered Species Observer, reported to the National Marine Fisheries Service, and disposed as directed by the National Marine Fisheries Service or U.S. Fish & Wildlife Service. Live shortnose sturgeon taken incidental to the work shall be photographed and examined by the Endangered Species Observer for injury, if possible and without subjecting the animal to further injury or stress. Live shortnose sturgeon determined by the Endangered Species Observer to be uninjured shall be measured for size and weight, and released by the Endangered Species Observer in a manner as directed by the National Marine Fisheries Service. Sturgeon determined to be injured shall be released by the Endangered Species Observer in a manner as directed by the National Marine Fisheries Service, or other disposition as may be directed by the National Marine Fisheries Service or U.S. Fish & Wildlife Service. All findings and determinations of live sturgeon by the Endangered Species Observer shall be recorded on the Incident Report and Endangered Species Observer Form.

31.2.6 Clamshell Dredge Endangered Species Special Equipment

The Contractor shall provide suitable lighting on all clamshell dredges used on this work from December 1 through July 31 to allow safe observations of the clamshell bucket and scows during periods of darkness. Safe access shall be provided to the scows to allow the observer to inspect for sturgeon or sturgeon parts."

** END OF SECTION 1 **

SECTION 2 - TECHNICAL CLAUSES

1. WORK COVERED BY CONTRACT PRICE:

1.1 Payment Item No. 0001: All costs connected with the mobilization and demobilization of the Contractor's dredging and rehandling plant and equipment as defined below shall be included in the contract lump-sum price for Item No. 0001 as listed in the Bidding Schedule.

1.1.1 Mobilization shall include all costs for operations accomplished prior to commencement of actual dredging operations, i.e. transfer of dredge, attendant plant, and equipment to site; initial installation of pipe, and dredged material placement area preparation required; and any other work that is necessary in advance of the actual dredging operations.

1.1.2 Demobilization shall include general preparation for transfer of plant to its home base, removal of pipelines, dredged material placement area cleanup, and transfer of plant to its home base.

1.2 Payment Item Nos. 0002, 0003, 0004, 0005, 0006, 0007: The contract price per cubic yard for dredging shall include the cost of removal and placement of all material as specified herein or as indicated on the maps and drawings exclusive of mobilization and demobilization costs as defined in paragraphs 1.1, 1.1.1, and 1.1.2 above; and except for ledge rock, large boulders, rock fragments, wrecks, snags, stumps, and piles which cannot be removed by the plant specified in the accepted bid, or the equivalent of such plant, without blasting. Should ledge rock or other material which cannot be removed by the plant specified in the accepted bid, or its equivalent, without blasting, be encountered, the Contractor shall remove therefrom all overlying material which in the judgement of the Contracting Officer can be removed by the use of plant so specified or its equivalent. Nothing in this paragraph shall be construed as prohibiting the removal of excepted material by special means at prices agreed upon and approved in accordance with Contract Clause I.52, "DIFFERING SITE CONDITIONS (1984 APR) FAR 52.236-0002."

2. ORDER OF WORK: The Craighill Entrance shall be the first area to be dredged followed by Craighill Upper Range, Cutoff Angle, Brewerton Channel Eastern Extension, and Tolchester Channel in that order. The material dredged from these sections shall be placed in the Poplar Island Environmental Restoration Project. The material dredged from the remaining section (Northwest Branch West Channel) shall be placed in the Hart-Miller Island Containment facility.

2.1 No dredged material placement operations shall be permitted in the Hart-Miller Island Placement Facility from April 1 through September 30. No dredged material placement operations shall be permitted in the Poplar Island Environmental Restoration Project from April 1 through August 31.

2.2 Acceptance Sections shall be dredged to their full depth and width prior to commencing work in the next Acceptance Section.

3. PLANT: Plant and equipment employed on the work shall be in satisfactory operating condition and capable of safely and efficiently performing the work as set forth in the specifications and shall be subject to inspection and approval by the Contracting Officer prior to commencement of work and at all

times thereafter. Pipeline for hydraulic machines shall be kept in good condition at all times, any leaks or breaks along their length shall be promptly and properly repaired. No reduction in the capacity of the plant employed on the work shall be made except by written permission of the Contracting Officer. The measure of the "Capacity of Plant" shall be its actual performance on the work to which these specifications apply. All floating pipelines used as accessways shall be equipped with walkways and guardrails conforming to paragraph 19.B.05 of the Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, September 1996. All buoyant (plastic) dredge pipelines shall be either anchored securely to the bottom, weighted so that they will stay on the bottom, or marked with floats or buoys during daylight and amber lights during darkness to mark distinctly the entire length and course of the line.

4. CHARACTER OF MATERIALS: The material to be removed under this contract to restore the depth within the limits shown on the drawings is that composing the shoaling which has accumulated since the areas were last dredged. It is believed that the material to be removed will consist principally of silt, mud, sand, shell, gravel, debris, trash and combinations thereof, but shall include any material that is in the areas to be dredged. Minor variations in the subsurface materials are to be expected and, if encountered, will not be considered as being materially different within the purview of paragraph: DIFFERING SITE CONDITIONS of the Contract Clauses. Bidders are expected to examine the site of the work, and decide for themselves the character of the materials

5. INSPECTION:

5.1 The work shall be conducted under the general direction of the Contracting Officer and will be subject to inspection by his appointed inspectors to ensure strict compliance with the specifications. The inspectors will direct the maintenance of the gages, ranges, location marks, and limit marks in proper order. Adequate lighting for thorough inspection of the dredging, rehandling, and discharge locations will be provided by the Contractor for night operations.

5.2 The inspector can direct suspension of operations at any unit of work where the Contractor upon request does not correct:

5.2.1 A safety hazard which is so grave as to endanger life, limb, or property or cause serious damage to the work.

5.2.2 An effluent reading from the material passing over the spillway from a confined dredged material placement area which exceeds the 0.4 gram per liter (g/l) Total Suspended Solids (TSS) tolerance permitted by the specifications for Contractor furnished placement areas; or an effluent exceeding the limits of the DISCHARGE PERMIT, (attached as Appendix B) for the Hart-Miller Island and Poplar Island facility.

5.2.3 An encroachment upon the maintenance of a minimum two feet of operating freeboard, measured vertically between the retained water and the top of the main retention dike of a confined placement area.

5.3 The Contractor shall perform the following tests for Contractor furnished dredged material placement areas:

5.3.1 Effluent Density: The density of the effluent shall be determined to ascertain compliance with the requirements of paragraph: Control of Dredged Material Placement Area Effluent. Samples for density determinations shall be obtained of the effluent at the sluice weir. 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. Each sample of creek water shall be obtained in a bucket or other suitable container submerged to a depth of not over 2 feet. When settled solids are not present in the sample, the Contractor may determine the density by the turbidity meter method or the weight-volume method as hereinafter specified. When settled solids are present, the density shall be determined by the weight-volume method.

5.3.2 Turbidity Meter Method: When a turbidity meter method is used for density determination, an instrument similar or equal to Hach #2100 portable shall be used. The instrument shall be capable of reading at least 0 to 100 Nephelometric Turbidity Units (NTU's). The Government will provide the Contractor with a conversion graph to convert NTU's to grams per liter. Laboratory tests of the sediment will correlate the NTU's and grams per liter total suspended solids.

5.3.3 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 1000 c.c. laboratory cylinder to the nearest gram. The unit weight shall be obtained by dividing the total weight in grams by the total volume in liters.

5.3.4 A minimum frequency of sampling is established in paragraph: "Control of Dredged Material Placement Area Effluent." This frequency shall be increased as the effluent density increases.

5.3.5 Records of placement area effluent measurements and corrective action taken shall be submitted daily to the Contracting Officer.

5.4 Control of Dredged Material Placement Area Effluent:

5.4.1 Government-Furnished Placement Area: Another contractor will operate the spillways at both the Hart-Miller Island Containment Facility and the Poplar Island Environmental Restoration Project facility in order to meet the requirements of the State of Maryland Water Quality Certification. The Contractor may be required to stop pumping into the placement area in order to permit the fill to settle and/or to allow the water quality to improve whenever the crest of the sluice weirs can no longer be raised to meet the requirements of the State of Maryland Water Quality Certification. Bidders are advised that stopping inflow may be required during this contract. The monitoring and water quality sampling required by the Water Quality Certification will be performed by others and will not be the responsibility of the Contractor.

5.4.2 Contractor-Furnished Placement Areas: The Contractor shall employ the full length of weir crest at all times. The Contractor shall raise the elevation of the crest of the sluice weir or to stop pumping into the placement area and permit the fill to settle whenever the density of samples, taken as provided hereinafter, of the mixture of suspended materials and water discharge over the weir exceed the TSS limits set forth in paragraph 5.2.2. The

Contractor shall furnish and install sufficient flashboards to control the elevation of the dredged material under the contract, and the flashboards so installed shall be left in place upon completion of all work under the contract. Pipe weirs will not be permitted.

5.4.3 Contractor-Furnished Placement Areas: Effluent samples shall be taken, tested, and recorded by the Contractor. Samples shall be taken immediately after removing any flashboards to assure that the effluent standard is not exceeded. Samples at the weir shall be taken as often as required and at least hourly.

5.4.4 Contractor-Furnished Placement Areas: The Contractor shall install a water level board on the side of the spillway. It shall be graduated in one-tenth of a foot intervals beginning with a datum level of zero feet at the elevation of the bottom of the spillway discharge pipe. The graduations shall continue to 1 foot above the highest point on the dike. Each foot shall be clearly marked and visible from the dike. The Contractor shall record the height of the water level each time an effluent density is taken.

6. PLACEMENT OF EXCAVATED MATERIAL:

6.1 General: The Contractor will be allowed to use either the designated Government-furnished placement area and/or approved Contractor-furnished placement areas. Prior to commencing work, the Contractor shall submit a plan describing the proposed dredging and placement operations, including a description of all dredging, transporting, and rehandling equipment to be utilized in performance of the contract work.

6.2 Government-Furnished Placement Area:

6.2.1 Dredged Material Placement Operations Plan: Prior to any operation at the Hart-Miller Island Placement Facility and the Poplar Island Environmental Restoration Project, the Contractor shall submit a placement operations plan which shall describe the proposed method of operation for dredging, materials handling and placement. The dredged material placement operations plan shall include the proposed commencement and completion dates, hours of operation, material unloading and handling equipment, estimated production rates, storage requirements, berthing and mooring requirements, equipment and vehicles to be used on site, the name and phone numbers of key personnel, pipeline routing, fuel spill plan and other pertinent procedures relating to material unloading, transportation and placement. Approval to proceed with placement operations will be granted after the dredged material placement operations plan has been approved.

6.2.2 Placement of Dredged Material: The Contractor shall deposit the dredged material at the inflow points shown on the contract drawings. The Contractor shall be responsible for assuring that his operation does not cause any dike erosion. Inflow points shall be piped-off parallel to the dike except for the primary inflow point at Hart-Miller Island. Should it become necessary to relocate the inflow point(s) in order to meet the operational requirements of the facility, the Contractor shall relocate the inflow point(s) within 24 hours notice by the Contracting Officer. The requirement to deposit the dredged material at these points shall apply equally to all types of dredging and rehandling equipment. The Contractor shall be responsible for advancing or relocating the point of deposit as required to prevent the material from

flowing over the adjacent roadway or levee. Material designated for placement at the Hart-Miller Island Placement Facility and the Poplar Island Environmental Restoration Project may not be placed outside these respective sites. The Contractor shall be required to have on site, sufficient pipe and Y-valves to establish all designated inflow points before unloading operations will be permitted.

6.2.3 The Contractor shall not lay a submerged pipeline(s) across or otherwise obstruct with any pipeline, equipment, or structure the "Access Channel" to Poplar Island Environmental Restoration Project as shown on the drawing.

6.2.4 The Contractor shall restore areas used in laying and maintaining his pipeline to the same or as good a condition as existed prior to commencing work. The pipeline shall be placed so that there is no interference with traffic on the existing roadway, roadway markers, wells, bench marks, or piezometers and no part of the portion of the line paralleling the roadway is within six (6) feet of the edge of the road surface.

