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SECTION 02000

MOBILIZATION AND DEMOBILIZATION
02/99

PART 1 GENERAL

1.1 SUBMITTALS

None

1.2 MOBILIZATION AND DEMOBILIZATION

Mobilization and Demobilization shall include transporting the dredge and all items of attendant plant to the site of the work, setting up the dredge and other equipment, and laying of pipelines and otherwise placing the entire plant in condition for effective dredging. The trenching and laying of buried pipe and other associated work will be part of mobilization and demobilization. Upon completion of each dredge cycle, the Contractor's attendant plant and equipment shall be removed from the site.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

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SECTION 02020

DREDGING
02/99

PART 1 GENERAL

1.1 REFERENCES

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

CORPS OF ENGINEERS (COE)

EM 1110-1-1003 (August 1996) Navstar Global Positioning System Survey Ref Title

EM 1110-2-1003 (October 1994) Hydrographic Surveying

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Samples

Sediment Samples

SD-06 Test Reports

Daily Report of Operations

SD-07 Certificates

Dredge and Disposal Plan;G

Hydrographic Surveyor;G

1.3 REQUIRED WORK

In the area to be dredged, all materials shall be removed and disposed of as indicated. Should material which cannot be removed without unreasonable methods be encountered, the Contractor shall remove all overlying material which in the judgment of the Contracting Officer, can be removed. 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 the CONTRACT CLAUSE: DIFFERING SITE CONDITIONS. The dredging area shall be dredged to the indicated depths below mean lower low water (MLLW).

Debris shall become the property of the Contractor and shall be removed from the site.

1.4 AVOIDANCE OF EXISTING CONSTRUCTION

Reference is made to the clause of contract entitled "PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS," which obligates the contractor to protect from damage all existing improvements known to exist at, near, or adjacent to the site of the work. The following existing structures shall be protected:

1.4.1 Existing Breakwaters and Groins

The Contractor shall conduct dredging operations in such a manner as to prevent undermining of the breakwaters, piers, groin, and revetment. Excessive or unnecessary dredging may result in an unstable condition at the toe of the structures. The Contractor will be required to strictly adhere to the indicated dredging template when working near any structures, and shall be responsible for repairing any damage which may result from failure to comply with the requirements of these specifications.

1.5 PERIOD OF DREDGING

Each year the contractor shall conduct two cycles of dredging within the time specified in SECTION 00800: SPECIAL CONTRACT REQUIREMENTS, paragraph: Commencement, Prosecution, and Completion of Work. During each cycle the contractor shall dredge the project areas to advance maintenance and project depths and dimensions. After completion of each dredging cycle, the Contractor shall remove the dredging plant and equipment from the channel as required in SECTION 02000: MOBILIZATION AND DEMOBILIZATION. The Contractor shall notify the Contracting Officer prior to returning the necessary dredging plant and equipment to the site of work for the subsequent dredging cycle

1.5.1 Priority of Construction

Unless directed otherwise, the Contractor shall conduct dredging and disposal activities in accordance with the following priorities:

- a. The Contractor shall dredge the project area commencing from the inside of the harbor and progress in the seaward direction.
- b. Conditions during dredging operations may require changes in the order of work; all such changes must be approved by the Contracting Officer

1.6 CHARACTER OF MATERIALS

The materials to be removed consist of sand, silty sand, sandy silt, and some silts and clays. Gravel, small cobbles, boulders, trash, and organic debris can also be expected within the project boundaries. Bedrock has not been encountered during explorations within the project boundaries above the project dredge depth, including holes drilled in 1938 to -12.2 meters MLLW in the vicinity of the timber and stone groin as indicated on the plans. A soft sandstone bedrock was encountered in RW92-5B at a depth of -11.0 meters MLLW as indicated on the plans. In addition, parts of the harbor may at times, contain significant debris caused by storms and related runoff. All test holes shown on plans were drilled prior to previous maintenance dredging contracts, which have been completed.

