Solicitation Number:



US Army Corps of Engineers ® New England District



Improvement Dredging

New Haven Harbor, New Haven, Connecticut

Construction Solicitation and Specifications

65% Design Milestone

NOT FOR CONSTRUCTION

June 2025

PROJECT TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

- 00 32 00 GEOTECHNICAL DATA
- 00 41 00 BIDDING SCHEDULE

DIVISION 01 - GENERAL REQUIREMENTS

01	11	00	SUMMARY OF WORK
01	22	00	MEASUREMENT AND PAYMENT
01	30	00	ADMINISTRATIVE REQUIREMENTS
01	33	00	SUBMITTAL PROCEDURES
01	33	29	SUSTAINABILITY REPORTING
01	35	26	GOVERNMENTAL SAFETY REQUIREMENTS
01	42	00	SOURCES FOR REFERENCE PUBLICATIONS
01	45	00	QUALITY CONTROL
01	45	01	RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)
01	50	00	TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
01	54	50	DREDGING PLANT AND EQUIPMENT
01	57	19	TEMPORARY ENVIRONMENTAL CONTROLS
01	71	23	FIELD ENGINEERING FOR DREDGING
01	74	19	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

DIVISION 31 - EARTHWORK

31 23 01 UNDERWATER BLASTING

DIVISION 35 - WATERWAY AND MARINE CONSTRUCTION

- 35 20 23 MECHANICAL DREDGING
- 35 20 23.13 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM SCOW MONITORING PROFILE
- 35 25 00 UNDERWATER DIVING WORK
- -- End of Project Table of Contents --

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

SECTION 00 32 00

GEOTECHNICAL DATA

- PART 1 GENERAL
 - 1.1 SUMMARY
 - 1.2 INTERPRETATION
- PART 2 PRODUCTS

PART 3 EXECUTION

-- End of Section Table of Contents --

SECTION 00 32 00

GEOTECHNICAL DATA

PART 1 GENERAL

1.1 SUMMARY

The subsurface conditions indicated on the contract drawings and in the specifications are the result of site surveys and material sampling activities. Locations on the site where subsurface investigations were performed, and copies of the laboratory test results and grain size curves, can be found in the attachment at the end of the specifications. Additional information on the hard/rock material shown on the contract drawings may be found at the link provided below. A summary of the subsurface materials expected to be encountered during dredging is specified in Section 35 20 23 MECHANICAL DREDGING in Subpart MATERIAL TO BE REMOVED.

ADD LINK TO THE PAO PAGE THAT GETS SET UP

1.2 INTERPRETATION

Subsurface investigation data are provided for informational purposes only and are for the convenience of the Contractor. The data shown at the end of the specifications is for the specific locations indicated only and no assurance is given that these conditions are representative of conditions between sampling locations or areas adjacent thereto. The responsibility lies with the Contractor to interpret subsurface conditions that may affect the Work.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

BIDDING SCHEDULE

-- End of Section Table of Contents --

BIDDING SCHEDULE

Refer to Section 01 22 00 MEASUREMENT AND PAYMENT Item Estimated Unit Estimated Description Quantity Price Amount No. Unit 0001 Mobilization and Demobilization for Dredging and Disposal 1 Job Job \$ 0002 Dredging and Disposal of Material at the Central Long Island Sound Disposal Site (CLDS), Morris Cove, or West River Borrow Pits 2,681,000 0002AA First 2,681,000 CY CD \$_____ \$ 920,000 0002AB Over 2,681,000 CY CD \$ \$_____ 0003 Dredging and Disposal of Sand at the Shellfish Habitat Disposal Area 0002AA First 595,000 CY 595,000 \$_____\$____ CD 305,000 0002AB Over 595,000 CY CD \$_____\$____ 0004 Drilling, Blasting, Dredging, and Disposal of Rock Material at the Rock Reef Disposal Area 0002AA First 51,000 CY 51,000 CD \$_____\$____ 0002AB Over 51,000 CY 9,500 \$_____\$___ CD

TOTAL ESTIMATED AMOUNT, BASE BID ITEMS

Note 1: "CD" = Cubic Yard.

Note 2: Bidders must bid all items. The work will be awarded as a whole to one bidder. Offers will be evaluated and the low bidder determined by the Total Estimated Amount for Line Items 0001 through 0004.

Note 3: Item Number 0002 through 0004 is subdivided into two estimated

\$_

quantities and shall be separately priced. The Government will evaluate these item on the basis of the total price of their sub-items. (AFARS 5152.211-9001 Variations in Estimated Quantities -- Subline Items).

Note 4: All work shall be completed within the time period specified in the SPECIAL CONTRACT REQUIREMENTS, Subpart "COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984) FAR 52.211-10."

Note 5: In the event there is a difference between a unit price and the extended total, the unit price will be held to be the intended bid. If the bidder shows only the total price but fails to enter a unit price, the total divided by the estimated quantity will be held to be the intended unit price.

Note 6: The Bidder shall Identify a point of contact e-mail for all correspondence related to this bid: _____@_____

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

- 1.1 PROJECT LOCATION AND DESCRIPTION
- 1.2 WORK COVERED BY CONTRACT DOCUMENTS
- 1.3 PERIOD OF PERFORMANCE, ENVIRONMENTAL WINDOW, AND DREDGING AND DISPOSAL PERIOD
 - 1.3.1 Period of Performance
 - 1.3.2 Environmental Window
 - 1.3.3 Dredging and Disposal Period
- 1.4 REFERENCES
- 1.5 SUBMITTALS
- 1.6 PROJECT SITE CONDITIONS
- 1.6.1 Physical Data
- 1.7 PRE-DREDGING PHOTOGRAPHIC SURVEY
- 1.8 SUPERINTENDENCE BY THE CONTRACTOR
- 1.9 WORK SEQUENCING AND SCHEDULING
 - 1.9.1 Hours of Operations
 - 1.9.2 Work Sequence
 - 1.9.2.1 General
 - 1.9.2.2 Two-Week Schedule of Work Activities
 - 1.9.2.3 Initial Project Schedule
 - 1.9.2.4 Periodic Schedule Updates
 - 1.9.2.5 Scheduling
 - 1.9.3 Rate of Progress
- 1.10 CONTRACTOR'S USE OF UPLAND FACILITIES AND HAULING ROUTES
- 1.11 CONTRACTOR USE OF PREMISES
 - 1.11.1 General
 - 1.11.2 Access to the Site and Storage/Staging Areas
 - 1.11.3 Temporary Facilities and Utilities, and Storage Areas
 - 1.11.4 Work Limits
 - 1.11.5 Government Access to Work Site
 - 1.11.6 Protection and Security
 - 1.11.7 Emergency Contacts
 - 1.11.8 Damaged Property
 - 1.11.9 Contractor's Receipt of Supplies
 - 1.11.10 Daily Clean Up
 - 1.11.11 Littering
 - 1.11.12 Government Sanitary Facilities
- 1.12 QUALITY ASSURANCE
- 1.13 COORDINATION
 - 1.13.1 Daily Dredge Operations Location Map (DOLM)
 - 1.13.2 Public Notice
 - 1.13.3 Notice to Mariners
 - 1.13.4 Aids to Navigation
 - 1.13.5 Points of Contact
 - 1.13.6 Coordination Meeting
- 1.14 GENERAL SAFETY REQUIREMENTS
 - 1.14.1 General
 - 1.14.2 Contractor's Project Superintendent
- 1.15 ENVIRONMENTAL PROTECTION

- 1.16 PRECONSTRUCTION CONFERENCE
- 1.17 PRECONSTRUCTION SURVEY PROCESS MEETING
- PART 2 PRODUCTS
- PART 3 EXECUTION
- -- End of Section Table of Contents --



SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.1 PROJECT LOCATION AND DESCRIPTION

The general description below is given to indicate the approximate scope of this project only. It does not limit the work required under the project drawings and specifications.

The work of this project involves improvement dredging by mechanical means of predominantly fine-grained materials from the Federal Navigation Project of the New Haven Harbor, New Haven, Connecticut. New Haven Harbor is located on the Connecticut coast in Long Island Sound, approximately 50 miles southeast from the sound's entrance to the Atlantic Ocean. The authorized improvement project provides for a 40-foot deep and 600-foot wide entrance channel, a 40-foot deep and 800-foot wide channel bend, a 40-foot deep and generally 500-foot wide main channel, and a 40-foot deep turning basin. This improvement effort involves the removal of approximately 900,000 cubic yards (CY) of medium-grained sand material, 3,500,000 CY of fine-grained material, and 60,000 CY of Hard (Rock) material down to elevation -42-Feet MLLW within the channel limits, all including allowable overdepth.

The Contractor is responsible for dredging and disposing of the total awarded contract quantity by the work completion date identified in the SPECIAL CONTRACT REQUIREMENTS, Subpart COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984) FAR 52.211-10

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The Contractor shall perform the work in strict accordance with the contract drawings and specifications and provide all supervision, plant, labor, materials, equipment, safety, and quality control necessary to perform all operations as necessary to accomplish the work, complete. The Contractor is responsible for providing and utilizing appropriate plant and equipment to remove and dispose of the dredged material.

B. The general description of the work described below is general in nature and is only given to indicate the approximate scope of work under this contract. It does not limit the work required under the project contract drawings and specifications.

C. General Description of the Work:

(1) Mobilization and demobilization as necessary to complete all work in accordance with the contract documents.

(2) The proposed work involves the improvement dredging and hard/rock material removal plus allowable overdepths within New Haven Harbor Federal Navigation Project.

(3) The proposed work shall be performed with a mechanical dredge and scows. For description and location of the disposal sites refer to

subparagraph "DISPOSAL OF DREDGED MATERIAL" in Section 35 20 23 MECHANICAL DREDGING

D. The Contractor shall note that any shoaling discovered during the period of performance of the contract shall be considered the responsibility of the Contractor to remove from the Federal Navigation Project, unless otherwise stated.

E. The project description is further defined in the contract drawings and specifications.

1.3 PERIOD OF PERFORMANCE, ENVIRONMENTAL WINDOW, AND DREDGING AND DISPOSAL PERIOD

To ensure immediate readiness to start dredging operations as early as possible within the environmental window and dredging and disposal period under this contract, the Contractor shall commence on preliminary contract administrative work by promptly placing all orders, awarding subcontracts, and preparing, processing, and submitting a project schedule within 10 calendar days and all other required submittals and details within 15 calendar days after the date the Contractor receives the Notice to Proceed (NTP).

1.3.1 Period of Performance

The period of performance is defined in the SPECIAL CONTRACT REQUIREMENTS, Subpart COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984) FAR 52.211-10. The period of performance includes all work defined by this project and the environmental window and dredging and disposal period are subsets of this time frame.

1.3.2 Environmental Window

In order to minimize interference with, disturbance to, and damage to particular species of fish, marine mammals, birds, and other aquatic wildlife, an environmental window has been established for dredging and disposal operations under this contract. The window, as noted in the Water Quality Certificate (WQC) attached at the end of Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, is as follows:

For existing material at depths greater than -20 feet MLLW: 1 October to 1 March of the subsequent year, for all years within the period of perormance.

For existing material at depths shallower than -20 feet MLLW: 1 October to 1 February of the subsequent year, for all years within the period of perormance.

Dredging and disposal work under this contract will not be permitted outside of this window. An extension to this window will not be permitted.

The Contractor shall note that the environmental window does not differ from the dredging and disposal period, as outlined below.

1.3.3 Dredging and Disposal Period

For existing material at depths greater than -20 feet MLLW: 1 October to 1 March of the subsequent year, for all years within the period of perormance.

For existing material at depths shallower than -20 feet MLLW: 1 October to 1 February of the subsequent year, for all years within the period of perormance.

All dredging and disposal work to be performed under this contract must be performed during this period, to include any corrective dredging work required until final acceptance by the Contracting Officer. See Section 01 71 23 FIELD ENGINEERING FOR DREDGING, Subpart 3.2, Government Surveys.

The Contractor's construction schedule shall show the completion of all work within the period of performance, environmental window, and the dredging and disposal period, as appropriate to the activity to be performed. Note that the Contractor's construction schedule shall show the completion of all dredge work within the dredge and disposal period.

1.4 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(2024) Safety and Occupational Health (SOH) Requirements

1.5 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 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Initial Project Schedule; G, RO

In accordance with the contract clauses, the Contractor shall, within 15 days after receipt of Notice to Proceed (NTP) or as otherwise determined by the Contracting Officer, submit for approval a practicable project schedule. When changes are authorized that result in contract time extensions, the Contractor shall submit a revised project schedule for approval by the Contracting Officer.

Two-Week Schedule of Work Activities

In addition to the scheduling and notification requirements specified elsewhere in the contract, the Contractor shall provide to the Contracting Officer a detailed schedule of work activities, which the Contractor intends to perform over the following two week period (Monday thru Sunday for two weeks).

Public Notice; G, RO

Submit a copy of the proposed wording of the Public Notice to the Contracting Officer for approval, prior to publication.

Notice to Mariners

Submit a copy of Notice to Mariners to the Contracting Officer.

Aids to Navigation

Submit proof of coordination with the USCG for any necessary relocation or movement of aids to navigation.

Safe Harbor Plan; G, RO

The Contractor shall submit a Safe Harbor Plan to the Contracting Officer for approval prior to the start of on-site work. The Safe Harbor Plan shall include a written description of the Contractor's plan to provide for the safety and security of floating plant, equipment, and personnel in the event of a storm or other site emergency. The location for the docking of floating plant and the off-loading of equipment and crews shall be clearly indicated.

Utility Plan; G, RO

Pre-Dredging Photographic Survey; G, RO

The Contractor shall submit a pre-dredging photographic survey as described in this section.

SD-07 Certificates

Periodic Schedule Updates; G, RO

1.6 PROJECT SITE CONDITIONS

1.6.1 Physical Data

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

A. Site Conditions: The indications of physical conditions on the drawings and in the specifications are the result of site investigations and surveys on the dates indicated on the drawings. The conditions represented prevailed at the time the investigations and surveys were made. A pre-dredge survey may be performed by the Government prior to the start of Contractor dredging operations at the site. Before commencing work at the site, the Contractor shall verify the existing conditions indicated on the drawings and in the specifications. See CONTRACT CLAUSE entitled "SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK".

B. Weather Conditions: Weather conditions for the site may be obtained by the Contractor from the National Oceanic and Atmospheric Administration's National Weather Service; www.NOAA.gov.

C. Tide Conditions: The Great Diurnal tidal range in the project area is 6.7 feet mean higher high water (MHHW) to mean lower low water (MLLW). The Mean tidal range in the project area is 6.2 feet mean high

water (MHW) to mean low water (MLW). This value is referenced from the National Oceanic and Atmospheric Administration's (NOAA) Tides and Currents website. Predicted times and heights of tides for each day of the year can be obtained from NOAA's National Ocean Service, "Tidal Current Tables, Atlantic Coast of North America."

D. Transportation facilities: The Contractor shall make its own investigations on the use of town, State and Federal highways, roads, streets, and bridges.

E. Condition of Channel: Soundings shown on the Contract Drawings are the results of hydrographic surveys conducted during December 2023. The channels and turning basin were last maintained in 2013. At that time, a dredge plant removed roughly 400,000 CY of material from the channels and anchorages.

F. Channel Traffic: The channel is used by commercial cargo, recreational craft, and commercial fishing vessels. The Government will not undertake to keep the channel free from vessels or other obstructions, except to the extent of applicable regulations. The Contractor shall conduct the work in such a manner as to obstruct navigation as little as possible, and in the event the Contractor's plant so obstructs the channel as to make difficult or endanger the passage of any vessels, the plant shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage. The Contractor shall coordinate with the Harbormaster daily to obtain a report for each day's channel traffic.

G. Utilities: There are known utility crossings in areas to be dredged. Known utilities within the channel and general work area are indicated on the contract drawings. The Contractor shall also make its own investigation and conduct utility research concerning utility lines in areas to be dredged. Submit to the Contracting Officer a Utility Plan showing all utilities found as a result of investigation and utility research.

1.7 PRE-DREDGING PHOTOGRAPHIC SURVEY

The Contractor shall perform a pre-dredging photographic survey at the project site with the Contracting Officer. This pre-dredging photographic survey shall include still photographs and videos in sufficient quantity to fully document the existing condition of all wharfs, piers, docks, fenders, and other shorefront structures and features within and adjacent to areas to be dredged as part of this contract. A written narrative shall be prepared by the Contractor which organizes and summarizes the findings of the pre-dredging survey photographs and videos. The narrative shall separately organize all items by individual owners. The condition of each item shall also be documented in writing. The written narrative, together with the photographs and videos, shall constitute a "Pre-Dredging Photographic Survey Report", which shall be submitted to the Contracting Officer for approval. No on-site dredging work shall be performed until this "Pre-Dredging Photographic Survey Report" has been approved. Damage to features caused by the Contractor's operations shall be repaired by the Contractor at no additional expense to the Government.

