Preparing Activity: USACE

Superseding
UFGS-35 20 23 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

****

SECTION TABLE OF CONTENTS

DIVISION 35 - WATERWAY AND MARINE CONSTRUCTION

SECTION 35 20 23

DREDGING

08/20

PART 1 GENERAL

1.1 GENERAL INFORMATION
1.2 DEFINITIONS
1.2.1 Maintenance Material
1.2.2 New Work Material
1.2.3 Hard Material
1.3 SUBMITTALS
1.4 METHOD OF COMMUNICATION
1.5 OTHER DREDGING OPERATIONS
1.6 ENVIRONMENTAL COMPLIANCE AND PROTECTION
1.7 BASIS FOR BIDS

PART 2 PRODUCTS

2.1 CHARACTER OF MATERIAL

PART 3 EXECUTION

3.1 INSPECTION
3.2 DREDGING
3.2.1 Order of Work
3.2.2 Interference with Navigation
3.2.3 Lights
3.2.4 Navigation Warnings
3.2.5 Ranges, Gages, and Lines
3.2.6 Dredge Plant and Equipment
3.2.7 Layout of Work
3.2.7.1 Overdepth Dredging
3.2.7.2 Side Slopes
3.2.8 Obstructions and Debris
3.2.9 Dredging Requirements
3.2.10 Quality Control
3.2.11 Surveys during Progress of Work
3.2.12 Skimming of Hoppers

3.2.13 Salvaged Material
3.2.14 Safety of Structures
3.2.15 Protection Plan
3.3 PLACEMENT OPERATONS
3.3.1 Placement of Excavated Materials
3.3.2 Method of Placement
3.3.3 Placement in Indicated Site(s)
3.3.4 Charges for Material Placement
3.3.5 Operation of Sluiceways
3.3.6 Misplaced Dredged Material
3.3.7 Submerged Pipelines
3.4 MEASUREMENT
3.4.1 Method of Measurement
3.4.2 Monthly Estimates
3.5 FINAL EXAMINATION AND ACCEPTANCE
3.6 PLANT REMOVAL

-- End of Section Table of Contents --

Preparing Activity: USACE

Superseding
UFGS-35 20 23 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

SECTION 35 20 23

DREDGING
08/20

NOTE: This guide specification covers the requirements for dredging.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

NOTE: The techniques of sounding, sweeping, or a combination thereof are applicable methods in the acceptance examination, depending upon specific requirements of the project. In general, for maintenance dredging or for new dredging on soft bottom, the acceptance examination by soundings will be acceptable; for new dredging on hard coral or rock bed, and also for dredging below existing channel bottom on hard coral or rock bed, sweepings are required. For new dredging on hard bed harbor channel and turning basin for capital ships (such as aircraft carriers), the combination of soundings and sweepings is required. If modification of navigation charts is required after completion of dredging work, the EFD must coordinate with Naval Facilities Engineering Systems Command Code 04A3 for the proper data transfer procedures to the Defense Mapping Agency. In the case of inland rivers all

navigation chart updates must be coordinated with Inland Electronic Navigation Chart (IENC) team of the Corps of Engineers.
****

PART 1 GENERAL

1.1 GENERAL INFORMATION

****
NOTE: Identify any known site specific information that would impact the contract work. Identification of known subsurface/submerged materials does not relieve the Contractor for doing their own investigations and should be noted in the contract.
****

This Section covers furnishing suitable dredging plant and performing all work required to remove the specified materials from within the prescribed work area limits as indicated, and placement of the dredge material within the prescribed material placement areas. The Contractor is responsible for making their own investigation of submerged, surface, and overhead structures in the work areas and other locations they find necessary to traverse. The exact location, depths, and heights of various structures including, but not limited to submarine cables, pipes, highlines, docks, piers, bulkheads, and bridges (as applicable), are not known and it will be necessary for the Contractor to ascertain interference problems and notify the respective owners in advance of dredging operations. The Contractor is responsible for making necessary arrangements with the respective owners of the structure(s) to assure satisfactory completion of dredging in the vicinity with a minimum interruption of service, and must perform their operations in such a manner as will avoid damage to these facilities.

1.2 DEFINITIONS

1.2.1 Maintenance Material

Maintenance material is defined as that comprising shoaling which has occurred since the channel areas were last dredged.