1.6.1 Rock Area

Approximately 15,000 cubic meters of boulders and cobble sized rock have been dumped in the vicinity of the project area. Should any of this material be encountered, the Contractor shall conduct dredging by removing only material along the perimeter of the boulder and cobble sized rock area and all overlying material, which in the judgement of the Contracting Officer, can be removed. During previous maintenance dredging cycles, cobbles were encountered in portions of Areas 2 and 3 shown on the plans.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 DREDGE AND DISPOSAL PLAN

The Contractor shall submit a Dredge and Disposal Plan indicating the methods and equipment he proposes to use to dredge, position and dispose. The plan shall be submitted to the Contracting Officer for approval at least 20 days prior to start of dredging operations and shall also include, as a minimum, the following information:

- a. Order of dredging operations, layout of dredging and disposal areas, and proposed time line.
- b. Layout of all buoys, anchors, pipelines, and ancillary equipment.
- c. Methods and equipment for positioning at the dredge and disposal site(s).
- d. Layout of dredge, including: dimensions; location of engines, fuel storage, electrical/transformer rooms; description of engine types and horsepower ratings, types and size of generating equipment, fuel storage capacity, and vertical and horizontal access. A copy of this information shall be provided to the local fire fighting agency.

3.2 DISPOSAL OF DREDGED MATERIAL

3.2.1 General

Dredged material shall be transported and deposited within the disposal limits of the area indicated on the drawings. Any dredged material that is deposited other than in the area indicated on the drawings, or as approved by the Contracting Officer, will not be included in the measurement for payment, and the Contractor may be required to remove such misplaced material and deposit it where directed at his own expense. Debris and other unsuitable materials encountered shall become the property of the Contractor and shall be removed from the site. See SECTION 01354: ENVIRONMENTAL PROTECTION for restrictions and commitments in environmental protection.

The Contracting Officer will direct the Contractor where to dispose of the dredge material. Each year dredge season (as specified in SECTION 00800: SPECIAL CONTRACT REQUIREMENTS, paragraph: Commencement, Prosecution, and Completion of Work), if it is necessary to replenish the beach between

Mission Creek and Laguna Channel, no more than 20,000 cubic meters of dredge material will be disposed in that area.

For dredging disposal operations conducted between 1 March and 15 April, the Contractor shall utilize the discharge method required in paragraph: Surf Zone Discharge Method.

3.2.2 Discharge Pipeline

The placement of the discharge pipeline shall be coordinated each year with the Contracting Officer and the City of Santa Barbara Waterfront Department.

The discharge pipeline shall be placed to extend from West Beach, under Stearn's Wharf, and along East Beach to the disposal areas (Areas "A" and "B") as shown on the drawings. The discharge pipeline shall be buried from the point where it first reaches the beach (the harborside of Stearns Wharf) to the beginning of the disposal area (Area "A"), with the exception of the area between Mission and Laguna Creeks. Entrenched discharge pipeline may be left in place throughout the length of the contract (for three (3) years). The discharge pipeline shall be located not closer than 20 meters inland of normal wave runup, except for where the pipe crosses Mission Creek and Laguna Channel. The top of the pipeline shall have 0.5 meter sand cover and backfill to match existing grade. At the completion of each year dredge season during the summer, the Contractor shall bury the end of the discharge pipeline.

The Contractor will be required to maintain the pipeline in a safe, buried, and covered condition during dredging operations and during non-dredging operations. After the completion of the contract, the discharged pipeline shall be removed from the site.

Discharge outlet structures shall not interfere with public use of the beach and ocean waters. The Contractor shall ensure that the disposal pipeline does not block, divert, or interfere with the flow of Mission Creek and Laguna Channel. See detailed drawings for other pipeline placement requirements.

3.2.3 Finished Grading

The entire disposal area above the Mean Higher High Water (MHHW) where dredged material has been placed, shall be graded to a reasonably smooth, uniform surface, and sloped toward the ocean as indicated or otherwise directed. The fill elevation may vary 0.3 meter above or below the indicated elevation as shown on the plan.