1.8 SUPERINTENDENCE BY THE CONTRACTOR

A. At all times during the performance of the contract and until the work is completed and accepted, the Contractor shall directly superintend the

work and have on the worksite a competent project superintendent who is satisfactory to the Contracting Officer and has the authority to act for the Contractor.

B. The qualified superintendent, and competent alternate, shall be capable of reading, writing, and conversing fluently in the English language.

C. The project superintendent must have a minimum of 10 years experience in construction with at least 5 of those years as a superintendent on projects similar in size and complexity. The individual must be familiar with the requirements of EM 385-1-1 and have experience in the areas of hazard identification and safety compliance. The individual must be capable of interpreting a critical path schedule and construction drawings. The qualification requirements for the alternate superintendent are the same as for the project superintendent. The Contracting Officer may request proof of the superintendent's qualifications at any point in the project if the performance of the superintendent is in question.

D. The project superintendent is primarily responsible for managing and coordinating day-to-day production and schedule adherence on the project. The superintendent is required to attend partnering meetings, and quality control meetings.

E. The project superintendent shall maintain a physical presence at the site at all times and be responsible for all construction and related activities at the site, except as otherwise acceptable to the Contracting Officer.

F. The Project Superintendent is subject to removal by the Contracting Officer for non-compliance with requirements specified in the contract and for failure to manage the project to insure timely completion. Furthermore, 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 such stop orders is acceptable as the subject of claim for extension of time for excess costs or damages by the Contractor.

G. The project superintendent may not serve as the Site Safety and Health Officer (SSHO) or the CQC Manager.

- 1.9 WORK SEQUENCING AND SCHEDULING
- 1.9.1 Hours of Operations

Operational Hours: The Contractor will be allowed to perform work 24 hours per day, 7 days per week, including holidays, for the entire performance period of this contract.

- 1.9.2 Work Sequence
- 1.9.2.1 General

There are certain essential criteria relative to the preparation of a work sequence and time schedule which the Contractor will be required to implement and follow during the prosecution of the work. Minor variations in the sequence of the items of work as approved may be made by the Contractor, provided such variations do not conflict with critical elements of the schedule. Proposed minor variations shall be noted on the progress charts submittal required by CONTRACT CLAUSE, entitled "SCHEDULES FOR CONSTRUCTION CONTRACTS." Variations shall be approved by the Contracting Officer prior to implementation.

1.9.2.2 Two-Week Schedule of Work Activities

In addition to the scheduling and notification requirements specified elsewhere in this section, the Contractor shall provide to the Contracting Officer a detailed schedule of work activities, which the Contractor intends to perform over the following two week period (Monday thru Sunday for two weeks). The schedule of work activities shall be updated and submitted by the Contractor to the Contracting Officer on a weekly basis, by noon on every Thursday during the prosecution of work period.

1.9.2.3 Initial Project Schedule

The initial project schedule shall be in the form of a chart graphically indicating the sequence proposed to accomplish each work feature or operation pursuant to FAR Clause 52.236-15 "Schedules for Construction Contracts". Show in the schedule the proposed sequence to perform the work and dates contemplated for starting and completing all schedule activities. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed and indicating calendar days to completion. The scheduling of the entire project is required. Provide a schedule that is a forward planning as well as a project monitoring tool. The Contractor shall indicate on the chart the important work features or operations that are critical to the timely overall completion of the project. Key dates for such important work features and portions of work features are milestone dates and shall be so indicated on the chart. Failure to develop the Project Schedule to an appropriate level of detail will result in its disapproval. The Contracting Officer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail, as appropriate to the project:

- 1. Activity Durations
- 2. Design and Permit Activities
- 3. Procurement Activities
- 4. Mandatory Tasks

a. Submission, review and acceptance of SD-01 Preconstruction Submittals (individual activity for each).

b. Submission, review and acceptance of features requiring design completion and submission, review and acceptance of design packages.

c. Submission of mechanical/electrical/information systems layout drawings.

- d. Long procurement activities
- e. Submission and approval of O & M manuals.
- f. Submission and approval of as-built drawings.
- g. Submission and approval of installed equipment lists.

h. Submission and approval of test data, and reports

i. Show Government and other agency activities that could impact progress. These activities include, but are not limited to: approvals, acceptance, design reviews, environmental permit approvals by State regulators, inspections, utility tie-in, Government Furnished Equipment (GFE), etc.

This schedule will be the medium through which the timeliness of the Contractor's construction effort is appraised. Anticipated adverse weather delay days shall be included in the schedule.

Submit the Initial Project Schedule for approval within 30 calendar days after notice to proceed is issued. No payment will be made for work items not fully detailed in the Project Schedule.

An Early Completion Schedule is an Initial Project Schedule (IPS) that indicates all scope of the required contract work will be completed before the contractually required completion date.

No IPS indicating an Early Completion will be accepted without being fully resource-loaded (including crew sizes and manhours) and the Government agreeing that the schedule is reasonable and achievable.

The Government is under no obligation to accelerate work items it is responsible for to ensure that the early completion is met nor is it responsible to modify incremental funding (if applicable) for the project to meet the contractor's accelerated work.

1.9.2.4 Periodic Schedule Updates

An updated schedule showing actual progress shall be submitted monthly and with each pay request. Changes to the base-line schedule shall be outlined in a narrative describing the reason for the change.

1.9.2.5 Scheduling

A. All work shall be carefully scheduled to prevent delays and any excessive interruptions with channel traffic.

B. Refer to Specifications Section 35 20 23 MECHANICAL DREDGING, Subpart titled "Dredging Operation Plan" for additional requirements and considerations when determining sequencing and developing schedules.

1.9.3 Rate of Progress

A. Employ ample personnel and sufficient equipment to accomplish the work of this contract in the least amount of time, within the prosecution period specified in the SPECIAL CONTRACT REQUIREMENTS, Subpart COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK (APR 1984) FAR 52.211-10.

B. Prosecute the work diligently, and maintain a dredge production rate, based on working 24 hours a day, 7 days a week, of not less than 300,000 cubic yards for each 30 consecutive calendar day period of actual dredging work at the site. This dredge production does not include excessive Dredging as defined in Section 35 20 23 MECHANICAL DREDGING, Subpart 3.5.3 "Excessive Dredging".

C. Should the Contractor fail to maintain the required rate of progress, the Contracting Officer may require that additional personnel and equipment be placed on the work and weekend and overtime work be performed, in order that the work be brought up to schedule and maintained. If, after a reasonable amount of time determined by the Contracting Officer, progress has either not been initiated, or has failed to sufficiently bring the work back on schedule to be completed by the scheduled contract period, the contract may be terminated.

1.10 CONTRACTOR'S USE OF UPLAND FACILITIES AND HAULING ROUTES

A. Unless obtained by the Government or specified otherwise in the contract documents, the Contractor shall be responsible for the following:

1. Locating, coordinating, and obtaining permission to use any land-based water access (docks, piers, ramps, etc.) that the Contractor deems necessary to complete the work.

2. Determining, if necessary, the trucking and hauling routes and associated restrictions to and from the work, to include the coordination for the use of such routes with local, state, and federal authorities.

3. Complying with all local, state, and federal regulations and restrictions when using any upland facilities or hauling routes.

B. The Government and its representatives will be allowed the use of the same land-based water access obtained by the Contractor.

1.11 CONTRACTOR USE OF PREMISES

1.11.1 General

The Contractor is responsible for maintaining access necessary for its equipment, material, and plant to and from the work area.

1.11.2 Access to the Site and Storage/Staging Areas

The Contractor is responsible for maintaining access necessary for its equipment, material, and plant to and from the work area.

1.11.3 Temporary Facilities and Utilities, and Storage Areas

See Section 01 50 00 TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS, subpart "Contractor's Temporary Facilities."

1.11.4 Work Limits

The general description below is given to indicate the approximate scope of this project only. It does not limit the work required under the project drawings and specifications. The authorized Federal Navigation Project for New Haven Harbor consists of the Federal Channel.

The work of this project includes maintenance dredging of the Federal Navigation project to achieve its required depths of -35 feet MLLW, plus two feet of allowable overdepth in the channel and turning basin which shall be confirmed in the Government's After Dredge Survey. The Contractor shall note that the 16-foot Anchorage in the northeastern part of the harbor is not included in this contract. The Government shall provide a Pre-Dredge survey to the Contractor at the start of construction to document the shoals present at the time of survey; however, due to the fact that both natural hydrodynamic processes and dredging operations can create new shoals it shall be the Contractor's responsibility to regularly survey their work and keep the Contracting Officer's Representative informed of any changes to the bathymetry data. See Section 01 71 23 FIELD ENGINEERING FOR DREDGING, Subpart CONTRACTOR SURVEYS", for more detail on required frequency.

Unless otherwise stated, the Contractor shall note that any shoaling discovered during the period of performance of the contract and prior to acceptance by the Government shall be considered the responsibility of the contractor to remove from the work limits. This includes all rework required to remove disturbed material that is above the required depth as a result of spudding, movement of equipment, or shifting of loose material due to water currents.

1.11.5 Government Access to Work Site

Prior to the start of work, the Contractor shall ensure that the Government has access from the mainland to the dredge site. Access to the dredge site will be discussed at the Preconstruction Conference.

1.11.6 Protection and Security

A. Protection to Contractor personnel or their equipment cannot be provided at the worksite by the Government.

B. The Contractor shall protect all its personnel, Government personnel, and the general public from injury.

C. The Contractor shall conduct all its work so as to prevent injury or unsafe conditions during construction.

D. The Contractor shall report any vandalism, suspicious activities, or devices to the Contracting Officer and local police as soon as possible.

1.11.7 Emergency Contacts

The Contractor shall provide a list of emergency contacts to be used in the event of an emergency. The list shall include the contact names, addresses, and telephone numbers. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

1.11.8 Damaged Property

Work shall proceed in a manner which will minimize disturbance or risk of damage to boats, structures, and surrounding lands. The Contractor shall repair such items damaged in the course of carrying out the work at no additional cost to the Government. All repairs shall match similar existing items in all aspects. All replacements shall be in kind.

1.11.9 Contractor's Receipt of Supplies

The Contractor shall be responsible for all arrangements for the receipt of materials and supplies at the job site. Government personnel are not permitted to receive or sign for items delivered to the site.

1.11.10 Daily Clean Up

The Contractor shall at all times keep rubbish from entering surrounding lands and water. Rubbish accumulated at the temporary facilities shall be removed from the premises daily.

1.11.11 Littering

The Contractor may be subjected to fines by State or local authorities for littering or discarding of tobacco materials other than into receptacles.

1.11.12 Government Sanitary Facilities

Toilet facilities are not available on site for Contractor's use. The Contractor shall provide portable toilets for its personnel and subcontractors as specified in EM 385-1-1 under Section 2, Sanitation.

1.12 QUALITY ASSURANCE

A. All items of work not addressed in the contract documents shall be completed in strict accordance with the manufacturers' specifications.

B. The Government is not obligated to inspect the Contractor's work, or to protect the Contractor from the consequences of its work. Government inspections are a general examination of the Contractor's conduct and workmanship and are solely for the purpose of the Government. Government-designated Quality Assurance Representatives (QARs) do not have the authority to accept work, nor is a Government inspection to be construed as conclusive.

C. Government agents including QARs and project engineers are not authorized to change the contract without the written approval of the Contracting Officer; this lack of authority extends to all situations in which the action of these agents could be construed as constituting a change.

D. The quality of workmanship is subject to audit by Government or Government-designated QARs at any time during the contract. The Contractor shall cooperate fully and provide all information necessary for this audit.

E. The Contractor shall submit all requests for changes in writing to the Contracting Officer. Do not proceed with changes without possession of written authorization of the Contracting Officer.

1.13 COORDINATION

1.13.1 Daily Dredge Operations Location Map (DOLM)

The Contractor shall prepare a Dredge Operations Location Map (DOLM) for each day that dredging activities are planned for this project. The DOLM shall indicate the locations where dredge(s) shall be working during a specific 24 hour period, planned disposal activity, and other significant activities planned. The DOLM shall be prepared in PDF format and forwarded to the parties indicated on a distribution list that will be provided to the Contractor after receipt of the Notice to Proceed. An example of a DOLM is attached at the end of this section. All information shown on the example is required for each DOLM prepared, including vessel information, location, maps, channel stations, etc. The DOLM's shall be prepared and distributed a minimum of 24 hours prior to the start of the period addressed in the specific DOLM.

ADD FURTHER COORDINATION REQUIREMENTS WITH THE PORT AUTHORITY, PILOTS ASSOCIATION, CSC, AND POSSIBLY THE TERMINAL? MAYBE ADD THIS HERE INSTEAD OF PROVIDING AT NPT/PRE-CON. SEE COASTAL PARTNERS SOW LANGUAGE.

1.13.2 Public Notice

The public shall be notified of this dredging project not less than 14 calendar days prior to commencement of dredging operations at the site. A brief description of the work to be performed and the intended schedule of dredging and disposal operations shall be published in a newspaper of general circulation in the area adjacent to the dredging and disposal. The notice shall include the locations where the work is to be performed, the time sequence of events, a map of the haul route to be followed between the dredging areas and the disposal site with reference to the width of the haul lane, the location and limits of the disposal site, and the procedure the Contractor will use to respond to claims for loss of property during the hauling work. The notice shall include the Contractor's point of contact and telephone number.

1.13.3 Notice to Mariners

Prior to the start of dredging operations each year, the Contractor shall coordinate with the U.S. Coast Guard (USCG) to issue a "Notice to Mariners" regarding the work to be performed and the Contractor's proposed operations.

The Corps of Engineers and the USCG have agreed to phraseology when issuing navigational bulletins and notices. The information furnished shall be consistent with USCG Broadcast Notice to Mariners and Local Notice to Mariners. When requesting local USCG offices to issue navigational information for Corps of Engineers work involving marine construction, the following terminology shall be used, as applicable:

For cautionary areas: "Mariners are urged to use extreme caution in the area."

For dredging and work operations: "Mariners are urged to transit at their slowest safe speed to minimize wake and proceed with caution after passing arrangements have been made."

The USCG LMN Information form is attached at the end of this specification section.

1.13.4 Aids to Navigation

Aids to navigation (beacons, buoys, markers, etc.) have been placed by the USCG in the vicinity of the project area. The Contractor shall not interfere with these aids to navigation. If the work of this project requires the temporary movement or relocation of any aid to navigation, the Contractor shall notify the USCG and the Contracting Officer of the requirement 30 days in advance. USCG personnel will then move or relocate the aid to navigation as appropriate for the progress of the work. Under no circumstances shall the Contractor move or relocate an aid to navigation under his own authority with his own personnel. The Contractor shall also contact the USCG at the completion of all work and the removal of all marine plant.

1.13.5 Points of Contact A. Coast Guard: (1) Aids to Navigation: Mr. Robert FLickinger Office Telephone: 410-302-5787 email: Robert.M.Flickinger@uscg.mil (2) Notice to Mariners: email: D01-SMB-LNM@uscg.mil Office Phone: 617-223-8356 Fax: 617-223-8094 B. New Haven Port Authority Sally Cruse Executive Director

C. New Haven Harbormaster

Telephone: 203-946-6778

email: Portauthority@newhavenct.org

John Paul Izzo Harbormaster Telephone: 203-931-1284 email: marinegen@aol.com

D. Cross Sound Cable

Brian Reinhart Director of Operations Telephone: 508-229-7949 x7513 email: Brian.Reinhart@CROSSSOUNDCABLE.com

E. New Haven CO-OP

George Gallo Director Telephone: 203-868-1442 email: George@portsecurity.com

F. New Haven Fire Department

Adress: 952 Grand Avenue, New Haven, CT, 06511 Telephone: 203-946-6300

1.13.6 Coordination Meeting

The Contractor shall attend an on-site Coordination Meeting arranged by the Contracting Officer, which will occur prior to the start of dredging. Subjects addressed will include project scheduling and coordination with local entities, and other topics as appropriate. The Contractor employees in attendance shall include the Project Manager, Project Superintendent, Quality Control Manager, and Site Safety and Health Officer. Other attendees will include reperentatives from the U.S. Army Corps of Engineers, Coast Guard, and local entities.