6.2.5 Due to the proximity of electric service lines, pipeline crossings of the main dike and/or supplemental dike shall be accomplished by limited trenching and backfilling along with construction of suitable ramps. A minimum separation of twenty-four (24) inches shall be maintained between the electric service line and any piping installation. Prior to commencing trenching, the Contractor must contact the Contracting Officer to coordinate the interruption of traffic and to ascertain the location of any utilities or obstructions. Trenches shall be backfilled with compacted on-site earth material. Compacted backfill shall consist of suitable material placed in 8-inch lifts and compacted to 90 percent of maximum density at optimum moisture content as determined by ASTM D 1557. Immediately following installation or removal of any pipelines crossing the main dike and/or supplemental dike, the dike shall be restored to its original design condition and configuration.

6.2.6 The Contractor shall be responsible for any damages caused by his operations and shall make any necessary repairs immediately. Ramps shall be constructed, maintained and properly marked by the Contractor for a safe day and night passage of the normal traffic in the area until the completion of work and subsequent removal of the ramps. The ramps shall be constructed with a minimum width of road surface conforming to the width of the existing roadway. A minimum 20-foot wide flat berm shall be centered at the pipeline crossing. The slope approaches to the ramp berm shall be no steeper than 1 vertical on 20 horizontal. When dredge pipe crossings are removed after completion of work, the crossing areas shall be restored to the condition existing prior to pipe installation and ramp construction.

6.2.7 The Contractor shall maintain and repair any damage to the dike roads caused by his operation. The existing main dike road construction consists of eight (8) inches of compacted crusher run (CR-6) material.

6.2.8 No material shall be allowed to flow on the road around the placement area or be deposited in a manner that will erode the levee slope, nor will any material or water be permitted to flow on the existing utilities or facilities.

6.2.9 The material excavated shall be transported, deposited, and retained in the area designated as "Dredged Material Placement Area" on the contract drawings. The approximate distances to which the material will have to be

transported can be obtained from the General Plan (sheet 2) of the drawings.

6.3 Contractor-Furnished Placement Area

6.3.1 If the Contractor proposes to use placement area(s) other than the Government-furnished placement area designated in these specifications, he shall submit with his bid an adequate description of the area(s) he proposes to use including size and capacity and shall submit a document which gives written permission of the owners to use the area(s) including ingress and egress. The Contractor shall coordinate and submit with his bid written approval for the use of the proposed Contractor-furnished areas from the following Agencies, and shall be required to obtain all permits and certificates required by law:

Mr. Ray C. Dintaman, Jr.
Director, Environmental Review Unit, B-3
Resource Management Services
Maryland Department of Natural Resources
Tawes State Office Building
Annapolis, Maryland 21401

Mr. John Wolflin
Field Supervisor
U.S. Fish & Wildlife Service
177 Admiral Cochrane Drive
Annapolis, Maryland 21401

Mr. Timothy Goodger
Assistant Regional Director
National Marine Fisheries Service
Oxford Biological Laboratory
Oxford, Maryland 21654

Mr. Thomas Slenkamp
Chief, Environmental Programs Branch (3ES30)
U.S. Environmental Protection Agency
Region III
841 Chestnut Street
Philadelphia, Pennsylvania 19107-4431

Mr. J. Rodney Little
State Historic Preservation Officer
100 Community Place
Crownsville, Maryland 21032

Mr. Robert Summers
Director
Water Management Administration
Maryland Department of the Environment
Building 30, First Floor
2500 Broening Highway
Baltimore, Maryland 21224

6.3.2 Failure by the Contractor to furnish the above data with the bid at the time of the bid opening shall result in the bid for the use of the alternate placement area(s) to be considered nonresponsive. The award of the contract

will be subject to acceptance of the proposed Contractor-furnished placement area(s) by the Contracting Officer.

6.3.3 If, after award of the contract, a placement area other than the designated Government-furnished area and/or approved alternate area is proposed, its acceptance will be subject to the approval of the Contracting Officer or his authorized representative to protect the Government's interest. The Contractor shall furnish the necessary documentation, to the Contracting Officer, in accordance with Paragraph: "Contractor-Furnished Placement Area." Substitution of placement areas will be considered as "Value Engineering" within the meaning of the Value Engineering Incentive Clause of the contract.

6.3.4 All expenses incurred in connection with providing and making available such Contractor-furnished placement areas shall be borne by the Contractor, and all materials deposited thereon, and all operations in connection therewith shall be at the Contractor's risk. Bidders are cautioned that if the necessary approvals and permits for Contractor-furnished placement areas have not already been obtained by the date of these specifications, the processing time may be such that it would be impossible to obtain them in time to meet the contract completion date. Should the Contracting Officer determine that the use of any Contractor-furnished placement area will require modification or supplementation of the Final Environmental Impact Statement or Environmental Assessment, the Contractor shall obtain and furnish at his expense any data required for the modification or supplementation.

6.3.5 It shall be the responsibility of the Contractor to design, construct, and maintain all necessary retaining structures to contain the dredged material and all necessary spillboxes of sufficient size and capacity to take care of the overflow water from the placement areas, and to prevent any material escaping through the spillboxes in accordance with standard tests outlined below. It is the intent of these specifications that the escape of material from the placement areas be held to an absolute practicable minimum. Consequently, the successful bidder shall be required to furnish the Contracting Officer, for approval, prior to commencement of dredging operations, a plan of the levees and spillboxes he proposes to construct to confine the material. Minimum spillbox requirements are as follows: Dredges 8 inches to 12 inches, one (1) 16-foot crest spillbox; dredges 14 inches to 18 inches, one (1) 28-foot crest spillbox or two (2) 14-foot crest spillboxes; dredges 20 inches to 24 inches, 60-foot total crest spillbox(es); and dredges 27 inches to 30 inches, 90-foot total crest spillbox(es). Pipes from spillboxes through levees shall be of adequate size and number to carry the effluent.

6.4 Government and/or Contractor-Furnished Placement Areas:

6.4.1 During the progress of all work covered by these specifications, the Contractor must confine the material within the designated or approved placement areas and take all necessary precautions to prevent any dredged material from escaping from the placement area.

6.4.2 In the event that leaks occur anywhere in the dredge pipeline, or any breaks in or overflow of the retaining structures occur, the Contractor shall immediately discontinue dredging operations until such leaks in the pipeline, or breaks or overflow of the retaining structures are remedied. The Contractor shall also be required, at his expense, to recover and remove any material

misplaced by such leaks, breaks, or overflow.

6.4.3 All of the pipe (including connections) used for a submerged line must be examined and determined to be in good condition to reasonably expect it to last throughout the job without wearing to the extent of allowing leaks in the pipe or at the connections.

6.4.4 The Contractor shall erect and maintain at his own expense suitable navigation warning signs at each end of a submerged pipeline and at any other points necessary to prevent hazards to navigation.

6.4.5 Marking Placement Areas: The placement area, whether Government- or Contractor-furnished, shall be plainly marked by the Contractor by conspicuous stakes, and except as otherwise authorized by the Contracting Officer in writing, no dumping shall be done at the placement area unless an inspector appointed by the Contracting Officer is present at the time.

6.4.6 Placement of Material: The Contractor must confine the dike and dredged material within the designated area. All embankments or bulkheads needed for confining or grading the material, with necessary waste weirs, shall be provided and maintained by the Contractor, and the cost thereof included in the contract price. He shall be responsible for any damage arising from the fact that the material or the dredge discharge water has been permitted to run off the dredged material placement area. The flow of the dredge discharge water back into the channel shall be regulated to prevent erosion or the return of dredged material to the channel. The Contractor shall be held responsible for providing adequate drainage for all back areas by keeping drains and water courses open for this purpose. The Contractor shall be responsible for providing and maintaining adequate ramps over the pipeline where it is necessary to cross roads and streets, and to provide adequate lighting and safeguards for such ramps. When necessary to cross private property to get to the placement area with roads or pipelines, the Contractor shall obtain permission from the owners of the property before proceeding to cross. Pipe weirs will not be permitted. The upland placement site shall be left in a draining condition without significant ponding of water.

6.4.6.1 Special Requirements for Placement of Dredged Material at Poplar Island: The contractor shall undertake careful measurement of the mass of dredged material transported to and placed into the cells at the Poplar Island Habitat Restoration Project.

6.4.6.1.1 Scow Data

The Contractor shall submit capacity and displacement curve data (in table format) for each barge or scow used to transport dredged material to the Island. Each table, capacity or displacement, must be broken out to the nearest tenth (0.01) of a foot. Displacement curves must be appropriate for the density of bay waters in the vicinity of Poplar Island. The Contractor shall submit the required data on each barge or scow at least 10 days before said scow or barge is placed in use for this contract.

The Contractor shall validate the displacement curve of each class of barge or scow with a Fill Test. The Contractor will collect volume and displacement data from a selected, empty barge and from the same barge or scow filled to 90 percent or greater capacity with Bay waters. Using the density of Bay waters,

the Contractor shall demonstrate fit to the displacement curve. If the mass of the water in the barge or scow varies by more than plus or minus 2.0 percent from the corresponding mass of displaced water according to the curve, the Contractor will retest and/or have a Qualified Marine Surveyor recalculate the displacement curve for the said barge or scow. The Contractor shall notify the Contracting Officer's Representative 72 hours in advance of each test and allow for QA inspection of the testing. Testing is to be completed and results are to be submitted showing correct fit to the displacement curve prior to that class or size of barge or scow being used to transport dredged material to Poplar Island.

6.4.6.1.2 Marking Required of Each Barge or Scow

At minimum, each barge or scow shall be marked at four locations so as to allow reading of displacement (on the hull) and the reading of ullage (on the coming) to the nearest one tenth of a foot (0.1 feet). The markings shall be fore and aft (as far as is practical) as follows: Forward Port, Forward Starboard, Aft Port, Aft Starboard. Markings shall be maintained and kept clean and readable at all times data collection is required.

6.4.6.1.3 Measurement of Volume and Displacement

The Contractor shall collect and record data on volume and displacement for each barge or scow at Poplar Island before unloading begins and at Poplar Island after unloading and before the barge or scow is put underway. In addition to the four volume readings and the four draft/displacement readings, the Contractor must record the Scow/Barge ID number, the date and time of the data readings, and the name(s) of the person(s) reading the data, and any other pertinent data. Each data sheet shall be reviewed by a responsible QC representative and transmitted/delivered to USACE/MES Poplar Island Site Operations Personnel within 1 hour of reading/data collection.

In addition, the Contractor shall read and record displacement data for barges or scows at the dredging site before filling and after filling, before getting underway. Said data from the readings at the dredging site are to be included with daily data submissions.

6.4.6.1.4 Volume and Displacement Quality Control/Quality Assurance

The Contractor's Quality Control System shall address the readings/data collection required in this section. Preparatory Phase and Follow-Up Phase meetings will be held on POPLAR Island as needed to insure data integrity and the requirements of this section.

USACE personnel and others under contract to the USACE or the Maryland Port Administration may undertake independent Quality Assurance readings for up to half of all barges or scows. The Contractor must provide the personnel and equipment necessary to safely enable said Quality Assurance readings/data collection.

6.4.7 Disposal of Debris: The Contractor shall be responsible for disposing of any debris encountered at an approved facility. No debris shall be placed at the Hart-Miller Island Placement Facility or the Poplar Island Environmental Restoration Project.

6.4.8 Discharge of Effluent: In order to localize the effect of increased turbidities from Contractor furnished placement areas, placement site effluent(s) should be discharged as near to the area being dredged as is practicable. Waste water return from the placement site(s) should be discharged directly to open water. The effluent is to be carried by pipeline over such wetland areas as marshes or wooded swamps in order to prevent sediment accumulation in these environmentally sensitive areas. Any accumulation of sediment on the wetlands shall be considered as misplaced material.

6.4.9 Marking Open Water Placement Areas: Before placing any material in an open water placement area, the placement area shall be marked by the Contractor with four lighted, orange colored buoys to be placed and maintained by him at locations designated by the Contracting Officer and under permit from the U.S. Coast Guard. Unless authorized by the Contracting Officer, no dumping shall be done at the placement area except within the area marked by such buoys, nor at night when less than three buoys are lighted.