1.2.2 New Work Material

New work material is defined as previously undredged material.

1.2.3 Hard Material

Hard material is defined as material requiring [blasting or] [the use of] special equipment for economical removal, and includes boulders or fragments too large to be removed in one piece by the dredge.

1.3 SUBMITTALS

****
NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification

technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G". Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a “G” to an item, if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

****

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Submerged Pipelines

Soundings or Sweepings; G[, [_____]]

Indicate pipeline location and installation details. Submit drawings of surveys during progress of work by soundings or sweepings.

SD-07 Certificates

Protection Plan

1.4 METHOD OF COMMUNICATION

****

NOTE: Where appropriate, also require communications between dredging crews, placement area, and the US Coast Guard or Port Services Department of the Naval installation. Section

01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS should be referenced to ensure there is no redundancy or discrepancy.
****

Provide a system of communication between the dredge crew and the crew at the placement area. A portable two-way radio is acceptable.

1.5 OTHER DREDGING OPERATIONS

The Contractor should anticipate the possibility of concurrent dredging operations, adjacent to or nearby the dredge and placement areas in this contract. Delays should be anticipated in transiting to, and through, the placement sites during concurrent dredging and placement operations. As a standard safety precaution, observe all placement site specific restrictions pertaining to the limit of dredges operating within at any given time. Coordination with other dredge plant in the vicinity of the dredge and placement areas is required.

1.6 ENVIRONMENTAL COMPLIANCE AND PROTECTION

****
NOTE: USACE Division 01 specification concerning environmental compliance should be referenced to ensure there is no redundancy or discrepancy.
****

Comply with conditions and requirements of State or Federal permits. The Government will secure the permit for dredging and placement of material as indicated. Coordinate with [_____] for placement of excavated materials.

During the life of the contract, provide and maintain environmental protective measures. Also, environmental protective measures required to correct conditions, such as oil spills or debris, that occur during the dredging operations, must be provided. Comply with Federal, State, and local regulations pertaining to water, air, and noise pollution.

1.7 BASIS FOR BIDS

****
NOTE: USACE will reference Division 00 and Division 01 to ensure there is no redundancy or discrepancy. Where applicable, choose one of the following options. Choose the first option for lump sum bidding of dredging, in projects where exact quantities can be practically determined prior to the actual work. Choose the second option for unit price bidding of dredging. Specify unit price bid items for dredging for projects where exact quantities cannot be practically determined prior to the actual work.
****

[Base bids on the quantity of dredging indicated. Should the total quantity of dredging vary from that specified as the basis for bidding, the contract price will be adjusted in accordance with FAR 52.243-4 Changes. The dredging conditions specified and indicated describe conditions which are known. However, the Contractor is responsible for

other conditions encountered which are not unusual when compared to the conditions recognized in the dredging business as usual in dredging activities such as those required under this contract.]

****
NOTE: For NAVFAC PAC projects, edit contract's prices schedule for inclusion in Bid Items.
****

For unit price bid, see paragraph entitled "Basis of Bids, Measurement, and Payment" in Section 01 20 00 PRICE AND PAYMENT PROCEDURES.

****
NOTE: For NAVFAC LANT projects, use the following for unit price bidding.
****

[Payment will be at the contract unit price per cubic meter cubic yard, multiplied by total cubic meters cubic yards of acceptable dredging. Base bids on total cubic meters cubic yards of dredging. Include a bid unit price per cubic meter cubic yard of dredging based on the quantity [as specified or indicated.] If the Contracting Officer requires an increase or a decrease in total volume of dredging, the contract price will be adjusted in accordance with the FAR 52.211-18 Variation in Estimated Quantity. Dredging conditions specified and indicated describe conditions which are known. However, the Contractor is responsible for other conditions encountered which are not unusual when compared to conditions recognized in the dredging business as usual in dredging activities such as those required under this contract.]