1.14 GENERAL SAFETY REQUIREMENTS

1.14.1 General

The Contractor shall take all necessary precautions in observing safety regulations in accordance with Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS, and shall assume the responsibility to guard against causing of fires and/or explosions and to protect Government property. The Contractor shall perform the work in a manner consistent with security and with fire safety regulations especially with regards to ingress and egress. Temporary closures shall not compromise life safety, security or fire safety.

1.14.2 Contractor's Project Superintendent

The Contractor's project superintendent shall take an active role in enforcing the safety requirements by participation in safety conferences, hazard analysis, tool box meetings, walk-through inspections, correction of violations, etc., and including that of any subcontractor's work.

1.15 ENVIRONMENTAL PROTECTION

To provide for control of all environmental pollution arising from construction activities, the Contractor and its subcontractors, in the performance of this contract, shall comply with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, and all applicable Federal, State, and local laws and regulations concerning environmental protection pollution control and abatement.

1.16 PRECONSTRUCTION CONFERENCE

The Contracting Officer will conduct a preconstruction conference with key Contractor personnel. The purpose of the conference is to review contract requirements and to establish a working relationship between the Contractor's Staff and the U.S. Army Corps of Engineers (USACE) personnel who will be closely associated with the project. During the conference, the Contracting Officer will inform the Contractor concerning topics such as, but not limited to, job safety, quality control, temporary facilities and storage areas, labor relations, and environmental protection. The Contractor's Project Superintendent, Quality Control Representative, and Site Safety and Health Officer (SSHO) shall attend this conference.

1.17 PRECONSTRUCTION SURVEY PROCESS MEETING

Following the Preconstruction Conference, the Contracting Officer will also conduct a Preconstruction Survey Process Meeting with key Government and Contractor personnel. The purpose of the meeting is to outline and confirm necessary surveys to fulfill the contract, discuss the required communication between the Contractor and Government for timely coordination of surveys, and identify and address any potential challenges associated with survey requirements. The Contractor's Superintendent, Quality Control Representative, and Survey Lead shall attend this meeting.

CONSIDER ADDING ONE FOR EACH DREDGE SEASON OF THE POP.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 01 11 00 Page 17 Not for Construction

SUMNER/CALLAHAN TUNNEL CROSSINGS	
	7
A	
+ + <td></td>	
Date: monitors channel 1,5,&13	
crossings. Tug is tender for both dredges. The tug is towing scows for material placement in CAD Cell	
in-between Charlestown and East Boston. S/V is assisting operations as a survey and crew boat. Dredge will move for traffic with notice, suggested traffic locations highlighted in cyan. If preferred relocation for passing traffic please contact dredges and/or on the radio. All dimensions in feet.	
To be added to the Traffic Notification E-mail distribution, contact	





LNM Information Form

DATE:
NAME:
PHONE NUMBER:
EMAIL ADDRESS:
COMPANY NAME:
TYPE OF WORK:
LOCATION (STATE AND WATERWAY) WHERE WORK WILL BE DONE:
LAT/LONG: (degrees, minutes, seconds & thousandths)
BEGINNING/ENDING DATES:
HOURS OF OPERATION (DAYS PER WEEK, HOURS PER DAY):
EQUIPMENT ON SCENE:
RADIO FREQUENCY VESSELS CAN BE CONTACTED ON (IF USED):

PASSING ARRANGEMENTS/Time to move vessels to not impede navigation:





Please email the form two weeks before the work is to begin to: <u>D01-SMB-LNM@uscg.mil</u> or you can fax the form to: 617-223-8094.

The completed LNM (Local Notice to Mariners) can be found on the following website: <u>http://www.navcen.uscg.gov</u> and is posted by Thursday morning of the current week.

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 22 00

MEASUREMENT AND PAYMENT

- PART 1 GENERAL
 - 1.1 CONTRACT COST BREAKDOWN
 - 1.2 SUBMITTALS
 - 1.3 JOB PAYMENT ITEMS
 - 1.4 UNIT PRICE PAYMENT ITEMS
 - 1.5 BIDDING SCHEDULE PAYMENT ITEMS
- PART 2 PRODUCTS
- PART 3 EXECUTION
- -- End of Section Table of Contents --

SECTION 01 22 00

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 CONTRACT COST BREAKDOWN

The Contractor must furnish within 30 days after the date of Notice to Proceed, and prior to the submission of its first partial payment estimate, a breakdown of its single job pay item or items which will be reviewed by the Contracting Officer as to propriety of distribution of the total cost to the various accounts. Any unbalanced items as between early and late payment items or other discrepancies will be revised by the Contracting Officer to agree with a reasonable cost of the work included in the various items. This Contract cost breakdown will then be utilized as the basis for progress payments to the Contractor.

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 01 33 00 SUBMITTAL PROCEDURES:

SD-05 Design Data

Quantity Surveys

Submit originals of all field notes and all other records relating to the quantity surveys.

1.3 JOB PAYMENT ITEMS

Payment items for the work of this contract for which contract job payments will be made are listed in the BIDDING SCHEDULE and described below. The job price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

1.4 UNIT PRICE PAYMENT ITEMS

Payment items for the work of this contract on which the contract unit price payments will be made are listed in the BIDDING SCHEDULE and described below. The unit price and payment made for each item listed shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for each of the unit price items. Submit originals of all field notes and all other records relating to Quantity Surveys.

1.5 BIDDING SCHEDULE - PAYMENT ITEMS

Payment items for the work of this contract on which the contract progress payments will be based are listed in the BIDDING SCHEDULE and are described below. All costs for items of work, which are not specifically mentioned to be included in a particular Bidding Schedule job or unit price payment item, shall be included in the listed job or unit price item most closely associated with the work involved. Any bid price for items indicated in the BIDDING SCHEDULE which are unbalanced as to price may be rejected as non-responsive. An unbalanced bid is one which is based on price significantly less than cost for some work and price which is significantly overstated for other work.

Base Bid Items

A. Item Number 0001, "Mobilization and Demobilization for Dredging and Disposal".

Payment will be made for costs associated with mobilization and demobilization for dredging operations and disposal operations as defined in Special Contract Requirements clause "PAYMENT FOR MOBILIZATION AND DEMOBILIZATION".

Unit of Measure: Job.

B. Item Number 0002, "Dredging and Disposal of Material at the Central Long Island Sound Disposal Site (CLDS), Morris Cove, or West River Borrow Pits".

The contract price per cubic yard for Payment Item Number 0002 shall include all costs for the removal, to the specified depths as indicated on the contract drawings, of all dredged materials encountered in the Federal Navigation Project of Hew Haven Harbor and transporting to and disposal of the dredged material at the Central Long Island Sound Disposal Site (CLDS), Morris Cove Borrow Pit Disposal Area, or the West River Borrow Pit Disposal Area as specified in Section 35 20 23 MECHANICAL DREDGING.

The total amount of material removed and paid for under the contract for this Item will be measured by the cubic yard in place by computing the volume between the bottom surface shown by soundings of the last Government specification or pre-dredge survey made before dredging begins and the bottom surface shown by the soundings of an after-dredge survey made as soon as practicable after the removal of the material. Dredged material will be included that is within the limits of the side slopes and specified overdepths as described in Section 35 20 23 MECHANICAL DREDGING, Subpart DREDGING LIMITS, less any deductions that may be required for material removed beyond these limits asdescribed in Subpart "Excessive Dredging".

The contract drawings are believed to accurately represent conditions existing on the date of the survey shown on the drawings, but the depths and the specific areas to be dredged shown thereon may be verified and corrected by soundings taken by the Government before dredging begins. Determination of quantities removed and the deductions made to determine quantities after having once been made by the Contracting Officer, will not be reopened, except on evidence of collusion, fraud, or obvious error. Refer to Special Contract Requirements, subpart "Contract Drawings and Specifications" for additional information and requirements regarding contract drawings.

Monthly partial payments will be based on approximate quantities determined by Contractor quality control surveys. The pre-dredge survey made immediately before dredging, and the after dredge survey made as soon as practicable after the removal of the material, will be performed by the Government at no cost to the Contractor.

No separate measurement or payment will be made for the removal of debris during dredging operations as specified in Section 35 20 23 MECHANICAL DREDGING, Subpart DEBRIS MANAGEMENT.

Unit of Measure: Cubic Yard (CD).

C. Item Number 0003, "Dredging and Disposal of sand at the Shellfish Habitat Disposal Area".

The contract price per cubic yard for Payment Item Number 0003 shall include all costs for the removal, to the specified depths as indicated on the contract drawings, of all dredged materials encountered in the Federal Navigation Project of Hew Haven Harbor and transporting to and disposal of the dredged material at the Shellfish Habitat Disposal Site as specified in Section 35 20 23 MECHANICAL DREDGING.

The total amount of material removed and paid for under the contract for this Item will be measured by the cubic yard in place by computing the volume between the bottom surface shown by soundings of the last Government specification or pre-dredge survey made before dredging begins and the bottom surface shown by the soundings of an after-dredge survey made as soon as practicable after the removal of the material from the designated sand area on the contract drawings. Dredged material will be included that is within the limits of the side slopes and specified overdepths as described in Section 35 20 23 Mechanical DREDGING, Subpart DREDGING LIMITS, less any deductions that may be required for material removed beyond these limits as described in Subpart "Excessive Dredging".

The contract drawings are believed to accurately represent conditions existing on the date of the survey shown on the drawings, but the depths and the specific areas to be dredged shown thereon may be verified and corrected by soundings taken by the Government before dredging begins. Determination of quantities removed and the deductions made to determine quantities after having once been made by the Contracting Officer, will not be reopened, except on evidence of collusion, fraud, or obvious error. Refer to Special Contract Requirements, subpart "Contract Drawings and Specifications" for additional information and requirements regarding contract drawings.

Monthly partial payments will be based on approximate quantities determined by Contractor quality control surveys. The pre-dredge survey made immediately before dredging, and the after dredge survey made as soon as practicable after the removal of the material, will be performed by the Government at no cost to the Contractor.

No separate measurement or payment will be made for the removal of debris during dredging operations as specified in Section 35 20 23 MECHANICAL DREDGING, Subpart DEBRIS MANAGEMENT.

Unit of Measure: Cubic Yard (CD).

D. Item Number 0004, "Drilling, Blasting, Dredging, and Disposal of Rock Material at the Rock Reef Habitat Disposal Area".

The contract price per cubic yard for Payment Item Number 0004 shall include all costs for the removal, to the specified depths as indicated on the contract drawings, of all rock materials encountered in the Federal Navigation Project of Hew Haven Harbor and transporting to and disposal of the dredged material at the Rock Reef Habitat Disposal Area as specified in Section 35 20 23 MECHANICAL DREDGING.

The total amount of material removed and paid for under the contract for this Item will be measured by the cubic yard in place by computing the volume between the top of rock surface and post rock removal survey. The top of rock surface determined by using drill log and blast reports from the drill boat. A surface will be developed using tide and deck corrected data from the drill log and blast reports. The total volume of hard (rock) material removed will be determined using the developed top of rock surface and the post-rock removal survey. Dredged material will be included that is within the limits of the side slopes and specified overdepths as described in Section 35 20 23 MECHANICAL DREDGING, Subpart DREDGING LIMITS, less any deductions that may be required for material removed beyond these limits as described in Subpart "Excessive Dredging".

The contract drawings are believed to accurately represent conditions existing on the date of the survey shown on the drawings, but the depths and the specific areas to be dredged shown thereon may be verified and corrected by soundings taken by the Government before dredging begins. Determination of quantities removed and the deductions made to determine quantities after having once been made by the Contracting Officer, will not be reopened, except on evidence of collusion, fraud, or obvious error. Refer to Special Contract Requirements, subpart "Contract Drawings and Specifications" for additional information and requirements regarding contract drawings.

Monthly partial payments will be based on approximate quantities determined by the drill logs and the after dredge survey [QC SURY?]. The after dredge survey will be made as soon as practicable after the removal of the material, will be performed by the Government at no cost to the Contractor.

No separate measurement or payment will be made for the removal of debris during dredging operations as specified in Section 35 20 23 MECHANICAL DREDGING, Subpart DEBRIS MANAGEMENT.

Unit of Measure: Cubic Yard (CD).

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

- 1.1 MINIMUM INSURANCE REQUIREMENTS
- 1.2 SUPERVISION
- 1.3 PRECONSTRUCTION CONFERENCE
- 1.4 PARTNERING
- 1.4.1 Team-Led (Informal) Partnering
- 1.5 ELECTRONIC MAIL (E-MAIL) ADDRESS

PART 2 PRODUCTS

PART 3 EXECUTION

-- End of Section Table of Contents --

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 MINIMUM INSURANCE REQUIREMENTS

Provide the minimum insurance coverage required by FAR 28.307-2 Liability, during the entire period of performance under this contract. Provide other insurance coverage as required by State of Connecticut law.

1.2 SUPERVISION

See Section 01 11 00 SUMMARY OF WORK, Subpart SUPERINTENDENCE BY THE CONTRACTOR.

1.3 PRECONSTRUCTION CONFERENCE

See Section 01 11 00 SUMMARY OF WORK, Subpart PRECONSTRUCTION CONFERENCE.

1.4 PARTNERING

The Contractor shall host the partnering session within 45 calendar days of contract award. To most effectively accomplish this Contract, the Contractor and Government must form a cohesive partnership with the common goal of drawing on the strength of each organization in an effort to achieve a successful project without safety mishaps, conforming to the Contract, within budget and on schedule. The partnering team must consist of personnel from both the Government and Contractor including project level and corporate level leadership positions. Key Personnel from the Contractor, key subcontractors and the Designer of Record are required to participate in the Partnering process.

1.4.1 Team-Led (Informal) Partnering

- a. The Contracting Officer will coordinate the initial Team-Led (Informal) Partnering Session with key personnel of the project team, including Contractor and Government personnel. The Partnering Session will be co-led by the Government Construction Manager and Contractor's Project Manager.
- b. The Initial Team-led Partnering session may be held concurrently with the Pre-Construction meeting. Partnering sessions will be held at a location mutually agreed to by the Contracting Officer and the Contractor, at the Contractor's temporary trailer.
- c. The Initial Team-Led Partnering Session will be conducted and facilitated using electronic media (a video and accompanying forms) provided by Contracting Officer.
- d. The Partners will determine the frequency of the follow-on sessions.
- e. Participants will bear their own costs for meals, lodging and transportation associated with Partnering.

1.5 ELECTRONIC MAIL (E-MAIL) ADDRESS

Establish and maintain electronic mail (e-mail) capability along with the capability to open various electronic attachments as text files, pdf files, and other similar formats. Within 10 days after contract award, provide the Contracting Officer a single (only one) e-mail address for electronic communications from the Contracting Officer related to this contract including, but not limited to contract documents, invoice information, request for proposals, and other correspondence. The Contracting Officer may also use email to notify the Contractor of base access conditions when emergency conditions warrant, such as hurricanes or terrorist threats. Multiple email addresses are not allowed.

It is the Contractor's responsibility to make timely distribution of all Contracting Officer initiated e-mail with its own organization including field office(s). Promptly notify the Contracting Officer, in writing, of any changes to this email address.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --
SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

- 1.1 SUMMARY
 - 1.1.1 Submittal Information
 - 1.1.2 Project Type
 - 1.1.3 Submission of Submittals
- 1.2 DEFINITIONS
 - 1.2.1 Submittal Descriptions (SD)
 - 1.2.2 Approving Authority
 - 1.2.3 Work
- 1.3 SUBMITTALS
- 1.4 SUBMITTAL CLASSIFICATION
 - 1.4.1 Government Approved (G)
 - 1.4.1.1 Approval Codes
 - 1.4.2 For Information Only
- 1.5 PREPARATION
 - 1.5.1 Transmittal Form
 - 1.5.2 Submittal Format
 - 1.5.2.1 Format of SD-01 Preconstruction Submittals
 - 1.5.2.2 Format for SD-02 Shop Drawings
 - 1.5.2.2.1 Drawing Identification
 - 1.5.2.3 Format of SD-03 Product Data
 - 1.5.2.3.1 Product Information
 - 1.5.2.3.2 Standards
 - 1.5.2.3.3 Data Submission
 - 1.5.2.4 Format of SD-04 Samples
 - 1.5.2.4.1 Sample Characteristics
 - 1.5.2.4.2 Sample Incorporation
 - 1.5.2.4.3 Comparison Sample
 - 1.5.2.5 Format of SD-05 Design Data
 - 1.5.2.6 Format of SD-06 Test Reports
 - 1.5.2.7 Format of SD-07 Certificates
 - 1.5.2.8 Format of SD-08 Manufacturer's Instructions
 - 1.5.2.8.1 Standards
 - 1.5.2.9 Format of SD-09 Manufacturer's Field Reports
 - 1.5.2.10 Format of SD-10 Operation and Maintenance Data (O&M)
 - 1.5.2.11 Format of SD-11 Closeout Submittals
 - 1.5.3 Source Drawings for Shop Drawings
 - 1.5.3.1 Source Drawings
 - 1.5.3.2 Terms and Conditions
- 1.6 QUANTITY OF SUBMITTALS
- 1.6.1 Number of SD-04 Samples
- 1.7 INFORMATION ONLY SUBMITTALS
- 1.8 PROJECT SUBMITTAL REGISTER
- 1.8.1 Submittal Management
 - 1.8.2 Preconstruction Use of Submittal Register

- 1.8.3 Contractor Use of Submittal Register
- 1.8.4 Approving Authority Use of Submittal Register
- 1.8.5 Action Codes
 - 1.8.5.1 Contractor Action Codes
- 1.8.6 Delivery of Copies
- 1.9 VARIATIONS
 - 1.9.1 Considering Variations
 - 1.9.2 Proposing Variations
 - 1.9.3 Warranting that Variations are Compatible
 - 1.9.4 Review Schedule Extension
- 1.10 SCHEDULING
- 1.11 GOVERNMENT APPROVING AUTHORITY
- 1.11.1 Review Notations
- 1.12 DISAPPROVED SUBMITTALS
- 1.13 APPROVED SUBMITTALS
- 1.14 APPROVED SAMPLES
- 1.15 WITHHOLDING OF PAYMENT
- 1.16 STAMPS
- PART 2 PRODUCTS
- PART 3 EXECUTION
- -- End of Section Table of Contents --

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Submittal Information

The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

Units of weights and measures used on all submittals are to be the same as those used in the contract drawings.