6.4.10 Hydraulic Dredging: Material excavated by hydraulic pipeline dredges shall be transported by pipeline to final position in the approved placement area without the use of rehandling basins, or shall be placed in scows or other similar vessels, without overflow, and transported to an approved placement area. All pipelines shall be kept in good condition at all times, and any leaks or breaks along their length shall be promptly and properly repaired. All scows shall be kept in good condition and the coamings kept in good repair. A minimum of 1 foot of free board between the top of the water/slurry material and the lowest opening in the coamings on scow and barge coamings is required. The decks of all loaded scows shall be washed before they are moved from the loading area. Dump scows shall have their pockets provided with proper doors or appliances to prevent leakage of material during the dredging and transporting operations. The overflow of water/slurry material from the scows is prohibited. Failure to repair leaks or to change methods of operation which are resulting in overflow or spillage will result in suspension of dredging operations and require prompt repair or change of operation to prevent overflow or spillage as a prerequisite to the resumption of dredging.

6.4.11 Bucket Dredging: Material excavated by bucket (bucket, drag line or dipper) dredges shall be placed in scows, without overflow, and transported to an approved placement area. All scows shall be kept in good condition and the coamings kept in good repair. A minimum of 1 foot of free board between the top of the water/slurry material and the lowest opening in the coamings on scow and barge coamings is required. The decks of all loaded scows shall be washed before they are moved from the loading area. Dump scows shall have their pockets provided with proper doors or appliances to prevent leakage of material during the dredging and transporting operations. The overflow of water/slurry material from the scows is prohibited. Failure to repair leaks or to change methods of operation which are resulting in overflow or spillage will result in suspension of dredging operations and require prompt repair or change of operation to prevent overflow or spillage as a prerequisite to the resumption of dredging

6.4.12 Hopper Dredging: Material excavated by hopper dredging shall be loaded into bins or hoppers, without overflow, and discharged directly into the approved placement area. Hopper dredges shall be equipped with bottom dumping

hopper doors or a split hull which prevents leakage during the dredging and transporting operations. Failure to repair leaks or change methods of operation which are resulting in prohibited overflow or spillage will result in suspension of dredging and/or pumpout operations and will require prompt repair or change of operation to prevent prohibited overflow or spillage as a prerequisite to the resumption of dredging and/or pumpout. All pipelines shall be kept in good condition at all times, and leaks or breaks along their length shall be promptly and properly repaired. The location and development of the moorings for direct pumpout operations shall be subject to the approval of the Contracting Officer.

6.5 Rehandling: The bottom dumping of scows and/or hopper dredges and underwater rehandling of dredged material is strictly prohibited in all locations other than approved placement areas. Scows and/or hopper dredges shall have their contents rehandled directly into the approved placement area by a means which will preclude any loss of water or material to the Chesapeake Bay or existing facilities prior to deposition at the designated location within the placement area.

6.6 Direct Pumpout Rehandling at Poplar Island: All pipelines shall be kept in good condition at all times, and any leaks or breaks along their length shall be promptly and properly repaired. The location and development of moorings shall be subject to the approval of the Contracting Officer and may be within the limits of the turning basin as shown on the contract drawings or in sufficiently deep water adjacent to Poplar Island. Any contract activity including unloading and scow traffic will not be permitted within 500 yards of Oyster Bars N.O.B. 8-10 and N.O.B. 8-11 and the designated fish stake areas shown on the contract drawings. The Contractor will be responsible for obtaining all necessary permits for installing any temporary mooring piles. A hydrographic survey of the rehandling area shall be conducted by the Contractor before and after rehandling operations to determine if any material has been misplaced.

6.7 Direct Pumpout Rehandling at Hart-Miller Island: All pipelines shall be kept in good condition at all times, and any leaks or breaks along their length shall be promptly and properly repaired. The location and development of moorings shall be subject to the approval of the Contracting Officer. The Contractor will be responsible for obtaining all necessary permits for installing any temporary mooring piles. A hydrographic survey of the rehandling area shall be conducted by the Contractor before and after rehandling operations to determine if any material has been misplaced. The route taken from the Hart-Miller Island Access Route to the unloading site shall be evenly marked by the Contractor with 4 green and 4 red buoys. The buoys to be used are Rolyan Buoy model number B5CPRM with light model number B340G60 (green) and model number B5NPRM with light model number B340R60 (red) or equivalent. Maintenance of the buoys during, and disposal after, the contract will also be the responsibility of the Contractor.

6.8 Pipeline Rights-of-Way: The pipeline rights-of-way where shown on the contract drawings are Government furnished. However, the Contractor is not restricted to the rights-of-way shown on the contract drawings. In those cases where the Contractor routes a pipeline outside of the Government furnished rights-of-way or placement area property, he shall obtain all easements, permits, and rights-of-way at his own expense.

6.9 Prevention of Landscape Defacement within Government Furnished Pipeline Rights-of-Ways: Unless otherwise noted on the contract drawings, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without the authority of the Contracting Officer or his authorized representative. Monuments and markers shall be protected before construction operations commence and until contract completion.

6.10 Restoration of Landscape Damage within Government Furnished Pipeline Rights-of-Ways: Any tree, grassed area or other landscape scarred or damaged by the Contractor or his equipment shall be restored as nearly as possible to its original condition at the Contractor's expense. The Contracting Officer shall determine the methods of restoration to be used.

6.11 Misplaced Material: Any 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 material and deposit it where directed at his expense. Misplaced material may constitute a violation of applicable Federal, State, and local statutes and the Contractor shall be liable for any civil and/or criminal penalties imposed by these statutes.

6.12 Noncompliance: The Contracting Officer will notify the Contractor in writing of any noncompliance with the foregoing provisions. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. Within 24 hours after the receipt of such notice, the Contractor shall mail, or personally deliver to the Contracting Officer, a complete proposal of the prompt correction of the noncompliance. The Contracting Officer will review the proposal and return it to the Contractor approved, subject to such changes or conditions as he finds necessary to assure correction of noncompliance. Immediately upon receipt of such approval, the Contractor shall begin the corrective work and shall carry it to completion. If the Contractor fails or refuses to submit his proposal or to proceed with the corrective work, the Contracting Officer may suspend all or any part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such suspension shall be made the subject of a claim for extension of time nor for excess costs or damages by the Contractor. If he so elects, the Contracting Officer may cause the corrective work to be accomplished by others, in which event the cost thereof shall be chargeable against any monies otherwise due the Contractor from the Government.

7. OVERDEPTH AND SIDE SLOPES:

7.1 Overdepth: To cover inaccuracies of the dredging process, material actually removed from within the specific areas to be dredged to a depth of not more than 2 feet below the required depth will be estimated and paid for at the contract price.

7.2 Side Slopes: Material actually removed, within limits approved by the Contracting Officer, to provide for final side slopes not flatter than 1 vertical on 3 horizontal, but not in excess of the amount originally lying above this limiting side slope 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 slope dredging, an over-depth of 2 feet

measured vertically will be used.

7.3 Excessive Dredging: Material taken from beyond the limits as extended in the provisions of Paragraphs: Overdepth and Side Slopes above will be deducted from the total amount dredged as excessive overdepth dredging, or excessive side 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 Paragraphs: FINAL EXAMINATION AND ACCEPTANCE, or SHOALING.

8. MEASUREMENT AND PAYMENT:

8.1 Mobilization and Demobilization: Mobilization and demobilization shall include all costs in connection with the development and maintenance of the placement area including but not limited to: obtaining the necessary permits and approvals for the work specified in accordance with the Contract Clause paragraph: Permits and Responsibilities, including in particular the approval from the State of the Contractor's plans for Sediment Control at the placement areas; full reimbursement for the premiums actually paid for performance and payment bonds; moving the Contractor's dredging and rehandling plant and equipment to the site; laying of pipelines; accomplishing the work required by the Sediment Control Permit; maintenance of the placement areas; and the removal of all dredging and rehandling plant, equipment, fencing and pipelines from the site upon completion of the work. Payment shall be made in accordance with Item No. 0001, "Mobilization and Demobilization" of the Unit Price Schedule which shall be full compensation for the work performed.

8.2 Dredging: The total amount of material removed and to be paid for under the contract, shall be measured by the cubic yard in place by computing the volume between the bottom surface shown by soundings of the last survey made before dredging and the bottom surface shown by the soundings of a survey made as soon as practicable after the entire work specified has been completed and included within the limits of the overdepth and side slopes described in Paragraph: OVERDEPTH AND SIDE SLOPES less any deductions that may be required for misplaced material described in paragraph: Misplaced Material. Payment shall be made in accordance with Item Nos. 0002, 0003, 0004, 0005, 0006, 0007: Dredging Craighill Entrance, Craighill Upper Range, Cutoff Angle, Northwest Branch West Channel, Brewerton Channel Eastern Extension, and Tolchester Channel respectively, of the Unit Price Schedule, which shall be full compensation for the dredging work performed.

8.3 The maps and/or drawings already prepared are believed to represent accurately conditions existing on the date shown on the drawings. Determination of quantities removed and the deductions made therefrom to determine quantities by place measurement to be paid in the area specified, after having once been made, shall not be reopened except on evidence of collusion, fraud, or obvious error.

8.4 Monthly partial payments will be based on approximate quantities determined by soundings or sweepings taken behind the dredge and/or approximate quantities reported in the Daily Reports of Operations.

8.5 Should the Contractor in conjunction with work under this contract perform dredging for third parties adjacent to the specified area to be dredged, payment will be made by the Government only for material removed from the

contract area within a vertical plane at the contract limit lines at the location work is performed for such third parties.

9. CABLE, UTILITY AND TRANSPORTATION CROSSINGS:

9.1 The Contractor shall notify well in advance, the owner of a cable or utility crossing which lies within the proposed dredging prism, to remove or relocate such during dredging operations in that area.

9.2 The Contractor shall verify the precise location of all utility crossings and take all precautions not to damage the crossing with spuds, anchors, buckets, or by any other method of operation. Any damage occurring from the Contractor's operations will require suspension of dredging operations until the damage is repaired by the Contractor and approved by the Contracting Officer. Costs of such repairs shall be at the Contractor's expense.

9.3 The Contractor shall notify the following agencies in writing with a copy to the Contracting Officer 21 days prior to commencing dredging operations in the vicinity of the utility crossings referenced in paragraph 9.2 above.

Jaswant S. Dhupar
Chief, Water Engineering Division
City of Baltimore
Department of Public Works
Bureau of Water and Waste Water
900 Municipal Building
Baltimore, Maryland 21202
410-396-1466

Mr. Dewane Daley
Supervisor, Customer Relocation and Maintenance
Baltimore Gas & Electric Company
301 Front Street
Baltimore, Maryland 21203
410-291-3730

10. SEDIMENT CONTROL: The Contractor shall obtain Sediment Control Approval from the State of Maryland, Department of the Environment, Sediment and Stormwater Administration (Telephone No. 410-631-3563). No work shall commence prior to submission of the Sediment Control Approval to the Contracting Officer. A copy of all correspondence shall be provided to the Contracting Officer.

10.1 SEDIMENT CONTROL: The Contractor shall submit written notification to the Enforcement Section of the State of Maryland, Department of the Environment at the address below at least 10 days before the proposed work begins and again within 10 days after the work is completed.

State of Maryland
Department of the Environment
Sediment and Stormwater Admin.
2500 Broening Highway
Baltimore, Maryland 21224
(410) 631-3563

11. QUALITY CONTROL:

11.1 The Contractor shall establish and maintain a Quality Control system for dredging operations in accordance with the Special Clauses to assure compliance with contract requirements and record his inspections and tests under this system including but not limited to the following:

11.1.1 Inspection to assure placement of the dredged material within the specified placement areas.

11.1.2 Continuous surveillance at upland placement sites for adequacy and stability of placement area retaining structures, spillboxes, and drainage facilities; inspection of any required placement area maintenance; and surveillance for breaks in or overflow of placement area retaining structures, if a confined placement area is used.