3.2.4 Surf Zone Discharge Method

The surf zone discharge method shall be used for dredging performed between 1 March and 15 April of each year. The following procedures shall be followed:

a. The Contractor shall align the disposal pipeline and deposit dredged material in the surf zone within a 150-meter wide area of operation. The 150-meter area of operation will be located and will be fixed and flagged by the Contracting Officer prior to dredge disposal and only one zone of operation will be allowed in the dredging contract, otherwise directed by the Contracting Officer. Heavy equipment, pipelines, or direct disposal of dredge material will not be permitted beyond this area. The disposal pipeline, alternate, or backup outfall shall extend seaward of Mean Higher

High Water (MHHW) and shall be located perpendicular to the ocean so that dredged material shall immediately run down the face of the beach. When mounding of dredged materials occurs in front of disposal pipes, extensions shall be added onto the pipes to bring the outfall closer to the ocean. Should lateral movement of the pipes be required, such movement shall not result in pipes, equipment, or direct discharge outside of the fixed 150-meter wide area of operations. Grading to move sand mounds will be allowed within the 150-meter area of operation provided the graded material is redistributed within the area. Surf-zone disposal will require the Contractor to remove sections of pipeline during disposal operations. If necessary, slotted or perforated pipes shall be used to extend the pipeline closer to the ocean in order to prevent erosion of sand mounds supporting the disposal pipes. Location of the slotted pipes within the pipeline will be directed by the Contracting Officer. The Contractor shall notify the Contracting Officer not less than 24 hours prior to movement of any discharge pipes. Slotted discharge pipes, multiple discharge points, or other approved means shall be employed to minimize loss of dredged material such that all dredged material will remain within the disposal site. Any material that is deposited elsewhere than in designated areas or approved by the Contracting Officer shall be removed and deposited where directed at the Contractor's expense.

b. The Contractor may be expected to perform dredging and disposal operations on a double workshift so as to minimize the temporal impacts. If necessary, the Contractor may be expected to perform dredging and disposal operations on a triple shift (24 hours per day) basis, provided the work conforms to the applicable noise control and other restrictions/commitments specified in SECTION 01354: ENVIRONMENTAL PROTECTION.

c. Any modification from the foregoing procedures will require supplemental environmental documentation and coordination at no additional cost to the Government. Any modifications to the foregoing procedures which have not been properly documented and coordinated will result in non-compliance with State and Federal laws and may result in fines or prosecution or both.

3.3 DREDGE QUANTITIES FOR PAST 6-DREDGE CYCLE

Quantity of material available within the dredge prism as of the previous 6 dredge cycles, pre-dredge surveys, is shown in the following table. The estimated quantity specified in the Bid Schedule is based upon these numbers and the estimated budget for the particular cycle.

<u>Area</u>	October 1998		February 1999	
	<u>Available Qty</u> <u>cu.m.</u>	<u>Removed</u> <u>cu.m.</u>	<u>Available Qty</u> <u>cu.m.</u>	<u>Removed</u> <u>cu.m.</u>
1	33,200	17,900	17,000	2,000
2	65,300	40,600	74,200	86,100
3	69,800	81,100	46,200	62,300
4	5,000	2,600	4,400	0

	October 1999		February 2000	
1	31,000	22,900	19,100	8,000
2	84,800	80,900	73,400	52,900
3	44,400	46,700	72,900	74,800
4	4,500	0	5,100	1,000
	October 2000		April 2001	
1	20,300	3,000	34,900	7,400
2	69,100	30,300	99,800	54,100
3	33,300	22,800	105,000	83,300
4	5,900	600	7,900	500

Quantities of Area 1 and Area 4 as shown include overdepth. Removed quantities are based upon quantities from within the dredge prism. Quantities removed from beyond the dredge prism are not represented. Overdepth dredging will be allowed to the limits specified in paragraphs: Overdepth and Excessive Dredging.

3.4 OVERDEPTH AND SIDE SLOPES

3.4.1 Overdepth

To cover inaccuracies of the dredging process, a 0.5 meter allowable overdepth applies to this contract. Material dredged from below the allowable overdepth will not be estimated and will not be included in the measurement of work.