PART 2 PRODUCTS

2.1 CHARACTER OF MATERIAL

****
NOTE: Include silt, sand and mud if project is for maintenance dredging. Delete new material if area has been previously dredged to design depth. New material is material which has never been dredged. Provide the site specific material description if it is known. For USACE, review any site investigations specifications, as applicable, to ensure consistency as it relates to material characterization.
****

The material to be removed is [silt, sand, and mud] [new material] [maintenance material] [_____]. The in situ bulk density of the predominant material to be dredged is as follows:

a. Dredge Area 1 has an in situ bulk density of [_____] grams/liter, and consists of [_____] percent sand, [_____] percent gravel, and [_____] percent fines.

b. The Contractor is ultimately responsible for determination of the characteristics of materials to be dredged.

****
NOTE: When blasting will not be permitted, so state. When blasting is permitted, incorporate the

project specification information relative to maximum amount of charge that will be permitted and detailed requirements applicable to the specific project.
****

Remove hard material as needed to achieve the required template. Use of blasting operations will be permitted. Reference Section 31 00 00 EARTHWORK for blasting requirements.

PART 3 EXECUTION

3.1 INSPECTION

****
NOTE: Choose one of the following options. Choose the first option for projects which incorporate Contractor Quality Control. Choose the second option for projects which do not incorporate Contractor Quality Control.
****

[Inspect the work, keep records of work performed, and ensure that gages, targets, ranges, and other markers are in place and usable for the intended purpose. Provide, at the request of the Contracting Officer, boats, boatmen, laborers, and materials necessary for inspecting, supervising, and surveying the work. When required, provide transportation for the Contracting Officer and inspectors to and from the placement area and between the dredging plant and adjacent points on shore.]

[The Government will keep a record of work performed and will require that gages, ranges, and other markers are usable for the intended purpose. Provide, at the request of the Contracting Officer, boats, boatmen, laborers, and materials necessary for inspecting, supervising, and surveying the work. When required, provide transportation for the Contracting Officer and inspectors to and from the placement area and between the dredging plant and adjacent points on shore.]

The dredge plant will be inspected by the Contracting Officer, or their representative, prior to beginning work to ensure total dredging plant is in safe working condition. Before any machinery or mechanized equipment is placed in service, it must be inspected and tested by the Contractor and certified to be in safe operating condition.

3.2 DREDGING

3.2.1 Order of Work

****
NOTE: Special scheduling requirements, restrictions, or other similar features bearing on the Contractor performing the work, should be specified in this paragraph or reference made to "Special Scheduling Requirements" paragraph in Section 01 14 00 WORK RESTRICTIONS.
****

The Contracting Officer will direct the Contractor on the order of work.

The Government reserves the right to change the order of work at any time.

3.2.2 Interference with Navigation

****
NOTE: If known, include types of vessel and volume of traffic expected to be encountered. USACE review Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS for Contractor requirements to ensure there is no redundancy or duplication.
****

Minimize interference with the use of channels and passages. The Contractor is responsible for shifting or moving of dredges or the interruption of dredging operations to accommodate the movement of vessels and floating equipment, if necessary. Adhere to Coast Guard Regulations for passing vessels.

3.2.3 Lights

Each night, between sunset and sunrise and during periods of restricted visibility, provide lights for floating plants, pipelines, ranges, and markers. Also, provide lights for buoys that could endanger or obstruct navigation. When night work is in progress, maintain lights from sunset to sunrise for the observation of dredging operations. Lighting must conform to United States Coast Guard requirements for visibility and color.

3.2.4 Navigation Warnings

Furnish and maintain navigation warning signs along the pipeline. Provide notice to increase public awareness of potential hazards presented by dredge plant equipment by stating the location, date of construction, equipment mooring, marshaling areas, using local newspapers, radios, television, waterway users associations, or other appropriate area specific communication networks. Ensure that an announcement is made through the same networks at the beginning of the dredging operation. Make periodic updates/status announcements at intervals of not more than a month throughout the contract life.

Display a sturdy and prominent warning sign at all public boat marinas within 10 miles of dredging operations or moored equipment. The Contractor is responsible for keeping this sign current with respect to the dredging operations or equipment.

3.2.5 Ranges, Gages, and Lines

Provide, set, and maintain ranges, buoys, and markers needed to define the work and to facilitate inspection. Establish and maintain gages in locations observable from each part of the work so that the depth may be determined. Suspend dredging when the gages or ranges cannot be seen or followed. The Contracting Officer will furnish, upon request by the Contractor, survey lines, points, and elevations necessary for the setting of ranges, gages, and buoys.