11.1.3 Surveillance for leaks and breaks in the dredge discharge pipeline.

11.2 A copy of the records of inspections and tests, as well as record of corrective action taken, shall be furnished daily to the Contracting Officer's representative in duplicate.

11.3 The Contractor shall also furnish an original, carbon copy or photo copy of the original of the following items daily to the Contracting Officer's representative during dredging operations:

(1) For hydraulic dredge(s)/unloader(s):

(a) Dredge leverman's log.

(b) Records of dredge pump vacuum and pressure gauge readings.

(2) For bucket dredges:

(a) Dredge leverman's log.

(3) For hopper dredges:

(a) Records of dredge load meter readings.

11.4 The Contractor shall supply to the Contracting Officer for distribution to the Maryland Port Administration and the Maryland Environmental Service a weekly report to include the following items:

(1) Summary of daily dredge production showing estimated "cut" volumes by type of material dredged.

(2) Channel areas dredged.

(3) Dredged material quantities as determined by the Contractor channel condition surveys.

(4) Daily record of bay water usage.

** END OF SECTION 2 **

APPENDIX A
ADDITION BENCH MARKS

TIDAL BENCH MARKS AT PLEASURE COVE
YACHT AND BEACH CLUB

STATION NAME	M.L.L.W. ELEVATION		
GRAY -----	5.11	- 0.24	<i>MLLW FOR '83-'01 T.E. 4.87</i>
PODICKERY #1 -----	5.18	- 0.24	<i>4.94</i>
PODICKERY #2 -----	5.52	- 0.24	<i>5.28</i>

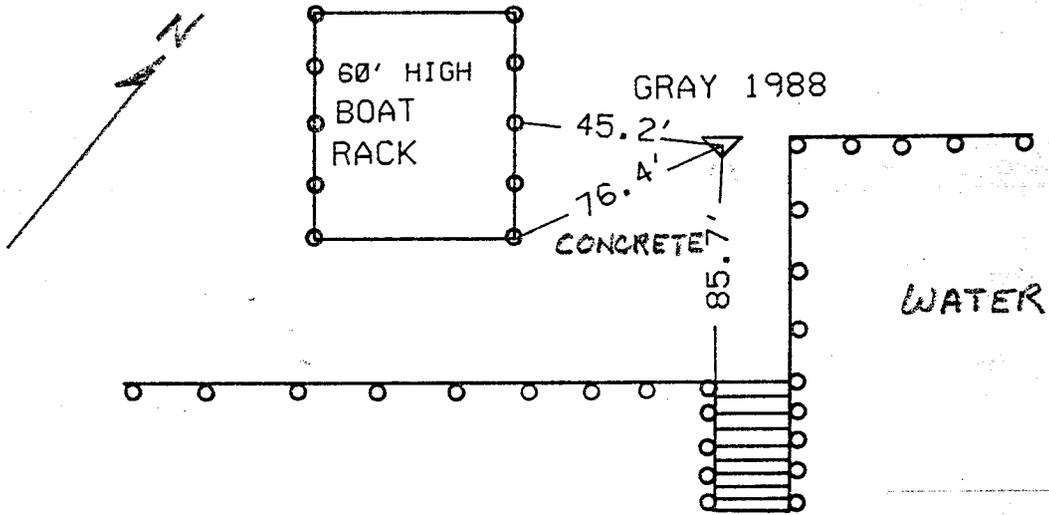
ELEVATIONS ARE BASED ON THE 1960 TO 1978 TIDAL EPOCH.

COUNTRY USA		TYPE OF MARK ALUMINUM DISK		STATION GRAY 1988	
LOCALITY		STAMPING ON MARK GRAY 1988		AGENCY (CAST IN MARKS) BALTO. DIST. C.O.E.	
LATITUDE		LONGITUDE		DATUM	
(NORTHING)(EASTING) (M)	(FT)	(EASTING)(NORTHING) (M)	(FT)	GRID AND ZONE	
(NORTHING)(EASTING) (M)	(FT)	(EASTING)(NORTHING) (M)	(FT)	GRID AND ZONE	
				ELEVATION (FT) 444	
				ESTABLISHED BY (AGENCY) C.O.E.	
				DATE 8/89	
				ORDER	

TO OBTAIN GRID AZIMUTH, ADD TO THE GEODETTIC AZIMUTH
 TO OBTAIN GRID AZ. (ADD)(SUB.) TO THE GEODETTIC AZIMUTH

OBJECT	AZIMUTH OR DIRECTION (GEODETTIC)(GRID) (MAGNETIC)		BACK AZIMUTH	GEOD. DISTANCE (METERS) (FEET)		GRID DISTANCE (METERS) (FEET)	

PLEASURE COVE YACHT AND BEACH CLUB



TO REACH SITE FROM BALTIMORE GO SOUTH ON RITCHIE HIGHWAY TO ROUTE 50. GO EAST ON 50 TO LOG INN ROAD ABOUT 1/4 MILE BEFORE THE BAY BRIDGE. TAKE LOG INN ROAD TO TYDINGS ROAD AND THEN RIGHT ON BAY FRONT TERR. PLEASURE COVE YACHT AND BEACH CLUB WILL BE ON YOUR RIGHT.

SKETCH

DA FORM 1959
1 OCT 64

REPLACES DA FORMS 1959 AND 1960, 1 FEB 57, WHICH ARE OBSOLETE.

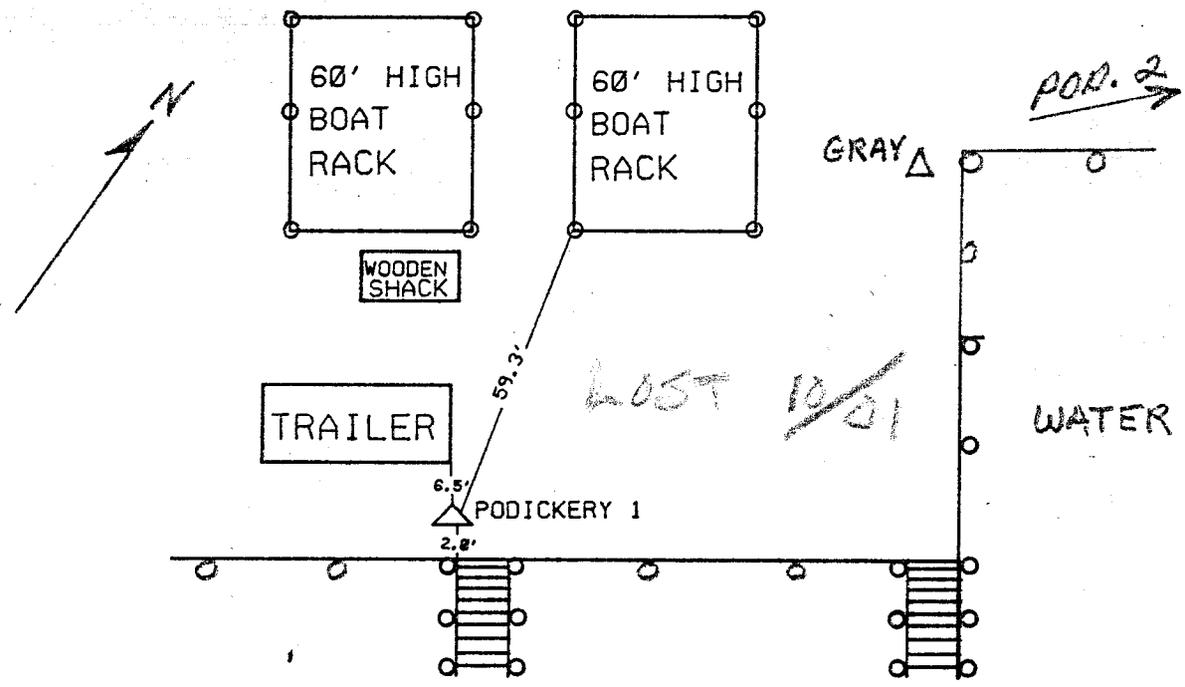
DESCRIPTION OR RECOVERY OF HORIZONTAL CONTROL STATION
For use of this form, see TM 5-237; the proponent agency is TRADOC.

COUNTRY USA		TYPE OF MARK ALUMINUM DISK		STATION PODICKERY 1 1988	
LOCALITY		STAMPING ON MARK PODICKERY 1 1988		AGENCY (CAST IN MARKS) BALTO. DIST. C.O.E.	
LATITUDE		LONGITUDE		DATUM	
(NORTHING)(EASTING) (FT) (M)		(EASTING)(NORTHING) (FT) (M)		GRID AND ZONE	
(NORTHING)(EASTING) (FT) (M)		(EASTING)(NORTHING) (FT) (M)		GRID AND ZONE	
				ESTABLISHED BY (AGENCY) C.O.E.	
				DATE 8/89	

TO OBTAIN	GRID AZIMUTH, ADD	TO THE GEODETIC AZIMUTH
TO OBTAIN	GRID AZ. (ADD)(SUB.)	TO THE GEODETIC AZIMUTH

OBJECT	AZIMUTH OR DIRECTION (GEODETIC)(GRID) (MAGNETIC)	BACK AZIMUTH	GEOD. DISTANCE		GRID DISTANCE	
			(METERS)	(FEET)	(METERS)	(FEET)

PLEASURE COVE YACHT AND BEACH CLUB



TO REACH SITE FROM BALTIMORE GO SOUTH ON RITCHIE HIGHWAY TO ROUTE 50. GO EAST ON 50 TO LOG INN ROAD ABOUT 1/4 MILE BEFORE THE BAY BRIDGE. TAKE LOG INN ROAD TO TYDINGS ROAD AND THEN RIGHT ON BAY FRONT TERR. PLEASURE COVE YACHT AND BEACH CLUB WILL BE ON YOUR RIGHT.

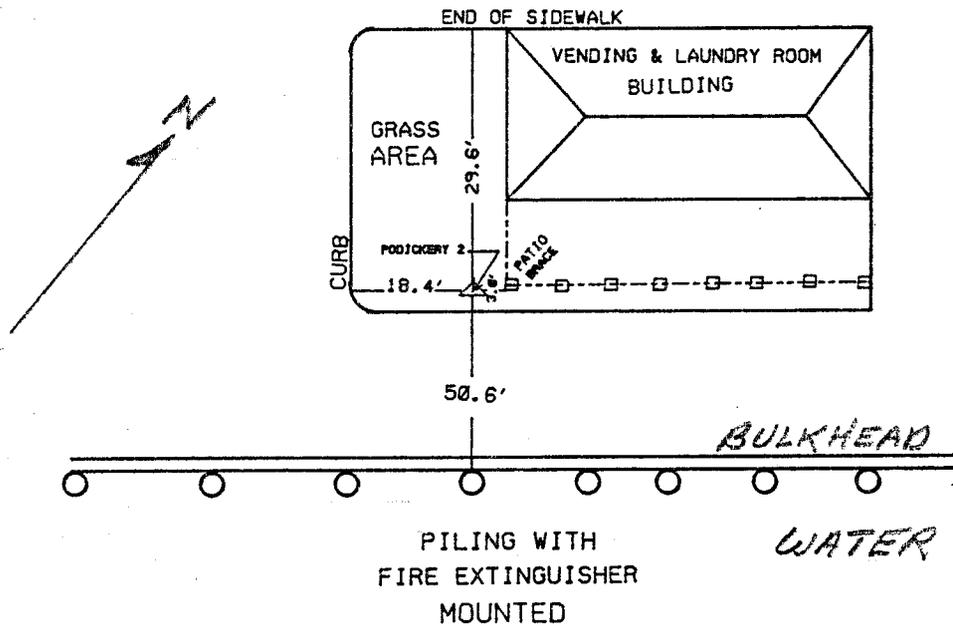
SKETCH

COUNTRY USA		TYPE OF MARK ALUMINUM DISK		STATION PODICKERY 2	
LOCALITY		STAMPING ON MARK PODICKERY 2		AGENCY (CAST IN MARKS) BALTO. DIST. C.O.E.	ELEVATION (FT) 444
LATITUDE		LONGITUDE		DATUM	DATUM
(NORTHING)(EASTING)	(FT)	(EASTING)(NORTHING)	(FT)	GRID AND ZONE	ESTABLISHED BY (AGENCY) C.O.E.
(NORTHING)(EASTING)	(M)	(EASTING)(NORTHING)	(M)	GRID AND ZONE	DATE 8/89
(NORTHING)(EASTING)	(FT)	(EASTING)(NORTHING)	(FT)	GRID AND ZONE	ORDER
(NORTHING)(EASTING)	(M)	(EASTING)(NORTHING)	(M)	GRID AND ZONE	

TO OBTAIN GRID AZIMUTH, ADD TO THE GEODETIC AZIMUTH
 TO OBTAIN GRID AZ. (ADD)(SUB.) TO THE GEODETIC AZIMUTH

OBJECT	AZIMUTH OR DIRECTION (GEODETIC)(GRID) (MAGNETIC)	BACK AZIMUTH	GEOD. DISTANCE (METERS) --(FEET)	GRID DISTANCE (METERS) (FEET)

PLEASURE COVE YACHT AND BEACH CLUB



TO REACH SITE FROM BALTIMORE GO SOUTH ON RITCHIE HIGHWAY TO ROUTE 50. GO EAST ON 50 TO LOG INN ROAD ABOUT 1/4 MILE BEFORE THE BAY BRIDGE. TAKE LOG INN ROAD TO TYDINGS ROAD AND THEN RIGHT ON BAY FRONT TERR. PLEASURE COVE YACHT AND BEACH CLUB WILL BE ON YOUR RIGHT.