1.1.2 Project Type

The Contractor's Quality Control (CQC) System Manager are to check and approve all items before submittal and stamp, sign, and date indicating action taken. Proposed deviations from the contract requirements are to be clearly identified. Include within submittals items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals.

1.1.3 Submission of Submittals

Schedule and provide submittals requiring Government approval before acquiring the material or equipment covered thereby. Pick up and dispose of samples not incorporated into the work in accordance with manufacturer's Safety Data Sheets (SDS) and in compliance with existing laws and regulations.

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

Submittal requirements are specified in the technical sections. Examples and descriptions of submittals identified by the Submittal Description (SD) numbers and titles follow:

SD-01 Preconstruction Submittals

Submittals that are required prior to or at the start of construction (work) or the next major phase of the construction on a multiphase contract.

Preconstruction Submittals include schedules and a tabular list of locations, features, and other pertinent information regarding products, materials, equipment, or components to be used in the work.

Certificates Of Insurance

Surety Bonds

List Of Proposed Subcontractors

List Of Proposed Products

Baseline Network Analysis Schedule (NAS)

Submittal Register

Schedule Of Prices Or Earned Value Report

Accident Prevention Plan

Work Plan

Quality Control (QC) plan

Environmental Protection Plan

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-05 Design Data

Design calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. Unless specified in another section, testing must have been within three years of date of contract award for the project.

Report that includes findings of a test required to be performed on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report that includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily logs and checklists

Final acceptance test and operational test procedure

SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that the product, system, or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a manufacturer, supplier, installer or Subcontractor through Contractor. The document purpose is to further promote the orderly progression of a portion of the work by documenting procedures, acceptability of methods, or personnel qualifications.

Confined space entry permits

Text of posted operating instructions

SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

Submittals required for Guiding Principle Validation (GPV) or Third Party Certification (TPC).

Special requirements necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

1.2.2 Approving Authority

Office or designated person authorized to approve the submittal.

1.2.3 Work

As used in this section, on-site and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction. In exception, excludes work to produce SD-01 submittals.

1.3 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. Submit the following in accordance with this section.

SD-01 Preconstruction Submittals

```
Submittal Register; G, RO
```

1.4 SUBMITTAL CLASSIFICATION

1.4.1 Government Approved (G)

Government approval is required for extensions of design, critical materials, variations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Government.

Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, submittals are considered to be "shop drawings."

1.4.1.1 Approval Codes

A. Construction Division {"AO" (Area Office), "RO" (Resident Office), or "PO" (Project Office) Reviewer}: An "AO", "RO", or "PO" in column "f" indicates that the submittal review action is by New England District Construction Division. Send all such submittals to the project Resident or Area Engineer, as applicable.

B. Engineering Division {"DO" (District Office) Reviewer): A "DO" on the attached submittal register, column "f" indicates that the submittal review action is by the New England District, Engineering Division, or other organization in the District Office. Send all such submittals to the project Resident or Area Engineer for distribution to the appropriate approving authority.

C. Architect-Engineer Firm {"AE" reviewer): An "AE" on the attached submittal register, column "f" indicates that the submittal review action is by the Architect-Engineer firm associated with the project.

D. Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING.

E. Government acceptance is required for submittals with a "G, A" designation.

1.4.2 For Information Only

Submittals not requiring Government approval will be for information only. Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, they are not considered to be "shop drawings."

1.5 PREPARATION

1.5.1 Transmittal Form

Use the ENG Form 4025-R transmittal form for submitting both Government-approved and information-only submittals. Submit in accordance with the instructions on the reverse side of the form. These forms are attached at the end of this section and are included in the RMS CM software that the Contractor is required to use for this contract. Properly complete this form by filling out all the heading blank spaces and identifying each item submitted. Exercise special care to ensure proper listing of the specification paragraph and sheet number of the contract drawings pertinent to the data submitted for each item.

1.5.2 Submittal Format

1.5.2.1 Format of SD-01 Preconstruction Submittals

When the submittal includes a document that is to be used in the project, or is to become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

Provide data in the unit of measure used in the contract documents.

1.5.2.2 Format for SD-02 Shop Drawings

Provide shop drawings not less than 8-1/2 by 11 inches nor more than 30 by 42 inches, except for full-size patterns or templates. Prepare drawings to accurate size, with scale indicated, unless another form is required. Ensure drawings are suitable for reproduction and of a quality to produce clear, distinct lines and letters, with dark lines on a white background.

- a. Include the nameplate data, size, and capacity on drawings. Also include applicable federal, military, industry, and technical society publication references.
- b. Dimension drawings, except diagrams and schematic drawings. Prepare drawings demonstrating interface with other trades to scale. Use the same unit of measure for shop drawings as indicated on the contract drawings. Identify materials and products for work shown.

Submit an electronic copy of drawings in PDF format.

1.5.2.2.1 Drawing Identification

Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph IDENTIFYING SUBMITTALS.

Number drawings in a logical sequence. Each drawing is to bear the number of the submittal in a uniform location next to the title block. Place the Government contract number in the margin, immediately below the title block, for each drawing.

Reserve a blank space on the right-hand side of each sheet for the Government disposition stamp.

1.5.2.3 Format of SD-03 Product Data

Present product data submittals for each section as a complete, bound volume. Include a table of contents, listing the page and catalog item numbers for product data.

Indicate, by prominent notation, each product that is being submitted; indicate the specification section number and paragraph number to which it pertains.

1.5.2.3.1 Product Information

Supplement product data with material prepared for the project to satisfy the submittal requirements where product data does not exist. Identify this material as developed specifically for the project, with information and format as required for submission of SD-07 Certificates.

Provide product data in units used in the Contract documents. Where product data are included in preprinted catalogs with another unit, submit the dimensions in contract document units, on a separate sheet.

1.5.2.3.2 Standards

Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.5.2.3.3 Data Submission

Collect required data submittals for each specific material, product, unit of work, or system into a single submittal that is marked for choices, options, and portions applicable to the submittal. Mark each copy of the product data identically. Partial submittals will not be accepted for expedition of the construction effort.

Submit the manufacturer's instructions before installation.

1.5.2.4 Format of SD-04 Samples

1.5.2.4.1 Sample Characteristics

Furnish samples in the following sizes, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately the same size as specified:

- a. Sample of Equipment or Device: Full size.
- b. Sample of Materials Less Than 2 by 3 inches: Built up to 8-1/2 by 11 inches.
- c. Sample of Materials Exceeding 8-1/2 by 11 inches: Cut down to 8-1/2 by 11 inches and adequate to indicate color, texture, and material variations.
- d. Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.
- e. Sample Volume of Nonsolid Materials: Pint. Examples of nonsolid materials are sand and paint.
- f. Color Selection Samples: 2 by 4 inches. Where samples are specified for selection of color, finish, pattern, or texture, submit the full set of available choices for the material or product specified. Sizes and quantities of samples are to represent their respective standard

unit.

- g. Sample Panel: 4 by 4 feet.
- h. Sample Installation: 100 square feet.
- 1.5.2.4.2 Sample Incorporation

Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples are to be in undamaged condition at the time of use.

Recording of Sample Installation: Note and preserve the notation of any area constituting a sample installation, but remove the notation at the final clean-up of the project.

1.5.2.4.3 Comparison Sample

Samples Showing Range of Variation: Where variations in color, finish, pattern, or texture are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range. Mark each unit to describe its relation to the range of the variation.

When color, texture, or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

1.5.2.5 Format of SD-05 Design Data

Provide design data and certificates on 8-1/2 by 11 inch paper. Provide a bound volume for submittals containing numerous pages.

1.5.2.6 Format of SD-06 Test Reports

Provide reports on 8-1/2 by 11 inch paper in a complete bound volume.

By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

1.5.2.7 Format of SD-07 Certificates

Provide design data and certificates on 8-1/2 by 11 inch paper. Provide a bound volume for submittals containing numerous pages.

1.5.2.8 Format of SD-08 Manufacturer's Instructions

Present manufacturer's instructions submittals for each section as a complete, bound volume. Include the manufacturer's name, trade name, place of manufacture, and catalog model or number on product data. Also include applicable federal, military, industry, and technical-society publication references. If supplemental information is needed to clarify the manufacturer's data, submit it as specified for SD-07 Certificates.

Submit the manufacturer's instructions before installation.

1.5.2.8.1 Standards

Where equipment or materials are specified to conform to industry or

technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.5.2.9 Format of SD-09 Manufacturer's Field Reports

Provide reports on 8-1/2 by 11 inch paper in a complete bound volume.

By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

1.5.2.10 Format of SD-10 Operation and Maintenance Data (O&M)

Comply with the requirements of the technical specification sections.

1.5.2.11 Format of SD-11 Closeout Submittals

When the submittal includes a document that is to be used in the project or is to become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

Provide data in the unit of measure used in the contract documents.

- 1.5.3 Source Drawings for Shop Drawings
- 1.5.3.1 Source Drawings

The entire set of source drawing files (DWG) will not be provided to the Contractor. Request the specific Drawing Number for the preparation of shop drawings. Only those drawings requested to prepare shop drawings will be provided. These drawings are provided only after award.

1.5.3.2 Terms and Conditions

Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction data for the referenced project. Any other use or reuse is at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor must make no claim, and waives to the fullest extent permitted by law any claim or cause of action of any nature against the Government, its agents, or its subconsultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities, or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic source drawing files are not construction documents. Differences may exist between the source drawing files and the corresponding construction documents. The Government makes no

representation regarding the accuracy or completeness of the electronic source drawing files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. The Contractor is responsible for determining if any conflict exists. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished source drawing files, the signed and sealed construction documents govern. Use of these source drawing files does not relieve the Contractor of the duty to fully comply with the contract documents, including and without limitation the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction data related to this contract, remove all previous indication of ownership (seals, logos, signatures, initials and dates).

1.6 QUANTITY OF SUBMITTALS

Provide submittals in electronic format, with the exception of material samples required for SD-04 Samples items. In addition to the electronic submittal, provide seven hard copies of the submittals in the formats indicated above. Compile the submittal file as a single, complete document, to include the Transmittal Form described within. Name the electronic submittal file specifically according to its contents, coordinate the file naming convention with the Contracting Officer. Electronic files must be of sufficient quality that all information is legible. Use PDF as the electronic format, unless otherwise specified or directed by the Contracting Officer. Generate PDF files from original documents with bookmarks so that the text included in the PDF file is both searchable and can be copied. If documents are scanned, Optical Character Resolution (OCR) routines are required. Index and bookmark files exceeding 30 pages to allow efficient navigation of the file. When required, the electronic file must include a valid electronic signature, or scan of a signature.

E-mail electronic submittal documents smaller than 10MB to an e-mail address as directed by the Contracting Officer. Provide electronic documents over 10 MB on an optical disc or through an electronic file sharing system such as the AMRDEC SAFE Web Application located at the following website: https://safe.amrdec.army.mil/safe/.

1.6.1 Number of SD-04 Samples

a. Submit two samples, or two sets of samples showing the range of variation, of each required item. One approved sample or set of samples will be retained by the approving authority and one will be returned to the Contractor.

b. Submit one sample panel or provide one sample installation where directed. Include components listed in the technical section or as directed.

- c. Submit one sample installation, where directed.
- d. Submit one sample of nonsolid materials.

1.7 INFORMATION ONLY SUBMITTALS

Submittals without a "G" designation must be certified by the QC manager and submitted to the Contracting Officer for information-only. Approval of

the Contracting Officer is not required on information only submittals. The Contracting Officer will mark "receipt acknowledged" on submittals for information and will return only the transmittal cover sheet to the Contractor. Normally, submittals for information only will not be returned. However, the Government reserves the right to return unsatisfactory submittals and require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.8 PROJECT SUBMITTAL REGISTER

A sample Project Submittal Register showing items of equipment and materials for when submittals are required by the specifications is provided as as an attachment at the end of this section.

1.8.1 Submittal Management

Prepare and maintain a submittal register, as the work progresses. Do not change data that is output in columns (c), (d), (e), and (f) as delivered by Government; retain data that is output in columns (a), (g), (h), and (i) as approved. As an attachment, provide a submittal register showing items of equipment and materials for which submittals are required by the specifications. This list may not be all-inclusive and additional submittals may be required. Maintain a submittal register for the project in accordance with Section 01 45 01 RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE(RMS CM). The Government will provide the initial submittal register in electronic format with the following fields completed, to the extent that will be required by the Government during subsequent usage.

Column (c): Lists specification section in which submittal is required.

Column (d): Lists each submittal description (SD Number. and type, e.g., SD-02 Shop Drawings) required in each specification section.

Column (e): Lists one principal paragraph in each specification section where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting the project requirements.

Thereafter, the Contractor is to track all submittals by maintaining a complete list, including completion of all data columns and all dates on which submittals are received by and returned by the Government.

1.8.2 Preconstruction Use of Submittal Register

Submit the submittal register. Include the QC plan and the project schedule. Verify that all submittals required for the project are listed and add missing submittals. Coordinate and complete the following fields on the register submitted with the QC plan and the project schedule: Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for the approving authority to receive submittals.

Column (h) Contractor Approval Date: Date that Contractor needs approval of submittal.

Column (i) Contractor Material: Date that Contractor needs material delivered to Contractor control.

1.8.3 Contractor Use of Submittal Register

Update the following fields in the Government-furnished submittal register program or equivalent fields in the program used by the Contractor with each submittal throughout the contract.

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (j) Action Code (k): Date of action used to record Contractor's review when forwarding submittals to QC.

Column (1) Date submittal transmitted.

Column (q) Date approval was received.

1.8.4 Approving Authority Use of Submittal Register

Update the following fields:

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (1) Date submittal was received.

Column (m) through (p) Dates of review actions.

Column (q) Date of return to Contractor.

1.8.5 Action Codes

1.8.5.1 Contractor Action Codes

	DESIGN BID BUILD SUBMITTALS										
Submittal Classifications shown in UFGS Sections	Submittal Classification	Corresponding SpecsIntact Submittal Register Code which is populated in the SI Submittal Register. Software Limitations: (The software shows one character delineation in the SpecsIntact Submittal Register)	RMS - The following Submittal Classifications are populated in RMS when the SpecsIntact Submittal Data File is pulled into RMS)								
G	Submittal requires Government	G	GA								
BLANK	Submittal is For Information Only (FIO)	BLANK	FIO								
S	Submittal is for documentation of Sustainable requirements	S	S/FIO								

1.8.6 Delivery of Copies

Submit an updated electronic copy of the submittal register to the Contracting Officer with each invoice request. Provide an updated Submittal Register monthly regardless of whether an invoice is submitted.

1.9 VARIATIONS

Variations from contract requirements require Contracting Officer approval pursuant to contract Clause FAR 52.236-21 Specifications and Drawings for Construction, and will be considered where advantageous to the Government.