3.4.2 Side Slopes

Material actually removed within limits approved by the Contracting Officer, shall provide for final side slopes not flatter than those indicated on the drawings and will be estimated and paid for. The Contractor may dredge material in original position or may dredge below the pay slope plane at the bottom of the slope to allow for sloughing of upslope material capable of falling into the cut (box dredge). However, material removed below any pay slope plane will not be estimated for payment. In computing the limiting amount of side slope dredging, the overdepth indicated on the drawings, measured vertically, will be used. The quantity of material to be paid for shall not be in excess of that originally lying above this limiting slope. Side slopes are given for pay purposes only and are not necessarily the angle of repose of the soil. Sloughing side slopes shall not be the basis for claims against the Government. End slopes, where indicated on the drawings, shall be treated in the same manner as side slopes.

Box cutting of side slopes will not be allowed near the breakwaters, groin, and revetment.

3.4.3 Excessive Dredging

Material taken from beyond the allowable overdepth limits may be deducted

from the total amount dredged as excessive overdepth dredging, or excessive side-slopes dredging. Materials dredged from below the depth limit which result in extra costs shall be the responsibility of the Contractor. Nothing here shall be construed to prevent the inclusion in the measurement of material dredged for the removal of shoals performed in accordance with the applicable provisions of the paragraphs: FINAL EXAMINATION AND ACCEPTANCE or SHOALING.

3.4.4 Advance Maintenance Depth

There is no overdepth limit indicated for the advanced maintenance areas (Areas 2, 3, and a portion of Area 1 (c,b,s,c) as indicated on the plans. Any material removed from below the indicated advanced maintenance depth will not be included in the measurement of work accomplished. Due to inaccuracies of the dredging process, the Contractor will only be required to remove material to within 0.5 meter above the advance maintenance dredge depth. However, any material removed to the advance maintenance dredge depth will be included in the measurement of work accomplished.

3.4.5 DREDGING AREAS

In order to effectively manage the performance of dredging operations, perform quality assurance verification, and provide accurate measurement of quantities, the entire dredging area shall be divided into reaches (sections) as indicated below:

AREA 1 - Reach 1A, Reach 1B, and Reach 1R

AREA 2 - Reach 2A, Reach 2B, Reach 2C, and Reach 2R

AREA 3 - Reach 3A, Reach 3B, Reach 3C, Reach 3D, and Reach 3R

AREA 4 - Reach 4R and Reach 4L

Attached at the end of the section is a detailed drawing referencing these reaches (sections).

3.5 SAMPLING OF MATERIAL

Each dredge cycle the Contractor shall obtain representative Sediment Samples at the discharge point as material is being discharged onto the beach. The exact location and depth of each sample shall be as directed by the Contracting Officer. The number of required samples shall be as follows:

<u>Area</u>	<u>Number of Samples Required</u>	
	Above Elev.-7.5m(MLLW)	Below Elev.-7.5m(MLLW)
Area 1	3	-
Area 2	4	3
Area 3	3	3
Area 4	3	-

The samples shall be taken at evenly spaced intervals of time and volume as each of the areas is dredged. Each sample (water extracted) shall be not less than one (1) liter and shall be obtained in clear plastic bottles. The sample bottles shall be labeled in indelible ink with the sample number, date sampled, and name of person obtaining sample. Sample bottle

lids shall be securely fastened to prevent spillage or leakage during shipment. Sample bottles shall be placed in a suitable shipping container with adequate cushioning to prevent breakage during shipment. The samples shall be delivered to the address specified herein below at weekly intervals, or at such other times as may be determined by the Contracting Officer.

A Dredge Sample Data Form with the description of the dredge cut location by coordinates and stationing, dredge cut elevation, placement location and description of where sample was taken, date, time, sample number, and the name of the person who collected the sample shall accompany each sample. The sample form shall be placed in a waterproof sealed plastic bag for protection during shipment. A copy of a sample form is provided at the end of this section.

A copy of the sample form shall be submitted to the Contracting Officer's Representative along with the transmittal form.

The Contractor shall notify the Contracting Officer's Representative 48 hours in advance of sample collection. Samples shall be delivered to:

U.S. Army Corps of Engineers
ATTN: Baseyard Soils Laboratory
645 North Durfee Avenue
South El Monte, CA 91733-4399
ATTN: Art Moncayo Tel: (626) 401-4095

3.6 CONTRACTOR'S SURVEYS

3.6.1 Survey Data

Reference is made to SECTION 00800: SPECIAL CONTRACT REQUIREMENTS, QUANTITY SURVEYS, FAR 52.236-16 which requires payment based on Government surveys. Progress payments or evidence (condition surveys) supporting extreme weather (storm) related shoaling, will be based upon Contractor's hydrographic surveys. The Contractor's survey shall provide full coverage of an entire area, such as Area 1, Area 2, Area 3, Area 4, for which progress payment or evidence of storm-related shoaling is being submitted.