SKETCH

DA FORM 1959
1 OCT 64

REPLACES DA FORMS 1959 AND 1960, 1 FEB 57, WHICH ARE OBSOLETE.

DESCRIPTION OR RECOVERY OF HORIZONTAL CONTROL STATION
 For use of this form, see TM 5-237; the proponent agency is TRADOC.

Station ID: C.O.E. Tidal Station Rude
Name: Gibson Island, Chesapeake Bay
Maryland

NOAA Chart: 12278

Latitude: 39° 06.2' N

USGS Quad: Gibson Island

Longitude: 76° 25.8' W

To reach the tidal bench mark take Rt. 100 East to Rt. 177. From the intersection of Rt. 100 and Rt. 177 take Rt. 177 east toward Gibson Island for 4.5 miles to Flanigan Farm Rd. Make a left on Flanigan Farm Rd. and continue for 0.2 miles to a dead end (Bayfront Rd.). Make a left on Bayfront Road and continue for 0.1 mile to 221 Bayfront Road on right side.

221 Bayfront Drive is a single story white frame house located on the western shore of the Chesapeake Bay just north of Gibson Island. This property is owned by Rick and Elaine Little.

T I D A L B E N C H M A R K S

PRIMARY BENCH MARK STAMPING: GAB HALL 1988

MONUMENTATION: Aluminum Survey Disk VM#: N/A
AGENCY: U.S. ARMY C.O.E. PID#: N/A
SETTING CLASSIFICATION:

The benchmark is a standard COE aluminum monument flush with the ground in concrete and is located in a grassy mowed spot. Adjacent to the benchmark will be an unused garden and is surrounded from behind and to the left with a heavy dense tree line.

To locate the benchmark from the driveway of the property walk toward the bank along the left side of the house. While passing the single story white house on the right and a small old white shed on the left a break or small walkway in the white wooden fence will be seen. Proceed through the break in the fence line and to the right will be two large 6'foot (1.82 m) circumference maple trees, which are approximately 20 and 15 feet from the bank respectively.

To pinpoint the benchmark, measure 28.8 feet (8.78 m) in a west direction from the southern most maple tree immediately north of the wooden fence. From the northern maple tree in a SSW direction measure 10.3 feet (3.14 m). The approximate distance to the BM from the top of the bank overlooking the Chesapeake Bay is 31 feet (9.45 m) in a SSW direction.

BENCH MARK STAMPING: TBM - A

MONUMENTATION: SPIKE VM#: N/A
AGENCY: U.S. ARMY C.O.E. PID#: N/A
SETTING CLASSIFICATION:

The temporary benchmark is a galvanized nail spike driven into a telephone pole (#292617) 34.8 feet (10.60 m) from the far north corner

of the white wooden fence, 27.6 feet (8.41 m) from the northern most maple tree inside the white wooden fence, and 39.4 feet (12.00 m) from the southern most maple tree before the driveway, and 14.7 feet (4.48 m) east of the centerline of the road.

T I D A L D A T U M S

Tidal datums at GIBSON ISLAND, CHESAPEAKE BAY based on:

TIDAL EPOCH: 1983-2001
CONTROL TIDE STATION:

Bench Mark Elevation Information	In FEET above:
Stamping or Designation	MLLW
GAB HALL 1988	25.99'
TBM - A	27.64'

Station ID: 8574857

Name: NORTH POINT, PATAPSCO RIVER, CHESAPEAKE BAY
MARYLAND

NOAA Chart: 12278

Latitude: 39° 11.8' N

USGS Quad: SPARROWS POINT

Longitude: 76° 26.8' W

To reach the tidal bench marks from the toll booth on Route 695 (Baltimore Beltway) at the north end of the Francis Scott Key Bridge, travel 5.4 miles (8.7 km) north to exit 41, continue to the T at the end of the exit ramp and turn left, proceed over Route 695 via an overpass to the next T and turn left onto Route 151 south, continue 2.3 miles (3.7 km) (noting signs to Fort Howard) to Highway 20 South, travel 4.0 miles (6.4 km) to the entrance to the Veterans Administration Hospital at Fort Howard, pass through the gate and follow the main road to the pier. The bench marks are along the road leading past the picnic area and to the pier. The tide gage and staff were located on the north side of the pier.

T I D A L B E N C H M A R K S

PRIMARY BENCH MARK STAMPING: NO 1 1959

MONUMENTATION: Survey Disk
AGENCY:
SETTING CLASSIFICATION: Concrete Abutment

VM#: 3188
PID#: AE4035

The bench mark is set flush atop a concrete abutment near the NE corner of the Fort Howard Pier, 48.7 feet (14.8 m) west (264 magnetic) of the west corner of a 6.0 foot (1.8 m) x 5.3 feet (1.6 m) concrete pad with a metal plate in it, 18.5 feet (5.6 m) SW of the NE edge of a concrete abutment and 8.2 feet (2.5 m) NW of the centerline of the Fort Howard Pier.

BENCH MARK STAMPING: NO 2 1959

MONUMENTATION: Survey Disk
AGENCY:
SETTING CLASSIFICATION: Concrete Headwall

VM#: 3189
PID#: AE4033

The bench mark is set in the SW of four headwalls of a concrete calvert on the main road leading to the Fort Howard Pier, 360 feet (110 m) NW of Bench Mark NO 1 1959, 72.9 feet (22.2 m) SE (144 magnetic) of a stack, 63.2 feet (19.3 m) NNW (346 magnetic) of a 5.3 feet (1.6 m) x 6.3 feet (1.9 m) x 4.0 feet (1.2 m) concrete structure, and 5.5 feet (1.7 m) NE of the centerline of a sidewalk.

Station ID: 8574857

Name: NORTH POINT, PATAPSCO RIVER, CHESAPEAKE BAY
MARYLAND

NOAA Chart: 12278

Latitude: 39° 11.8' N

USGS Quad: SPARROWS POINT

Longitude: 76° 26.8' W

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: NO 3 1959

MONUMENTATION: Survey Disk
AGENCY:
SETTING CLASSIFICATION: Concrete Slab

VM#: 3190
PID:

The bench mark is set in the northernmost of two former gun mounts, 263 feet (80 m) NW of Bench Mark NO 2 1959, 79.1 feet (24.1 m) SW of the centerline of the main road, 76.5 feet (23.3 m) SSW of a steel post at the southern side of the access road leading to the light house which is forward of the Craighill Ranges, 72.7 feet (22.2 m) SE of the access road leading to the shore, and in the center of a 4.5 feet (1.4 m) diameter octagon-shaped slab of concrete on a 6.3 feet (1.9 m) x 6.3 feet (1.9 m) concrete slab.

BENCH MARK STAMPING: ENGINEERING DEPT B.S.CO.

MONUMENTATION: Survey Disk
AGENCY:
SETTING CLASSIFICATION: Concrete Wing Wall

VM#: 3191
PID:

The bench mark is set in the top of an offshore end of a concrete wing wall of the small boat launching ramp adjacent to the Fort Howard Pier, 19.6 feet (6.0 m) NNW (325 magnetic) of Bench Mark NO 1 1959.

T I D A L D A T U M S

Tidal datums at NORTH POINT, PATAPSCO RIVER, CHESAPEAKE BAY based on:

TIDAL EPOCH: 1983-2001
CONTROL TIDE STATION: 8574680 BALTIMORE

The NAVD 88 elevation is shown on the Elevations of Tidal Datums Table Referred to MLLW only when two or more of the bench marks listed have NAVD 88 elevations. The NAVD 88 elevation relationship shown in the table is derived from an average of several bench mark elevations relative to tide station datum. As a result of this averaging, NAVD 88 bench mark elevations computed indirectly from the tidal datums elevation table may differ slightly from NAVD 88 elevations listed for each bench mark in the NGS database.

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National Oceanic and Atmospheric Administration
National Ocean Service

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Station ID: 8574680 PUBLICATION DATE: 04/21/2003
Name: BALTIMORE, FORT MCHENRY, PATAPSCO RIVER
MARYLAND
NOAA Chart: 12281 Latitude: 39° 16.0' N
USGS Quad: BALTIMORE EAST Longitude: 76° 34.7' W

To reach the tidal bench marks from the north bound Baltimore-Washington Expressway (State Highway 295) take the Water View exit east to State Highway 2 (Hanover Street). Proceed north on Hanover Street for 2.4 km (1.5 mi) to Fort Avenue. Turn right and travel east on Fort Avenue for 2.9 km (1.8 mi) to the entrance of Fort McHenry. Turn left onto Wallace Avenue, then right again onto Nimitz Drive, and then left onto Halsey Road to its end. Turn right and continue past a gate to the U.S. Corps of Engineers (COE) compound. The bench marks are located in the U.S. Naval Reserve compound, the COE compound, and on the Fort McHenry grounds. The tide gage and staff are located on the COE pier.

T I D A L B E N C H M A R K S

PRIMARY BENCH MARK STAMPING: 32 1922
DESIGNATION: 857 4680 TIDAL 32

MONUMENTATION: Tidal Station disk VM#: 434
AGENCY: US Coast and Geodetic Survey (USC&GS) PID#: JV0586
SETTING CLASSIFICATION: Granite sill

The primary bench mark is a disk set in the top of a granite sill on the west side of the U.S. Naval Reserve Center Building at Fort McHenry, 19.81 m (65.0 ft) north of the SW corner of the building, 10.10 m (33.1 ft) SE of the centerline of Halsey Road, and 0.43 m (1.4 ft) above the sidewalk.

BENCH MARK STAMPING: 27 1922
DESIGNATION: 857 4680 TIDAL 27

MONUMENTATION: Tidal Station disk VM#: 429
AGENCY: US Coast and Geodetic Survey (USC&GS) PID#: JV0579
SETTING CLASSIFICATION: Granite foundation

The bench mark is a disk set in the center of an octagon shaped granite cannon base at the easternmost point of the star shaped fort on the Fort McHenry grounds, 45.7 m (150 ft) ESE of the fort flagpole, 1.68 m (5.5 ft) ESE of a pile of cannon balls, and 0.12 m (0.4 ft) east of the west edge of the base.

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National Ocean Service

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Station ID: 8574680 PUBLICATION DATE: 04/21/2003
Name: BALTIMORE, FORT MCHENRY, PATAPSCO RIVER
MARYLAND
NOAA Chart: 12281 Latitude: 39° 16.0' N
USGS Quad: BALTIMORE EAST Longitude: 76° 34.7' W

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: 28 1922
DESIGNATION: TIDAL 28 STA 72

MONUMENTATION: Tidal Station disk VM#: 430
AGENCY: US Coast and Geodetic Survey (USC&GS) PID#: JV0580
SETTING CLASSIFICATION: Concrete foundation

The bench mark is a disk set in the east corner of the 1.01 m x 1.01 m (3.0 ft x 3.0 ft) concrete sub-base on the east leg of a range beacon near the east end of the Fort McHenry grounds, 16.40 m (53.8 ft) south of the SW leg of an electric meter box, 12.71 m (41.7 ft) WNW of the offshore edge of the seawall, 0.3 m (1 ft) east of the east leg of the beacon, and 0.3 m (1 ft) below ground. Note: Contact the Chief Ranger at Fort McHenry prior to leveling and recovering marks.