1.9.1 Considering Variations

Discussion of variations with the Contracting Officer before submission will help ensure that functional and quality requirements are met and minimize rejections and resubmittals. When contemplating a variation that results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

Specifically point out variations from contract requirements in transmittal letters. Failure to point out variations may cause the Government to require rejection and removal of such work at no additional cost to the Government.

1.9.2 Proposing Variations

Check the column "variation" of ENG Form 4025 for submittals that include variations proposed by the Contractor. Set forth in writing the reason for any variations and note such variations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted variations.

1.9.3 Warranting that Variations are Compatible

When delivering a variation for approval, the Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.9.4 Review Schedule Extension

In addition to the normal submittal review period, a period of 14 calendar days will be allowed for the Government to consider submittals with variations.

1.10 SCHEDULING

Schedule and submit concurrently product data and shop drawings covering component items forming a system or items that are interrelated. Submit pertinent certifications at the same time. No delay damages or time extensions will be allowed for time lost in late submittals.

- a. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. The Contractor is responsible for additional time required for Government reviews resulting from required resubmittals. The review period for each resubmittal is the same as for the initial submittal.
- b. Submittals required by the contract documents are listed on the submittal register. If a submittal is listed in the submittal register but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but that have been omitted from the register or marked "N/A."
- c. Resubmit the submittal register and annotate it monthly with actual submission and approval dates. When all items on the register have been fully approved, no further resubmittal is required.

Contracting Officer review will be completed within 21 calendar days after the date of submission.

1.11 GOVERNMENT APPROVING AUTHORITY

When the approving authority is the Contracting Officer, the Government will:

- a. Note the date on which the submittal was received.
- b. Review submittals for approval within the scheduling period specified and only for conformance with project design concepts and compliance with contract documents.

c. Identify returned submittals with one of the actions defined in paragraph REVIEW NOTATIONS and with comments and markings appropriate for the action indicated.

Upon completion of review of submittals requiring Government approval, stamp and date submittals. Two copies of the submittal will be retained by the Contracting Officer and the remaining copies of the submittal will be returned to the Contractor.

1.11.1 Review Notations

Submittals will be returned to the Contractor with the following notations:

- a. Submittals marked "approved" or "accepted" authorize proceeding with the work covered.
- b. Submittals marked "approved as noted" or "approved, except as noted, resubmittal not required," authorize proceeding with the work covered provided that the Contractor takes no exception to the corrections.
- c. Submittals marked "not approved," "disapproved," or "revise and resubmit" indicate incomplete submittal or noncompliance with the contract requirements or design concept. Resubmit with appropriate changes. Do not proceed with work for this item until the resubmittal is approved.
- d. Submittals marked "not reviewed" indicate that the submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.
- e. Submittals marked "receipt acknowledged" indicate that submittals have been received by the Government. This applies only to "information-only submittals" as previously defined.

1.12 DISAPPROVED SUBMITTALS

Make corrections required by the Contracting Officer. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications, give notice to the Contracting Officer as required under the FAR clause titled CHANGES. The Contractor is responsible for the dimensions and design of connection details and the construction of work. Failure to point out variations may cause the Government to require rejection and removal of such work at the Contractor's expense.

If changes are necessary to submittals, the Contractor shall make such revisions and submission of the submittals in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved. Submittals requiring resubmittal shall be resubmitted within 14 calendar days unless additional time is granted by the Government.

1.13 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing, and other information are satisfactory.

Approval or acceptance by the Government for a submittal does not relieve the Contractor of the responsibility for meeting the contract requirements or for any error that may exist, because under the Quality Control (QC) requirements of this contract, the Contractor is responsible for ensuring information contained with in each submittal accurately conforms with the requirements of the contract documents.

After submittals have been approved or accepted by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.14 APPROVED SAMPLES

Approval of a sample is only for the characteristics or use named in such approval and is not be construed to change or modify any contract requirements. Before submitting samples, provide assurance that the materials or equipment will be available in quantities required in the project. No change or substitution will be permitted after a sample has been approved.

Match the approved samples for materials and equipment incorporated in the work. If requested, approved samples, including those that may be damaged in testing, will be returned to the Contractor, at its expense, upon completion of the contract. Unapproved samples will also be returned to the Contractor at its expense, if so requested.

Failure of any materials to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make as that material. The Government reserves the right to disapprove any material or equipment that has previously proved unsatisfactory in service.

Samples of various materials or equipment delivered on the site or in place may be taken by the Contracting Officer for testing. Samples failing to meet contract requirements will automatically void previous approvals. Replace such materials or equipment to meet contract requirements.

1.15 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

1.16 STAMPS

Certify the submittal data as follows on Form ENG 4025: "I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

____NAME OF CONTRACTOR _____ SIGNATURE OF CONTRACTOR

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 01 33 00 Page 18 Not for Construction

TRANSM	IITTAL OF SHOP DRAWINGS MANUFACTURER'S C For use of this form, see ER 41	, EQUIPMENT DA ERTIFICATES OF 5-1-10; the proponent	TA, MATER	IAL SAMPL ICE N-CE.	ES, OR	DA	ATE	TRÀNS	SMITTAL NO.		
	SECTION 1 -	REQUEST FOR APPR	ROVAL OF THE	FOLLOWING	ITEMS (Th	is secti	tion will be initi	ated by the cor	ntractor)		
то:	FF	ROM:	· ·	Со	NTRACT N	Э.				: NEW TRANSMI RESUBMITTAL AL	TTAL OF
SPECIFICATIO	DN SEC. NO. (Cover only one section v	with each transmittal)	PROJECT TIT	LE AND LOCA	TION			NSMITTAL IS	FOR: (<i>Check c</i>	ne) R DA/CR	DA/GA
ITEM NO. (See Note 3)	DESCRIPTION OF S (Type size, mode	SUBMITTAL ITEM el number/etc.)		SUBMITTAI TYPE CODI (See Note 8	L NC E OF COP	ES	CONTRACT REFER SPEC. PARA. NO.	DOCUMENT RENCE DRAWING SHEET NO.	CONTRACTO REVIEW CODE	OR Enter "Y" if requesting a variation (See Note 6)	USACE ACTION CODE (Note 9)
a.	b.			С.	d.		e.	f.	g.	h.	i.
	· · · · · · · · · · · · · · · · · · ·										
						-+					
						-+					
						\rightarrow					
											-
REMARKS					I certit	y that t	the above subr	nitted items had contract drawin	been reviewed	in detail and are cations except as ot	orrect and in herwise stated.
		· ·				N		NTRACTOR	SI	GNATURE OF CO	ONTRACTOR
ENCLOSURE	S RETURNED (List by item No.)	NAME AND TI	ITLE OF APPRO	OVING AUTHO	RITY	N 	SIGN	ATURE OF AP	PROVING AUT		ATE
		-									Dago 1 of

4	ISTRUCTIONS
1. Section I will be initiated by the Contractor in the required number of copies.	
2. Each Transmittal shall be numbered consecutively. The Transmittal Number typ number. The second part is a sequential number for the submittals under that s original Transmittal Number and begin numbering the resubmittal packages seq	vically includes two parts separated by a dash (-). The first part is the specification section spec section. If the Transmittal is a resubmittal, then add a decimal point to the end of the quentially after the decimal.
3. The "Item No." for each entry on this form will be the same "Item No." as indicat	ed on ENG FORM 4288-R.
4. Submittals requiring expeditious handling will be submitted on a separate ENG	Form 4025-R.
 Items transmitted on each transmittal form will be from the same specification so transmittal. 	ection. Do not combine submittal information from different specification sections in a single
If the data submitted are intentionally in variance with the contract requirements detailed reason for the variation.	, indicate a variation in column h, and enter a statement in the Remarks block describing he
7. ENG Form 4025-R is self-transmitting - a letter of transmittal is not required.	
 8. When submittal items are transmitted, indicate the "Submittal Type" (SD-01 thro Submittal types are the following: SD-01 - Preconstruction SD-02 - Shop Drawings SD-03 - Produ SD-07 - Certificates SD-08 - Manufacturer's Instructions SD-0 	ough SD-11) in column c of Section I. Ict Data SD-04 - Samples SD-05 - Design Data SD-06 - Test Reports 09 - Manufacturer's Field Reports SD-10 - O&M Data SD-11 - Closeout
 For each submittal item, the Contractor will assign Submittal Action Codes in co Action Codes in column i of Section I. The Submittal Action Codes are: 	Jumn g of Section I. The U.S. Army Corps of Engineers approving authority will assign Submittal
 A Approved as submitted. B Approved, except as noted on drawings. Resubmission not required. C Approved, except as noted on drawings. Refer to attached comments. Resubmission required. D Will be returned by separate correspondence. E Disapproved. Refer to attached comments. 	 F Receipt acknowledged. X Receipt acknowledged, does not comply with contract requirements, as noted. G Other action required (Specify) K Government concurs with intermediate design. (For D-B contracts) R Design submittal is acceptable for release for construction. (For D-B contracts)

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract.

SUBMITTAL REGISTER												CONTRACT	NO.				
TITLE	AND	LOCATION				CONTRAC	TOR										
Impi	rove	ment Dredging	New Haven Harbor New Haven, Cor	nnecticut													
					G		ONTRACTO	R: TES		ITRACTOR		APF	PROVING AL	THOR	RITY		
A C T I V I T Y N O	TRANSMITTAL NO	S P E C S E C T	DESCRIPTION ITEM SUBMITTED	P A R A G R A P H	GOVT OR A/E REVWR CLASSIFICATION	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	A C T I O N C O D E	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	A C T I O N C O D E	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(I)	(m)	(n)	(o)	(p)	(q)	(r)
		01 11 00	SD-01 Preconstruction Submittals														
			Initial Project Schedule	1.9.2.3	G RO												
			Two-Week Schedule of Work	1.9.2.2													
			Activities														
			Public Notice	1.13.2	G RO												
			Notice to Mariners	1.13.3													
			Aids to Navigation	1.13.4													
			Safe Harbor Plan		G RO												
			Utility Plan	1.6.1	G RO												
			Pre-Dredging Photographic	1.7	G RO												
			Survey														
			SD-07 Certificates														
			Periodic Schedule Updates	1.9.2.4	G RO												
		01 22 00	SD-05 Design Data														
			Quantity Surveys	1.4													
		01 33 00	SD-01 Preconstruction Submittals														
			Submittal Register	1.8	G RO												
		01 33 29	SD-01 Preconstruction Submittals														
			Documentation Requirements	1.5	G RO												
		01 35 26	SD-01 Preconstruction Submittals														
			Accident Prevention Plan (APP)	1.8	G RO												
			Dive Operations Plan	1.15	G RO												
			Standard Lift Plan	1.12.4	G RO												
			SD-06 Test Reports														
			Accident Reports	1.12.2	G RO												
			LHE Inspection Reports	1.12.3													

	SUBMITTAL REGISTER																
TITLE	AND	LOCATION				CONTRAC	TOR										
Imp	rove	ment Dredging I	New Haven Harbor New Haven, Cor	nnecticut													
					G	C SC	ONTRACTO	R: TES	CON	NTRACTOR ACTION		APPROVING AUTHORITY			RITY		
A C T I V I T Y N O	TRANSMITTAL NO	S P E C S E C T	DESCRIPTION ITEM SUBMITTED	P A R A G R A P H	GOVT OR A/E REVWR CLASSIFICATION	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	A C T I O N C O D E	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	A C T I O N C O D E	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(I)	(m)	(n)	(o)	(p)	(q)	(r)
		01 35 26	Monthly Exposure Reports	1.5	G RO												
			SD-07 Certificates														
			Activity Hazard Analysis (AHA)	1.9	G RO												
			Certificate of Compliance	1.12.4													
			Hot Work Permit	1.13					<u> </u>								
		01 45 00	SD-01 Preconstruction Submittals														
			Contractor Quality Control (CQC)	1.5.2	G RO												
			Plan														
			SD-06 Test Reports														
			Verification Statement	1.12.3		, r											
		01 54 50	SD-01 Preconstruction Submittals														
			Plant and Equipment	1.3													
		01 57 19	SD-01 Preconstruction Submittals														
			Environmental Protection Plan	1.7	G DO												
		01 71 23	SD-01 Preconstruction Submittals														
			Contractor Quality Control Survey		G DO												
			Plan														
			Layout Plan	1.6	G DO												
			Charts														
			Survey Personnel	1.1.2													
			Pre-Dredge Survey	3.1.2	G DO												
			SD-05 Design Data														
			Contractor Quality Control	3.1.1	G DO												
			Surveys														
			Contractor After Dredge Survey	3.1.1	G DO												
		01 74 19	SD-01 Preconstruction Submittals														

SUBMITTAL REGISTER											CONTRACT	NO.					
TITLE Imp	AND	LOCATION ment Dredging	New Haven Harbor New Haven, Co	nnecticut		CONTRAC	TOR										
					6	(SC	CONTRACTO	R: TES		NTRACTOR ACTION		APF	PROVING AL	ITHOR	RITY		
A C T I V I T Y NO	TRANSMITTAL NO	S P E C S E C T	DESCRIPTION ITEM SUBMITTED	Р А R А # Я R А Р Н	OVT CLASSIFICATEVWR	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACT-ON CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACT-ON CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(I)	(m)	(n)	(o)	(p)	(q)	(r)
		01 74 19	Construction Waste Management	1.6	G RO	_											
			Plan														
			SD-11 Closeout Submittals														
			Final Construction Waste	1.8	G RO												
			Diversion Report						P								
		31 23 01	SD-01 Preconstruction Submittals														
			Master Blasting Plan	3.6.1	G DO												
			Blasting Safety Plan	3.6.1.3	G DO												
			Navigation Control Plan	3.6.1.4	G DO												
			Test-Blast Plan	3.6.1.6	G DO												
			Certified Marine Survey	3.2.9	G DO												
			Pre-Blast Surveys	3.5.1	G DO												
			Blasting Consultant's	3.4.1.3	G DO												
			Qualifications														
			Blasting Specialist's	3.4.2.3	G DO												
			Qualifications														
			Blaster-In-Charge Qualifications	3.4.3.3	G DO												
			Blaster Qualifications	3.4.4	G DO												
			Blasting Administrator's		G DO												
			Qualifications														
			Vibration Monitoring Specialty	3.4.5	G DO												
			Firm														
			Public Notice Of Blasting	3.2.3	G DO												
			Operations														
			Structural Inspection/Evaluation	3.4.8	G DO												
			Specialist														

SUBMITTAL REGISTER																		
TITLE	AND	LOCATION	Now Haven Harber New Haven, Co	opostiout			CONTRAC	TOR										
Imp	rove	ment Dredging	New Haven Harbor New Haven, Cor				C	ONTRACTO	R:	CON	NTRACTOR		APF	PROVING AL	THOF	RITY		
A C T I V I T Y N O	TRANSMITTAL NO	S P E C S E C T	DESCRIPTION ITEM SUBMITTED	P A R A G R A P H	C L A S S I F I C A T I O N	GOVT OR A/E REVWR	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	A C T - O N C O D E	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f))	(g)	(h)	(i)	(j)	(k)	(I)	(m)	(n)	(o)	(p)	(q)	(r)
		31 23 01	Natural Resource Subcontractor		G D	0												
			SD-03 Product Data															
			Explosives and Blasting	3.6.1.2	G D	0												
			Equipment															
			Lightning Detection Device	3.2.8	G D	0												
			Seismographs	3.3.3.3	G D	0												
			SD-05 Design Data															
			Individual Shot Plan	3.4.3	G D	0												
			SD-06 Test Reports															
			Test-Blast Evaluation Report	3.6.3	G D	ŏ _	r											
			Individual Shot Reports	3.6.4	G D	0												
			Drilling Logs	3.6.4.1	G D	0												
			Individual Shot Vibration	3.6.4.2	G D	0												
			Monitoring Report															
			Individual Shot Videos	3.6.4.3	G D	0												
			Daily Blasting And Removal Log	3.6.5	GD	0												
			Blasting Consultant's Report	3.4.1.1	G D	0												
			Post-Blast Surveys	3.5.2	G D	0												
			Reports of Required Safety,	3.6.4.4														
			Protective, and Natural Resource															
			Programs															
			SD-07 Certificates															
			Blasting Licenses and	3.4.1.3	G D	0												
			Credentials															
			Vibration Specialist	3.4.6	G D	0												
			Seismograph Technicians	3.4.7	G D	0												

			SUBMI							CONTRACT	NO.						
TITLE	AND	LOCATION			CONTRAC	TOR											
Imp	rove	ment Dredging	New Haven Harbor New Haven, Cor	nnecticut													
		0.0			G		ONTRACTO	R: TES		NTRACTOR ACTION		APF	PROVING AU	ITHOR	RITY		
A C T - V - T Y NO	TRANSMITTAL NO	S P E C S E C T	DESCRIPTION ITEM SUBMITTED	P	OVT OR A/E REVWR CLASSIFICATION	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACT-ON CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(I)	(m)	(n)	(o)	(p)	(q)	(r)
		31 23 01	Magazine Keeper	3.4.9	G DO												
		35 20 23	SD-01 Preconstruction Submittals														
			Dredging Operation Plan	3.2.2	G RO												
			Debris Management Plan	1.11													
			Scows	3.1.3.2													
			SD-05 Design Data														
			Equipment and Performance														
			Data														
			Daily Report of Operations	3.6													
-			Monthly Report of Operations	3.6													
		35 20 23 13	SD-07 Certificates														
		00 10 100	National Dredging Quality	14	G RO												
			Management Program														
			Certification														
		35 25 00	SD-01 Preconstruction Submittals														
		00 20 00	Contractor Safe Practices Manual	1 4 1													
			Diving Operations Plan	142													
			Activity Hazard Analysis	143	A DO												
			Emergency Management Plan	1 4 4													
			Dive Personnel Qualifications	145	A DO												
						1	1										
					1	1	1			1							
					1	1	1			1							
					1	1	1										
					1	1	1										

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 33 29

SUSTAINABILITY REPORTING

- PART 1 GENERAL
 - 1.1 REFERENCES
 - 1.2 SUBMITTALS
 - 1.3 SUMMARY
 - 1.4 LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK
 - 1.5 DOCUMENTATION REQUIREMENTS
 - 1.5.1 Waste Material Management (Recycling Construction)
- PART 2 PRODUCTS
- PART 3 EXECUTION
 - 3.1 SUSTAINABILITY COORDINATION
- -- End of Section Table of Contents

SECTION 01 33 29

SUSTAINABILITY REPORTING

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 within the text by the basic designation only.