3.2.6 Dredge Plant and Equipment

****
NOTE: Include either (dredge type) or option for (clamshell) (hydraulic cutterhead) (trailing suction

hopper) (other) after bracket.
****

a. A [_____] dredge will be used to perform all dredging work under this contract.

****
NOTE: Include (number) or (count).
****

b. [_____] dredge(s) may be in operation under this Contract at a time.

c. Maintain all dredge plant and associated equipment such as, but not limited to, scows, coamings, barges, and pipelines, to meet the requirements of the work. Promptly repair leaks or breaks along pipelines.

3.2.7 Layout of Work

****
NOTE: Include datum following bracket to identify purpose of bracket.
****

The Contractor will be provided layout charts for all dredging areas based on the schedule of work, the Contractor's hydrosurvey requests, and/or the results of Government hydrographic survey monitoring. The most current Government hydrosurvey information will be displayed on the dredging layout charts and provided to the Contractor. All depths are measured from [_____]. Other pertinent information to be included with each layout package will be: payment method, required and maximum dredging depths, coordinates for the material placement site, distance one-way from dredging location to placement site, specific placement site instructions, supplemental tide gauge information, horizontal control locations, and computed hydrosurvey quantities.

****
NOTE: For USACE, quantities for project dredging, overdepth dredging, and total in the blanks are included in the Bid Schedule and should be deleted from herein.
****

The total estimated quantity of material to be removed is computed as that material that is within the specified limits, including side slopes, but excluding unpaid overdepth. The quantities listed are estimates only. All estimated quantities are subject to FAR 52.211-18 Variation in Estimated Quantity.

3.2.7.1 Overdepth Dredging

To cover unavoidable inaccuracies of dredging processes, material actually removed to a depth of [_____] meters feet below the minimum required depth specified and within the dredging limits will be measured and paid for at full contract price.

The maximum amount of allowable unpaid overdepth dredging is [_____] meters feet below the specified maximum paid dredging depth.

3.2.7.2 Side Slopes

****

NOTE: Use the first bracketed item when the side slope overdredge allowance is specified; use second bracketed item when side slope overdredge allowance is not specified. For first bracketed item, insert allowable depth for dredging of side slopes beyond the indicated or specified side slopes for which payment will be made.

Ensure project requirements consider slope natural angle of repose and potential for sloughing when selecting appropriate language herein. Dredge equipment used will impact the resultant amount of material required to be removed.

****

Side slopes in the dredge areas within this contract will be measured and paid based on a [_____] meter feet horizontal to [_____] meter feet vertical ratio. Dredging on side slopes must follow, as closely as practicable, the dredge area limits indicated on associated layout drawings.

[A [_____] meter feet allowance will be made for dredging beyond the indicated or specified side slopes, except as provided herein. Material removed from within the allowance area will be unpaid. The allowance will be determined by projecting a line upwards, paralleling the project design side slopes, from the intersection of the overdepth dredging limit (at a point located vertically below the limit of dredging at the top of slope). The amount of material excavated from side slopes will be determined by either cross-sections or computer, or both.

][No allowance will be made for dredging beyond the dredge area limits as indicated on the associated layout drawings. No dredging can occur outside of the dredge area and side slope limits.

]3.2.8 Obstructions and Debris

****

NOTE: Choose one of the following options. Choose the first option where no known obstructions exist and site is not near existing piers. Choose the second option where known obstructions exist or for dredging around existing piers.

****

[The Government has no knowledge of cables, pipes, or other artificial obstructions or of any wrecks, wreckage, or other material that would necessitate the use of explosives or the employment of additional equipment for economical removal. Contractors should however exercise due diligence in determining the existence of any obstructions within proposed work areas during bid preparation.

][The Government has knowledge of debris such as, but not limited to, metal bands, pallets, pieces of broken cable, rope, fire hose, and broken piles. The Contractor is responsible for the disposal of the removed debris. This disposal must occur outside the limits of government property, and done so in accordance with all federal, state, and municipal

regulations.

The Government has no knowledge of existing wrecks, wreckage, or other material of such size or character as to require the use of explosives or special or additional plant for its economical removal.