BENCH MARK STAMPING: 29 1922
DESIGNATION: 857 4680 TIDAL 29

MONUMENTATION: Tidal Station disk VM#: 431
AGENCY: US Coast and Geodetic Survey (USC&GS) PID#: JV0582
SETTING CLASSIFICATION: Granite sea wall

The bench mark is a disk set in the granite seawall coping at Fort McHenry, 16.80 m (55.1 ft) north of the Fire Department Barracks, 6.10 m (20.0 ft) east of the centerline of the Fire Department Pier, and 0.30 m (1.0 ft) south of the north edge of the sea wall.

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Station ID: 8574680 PUBLICATION DATE: 04/21/2003
Name: BALTIMORE, FORT MCHENRY, PATAPSCO RIVER
MARYLAND
NOAA Chart: 12281 Latitude: 39° 16.0' N
USGS Quad: BALTIMORE EAST Longitude: 76° 34.7' W

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: 30 1922
DESIGNATION: 857 4680 TIDAL 30

MONUMENTATION: Tidal Station disk VM#: 432
AGENCY: US Coast and Geodetic Survey (USC&GS) PID#: JV0584
SETTING CLASSIFICATION: Granite doorsill

The bench mark is a disk set in the top of a granite door sill in the COE compound at Fort McHenry, 6.10 m (20.0 ft) west of the centerline of a paved road between the Fire Barracks and Soil Laboratory, 2.01 m (6.6 ft) south of the NE corner of the building, and 1.01 m (3.0 ft) above ground.

BENCH MARK STAMPING: 31 1922
DESIGNATION: 857 4680 TIDAL 31

MONUMENTATION: Tidal Station disk VM#: 433
AGENCY: US Coast and Geodetic Survey (USC&GS) PID#: JV0585
SETTING CLASSIFICATION: Granite doorsill

The bench mark is a disk set in the granite door sill on the SW side of the Fort McHenry U.S. Naval Reserve Boiler Room (Building 4), 13.60 m (44.6 ft) north of the NW corner of the main U.S. Naval Reserve Building, 6.70 m (22.0 ft) NW of the south corner of the building, 5.50 m (18.0 ft) NNE of the road centerline, 1.40 m (4.6 ft) NW of the edge of the top step, and 1.01 m (3.0 ft) above ground.

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Station ID: 8574680 PUBLICATION DATE: 04/21/2003
Name: BALTIMORE, FORT MCHENRY, PATAPSCO RIVER
MARYLAND
NOAA Chart: 12281 Latitude: 39° 16.0' N
USGS Quad: BALTIMORE EAST Longitude: 76° 34.7' W

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: 35 1922
DESIGNATION: TIDAL 35 STA 72

MONUMENTATION: Tidal Station disk VM#: 435
AGENCY: US Coast and Geodetic Survey (USC&GS) PID#: JV0576
SETTING CLASSIFICATION: Granite doorsill

The bench mark is a disk set in the main entrance door sill to the Southern States Coop Mills office building at the intersection of East Fort Avenue and Wallace Street, 38.7 m (127 ft) SSW of the centerline of Fort Avenue, 11.52 m (37.8 ft) WNW of the brick wall around the Fort McHenry grounds, and 0.15 m (0.5 ft) SE of the west side of the entrance way to the building.

BENCH MARK STAMPING: 4680 B 1997
DESIGNATION: 857 4680 B

MONUMENTATION: Flange-encased Rod VM#: 3953
AGENCY: National Ocean Service (NOS) PID:
SETTING CLASSIFICATION: Stainless steel rod in sleeve

The bench mark is a flange encased rod located in the lawn on the north side of the U.S. Army Corps of Engineers Fort McHenry, 27.77 m (91.1 ft) SE of power pole number 816425 on the east side of the parking lot, 24.58 m (80.6 ft) SW of the seawall, and 4.78 m (15.7 ft) NNE of the NE face of the office building. The datum point is set 0.12 M (0.4 ft) below ground, being the top of a stainless steel rod driven 12.20 m (40.0 ft) to refusal, and encased in a 5-inch NGS logo cap.

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Station ID: 8574680 PUBLICATION DATE: 04/21/2003
Name: BALTIMORE, FORT MCHENRY, PATAPSCO RIVER
MARYLAND
NOAA Chart: 12281 Latitude: 39° 16.0' N
USGS Quad: BALTIMORE EAST Longitude: 76° 34.7' W

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: 4680 C 1997
DESIGNATION: 857 4680 C

MONUMENTATION: Flange-encased Rod VM#: 13778
AGENCY: National Ocean Service (NOS) PID:
SETTING CLASSIFICATION: Stainless steel rod in sleeve

The bench mark is a flange encased rod located in the lawn on the SW side of the Naval Reserve Readiness Center just west of the U.S. Army Corps of Engineers Fort McHenry Yard, 12.51 m (41.0 ft) NW of the NW edge of a parking lot, 8.23 m (27.0 ft) SW of a large flag pole surrounded by a hedge, and 3.38 m (11.1 ft) NW of the north edge of a concrete pad supporting an anchor. The datum point is set 0.11 m (0.35 ft) below ground, being the top of a stainless steel rod driven 4.60 m (15.1 ft) to refusal, and encased in a 5-inch NGS logo cap.

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Station ID: 8574680 PUBLICATION DATE: 04/21/2003
Name: BALTIMORE, FORT MCHENRY, PATAPSCO RIVER
MARYLAND
NOAA Chart: 12281 Latitude: 39° 16.0' N
USGS Quad: BALTIMORE EAST Longitude: 76° 34.7' W

T I D A L D A T U M S

Tidal datums at BALTIMORE, FORT MCHENRY, PATAPSCO RIVER based on:

LENGTH OF SERIES: 19 Years
TIME PERIOD: January 1983 - December 2001
TIDAL EPOCH: 1983-2001
CONTROL TIDE STATION:

Elevations of tidal datums referred to Mean Lower Low Water (MLLW), in METERS:

HIGHEST OBSERVED WATER LEVEL (08/23/1933)	=	2.346
MEAN HIGHER HIGH WATER (MHHW)	=	0.506
MEAN HIGH WATER (MHW)	=	0.415
NORTH AMERICAN VERTICAL DATUM-1988 (NAVD)	=	0.254
MEAN SEA LEVEL (MSL)	=	0.244
MEAN TIDE LEVEL (MTL)	=	0.241
MEAN LOW WATER (MLW)	=	0.067
MEAN LOWER LOW WATER (MLLW)	=	0.000
LOWEST OBSERVED WATER LEVEL (01/24/1908)	=	-1.556

Bench Mark Elevation Information In METERS above:

Stamping or Designation	In METERS above:	
	MLLW	MHW
32 1922	1.907	1.492
27 1922	9.411	8.996
28 1922	2.104	1.690
29 1922	1.400	0.986
30 1922	2.811	2.396
31 1922	1.889	1.475
35 1922	8.275	7.861
857 4680 TIDAL BASIC	9.519	9.104
4680 B 1997	1.648	1.233
4680 C 1997	1.894	1.480

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Station ID: 8574680 PUBLICATION DATE: 04/21/2003
Name: BALTIMORE, FORT MCHENRY, PATAPSCO RIVER
MARYLAND
NOAA Chart: 12281 Latitude: 39° 16.0' N
USGS Quad: BALTIMORE EAST Longitude: 76° 34.7' W

D E F I N I T I O N S

Mean Sea Level (MSL) is a tidal datum determined over a 19-year National Tidal Datum Epoch. It pertains to local mean sea level and should not be confused with the fixed datums of North American Vertical Datum of 1988 (NAVD 88).

NGVD 29 is a fixed datum adopted as a national standard geodetic reference for heights but is now considered superseded. NGVD 29 is sometimes referred to as Sea Level Datum of 1929 or as Mean Sea Level on some early issues of Geological Survey Topographic Quads. NGVD 29 was originally derived from a general adjustment of the first-order leveling networks of the U.S. and Canada after holding mean sea level observed at 26 long term tide stations as fixed. Numerous local and wide-spread adjustments have been made since establishment in 1929. Bench mark elevations relative to NGVD 29 are available from the National Geodetic Survey (NGS) data base via the World Wide Web at [National Geodetic Survey](#).

NAVD 88 is a fixed datum derived from a simultaneous, least squares, minimum constraint adjustment of Canadian/Mexican/United States leveling observations. Local mean sea level observed at Father Point/Rimouski, Canada was held fixed as the single initial constraint. NAVD 88 replaces NGVD 29 as the national standard geodetic reference for heights. Bench mark elevations relative to NAVD 88 are available from NGS through the World Wide Web at [National Geodetic Survey](#).

NGVD 29 and NAVD 88 are fixed geodetic datums whose elevation relationships to local MSL and other tidal datums may not be consistent from one location to another.

The Vertical Mark Number (VM#) and PID# shown on the bench mark sheet are unique identifiers for bench marks in the tidal and geodetic databases, respectively. Each bench mark in either database has a single, unique VM# and/or PID# assigned. Where both VM# and PID# are indicated, both tidal and geodetic elevations are available for the bench mark listed.

The NAVD 88 elevation is shown on the Elevations of Tidal Datums Table Referred to MLLW only when two or more of the bench marks listed have NAVD 88 elevations. The NAVD 88 elevation relationship shown in the table is derived from an average of several bench mark elevations relative to tide station datum. As a result of this averaging, NAVD 88 bench mark elevations computed indirectly from the tidal datums elevation table may differ slightly from NAVD 88 elevations listed for each bench mark in the NGS database.

TIDAL BENCH MARKS AT ROCKHALL

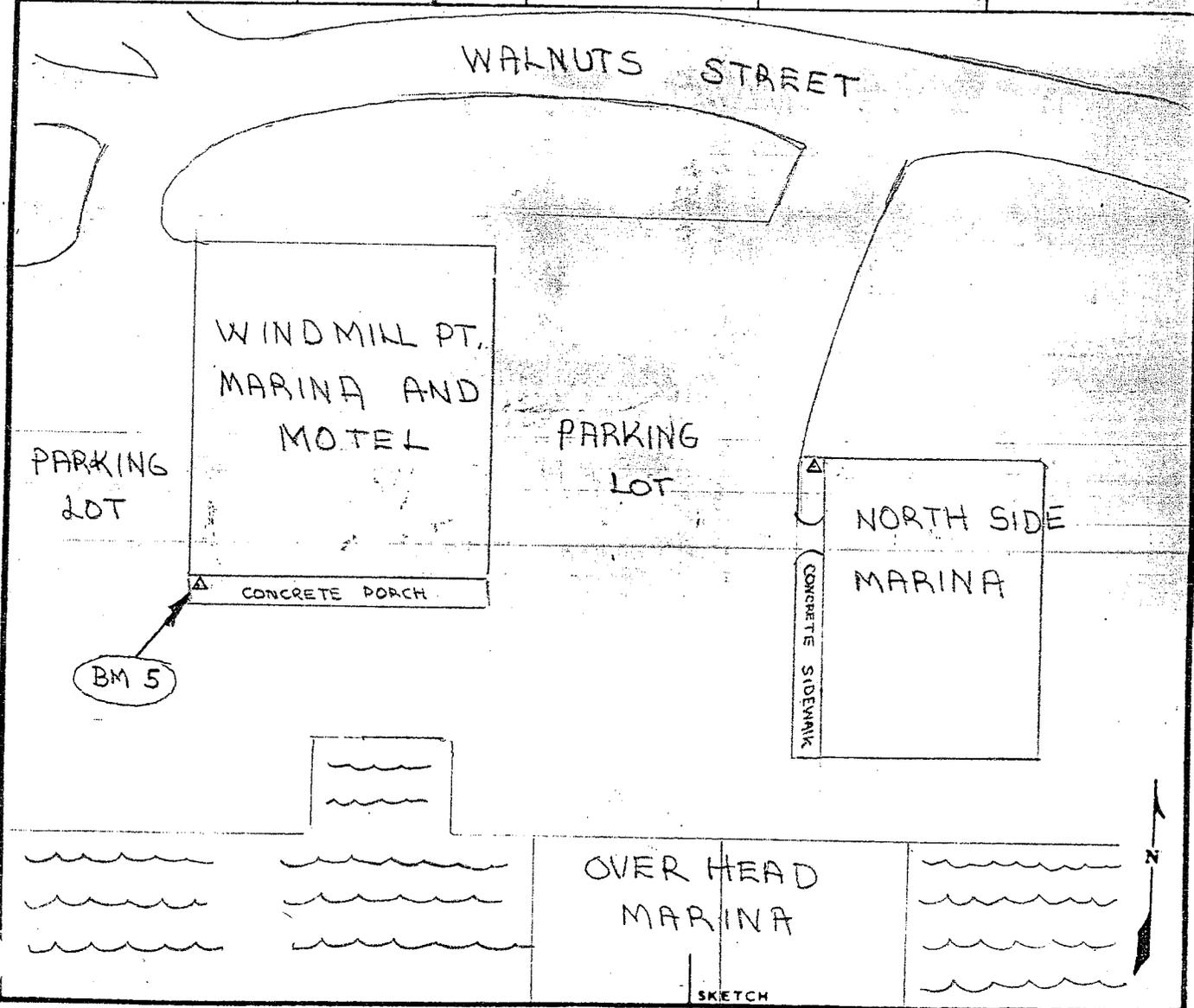
STATION NAME	M.L.L.W. ELEVATION			MLLW FOR '83-'81 TE
009-RH-3 -----	4.61	- 0.26	=	4.35
009-RH-4 -----	4.71	- 0.26	=	4.45
009-RH-5 -----	4.83	- 0.26	=	4.57