It is further emphasized that only condition surveys supporting extreme weather (storm) - related shoaling will be considered for payment in addition to the government surveys, provided that the Contractor's surveys clearly show the condition before and after each shoaling event and the condition after removal of material from the shoaled area. Survey data which does not meet all applicable requirements and quality assurance verifications will not constitute a valid request for payment of shoaling.

Contractor's hydrographic surveys shall be performed electronically (automated) and the data shall be provided and submitted to the Government on an electronic media (IBM compatible, ASCII format) in delimited files of easting, northing, and depth (x,y,z), where the depth is indicated as negative if recorded below MLLW. The first lines of the data file will list the information as follows:

- * Project Name: Santa Barbara Harbor, Maintenance Dredging FY2002
- * Surveyor's Name and Company Name
- * Area Surveyed
- * Type of Survey and Date of Survey (i.e. Pre-dredge, MM/DD/YR)

- * Vertical Datum
- * Horizontal Datum

These first 6 lines will be preceded by an asterisk (*), which indicates a comment line.

A plot of soundings will accompany the x,y,z data and all data shall be collected and plotted in metric units (meters).

3.6.2 Sounding Data Standards

The Contractor's hydrographic surveys for progress payment or evidence supporting extreme(storm) weather-related shoaling shall meet or exceed the survey standards listed in EM 1110-2-1003 (Hydrographic Surveying) for Class I surveys. Surveys shall be in the State Plane Coordinate System of 1983 - meters (SPCS 83), Zone 5, State of California, and be performed by an independent hydrographic survey contractor with at least three (3) years of experience in hydrographic surveying of navigable channels and have either a current Land Surveyor's or a Professional Engineer's license, authorized to certify surveys in the State of California. The Hydrographic Surveyor firm selected by the Contractor must be approved by the Contracting Officer prior to performing surveys for this contract.

3.6.3 Positioning System

It is required that hydrographic surveys shall be conducted using an Automated Range-Azimuth Positioning System or Differential Global Positioning System (DGPS) with positional accuracy of +/- 3 meters (1 DRMS) or exceed the survey standards listed in EM 1110-1-1003 and EM 1110-2-1003 that is linked to an automated (digital) depth recording device capable of continuous logging of x,y,z positional data with depth measurement resolution to the nearest five-hundredths (5/100) of a meter. Digital depths shall be supplemented by analog depth records if survey is performed by single beam echosounder. Sounding lines shall be verified by crosslines at least 10 percent of the principal lines and along the centerline of channel. Distance between successive soundings (sounding interval) shall be no more than 2 meters. Soundings shall be reduced to sounding datum (Mean Lower Low Water) by using actual tides and other appropriate corrections resulting in an accuracy of +/- 0.2 meter from actual depth.

3.6.4 Survey Firm Acceptance

For the Contracting Officer to approve the selected survey firm, the Contractor must provide documentation indicating that modern electronic horizontal positioning and sounding system equipment will be used for the surveys to be performed as well as documentation verifying the experience of the operators using the equipment. Typical information that will be required, as a minimum, includes the name, model, and year of manufacture of the electronic equipment, the electronic frequencies of the horizontal positioning equipment and sounding equipment, and the manufacturer's stated positioning and sounding accuracies, and capability of the equipment proposed for usage. In addition, the Contractor must provide information that a safe and suitable vessel meeting U.S. Coast Guard requirements is available and will be used for operation in the waters where the surveys are to be performed. The Contractor shall submit credentials/qualifications as evidence that qualified, experienced staff are available and will be used for the operation of the vessel as well as for the electronic positioning and sounding equipment.