]3.2.9 Dredging Requirements

****
NOTE: Include requirements for various dredge areas. The current text is a template for use.
****

Dredge Areas

1) Dredge Area 1

a) As determined by the results of a hydrographic survey monitoring, the Government will direct the Contractor to dredging areas within [_____]. Dredging depths at this area will be between plus or minus [_____] and plus or minus [_____] meters feet [datum] including paid overdepth, unless otherwise stated in the layout drawing.

b) Material placement will be [_____] site. See Section [01 20 00 PRICE AND PAYMENT PROCEDURES][01 20 00 PRICE AND PAYMENT PROCEDURES] for more details.

2) Dredge Area 2

3.2.10 Quality Control

Establish and maintain quality control for operations to assure compliance with contractual requirements and maintain records of this quality control for dredging operations.

While performing all dredging work control the horizontal positioning of the dredge with electronic positioning.

3.2.11 Surveys during Progress of Work

Quality of dredging depth will be determined by soundings or sweepings taken behind the dredge as work progresses. The [Government will][Contractor will] take progress soundings or sweepings.

3.2.12 Skimming of Hoppers

Skimming of hoppers must be performed in compliance with environmental requirements and ABS/USCG load line marks.

3.2.13 Salvaged Material

Anchors, chains, firearms, and other articles of value, which are brought to the surface during dredging operations, must remain or become the property of the Government and will be placed on shore at a convenient location near the site of the work, as directed.

3.2.14 Safety of Structures

The prosecution of work must ensure the stability of piers, bulkheads, and

other structures lying on or adjacent to the site of the work, insofar as structures may be jeopardized by dredging operations. Repair damage resulting from dredging operations is the responsibility of the Contractor, insofar as such damage may be caused by variation in locations or depth of dredging, or both, from that indicated or permitted under the contract. The Contractor is responsible for coordinating with the owner of the structure for any necessary repairs.

3.2.15 Protection Plan

Prior to blasting, submit a plan for protection of surrounding structures, equipment, and vessels in accordance with Section 31 00 00 EARTHWORK for blasting requirements.

3.3 PLACEMENT OPERATONS

3.3.1 Placement of Excavated Materials

****

NOTE: Delete inapplicable language for placement area; insert other placement area language as appropriate.

****

Provide for safe transportation and placement of dredged materials. Transport and placement of dredged material in the [_____][placement area][area designated for placement of dredged material].[The Contractor may, at his option, place dredge material at [_____] or provide placement at an government approved placement area.] The placement of dredged materials in unauthorized places is forbidden. Comply with rules and regulations of all, federal, state and local authorities.

3.3.2 Method of Placement

****

NOTE: Delete inapplicable method of placement and include only the language appropriate for the method of placement to be used. Details should be specified regarding exact location for discharge into the placement area, maximum allowable elevation of buildup, and any other limitations or special provisions for placement. It is not recommended to pay based on scow measurement.

****

Place all dredged material by [the hydraulic process][hopper dredge][self-dumping scow or barge].[Coordinate completion of load with the Government. Notify the Government when scows or barges are returned to the dredge area.][Pipeline for hydraulic dredging must discharge into the placement area.]

3.3.3 Placement in Indicated Site(s)

****

NOTE: Include any special requirements for the construction and maintenance of fill area bulkheads and weirs. Delete when fill areas are not shown on the contract drawings. Require bulkheads and weir submittals for Contracting Officer review.

****

In placing excavated material for fill, uniformly grade and allow for shrinkage. Provide and maintain necessary bulkheads, dikes, ditches, weirs, spillways, and other construction necessary to confine and retain the fill in the dredge fill area.

3.3.4 Charges for Material Placement

****

NOTE: Insert "Department of the Army" in the first blank where placement area is under jurisdiction of the Corps of Engineers. Insert name of placement area in second blank. Delete entire paragraph when not applicable.

****

The [Government][Contractor] is responsible for payment of charges imposed by the [_____] for placement of material in the [_____] placement area.

3.3.5 Operation of Sluiceways

****

NOTE: Insert Corps of Engineers or other controlling agency in the blank provided. Delete when not applicable to the project.

****

Sluiceways on the placement area levees will be operated and maintained by the [_____]. The Government will relieve the Contractor of operations thereof.