ELEVATIONS ARE BASED ON THE 1960 TO 1978 TIDAL EPOCH.

COUNTRY U.S.A		TYPE OF MARK		STATION 4.83 M.L.L.W	
LOCALITY ROCK HALL, MD		STAMPING ON MARK 009-AH-5		AGENCY (CAST IN MARKS)	
LATITUDE		LONGITUDE		DATUM MEAN LOW WATER ESTABLISHED BY (AGENCY)	
(NORTHING)(EASTING)	(FT)	(EASTING)(NORTHING)	(FT)	GRID AND ZONE	
	(M)		(M)		
(NORTHING)(EASTING)	(FT)	(EASTING)(NORTHING)	(FT)		
	(M)		(M)		
TO OBTAIN		GRID AZIMUTH			
TO OBTAIN		GRID AZ. (ADD)			
OBJECT	AZIMUTH OR DIRECTION (GEODETIC)(GRID) (MAGNETIC)		BACK AZI		

8/19/61
Recovered
No level run

MUTH
MUTH
E
EET)

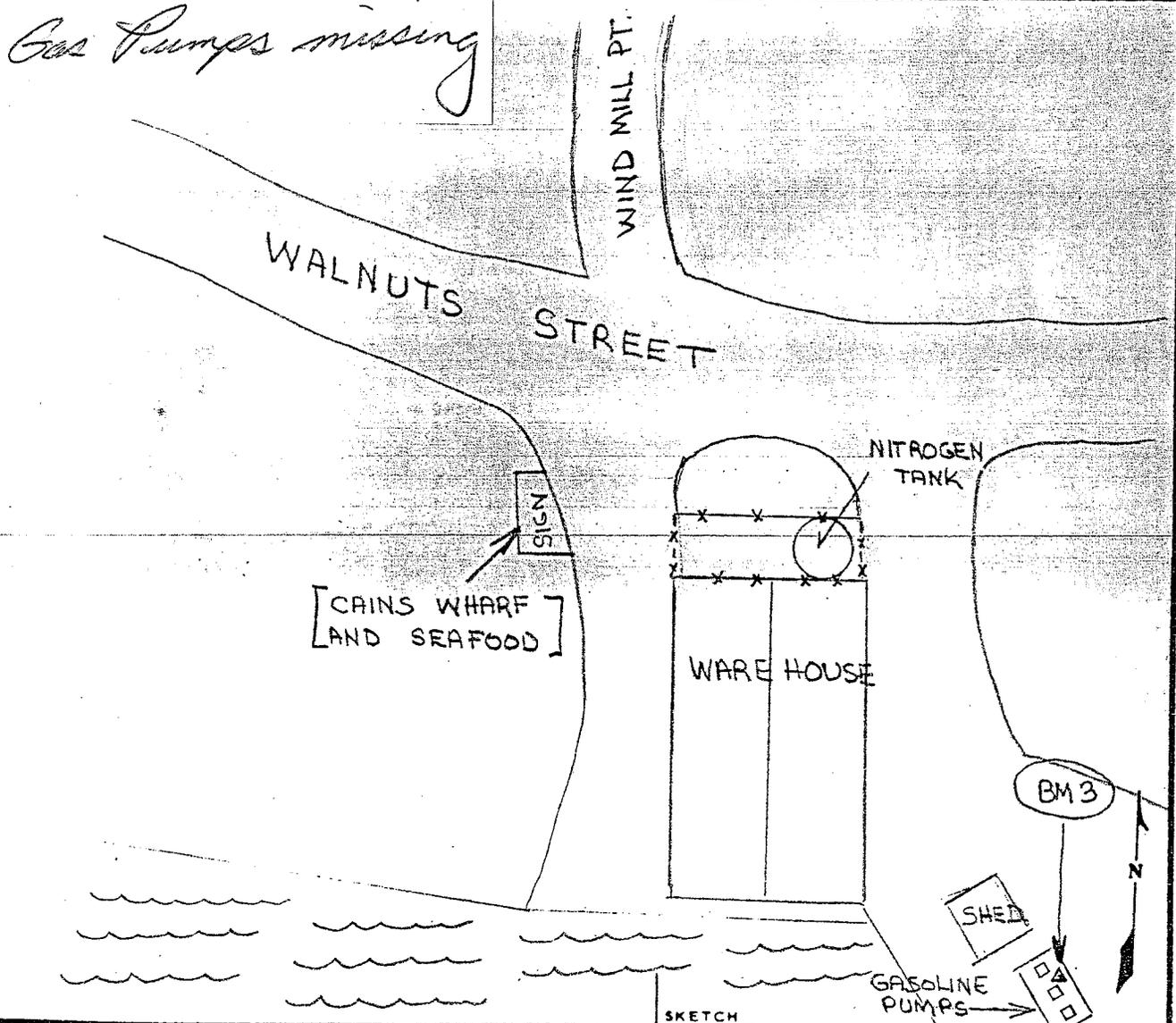


SKETCH

COUNTRY U.S.A.		TYPE OF MARK		STATION 4.61 M.L.L.W.	
LOCALITY ROCK HALL, MD.		STAMPING ON MARK 009-RH-3		AGENCY (CAST IN MARKS)	
LATITUDE		LONGITUDE		DATUM MEAN LOW WATER	
(NORTHING)(EASTING)	(FT)	(EASTING)(NORTHING)	(FT)	GRID AND ZONE	
	(M)		(M)	ESTABLISHED BY (AGENCY)	
(NORTHING)(EASTING)	(FT)	(EASTING)(NORTHING)	(FT)	GRID AND ZONE	
	(M)		(M)	DATE	ORDER

TO OBTAIN	GRID AZIMUTH, ADD	TO THE GEODETIC AZIMUTH
TO OBTAIN	GRID AZ. (ADD)(SUB.)	TO THE GEODETIC AZIMUTH

OBJECT	AZIMUTH OR DIRECTION (GEODETIC)(GRID) (MAGNETIC)	BACK AZIMUTH	GEOD. DISTANCE		GRID DISTANCE	
			(METERS)	(FEET)	(METERS)	(FEET)
8/19/01 Not recovered Gas Pumps missing						

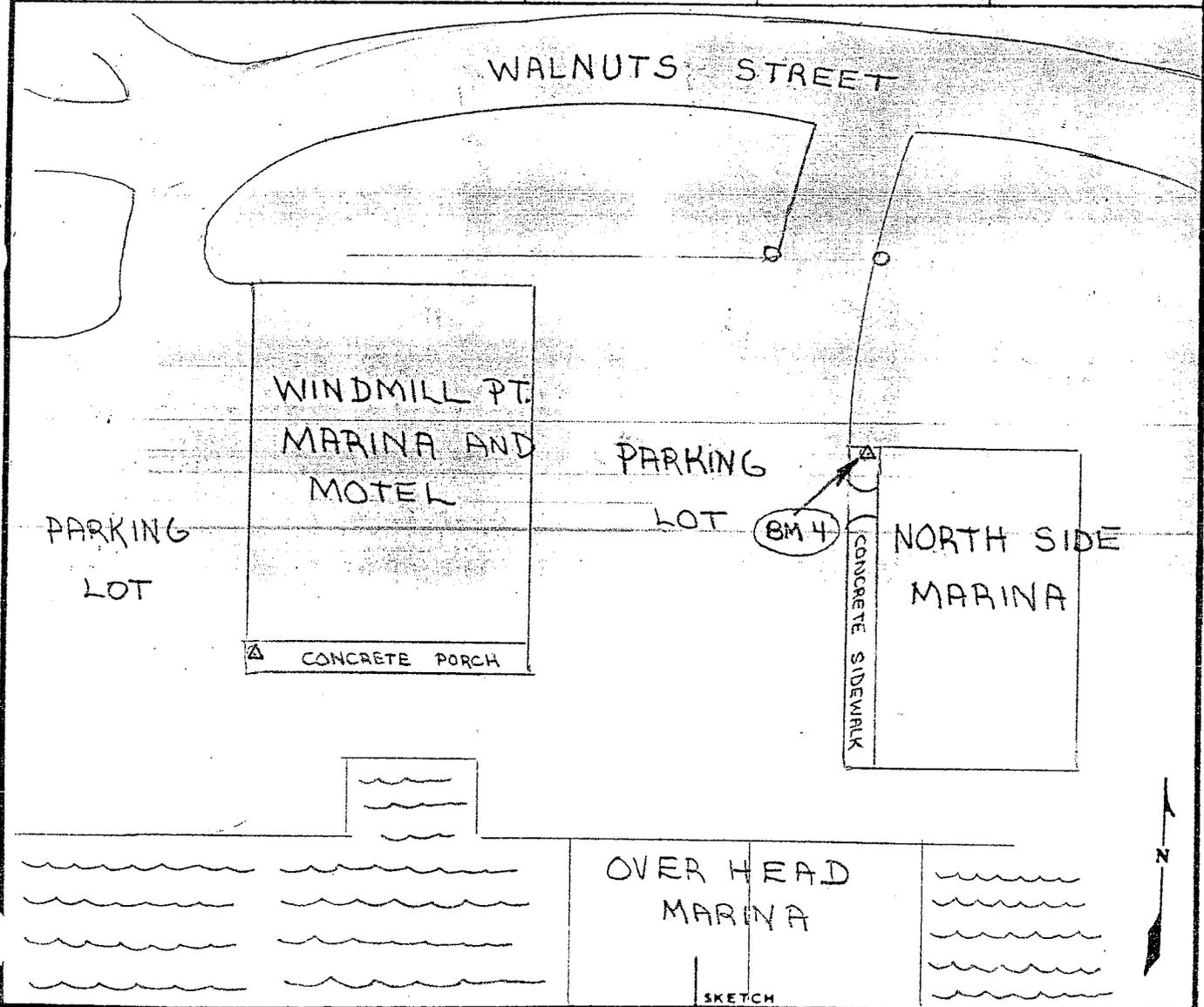


4.71 M.L.L.W.

COUNTRY U.S.A		TYPE OF MARK		STATION	
LOCALITY ROCK HALL, MD		STAMPING ON MARK 009-RH-4		AGENCY (CAST IN MARKS)	
LATITUDE		LONGITUDE		DATUM MEAN LOW WATER	
(NORTHING)(EASTING)	(FT)	(EASTING)(NORTHING)	(FT)	GRID AND ZONE	
(M)	(M)	(M)	(M)	ESTABLISHED BY (AGENCY)	
(NORTHING)(EASTING)	(FT)	(EASTING)(NORTHING)	(FT)	GRID AND ZONE	DATE
(M)	(M)	(M)	(M)		ORDER
TO OBTAIN			GRID AZIMUTH		
TO OBTAIN			GRID AZ. (ADD)		
OBJECT	AZIMUTH OR DIRECTION (GEODETIC)(GRID) (MAGNETIC)		BACK AZI		

8/19/01
Recovered
No level run

MUTH
MUTH
CE
EET



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National Oceanic and Atmospheric Administration
National Ocean Service

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Station ID: 8573364
Name: TOLCHESTER BEACH, CHESAPEAKE BAY
MARYLAND
NOAA Chart: 12278
USGS Quad: ROCK HALL

PUBLICATION DATE: 04/21/2003
Latitude: 39° 12.8' N
Longitude: 76° 14.7' W

To reach the bench marks from the intersection of State Highways 213 and 291 in Chestertown, proceed west on Route 291 for 0.8 km (0.5 mi) to Highway 20, turn right and continue west on Highway 20 for 11.3 km (7.0 mi) to Highway 21. Turn right and proceed west on Highway 21 for 5.3 km (3.3 mi) to the Tolchester Marina. The bench marks are located between Route 21 and the entrance channel to the marina. The gage is located on the north bulkhead along the entrance channel.