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE)

HPSB	Guiding	Principle	s	(2	016) Guid	ding Princ	iples	for Sustaina	ble
				Fee	deral Bu:	ildings ar	nd Dete	ermining	
				Coi	mpliance	with the	Guidir	ng Principles	for
				Su	stainable	e Federal	Buildi	ngs	
	U.S.	NATIONAL	ARCHIVES	AND	RECORDS	ADMINISTR	RATION	(NARA)	

40 CFR 247
 48 CFR 23
 48 CFR 23
 49 CFR 24
 40 CFR 247
 40 Comprehensive Procurement Guideline for Products Containing Recovered Materials
 40 CFR 247
 40 Comprehensive Procurement Guideline for Products Containing Recovered Materials
 48 CFR 23
 48 CFR 247
 49 Comprehensive Procurement Guideline for Products Containing Recovered Materials
 48 CFR 24
 48 CFR 247
 48 CFR 247
 49 Comprehensive Procurement Guideline for Products Containing Recovered Materials
 48 CFR 24
 49 CFR 24
 40 CF

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. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Documentation Requirements; G, RO

Submit documentation that proves compliance with the listed requirement of this section.

1.3 SUMMARY

This specification includes general requirements and procedures for this project to be constructed and documented per the federally mandated "Guiding Principles" (GP) and other requirements identified in this specification.

1.4 LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

Many products listed in 40 CFR 247 and 48 CFR 23 have been designated or proposed by EPA and USDA to include recycled, recovered and biobased

materials that may be used by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled, recovered and biobased materials and that these products be recycled when no longer needed.

1.5 DOCUMENTATION REQUIREMENTS

Incorporate the following HPSB Guiding Principles requirement into the project and provide documentation that proves compliance with the listed requirement.

1.5.1 Waste Material Management (Recycling - Construction)

Divert debris resulting from the work from landfill disposal in accordance with Section 01 74 19 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT. Provide the following documentation:

A. Monthly documentation showing total amount, by weight, of waste and debris diverted from landfill as a percentage of all debris on the project. The Contractor shall divert a minimum of 60 percent of waste and debris from landfill disposal as specified in Section 01 74 19 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT.

B. Include in documentation the total solid waste generated in tons, the total solid waste diverted from landfill in tons, and the total cost of the solid waste generated.

C. Include project's Construction Waste Management Plan (see Section 01 74 19 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT) and all dumpster haul tickets.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 SUSTAINABILITY COORDINATION

Provide sustainability focus and coordination at the following meetings to achieve sustainability goals. Contractor's designated sustainability professional responsible for GP documentation shall participate in the following meetings to coordinate documentation completion.

a. Pre-Construction Conference: Discuss the following: sustainability actions and documentation requirements, construction submittal requirements and schedule, and individuals responsible for achieving each Guiding Principle Requirement.

b. Construction Progress Meetings: Review GP sustainability requirements with project team including contractor and sub-contractor representatives.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS

- PART 1 GENERAL
 - 1.1 REFERENCES
 - 1.2 DEFINITIONS
 - 1.2.1 Site Safety and Health Officer (SSHO)
 - 1.2.1.1 Level One SSHO
 - Level Two SSHO 1.2.1.2
 - Level Three SSHO 1.2.1.3
 - 1.2.1.4 Alternate SSHO
 - 1.2.2 Competent Person (CP)
 - 1.2.3 Qualified Person (QP)
 - 1.3 SUBMITTALS
 - 1.4 PUBLIC HEALTH EMERGENCIES
 - MONTHLY EXPOSURE REPORTS 1.5
 - 1.6 REGULATORY REQUIREMENTS
 - 1.7 SITE QUALIFICATIONS, DUTIES, AND MEETINGS
 - 1.7.1 Site Safety and Health Officer (SSHO)
 - Qualifications of SSHO 1.7.1.1
 - Duties of SSHO 1.7.1.2
 - Safety Meetings 1.7.1.3
 - 1.7.2 Roles and Responsibilities of Prime Contractor and SSHO
 - 1.7.3 Additional Requirement
 - 1.7.4 Contract Site Safety and Health Officer(s)(SSHOs) Minimum Requirements
 - 1.7.5 Dredging Contract Site Safety and Health Officer(s)(SSHOs) Requirements
 - 1.7.5.1 Dredging SSHO Personnel Requirements
 - 1.7.6 Competent Person for Confined Space Entry
 - 1.7.7 Preconstruction Conference
 - 1.8 ACCIDENT PREVENTION PLAN (APP)
 - 1.8.1 Accident Prevention Plan (APP)
 - Names and Qualifications 1.8.2
 - 1.9 ACTIVITY HAZARD ANALYSIS (AHA)
 - 1.9.1 AHA Management
 - 1.9.2 AHA Signature Log
 - 1.10 SITE SAFETY REFERENCE MATERIALS
 - 1.11 EMERGENCY MEDICAL TREATMENT
 - 1.12 NOTIFICATIONS AND REPORTS
 - 1.12.1 Accident Notification
 - 1.12.2 Accident Reports
 - 1.12.3 LHE Inspection Reports
 - 1.12.4 Certificate of Compliance and Pre-lift Plan/Checklist for LHE and Rigging
 - 1.13 HOT WORK PERMIT
 - 1.13.1 Permit and Personnel Requirements
 - 1.13.2 Work Around Flammable Materials

- 1.14 CONFINED SPACE ENTRY REQUIREMENTS
- 1.14.1 Rescue Procedures and Coordination with Local Emergency Responders
- 1.15 DIVE SAFETY REQUIREMENTS
- 1.16 SEVERE WEATHER PLAN FOR MARINE ACTIVITIES (SWPMA)
- PART 2 PRODUCTS
- PART 3 EXECUTION
 - 3.1 CONSTRUCTION AND OTHER WORK
 - 3.1.1 Worksite Communication
 - 3.1.2 Hazardous Material Exclusions
 - 3.1.3 Unforeseen Hazardous Material
 - 3.2 UTILITY OUTAGE REQUIREMENTS
 - 3.3 OUTAGE COORDINATION MEETING
 - 3.4 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)
 - 3.4.1 Safety Preparatory Inspection Coordination Meeting with the Government or Utility
 - 3.4.2 Lockout/Tagout Isolation
 - 3.4.3 Lockout/Tagout Removal
 - 3.5 FALL PROTECTION PROGRAM
 - 3.5.1 Fall Protection Equipment and Systems
 - 3.5.1.1 Additional Personal Fall Protection Measures
 - 3.5.1.2 Personal Fall Protection Equipment
 - 3.6 EQUIPMENT
 - 3.6.1 Use of Explosives
 - 3.7 ELECTRICAL
 - 3.7.1 Electrical Work
 - 3.7.2 Qualifications
 - 3.7.3 Arc Flash
 - 3.7.4 Grounding
 - 3.7.5 Testing
- -- End of Section Table of Contents --

SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS

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 within the text by the basic designation only.

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ANSI/ASSP	A10.34	(2021) Protection of the Public on or
		Adjacent to Construction Sites
ANSI/ASSP	A10.44	(2020) Control of Energy Sources (Lockout/Tagout) for Construction and Demolition Operations
		Demotreton Operacions

ASTM INTERNATIONAL (ASTM)

ASTM F855 (2020) Standard Specifications for Temporary Protective Grounds to Be Used on De-energized Electric Power Lines and Equipment INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) IEEE 1048 (2016) Guide for Protective Grounding of Power Lines IEEE C2 (2023) National Electrical Safety Code INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA) ANSI/ISEA Z89.1 (2014; R 2019) American National Standard for Industrial Head Protection NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 51B	(2024) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70	(2023) National Electrical Code
NFPA 70E	(2024) Standard for Electrical Safety in the Workplace
NFPA 241	(2022) Standard for Safeguarding Construction, Alteration, and Demolition Operations
NFPA 306	(2024) Standard for the Control of Gas Hazards on Vessels

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2024) Safety and Occupational Health (SOH) Requirements

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910 Occupational Safety and Health Standards
29 CFR 1915 Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
29 CFR 1926 Safety and Health Regulations for Construction
CPL 2.100 (1995) Application of the Permit-Required Confined Spaces (PRCS) Standards, 29 CFR 1910.146

1.2 DEFINITIONS

The following definitions are for the convenience of the reader. If there is a referenced document in the text of this specification section, that is the document that should define terms for that paragraph. If further clarification is needed, contact the Contracting Officer.

1.2.1 Site Safety and Health Officer (SSHO)

A Contractor Employee that is responsible for overseeing and ensuring implementation of the prime Contractor's Safety and Occupational Health (SOH) program according to the Contract, EM 385-1-1, applicable federal, state, and local requirements.

1.2.1.1 Level One SSHO

A designated employee with full-time SOH responsibility that meets and follows the requirements of EM 385-1-1.

1.2.1.2 Level Two SSHO

A designated employee with Level Two SSHO responsibility that meets and follows the requirements of EM 385-1-1. Level Two SSHOs cannot be assigned to projects that have a residual Risk Assessment Code (RAC) of high or extremely high.

1.2.1.3 Level Three SSHO

A designated Qualified Person or Competent Person with SOH responsibility that meets and follows the requirements of EM 385-1-1. Level 3 SSHOs cannot be assigned to projects that have a residual RAC of high or extremely high.

1.2.1.4 Alternate SSHO

An employee that meets the definition of the contract-required level SSHO, but is not the primary SSHO.

1.2.2 Competent Person (CP)

The CP is a person designated in writing, who, through training, knowledge and experience, is capable of identifying, evaluating, and addressing existing and predictable hazards in the working environment or working conditions that are unsanitary, hazardous, or dangerous to personnel, and who has authorization to take prompt corrective measures to eliminate them.

1.2.3 Qualified Person (QP)

The QP is a person designated in writing, who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problems related to the subject matter, the work, or the project.

1.3 SUBMITTALS

Government Acceptance or Approval does not remove responsibility from the Contractors for their actions or liability.

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are 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-01 Preconstruction Submittals

Accident Prevention Plan (APP); G, RO

Dive Operations Plan; G, RO

Standard Lift Plan; G, RO

SD-06 Test Reports

Accident Reports; G, RO

LHE Inspection Reports

Monthly Exposure Reports; G, RO

SD-07 Certificates

Activity Hazard Analysis (AHA); G, RO

Certificate of Compliance

Hot Work Permit

1.4 PUBLIC HEALTH EMERGENCIES

In the event of a declared public health emergency, follow safety precautions as required by the Occupational Safety and Health Administration (OSHA) www.osha.gov, the Centers for Disease Control and Prevention (CDC) www.cdc.gov, and as required by federal, state and local requirements.

1.5 MONTHLY EXPOSURE REPORTS

Provide a Monthly Exposure Report by the fifth of each month. This report is a compilation of employee-hours worked each month for all site workers, both Prime and subcontractor. Failure to submit the report may result in retention of up to 10 percent of the progress payment.

1.6 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this Contract, comply with the most recent edition of USACE EM 385-1-1. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements govern.

- 1.7 SITE QUALIFICATIONS, DUTIES, AND MEETINGS
- 1.7.1 Site Safety and Health Officer (SSHO)
- 1.7.1.1 Qualifications of SSHO

All SSHOs will have met the training, experience requirements identified in the EM 385-1-1 and this Contract.

1.7.1.2 Duties of SSHO

All SSHOs will carry out the roles and responsibilities as identified in this Contract and the EM 385-1-1. All SSHOs will be designated on an ENG Form 6282, provided by the Contracting Officer. Superintendent, QC Manager, and SSHO are subject to dismissal if their required duties are not being effectively carried out. If either the Superintendent, QC Manager, or SSHO are dismissed, project work will be stopped and will not be allowed to resume until a suitable replacement is approved and the above duties are again being effectively carried out.

1.7.1.3 Safety Meetings

Conduct safety meetings to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade), establish safe working procedures for anticipated hazards, and provide pertinent Safety and Occupational Health (SOH) training and motivation. Conduct meetings at least once a month for all supervisors at the project location. The SSHO, supervisors, or foremen must conduct meetings at least once a week for the trade workers. Document meeting minutes to include the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Maintain documentation on-site and furnish copies to the Contracting Officer on request. Notify the Contracting Officer of all scheduled meetings 7 calendar days in advance. A copy of a suggested weekly safety meeting form is attached at the end of this section.

1.7.2 Roles and Responsibilities of Prime Contractor and SSHO

The Prime Contractor and SSHO must ensure that the requirements of all applicable OSHA and EM 385-1-1 are met for the project. The Prime Contractor must ensure an SSHO or an equally qualified Alternate SSHO(s) is at the worksite at all times to implement and administer the Contractor's safety program and Government accepted Accident Prevention Plan. If the

required SSHO has to temporarily (that is, up to 24 hours / 1 day) leave the site of work due to unforeseen or emergency situations, a Level One, Two, or Three SSHO may be used in the interim and must be on the site of work at all times when work is being performed.

If the SSHO must be off-site for a period longer than 24 hours / 1 day, a qualified alternate that meets the contract requirements must be onsite.

- a. Prime contractor must ensure all SSHOs will:
 - (1) Are designated on an ENG Form 6282.

(2) Meet minimum training and experience requirements identified in EM 385-1-1.

(3) Execute roles and responsibilities identified in EM 385-1-1.

1.7.3 Additional Requirement

The Level One SSHO must not serve as the Quality Control Manager. The Level One SSHO must not serve as the Superintendent.

1.7.4 Contract Site Safety and Health Officer(s)(SSHOs) Minimum Requirements

Provide a minimum of one Level One SSHO that meets the requirements of EM 385-1-1 for this project.

1.7.5 Dredging Contract Site Safety and Health Officer(s)(SSHOs) Requirements

1.7.5.1 Dredging SSHO Personnel Requirements

a. Provide a minimum of one primary Level One SSHO assigned for the primary shift.

Note: Hopper Dredges with U.S. Coast Guard credentialed crews, the prime contractor may designate a Level Two SSHO in lieu of having a Level one SSHO onboard.

- b. For a project involving multiple work shifts, provide a minimum of a Level One SSHO for each additional shift.
- c. For individual dredging projects the prime contractor will designate additional Level Three SSHOs at locations where the primary Level One SSHO is not located (example: on dredge, tug, material placement site).

Examples of one dredging project site is reflected in each of the following:

- (1) a mechanical dredge, tug(s) and scow(s), scow route, and material
 placement site; or
- (2) a hydraulic pipeline dredge, attendant plant, and material placement site; or,
- d. Designated SSHOs must be present at the project site, located so that

they have full mobility and reasonable access to all major work operations and must be available during their shift for immediate verbal consultation and notification.