3.3.6 Misplaced Dredged Material

Any dredged materials deposited at locations other than in areas designated or approved by the Contracting Officer will be considered misplaced material and will not be paid for until the Contractor, at his own expense, removes and deposits such misplaced material where directed. This required removal and redeposit of the misplaced material and any necessary placement site restoration work is not the basis for a time extension or additional compensation under this contract.

3.3.7 Submerged Pipelines

If a leak occurs in the discharge pipeline, immediately discontinue using the line until leaks are repaired. Following a leak, the Contractor should conduct, or request the Government to conduct, a hydrosurvey to ensure that any dredged material discharged through the leak did not accumulate or cause mounding. If accumulation did occur, the Contractor must coordinate with the Government to remove the accumulated material, if deemed necessary. The Contractor is responsible for any resulting costs of repair and restoration.

3.4 MEASUREMENT

****

NOTE: FOR US Army Corps of Engineers Projects, the measurement is discussed in Division 01 Measurement and Payment and should not be included in the

specification herein.
****

The [Government will be][Contractor is] responsible for taking soundings before and after dredging.

Final quantities will be subject to deductions or correction of deductions previously made because of excessive overdepth, dredging outside or authorized areas, or placement of material in an unauthorized manner.

3.4.1 Method of Measurement

****
NOTE: The method of survey must be defined by the Government. Details for the method of measurement, calculations, and time frame for measurements to be made must all be defined herein.
****

Quantity of material removed that will be paid for will be measured by cubic meter cubic yard [in place][by means of volume difference from soundings taken before and after dredging][by means of topographic surveys of fill sites taken before and after dredging][_____]. The drawings represent existing conditions based on current available information, but will be verified and corrected, if necessary, by soundings taken before dredging in each locality. Areas sounded within [_____] of completion of work. The Contractor has the option of being present when such soundings are made.

3.4.2 Monthly Estimates

****
NOTE: The progress payments requirements for US Army Corps of Engineers Contracts are typically included in Division 01 Measurement and Payment, as well as the front end clauses, and if so, must be deleted from herein.
****

Monthly estimates of work completed will be based on the result of soundings taken during the progress of the work[or, at the option of the Contracting Officer, on 85 percent of the scow or barge measurement]. Deductions will be made for dredging and placement not in accordance with the specifications.

3.5 FINAL EXAMINATION AND ACCEPTANCE

****
NOTE: The techniques of sounding, sweeping, or a combination thereof are applicable methods in the acceptance examination, depending upon specific requirements of the project. In general, for maintenance dredging or for new dredging on soft bottom, the acceptance examination by soundings will be acceptable; for new dredging on hard coral or rock bed, and also for dredging below existing channel bottom on hard coral or rock bed, sweepings are required. For new dredging on hard bed harbor channel and turning basin for capital ships (such as

aircraft carriers), the combination of soundings and sweepings is required. If modification of navigation charts is required after completion of dredging work, the EFD must coordinate with Naval Facilities Engineering Systems Command Code 04A3 for the proper data transfer procedures to the Defense Mapping Agency. In the case of inland rivers all navigation chart updates must be coordinated with Inland Electronic Navigation Chart (IENC) team of the Corps of Engineers.

For USACE, do not use if removal requirements are included in other specification sections.

****

As soon as practicable after the completion of areas, which in the opinion of the Contracting Officer, will not be affected by further dredging operations, each area will be examined by the Government by sounding or sweeping, or both. Remove shoals and lumps as required by methods approved by the Government. However, if the bottom is soft and the shoal areas form no material obstruction to navigation, removal may be waived at the discretion of the Government. The Contractor will be notified when soundings or sweepings are to be made and will be permitted to accompany the sounding or sweeping party and to inspect the data and methods used in preparing the final quantity for payment. When areas are found to be in a satisfactory condition, the work therein will be accepted as complete.

Re-dredging at the Contract price, within the limit of available funds, may be completed with the consent of both the Government and the Contractor when infill or shoaling beyond the Contractor's control occurs in any area previously accepted.

3.6 PLANT REMOVAL

Upon completion of the work, remove all dredging plant, including ranges, buoys, piles, and other markers or obstructions within [_____] days.

-- End of Section --