T I D A L B E N C H M A R K S

PRIMARY BENCH MARK STAMPING: 3364 A 1983
DESIGNATION: 857 3364 A

MONUMENTATION: Tidal Station disk VM#: 3159
AGENCY: National Ocean Survey (NOS) PID:
SETTING CLASSIFICATION: Stainless steel rod

The primary bench mark is a disk located on the SE side of a prominent hill between the Marina and the Bay, 59.44 m (195.0 ft) SSW of the southernmost corner of the tennis courts, 48.37 m (158.7 ft) SW of the NW corner of a wooden bulkhead, 10.03 m (32.9 ft) WNW of the west edge of the wood bulkhead, and 0.76 m (2.5 ft) WNW of the west edge of the asphalt apron around the slip area. The bench mark is 0.12 m (0.4 ft) below ground, crimped to a stainless steel rod driven 17.1 m (56 ft) to refusal, and encased in a 4-inch PVC pipe.

BENCH MARK STAMPING: KNOB 1950
DESIGNATION: 857 3364 KNOB

MONUMENTATION: Triangulation Station disk VM#: 3157
AGENCY: US Army Corps of Engineers (USE) PID:
SETTING CLASSIFICATION: Concrete monument

The bench mark is a disk set in top of a 0.30 m (1.0 ft) square concrete post located on the top of the south end of a prominent hill between the marina and the bay, 5.49 m (18.0 ft) NW of a spanish oak tree, 4.27 m (14.0 ft) SE of a post oak tree, and 0.30 m (1.0 ft) above ground.

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National Oceanic and Atmospheric Administration
National Ocean Service

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Station ID: 8573364 PUBLICATION DATE: 04/21/2003
Name: TOLCHESTER BEACH, CHESAPEAKE BAY
MARYLAND
NOAA Chart: 12278 Latitude: 39° 12.8' N
USGS Quad: ROCK HALL Longitude: 76° 14.7' W

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: NO 6 1971
DESIGNATION: 857 3364 TIDAL 6

MONUMENTATION: Tidal Station disk VM#: 3158
AGENCY: National Ocean Survey (NOS) PID:
SETTING CLASSIFICATION: Concrete monument

The bench mark is a disk set in top of a concrete monument on the SW side of a prominent hill in a small picnic area, 60.35 m (198.0 ft) north of the north bulkhead along the entrance channel, 20.45 m (67.1 ft) NW of the center of 3 fuel tank vent pipes at the north edge of the parking lot, 12.10 m (39.7 ft) north of a basketball goal post, 0.24 m (0.8 ft) south of an orange fiberglass witness post, and 0.46 m (1.5 ft) below ground.

BENCH MARK STAMPING: 3364 B 1983
DESIGNATION: 857 3364 B

MONUMENTATION: Tidal Station disk VM#: 3160
AGENCY: National Ocean Survey (NOS) PID:
SETTING CLASSIFICATION: Stainless steel rod

The bench mark is a disk located on the east side of the tennis courts, 31.85 m (104.5 ft) north of the NW corner of a wooden bulkhead, 21.76 m (71.4 ft) SSW of the easternmost wood fence post along the north edge of the Marina property, 18.59 m (61.0 ft) south of the SE corner of the fence around the tennis courts, 4.54 m (14.9 ft) SE of the fence along the tennis court and in line with the nets, 0.91 m (3.0 ft) WNW of the WNW face of the tenth wood post from the road on the WNW side of the asphalt apron. The bench mark is 0.12 m (0.4 ft) below ground, crimped to a stainless steel rod driven 18.3 m (60 ft) to refusal, and encased in a 4-inch PVC pipe with a protective cap.

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National Oceanic and Atmospheric Administration
National Ocean Service

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Station ID: 8573364 PUBLICATION DATE: 04/21/2003
Name: TOLCHESTER BEACH, CHESAPEAKE BAY
MARYLAND
NOAA Chart: 12278 Latitude: 39° 12.8' N
USGS Quad: ROCK HALL Longitude: 76° 14.7' W

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: 3364 C 1983
DESIGNATION: 857 3364 C

MONUMENTATION: Tidal Station disk VM#: 3161
AGENCY: National Ocean Survey (NOS) PID:
SETTING CLASSIFICATION: Stainless steel rod

The bench mark is a disk located on an earthen dam on the north side of Route 21 across from the entrance to the Tolchester Marina, 31.82 m (104.4 ft) SE of the SE corner fence post for a hurricane fence by the pond on the north side of Route 21, 24.60 m (80.7 ft) north of the eastern gate post at the entrance to the marina, 22.19 m (72.8 ft) NNE of the western gate post, 13.35 m (43.8 ft) NE of the centerline of Route 21, and 5.76 m (18.9 ft) south of the waters edge of the SE corner of the pond. The bench mark is 0.12 m (0.4 ft) below ground, crimped to a stainless steel rod driven 16.4 m (54 ft) to refusal, and encased in a 4-inch PVC pipe with a protective cap.

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National Oceanic and Atmospheric Administration
National Ocean Service

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Station ID: 8573364 PUBLICATION DATE: 04/21/2003
Name: TOLCHESTER BEACH, CHESAPEAKE BAY
MARYLAND
NOAA Chart: 12278 Latitude: 39° 12.8' N
USGS Quad: ROCK HALL Longitude: 76° 14.7' W

T I D A L D A T U M S

Tidal datums at TOLCHESTER BEACH, CHESAPEAKE BAY based on:

LENGTH OF SERIES: 7 Years
TIME PERIOD: July 1994 - June 2001
TIDAL EPOCH: 1983-2001
CONTROL TIDE STATION: 8574680 BALTIMORE, FORT MCHENRY, PATAPSCO RIVER

Elevations of tidal datums referred to Mean Lower Low Water (MLLW), in METERS:

HIGHEST OBSERVED WATER LEVEL (09/07/1996)	=	1.486
MEAN HIGHER HIGH WATER (MHHW)	=	0.527
MEAN HIGH WATER (MHW)	=	0.431
MEAN SEA LEVEL (MSL)	=	0.254
MEAN TIDE LEVEL (MTL)	=	0.248
MEAN LOW WATER (MLW)	=	0.064
MEAN LOWER LOW WATER (MLLW)	=	0.000
LOWEST OBSERVED WATER LEVEL (04/01/1997)	=	-0.959

Bench Mark Elevation Information

In METERS above:

Stamping or Designation	In METERS above:	
	MLLW	MHW
3364 A 1983	1.922	1.491
KNOB 1950	8.429	7.998
NO 6 1971	2.057	1.626
3364 B 1983	1.945	1.514
3364 C 1983	3.244	2.813

APPENDIX B

**STATE OF MARYLAND WATER QUALITY
CERTIFICATION**

APPENDIX C

LIST OF DREDGE OBSERVER CONTRACTORS

List of Dredge Observer Contractors

Dr. L. M. Ehrhart
Dept. of Biological Science
University of Central Florida
P.O. Box 25000
Orlando, FL 32816
407-823-2970
Fax: 407-283-5769
lehrhart@pegasus.cc.ucf.edu

Jane Provancha
Dynamac Corporation
DYN-2
Kennedy Space Ctr., FL 32899
321-853-6578
Fax: 321-853-6543
Jane.Provancha@esc.patrick.af.mil

Gregg Gitschlag
NMFS, Galveston Laboratory
4700 Avenue U
Galveston, TX 77550
409-766-3517
Fax: 409-766-3508
Gregg.Gitschlag@noaa.gov

Christopher Slay, President
Coastwise Consulting
(Environmental Consultants -
Land, Sea, Air)
173 Virginia Avenue
Athens, GA 30601
706-543-6859
904-261-8518 Fax/Tel
cslay@att.net

A.I.S. Inc.
(P.O.C. Arv Poshkus)
19 Camden Street
P.O. Box 421
Stoughton, MA 02072-0421
800-230-8032
Fax: 781-297-7669
ARVIDAS1@juno.com

Dr. James Richardson
Institute of Ecology University of
Georgia
Room 103, Ecology Building
Athens, GA 30602
706-542-2968
Fax: 706-542-6040
rainforestry@earthlink.net

R. Eric Martin
Ecological Associates, Inc.
P.O. Box 405
Jensen Beach, FL 34958
561-334-3729
Fax: 561-334-4925
eai@gate.net

Richard Alboth
Tiny's Marine Environmental
Services
7 Rogers Street
Randolph, MA 02368
Cellular: 321-431-6502
tinysvc@aol.com

Mary Jo Barkaszi
ECOES, Inc.
7341 Glenwood Road
Cocoa, FL 32927
321 635-8477
Fax: 321-635-8449
maryjo@eco.es.com
www.ecoes.com

Trish Bargo
REMSA, Inc.
2829A Jefferson Ave., Suite 108
Newport News, VA 23608
757-723-2930
Fax: 757-723-2931
Cellular: 757-544-0295
pbargo@remsa.remsainc.com

Andrea Balla-Holden,
Marine & Marine Life Consulting
5988 SE Kelsey Court
Port Orchard, WA 98367
360-769-5934: Office
360-769-4195: Fax
MarineMarineLife@aol.com

Robert K. Metzger
1327 N. Wheaton Dr.
St. Charles, MO 63301-0881
636-946-6464 Tel/Fax
314-265-4806: Cell
metzgerr@swbellnet

Charles Oravetz
P.O. Box 2360
Flagler Beach, FL 32136
(386)439-4691
email: paint3084@aol.com

APPENDIX D

ENDANGERED SPECIES OBSERVER FORM

APPENDIX E

INCIDENT REPORT OF SHORTNOSE STURGEON

**Incident Report of Shortnose Sturgeon Take
Maintenance Dredging**

Species _____ Date _____ Time (specimen found) _____

Geographic Site _____

Location: Lat/Long _____

Vessel Name _____ Load # _____

Begin load time _____ End load time _____

Begin dump time _____ End dump time _____

Sampling method _____

Condition of equipment _____

Location where specimen recovered _____

Weather conditions _____

Water temp: Surface _____ Below midwater (if known) _____

Species Information: (please designate cm/m or inches.)

Total length: _____ Fork length: _____

Weight: _____

Condition of fish/description of animal

Fish Condition: ALIVE DEAD

Fish Decomposed: NO SLIGHTLY MODERATELY SEVERELY

Fish tagged: YES / NO / DON'T KNOW

Please record all tag numbers. Tag # _____

Photograph attached: YES / NO

(please label *species, date, geographic site* and *vessel name* on back of photograph)

Comments/other (include justification on how species was identified) _____

Disposition of animal _____

Observer's Name _____

Observer's Signature _____