- e. Designated Level One and Two SSHOs must have direct report authority to a senior project (or corporate) management official.
- f. Designated Level Three SSHOs must report potential safety and occupational health hazards, incidents, and concerns to the Level One or Two SSHO on shift.
- g. Level One and Level Two SSHOs for dredging must have a minimum of 3 years experience in one of the following areas:
 - (1) Supervising/managing dredging activities.
 - (2) Supervising/managing marine construction activities.
 - (3) Supervising/managing land-based construction activities.
 - (4) Work managing safety programs or processes.
 - (5) Conducting hazard analyses and developing controls in activities or environments with similar hazards.
- 1.7.6 Competent Person for Confined Space Entry

Provide a CP for Confined Space Entry who meets the requirements of EM 385-1-1 and herein. The CP for Confined Space Entry must supervise the entry into each confined space in accordance with EM 385-1-1.

Since this work involves operations that handle combustible or hazardous materials, this person must have the ability to understand and follow through on the air sampling, Personal Protective Equipment (PPE), and instructions of a Marine Chemist, Coast Guard authorized persons, or Certified Industrial Hygienist. Confined space and enclosed space work must comply with NFPA 306, 29 CFR 1915, "Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment," or as applicable in 29 CFR 1910 for general industry, 29 CFR 1926 for construction.

- 1.7.7 Preconstruction Conference
 - a. Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the preconstruction conference. This includes the project superintendent, Site Safety and Occupational Health Officer, quality control manager, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
 - b. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the Contract. This list of proposed AHAs will be reviewed and an agreement will be reached between the Contractor and the Contracting Officer as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, and Government review of AHAs to preclude project delays. The creation of the APP and Schedule will be created after being given Notice to Proceed.
c. Deficiencies in the submitted APP, identified during the Contracting Officer's review, must be corrected, and the APP re-submitted for review prior to the start of construction. Work is not permitted to begin until an APP is established that is acceptable to the Contracting Officer.

1.8 ACCIDENT PREVENTION PLAN (APP)

1.8.1 Accident Prevention Plan (APP)

Submit the Accident Prevention Plan (APP) for review and acceptance by the Government at least 15 calendar days prior to the start, after being given Notice to Proceed. A competent person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1, ENG Form 6293, and herein. The APP must be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP must interface with the Contractor's overall safety and occupational health program referenced in the APP in the applicable APP element, and made site-specific. Describe the methods to evaluate past safety performance of potential subcontractors in the selection process. Also, describe innovative methods used to ensure and monitor safe work practices of subcontractors. The Government considers the Prime Contractor to be the "controlling employer" for all worksite safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the Contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP must be signed in accordance with the APP and ENG Form 6293 Accident Prevention Plan Worksheet. The SSHO must provide and maintain the APP and a log of signatures by each subcontractor foreman, attesting that they have read and understand the APP, and make the APP and log available on-site to the Contracting Officer. If English is not the foreman's primary language, the Prime Contractor must provide an interpreter.

Submit the APP to the Contracting Officer within 30 calendar days of Contract award and not less than 10 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. Once reviewed and accepted by the Contracting Officer, the APP and attachments will be enforced as part of the Contract. Disregarding the provisions of this Contract or the accepted APP is cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Continuously review and amend the APP, as necessary, throughout the life of the Contract. Changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and Quality Control Manager. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered. Should any severe hazard exposure (i.e., imminent danger) become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate and remove the hazard. Τn the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ANSI/ASSP A10.34), and the environment.

1.8.2 Names and Qualifications

Provide plans in accordance with the requirements outlined in EM 385-1-1, including the following:

- a. Names and qualifications (resumes including education, training, experience and certifications) of site safety and health personnel designated to perform work on this project to include the designated Site Safety and Health Officer and other competent and qualified personnel to be used. Specify the duties of each position.
- b. As a minimum, designate and submit qualifications of Competent Persons (CP) for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; and personal protective equipment and clothing to include selection, use and maintenance. Designate and submit qualifications for additional CPs as applicable to the work performed under this Contract.

1.9 ACTIVITY HAZARD ANALYSIS (AHA)

Before beginning each activity, task or Definable Feature of Work (DFOW) involving a type of work presenting hazards not experienced in previous project operations, or where a new work crew or subcontractor is to perform the work, the Contractor(s) performing that work activity must prepare an AHA. AHAs must be developed by the Prime Contractor, subcontractor, or supplier performing the work, and provided for Prime Contractor review and approval before submitting to the Contracting Officer. AHAs must be signed by the SSHO, Superintendent, QC Manager and the subcontractor Foreman performing the work. Format the AHA in accordance with EM 385-1-1 or as directed by the Contracting Officer. Submit the AHA for review at least 15 working days prior to the start of each activity task, or DFOW. The Government reserves the right to require the Contractor to revise and resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

AHAs must identify competent persons required for phases involving high risk activities, including confined entry, crane and rigging, excavations, trenching, electrical work, fall protection, and scaffolding.

1.9.1 AHA Management

Review the AHA list periodically (at least monthly) at the Contractor supervisory safety meeting, and update as necessary when procedures, scheduling, or hazards change. Use the AHA during daily inspections by the SSHO to ensure the implementation and effectiveness of the required safety and health controls for that work activity.

1.9.2 AHA Signature Log

Each employee performing work as part of an activity, task or DFOW must review the AHA for that work and sign a signature log specifically maintained for that AHA prior to starting work on that activity. The SSHO must maintain a signature log on site for every AHA. Provide employees whose primary language is other than English, with an interpreter to ensure a clear understanding of the AHA and its contents.

1.10 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in paragraph REFERENCES. Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT

Contractors must arrange for their own emergency medical treatment in accordance with EM 385-1-1. The Government has no responsibility to provide emergency medical treatment.

1.12 NOTIFICATIONS AND REPORTS

1.12.1 Accident Notification

Notify the Contracting Officer in accordance with the EM 385-1-1 Accident Reporting Timeline.

Table Accident Reporting Required Timeline										
Accident Type	Notify KO or COR	Complete Final Accident Report on ENG 3394 and provide to KO or COR								
Fatality, in-patient hospitalization, amputation, eye loss, or property damage over \$600,000.	Immediately, no later than (NLT) 8 Hours	Within 7 Days								
All other accidents and near misses	Immediately, no later than (NLT) 24 Hours	Within 7 Days								

Within notification include Contractor name; Contract title; type of Contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (for example, type of construction equipment used and PPE used). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted. Assist and cooperate fully with the Government's investigation(s) of any accident or near miss.

1.12.2 Accident Reports

a. Conduct an accident investigation for recordable injuries and illnesses, property damage, and near misses as defined in EM 385-1-1, to establish the root cause(s) of the accident. All accidents are reportable, regardless of whether or not it is recordable. Complete the applicable USACE Accident Report, ENG Form 3394, and provide the report to the Contracting Officer within 7 calendar days of the accident. The Contracting Officer will provide copies of any required or special forms. All accidents are reportable, regardless of whether or not it is recordable. b. Near Misses: For Army projects, report all "Near Misses" to the Contracting Officer, using local accident reporting procedures, within 24 hours. The Contracting Officer will provide the Contractor the required forms. Near miss reports are considered positive and proactive Contractor safety management actions.

1.12.3 LHE Inspection Reports

Submit LHE inspection reports required in accordance with EM 385-1-1 and as specified herein with Daily Reports of Inspections.

1.12.4 Certificate of Compliance and Pre-lift Plan/Checklist for LHE and Rigging

Provide a Certificate of Compliance for LHE entering an activity under this Contract and in accordance with EM 385-1-1. Post certifications on the crane.

Develop a Standard Lift Plan (SLP) in accordance with EM 385-1-1 and using Standard Pre-Lift Crane Plan/Checklist for each lift planned. Submit SLP to the Contracting Officer for approval within 15 calendar days in advance of planned lift.

1.13 HOT WORK PERMIT

1.13.1 Permit and Personnel Requirements

Submit and obtain a written permit prior to performing "Hot Work" (i.e., welding or cutting) or operating other flame-producing/spark producing devices, from the local Fire Department. Contractors are required to meet all criteria before a permit is issued. Provide at least two 20 pound 4A:20 BC rated extinguishers for normal "Hot Work". The extinguishers must be current inspection tagged, and contain an approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch must be trained in accordance with NFPA 51B and remain on-site for a minimum of 1 hour after completion of the task or as specified on the hot work permit.

When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Department phone number. Report any fire, no matter how small, to the responsible Fire Department immediately.

1.13.2 Work Around Flammable Materials

Obtain permit approval from a NFPA Certified Marine Chemist, or Certified Industrial Hygienist for "Hot Work" within or around flammable materials (such as fuel systems or welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, or vaults) that have the potential for flammable or explosive atmospheres.

Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to within acceptable limits must be used and maintained in accordance with manufacturer's instruction and supplemented by exceptions noted in EM 385-1-1.

1.14 CONFINED SPACE ENTRY REQUIREMENTS

Confined space entry must comply with EM 385-1-1, 29 CFR 1926, 29 CFR 1910, and Directive CPL 2.100. Any potential for a hazard in the confined space requires a permit system to be used.

1.14.1 Rescue Procedures and Coordination with Local Emergency Responders

Develop and implement an on-site rescue and recovery plan and procedures. The rescue plan must not rely on local emergency responders for rescue from a confined space.

1.15 DIVE SAFETY REQUIREMENTS

Develop a Dive Operations Plan, AHA, emergency management plan, and personnel list that includes qualifications, for each separate diving operation. Submit these documents to the District Dive Coordinator (DDC) via the Contracting Officer, for review and approval at least 15 working days prior to commencement of diving operations. These documents must be at the diving location at all times. Provide each of these documents as a part of the project file.

1.16 SEVERE WEATHER PLAN FOR MARINE ACTIVITIES (SWPMA)

In the event of a severe storm warning, the Contractor must comply with the applicable Storm Plan and:

- a. Secure outside equipment and materials and place materials that could be damaged in protected areas.
- b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
- c. Ensure that temporary erosion controls are adequate.
- PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 CONSTRUCTION AND OTHER WORK

Comply with EM 385-1-1, NFPA 70, NFPA 70E, NFPA 241, the APP, the AHA, Federal and State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

PPE is governed in all areas by the nature of the work the employee is performing. Use personal hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks. Safety glasses must be worn or carried/available on each person. Mandatory PPE includes:

- a. Head Protection that meets ANSI/ISEA Z89.1
- b. Long Pants
- c. Appropriate Safety Footwear

SECTION 01 35 26 Page 13 Not for Construction

- d. Appropriate Class Reflective Vests
- 3.1.1 Worksite Communication

Employees working alone in a remote location or away from other workers must be provided an effective means of emergency communications (i.e., cellular phone, two-way radios, land-line telephones or other acceptable means). The selected communication must be readily available (easily within the immediate reach) of the employee and must be tested prior to the start of work to verify that it effectively operates in the area/environment. Develop an employee check-in/check-out communication procedure to ensure employee safety.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this Contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint, and hexavalent chromium, are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials. Low mercury lamps used within fluorescent lighting fixtures are allowed as an exception without further Contracting Officer approval. Notify the Radiation Safety Officer (RSO) prior to excepted items of radioactive material and devices being brought on base.

3.1.3 Unforeseen Hazardous Material

Contract documents identify materials such as PCB, lead paint, and friable and non-friable asbestos and other OSHA regulated chemicals (i.e., 29 CFR Part 1910.1000). If material(s) that may be hazardous to human health upon disturbance are encountered during demolition, repair, renovation, or construction operations. Stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification.

3.2 UTILITY OUTAGE REQUIREMENTS

Apply for utility outages at least 14 calendar days in advance. At a minimum, the written request must include the location of the outage, utilities being affected, duration of outage, any necessary sketches, and a description of the means to fulfill energy isolation requirements in accordance with EM 385-1-1. In accordance with EM 385-1-1, where outages involve Government or Utility personnel, coordinate with the Government on all activities involving the control of hazardous energy.

These activities include, but are not limited to, a review of Hazardous Energy Control Program (HECP) and HEC procedures, as well as applicable Activity Hazard Analyses (AHAs). In accordance with EM 385-1-1 and NFPA 70E, work on energized electrical circuits must not be performed without prior Government authorization. Government permission is considered through the permit process and submission of a detailed AHA. Energized work permits are considered only when de-energizing introduces additional or increased hazard or when de-energizing is infeasible.

3.3 OUTAGE COORDINATION MEETING

After the utility outage request is approved and prior to beginning work on the utility system requiring shut-down, conduct a pre-outage coordination meeting in accordance with EM 385-1-1. This meeting must include the Prime Contractor, the Prime and subcontractors performing the work, the Contracting Officer, and the Public Utilities representative. All parties must fully coordinate HEC activities with one another. During the coordination meeting, all parties must discuss and coordinate on the scope of work, HEC procedures (specifically, the lock-out/tag-out procedures for worker and utility protection), the AHA, assurance of trade personnel qualifications, identification of competent persons, and compliance with HECP training in accordance with EM 385-1-1. Clarify when personal protective equipment is required during switching operations, inspection, and verification.

3.4 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1, 29 CFR 1910, 29 CFR 1915, ANSI/ASSP A10.44, NFPA 70E.

3.4.1 Safety Preparatory Inspection Coordination Meeting with the Government or Utility

For electrical distribution equipment that is to be operated by Government or Utility personnel, the Prime Contractor and the subcontractor performing the work must attend the safety preparatory inspection coordination meeting, which will also be attended by the Contracting Officer's Representative, and required by EM 385-1-1. The meeting will occur immediately preceding the start of work and following the completion of the outage coordination meeting. Both the safety preparatory inspection coordination meeting and the outage coordination meeting must occur prior to conducting the outage and commencing with lockout/tagout procedures.

3.4.2 Lockout/Tagout Isolation

Where the Government or Utility performs equipment isolation and lockout/tagout, the Contractor must place their own locks and tags on each energy-isolating device and proceed in accordance with the HECP. Before any work begins, both the Contractor and the Government or Utility must perform energy isolation verification testing while wearing required PPE detailed in the Contractor's AHA and required by EM 385-1-1. Install personal protective grounds, with tags, to eliminate the potential for induced voltage in accordance with EM 385-1-1.

3.4.3 Lockout/Tagout Removal

Upon completion of work, conduct lockout/tagout removal procedure in accordance with the HECP. In accordance with EM 385-1-1, each lock and tag must be removed from each energy isolating device by the authorized individual or systems operator who applied the device. Provide formal notification to the Government (by completing the Government form if provided by Contracting Officer's Representative), confirming that steps of de-energization and lockout/tagout removal procedure have been conducted and certified through inspection and verification. Government or Utility locks and tags used to support the Contractor's work will not be removed

until the authorized Government employee receives the formal notification.

3.5 FALL PROTECTION PROGRAM

Establish a fall protection program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify roles and responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures in accordance with EM 385-1-1.

3.5.1 Fall Protection Equipment and Systems

Enforce use of personal fall protection equipment and systems designated (to include fall arrest, restraint, and positioning) for each specific work activity in the Site Specific Fall Protection and Prevention Plan and AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1.

Provide personal fall protection equipment, systems, subsystems, and components that comply with EM 385-1-1 and 29 CFR 1926.

3.5.1.1 Additional Personal Fall Protection Measures

In addition to the required fall protection systems, other protective measures such as safety skiffs, personal floatation devices, and life rings, are required when working above or next to water in accordance with EM 385-1-1. Personal fall protection systems and equipment are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall protection systems are required when operating other equipment such as scissor lifts. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, travel, or while performing work.

3.5.1.2 Personal Fall Protection Equipment

Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. The use of body belts is not acceptable. Harnesses must have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Snap hooks and carabineers must be self-closing and self-locking, capable of being opened only by at least two consecutive deliberate actions and have a minimum gate strength of 3,600 lbs in all directions. Use webbing, straps, and ropes made of synthetic fiber. The maximum free fall distance when using fall arrest equipment must not exceed 6 feet, unless the proper energy absorbing lanyard is used. Always take into consideration the total fall distance and any swinging of the worker (pendulum-like motion), that can occur during a fall, when attaching a person to a fall arrest system. Equip all full body harnesses with Suspension Trauma Preventers such as stirrups, relief steps, or similar in order to provide short-term relief from the effects of orthostatic intolerance in accordance with EM 385-1-1.

3.6 EQUIPMENT

3.6.1 Use of Explosives

Explosives must not be used or brought to the project site without prior written approval from the Contracting Officer. Such approval does not

relieve the Contractor of responsibility for injury to persons or for damage to property due to blasting operations.

Storage of explosives, when permitted on Government property, must be only where directed and in approved storage facilities. These facilities must be kept locked at all times except for inspection, delivery, and withdrawal of explosives.

3.7 ELECTRICAL

Perform electrical work in accordance with EM 385-1-1.