3.6.5 Data Processing

The Contractor shall use a Data Processing System to map the sounding data and calculate quantities. Reduced sounding data shall then be imported into the Data Processing System where cross-sections are compared to dredge templates and volume quantities are calculated. The software shall be capable of digital terrain modeling and shall produce, as a minimum, sounding sheets, cross section profiles, 3-dimensional area profiles, and quantity volume calculations using the Triangulated Irregular Network (TIN) method.

3.7 PRE-DREDGE AND FINAL SURVEYS

The Contractor shall notify the Contracting Officer not less than 15 calendar days prior to the scheduled commencement of dredging. The Government will perform a pre-dredge survey for each dredging cycle based upon the Contractor's scheduled commencement date. For the post-dredge survey for each dredging cycle, the Contractor shall notify the Contracting Officer not less than ten (10) working days prior to completion of the entire work. The Government will perform the final survey as soon as possible after completion of the entire work, generally within 10 calendar days. All areas found to be in compliance with the contract requirements will be accepted and measured for payment in accordance with SECTION 01270: MEASUREMENT AND PAYMENT.

If the Government is unable to perform the final survey(s) due to the failure of the Contractor to complete the work in accordance with his prior notification, the Contracting Officer will charge the cost of the survey plant and standby labor, at \$3,000.00 per day, to the Contractor. Preliminary data from the final Government survey will be available within ten (10) calendar days. If the preliminary survey data indicates that the dredged area is not at the required depth, the Contractor will be directed to resume dredging and to complete the work to project depth. Adjustment in cost for additional Government post-dredge surveys shall be as specified in paragraph: FINAL EXAMINATION AND ACCEPTANCE.

3.8 METHODS OF SOUNDINGS

The material removed will be measured by cubic meter in place, by means of soundings taken before and after dredging. Soundings will be taken by either lead line, trigonometric leveling (total station)/differential leveling, 200 kHz single-beam acoustic methods, acoustic multi-beam swath methods, or in combination, as determined by the Government; results of soundings by any of these methods, singularly or in combination, will be the basis for payment. The Contractor has the option of being present when such soundings are made.

3.9 SHOALING

If, before each dredging year contract is completed, additional shoaling occurs in any section (area) including shoaling in the finished channel, because of the natural lowering of the side slopes or from sediments transported inside the project area, re-dredging at contract price, within the limit of available funds, may be done if agreeable to both the Contractor and the Contracting Officer.

3.10 REPORTING REQUIREMENT

The Contractor will be required to prepare and maintain a Daily Report of Operations and furnish copies thereof to the Contracting Officer's representative. The daily reports shall document dredging operations for all shifts in a 24-hour period. Further instruction on the preparation of the report will be furnished at a pre-construction conference. Copies of sample submittals are provided at the end of the Contractor's Quality Control section.

3.11 FINAL EXAMINATION AND ACCEPTANCE

As soon as practicable after the completion of the entire work of each dredging year contract, a final examination of the work will be conducted by the Contracting Officer. Should any shoals, lumps, or other lack of contract depth be disclosed by this examination, the Contractor will be required to remove same dredging at the contract rate for dredging. However, 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 or his authorized representative will be notified when soundings 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 operations by the Government over an area be necessary by reason of work for the removal of shoals disclosed at a prior sounding, the cost of such third and any subsequent sounding operations will be charged against the Contractor at the rate of \$3,000.00 per day for each day in which the Government plant is engaged in sounding and/or is en route to or from the site or held at or near the said site for such operations.

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.

Dredge Sample Data Form

SANTA BARBARA HARBOR MAINTENANCE DREDGING

Contract No.: _____ Sample No.: _____
 Contractor Name: _____ Date: _____
 Name of Dredge: _____ Time: _____
 Type of Dredge: ___clamshell ___hopper ___hydraulic cutterhead ___other
 If other, please specify: _____

Cut Location

area: _____ northing: _____
 station: _____ easting: _____
 range: _____
 elevation: _____

Placement Location

area: _____ northing: _____
 station: _____ easting: _____
 range: _____
 elevation: _____

Sample Obtained By: _____

Sample Obtained From: _____

Remarks: _____

Note: A copy of this completed form shall accompany the sample when shipped to the laboratory for testing.

-- End of Section --