3.7.1 Electrical Work

As described in EM 385-1-1, electrical work is to be conducted in a de-energized state unless there is no alternative method for accomplishing the work. In those cases obtain an energized work permit from the Contracting Officer. The energized work permit application must be accompanied by the AHA and a summary of why the equipment/circuit needs to be worked energized. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Attach temporary grounds in accordance with ASTM F855 and IEEE 1048. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator is allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method.

When working in energized substations, only qualified electrical workers are permitted to enter. When work requires work near energized circuits as defined by NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety footwear, insulating gloves and electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA. Ensure that each employee is familiar with and complies with these procedures and 29 CFR 1910.

3.7.2 Qualifications

Electrical work must be performed by QP with verifiable credentials who are familiar with applicable code requirements. Verifiable credentials consist of State, National and Local Certifications or Licenses that a Master or Journeyman Electrician may hold, depending on work being performed, and must be identified in the appropriate AHA. Journeyman/Apprentice ratio must be in accordance with State, Local requirements applicable to where work is being performed.

3.7.3 Arc Flash

Conduct a hazard analysis/arc flash hazard analysis whenever work on or near energized parts greater than 50 volts is necessary, in accordance with NFPA 70E.

All personnel entering the identified arc flash protection boundary must be QPs and properly trained in NFPA 70E requirements and procedures. Unless permitted by NFPA 70E, no Unqualified Person is permitted to approach

nearer than the Limited Approach Boundary of energized conductors and circuit parts. Training must be administered by an electrically qualified source and documented.

3.7.4 Grounding

Ground electrical circuits, equipment and enclosures in accordance with NFPA 70 and IEEE C2 to provide a permanent, continuous and effective path to ground unless otherwise noted by EM 385-1-1.

3.7.5 Testing

Temporary electrical distribution systems and devices must be inspected, tested and found acceptable for Ground-Fault Circuit Interrupter (GFCI) protection, polarity, ground continuity, and ground resistance before initial use, before use after modification and at least monthly. Monthly inspections and tests must be maintained for each temporary electrical distribution system, and signed by the electrical CP or QP.

	WEEKLY SAFETY MEETING							
CENAE	Date Held							
	11mc							
SUBJECT: CONTRACT NO	- WEEKLY SAFETY MEETING							
CONTRACTOR	PERSONNEL PRESENT							
Date and Time Held:	Contr. Sub. Govt. 							
Conducted By:								
All persons attending the	meeting must sign the bottom or back of this form.							
Subjects discussed (Note, EM 385-1-1, Section:	delete, or add):							
Accident Prevention Plan	Individual Protective Equipment							
Prevention of Falls	Back Injury/Safe Lifting Techniques							
Fire Prevention	Sanitation, First Aid, Waste Disposal							
Tripping Hazards	Clean-up - trash, nails in lumber							
Staging, Ladders, Concrete	e Forms, Safety Nets							
Hand Tools, Power Tools, M	Machinery, Chain Saws							
Equipment Inspection & Mai	ntenance (Zero Defects)							
Hoisting Equipment, Winch	and Crane Safety							
Ropes, Hooks, Chains and S	Slings							
Vehicle Operation Safety								
Electrical Grounding, Temp	oorary Wiring, GFCI							
Lockouts/Safe clearance pr (electrical, pressure, mov	rocedures ving parts)							
Welding, Cutting	Excavation Hazard/Rescue							
Loose Rock/Steep Slopes	Explosives							
Water Safety	Boat Safety							
HAZMAT, Toxic hazards, MSI	DS, respiratory, ventilation							
Other Items of concern spe	ecific to this contract:							
CQC Rep. Signature CF: End of Section -	CE Inspector							

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS

- PART 1 GENERAL
 - 1.1 REFERENCES
 - 1.2 ORDERING INFORMATION
- PART 2 PRODUCTS
- PART 3 EXECUTION
- -- End of Section Table of Contents --

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization (e.g., ASTM B564 Standard Specification for Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP) 520 N. Northwest Highway Park Ridge, IL 60068 Ph: 847-699-2929 E-mail: customerservice@assp.org Internet: https://www.assp.org/

ASTM INTERNATIONAL (ASTM) 100 Barr Harbor Drive, P.O. Box C700 West Conshohocken, PA 19428-2959 Ph: 610-832-9500 Fax: 610-832-9555 E-mail: service@astm.org Internet: https://www.astm.org/

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE) 722 Jackson Place Washington DC 20506 Internet: https://www.whitehouse.gov/administration/eop/ceq

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
445 and 501 Hoes Lane
Piscataway, NJ 08854-4141
Ph: 732-981-0060 or 800-701-4333
Fax: 732-981-9667
E-mail: onlinesupport@ieee.org
Internet: https://www.ieee.org/

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA) 1101 Wilson Blvd, Suite 1425 Arlington, VA 22209-1762 Ph: 703-525-1695 Fax: 703-528-2148 Internet: https://safetyequipment.org/

INTERNATIONAL SOCIETY OF AUTOMATION (ISA)
67 T.W. Alexander Drive
PO Box 12277
Research Triangle Park, NC 27709
Ph: 919-549-8411
Fax: 919-549-8288
E-mail: info@isa.org
Internet: https://www.isa.org/

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 1 Batterymarch Park Quincy, MA 02169-7471 Ph: 800-344-3555 Fax: 800-593-6372 Internet: https://www.nfpa.org

U.S. ARMY CORPS OF ENGINEERS (USACE) CRD-C DOCUMENTS available on Internet: <u>http://www.wbdg.org/ffc/army-coe/standards</u> Order Other Documents from: Official Publications of the Headquarters, USACE E-mail: hqpublications@usace.army.mil Internet: <u>http://www.publications.usace.army.mil/</u> or

https://www.hnc.usace.army.mil/Missions/Engineering-Directorate/TECHINFO/

U.S. CODE (USC) Office of the Law Revision Counsel U.S. House of Representatives H2-308 Ford House Office Building Washington, DC 20515 Ph: 202-226-2411 E-mail: uscode@mail.house.gov Internet: http://uscode.house.gov/

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
8601 Adelphi Road
College Park, MD 20740-6001
Ph: 866-272-6272
Internet: https://www.archives.gov/
Order documents from:
Superintendent of Documents
U.S. Government Publishing Office (GPO)
732 N. Capitol Street, NW
Washington, DC 20401
Ph: 202-512-1800 or 866-512-1800
Bookstore: 202-512-0132
Internet: https://www.gpo.gov/

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 45 00

QUALITY CONTROL

- PART 1 GENERAL
 - 1.1 REFERENCES
 - 1.2 PAYMENT
 - 1.3 SUBMITTALS
 - GENERAL REQUIREMENTS 1.4
 - QUALITY CONTROL (QC) PROGRAM REQUIREMENTS 1.5
 - 1.5.1 Meetings
 - 1.5.1.1 Quality Control Plan Meeting
 - 1.5.1.2 Coordination and Mutual Understanding Meeting
 - 1.5.1.2.1 Purpose
 - 1.5.1.2.2 Coordination of Activities
 - 1.5.1.2.3 Attendees
 - 1.5.1.3 Quality Control (QC) Meetings
 - 1.5.2 Contractor Quality Control (CQC) Plan
 - 1.5.2.1 Content of Contractor Quality Control (CQC) Plan
 - 1.5.3 Acceptance of the Quality Control (QC) Plan
 - 1.5.4 Notification of Changes
 - 1.6 QUALITY CONTROL (QC) ORGANIZATION
 - 1.6.1 Personnel Requirements
 - 1.6.2 Quality Control (QC) Manager
 - 1.6.2.1 Duties
 - Qualifications 1.6.2.2
 - 1.6.2.3 Construction Quality Management Training
 - 1.6.3 Organizational Changes
 - 1.6.4 Alternate Quality Control (QC) Manager Duties and Qualifications
 - 1.7 SUBMITTAL AND DELIVERABLES REVIEW AND APPROVAL
 - 1.8 THREE PHASES OF CONTROL
 - 1.8.1 Preparatory Phase
 - 1.8.2 Initial Phase
 - 1.8.3 Follow-Up Phase
 - 1.8.4 Additional Preparatory and Initial Phases
 - 1.8.5 Notification of Three Phases of Control for Off-Site Work
 - 1.8.6 Deficiency/Rework Items List
 - 1.9 TESTING
 - 1.9.1 Laboratory Accreditation Authorities
 - 1.9.2 Capability Check
 - 1.9.2.1 Capability Recheck
 - 1.9.2.2 Onsite Laboratory
 - 1.9.3 Test Results
 - 1.10 COMPLETION INSPECTIONS
 - 1.10.1 Punch-Out Inspection
 - 1.10.2 Pre-Final Inspection
 - 1.10.3 Final Acceptance Inspection
 - 1.11 QUALITY CONTROL (QC) CERTIFICATIONS
 - 1.11.1 Contractor Quality Control (CQC) Report Certification

- 1.12 DOCUMENTATION AND INFORMATION FOR THE CONTRACTING OFFICER
 - 1.12.1 Construction Documentation
 - 1.12.2 Quality Control Activities
 - 1.12.3 Verification Statement
 - ⊥.12.4 1.12.5 Quality Control Validation
 - Testing Plan and Log
- 1.13 NOTIFICATION ON NON-COMPLIANCE
- DELIVERY, STORAGE, AND HANDLING 1.14
- part 2 PRODUCTS
- part 3 EXECUTION
- -- End of Section Table of Contents --

SECTION 01 45 00

QUALITY CONTROL

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 the basic designation only.

ASTM INTERNATIONAL (ASTM)

(2019) Minimum Requirements for Agencies
Engaged in the Testing and/or Inspection
of Soil and Rock as Used in Engineering
Design and Construction
(2023) Standard Specification for Agencies Engaged in Construction Inspection,
resching, or special inspection

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(2024) Safety and Occupational Health (SOH) Requirements

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program. Include all associated costs in the applicable Bid Schedule item.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are 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-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G, RO

SD-06 Test Reports

Verification Statement

1.4 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system that complies with FAR 52.246-12 Inspection of Construction. QC is comprised of plans, procedures, and organization necessary to produce an end product

that complies with the Contract requirements. The QC system covers all construction operations, both onsite and offsite, and must be keyed to the proposed construction sequence. The Quality Control Manager, Superintendent, Site Safety and Health Officer (SSHO), and all on-site supervisors are responsible for the quality of work and are subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the Contract. The Quality Control Manager must maintain a physical presence at the work site at all times and is the primary individual responsible for all quality control.

1.5 QUALITY CONTROL (QC) PROGRAM REQUIREMENTS

Establish and maintain a QC program as described in this section. The QC program consists of a QC Organization, QC Plan, QC Plan Meeting(s), a Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review and approval, testing, completion inspections, QC certifications, and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations that comply with the requirements of this Contract. The QC program must cover on-site and off-site work and be keyed to the work sequence. No construction work or testing may be performed unless the QC Manager is on the work site. The QC Manager must report to an officer of the firm and not be subordinate to the Project Superintendent or the Project Manager. The QC Manager, Project Superintendent and Project Manager must work together effectively. Although the QC Manager is the primary individual responsible for quality control, all individuals will be held responsible for the quality of work on the job.

1.5.1 Meetings

1.5.1.1 Quality Control Plan Meeting

Prior to submission of the QC Plan, the Contractor may request a meeting with the Contracting Officer to discuss the QC Plan requirements of this Contract.

The purpose of this meeting is to develop a mutual understanding of the QC Plan requirements prior to plan development and submission and to agree on the Contractor's list of Definable Feature of Work (DFOW).

1.5.1.2 Coordination and Mutual Understanding Meeting

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, meet with the Contracting Officer and discuss the Contractor's quality control system. During the meeting, a mutual understanding of the system details must be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting will be prepared by the QC Manager and signed by the Contractor and the Government. Provide a copy of the signed minutes to all attendees and include in the QC Plan. At a minimum the Coordination and Mutual Understanding Meeting must be repeated when a new QC Manager is appointed. There can be other occasions when subsequent conferences will be called by either party to reconfirm mutual understandings or address deficiencies in the CQC system or procedures which can require corrective action by the Contractor.

1.5.1.2.1 Purpose

The purpose of this meeting is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, design intent, environmental requirements and procedures, coordination of activities to be performed, and the coordination of the Contractor's management, production, and QC personnel. At the meeting, the Contractor must explain in detail how three phases of control will be implemented for each DFOW, as well as how each DFOW will be affected by each management plan or requirement as listed below:

- a. Waste Management Plan.
- b. Procedures for noise and acoustics management.
- c. Environmental Protection Plan.
- d. Environmental regulatory requirements.

1.5.1.2.2 Coordination of Activities

Coordinate activities included in various sections to assure efficient and orderly installation of each component. Coordinate operations included under different sections that are dependent on each other for proper installation and operation.

1.5.1.2.3 Attendees

As a minimum, the Contractor's personnel required to attend include an officer of the firm, the Project Manager, Project Superintendent, QC Manager, Alternate QC Manager, Environmental Manager, and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities must have a principal of the firm at the meeting.

1.5.1.3 Quality Control (QC) Meetings

After the start of construction, conduct weekly QC meetings led by the QC Manager at the work site with the Project Superintendent, and the other personnel as necessary. The QC Manager is to prepare the minutes of the meeting and provide a copy to the Contracting Officer within 2 working days after the meeting. The Contracting Officer may attend these meetings. As a minimum, accomplish the following at each meeting:

- a. Review the minutes of the previous meeting.
- b. Review the schedule and the status of work and deficiencies/rework. Review the most current approved schedule (in accordance with schedule specification) and the status of work and deficiencies/rework.
- c. Review the status of submittals and Request For Information (RFIs).
- d. Review the work to be accomplished in the next 3 weeks as defined by the schedule section paragraph and all documentation required for that work.
- e. Review Testing Plan and Log including status of tests performed since last QC Meeting.
- f. Resolve QC and production problems. Discuss status of pending change

orders.

- g. Address items that may require revising the QC Plan.
- h. Review Accident Prevention Plan (APP) and effectiveness of the safety program.
- i. Review environmental requirements and procedures.
- j. Review Environmental Management Plan.
- k. Review Waste Management Plan.
- 1. Review the status of training completion.
- m. Review IAQ Management Plan.
- 1.5.2 Contractor Quality Control (CQC) Plan

Submit no later than 30 days after receipt of notice to proceed, the CQC Plan proposed to implement the requirements FAR 52.246-12 Inspection of Construction. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan and other Contract requirements or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional work.

1.5.2.1 Content of Contractor Quality Control (CQC) Plan

Provide a CQC Plan, prior to start of construction that includes a table of contents, with major sections identified, pages numbered sequentially, and that documents the proposed methods and responsibilities for accomplishing quality control during the construction of the project. The CQC Plan must at a minimum include the following sections:

- a. A description of the quality control organization and acknowledgment that the CQC staff will implement the three phase control system for all aspects of the work specified.
- b. An organizational chart showing the quality control organization with individual names and job titles and lines of authority up to an executive of the company at the home office.
- c. NAMES AND QUALIFICATIONS: Names and qualifications, in resume format, (including position titles and durations for qualifying experiences) for each person in the QC organization. Include the Construction Quality Management (CQM) for Contractors course certifications for the QC personnel as required by the paragraph CONSTRUCTION QUALITY MANAGEMENT TRAINING.
- d. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL: Duties, responsibilities, and authorities of each person in the QC organization.
- e. OUTSIDE ORGANIZATIONS: A listing of outside organizations, such as architectural and consulting engineering firms, that will be employed by the Contractor and a description of the services these firms will provide.

- f. APPOINTMENT LETTERS: Letters signed by an officer of the firm appointing the QC Manager and Alternate QC Manager, and stating that they are responsible for implementing and managing the QC program as described in this Contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of control, and their authority to stop work that is not in compliance with the Contract. Letters of direction are to be issued by the QC Manager to all other QC Specialists or quality control representatives outlining their duties, authorities, and responsibilities. Include copies of the letters in the QC Plan.
- g. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER: Procedures for reviewing, approving, scheduling, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. Provide the name(s) of the person(s) in the QC organization authorized to review and certify submittals prior to approval. Provide the initial submittal of the Submittal Register as specified in Section 01 33 00 SUBMITTAL PROCEDURES.
- h. TESTING LABORATORY INFORMATION: Testing laboratory information required by the paragraph ACCREDITATION REQUIREMENTS, as applicable.
- i. TESTING PLAN AND LOG: A Testing Plan and Log that includes the tests required, associated feature of work required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.
- j. Procedures to complete construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected. This phase is performed prior to beginning work on each definable feature of work, after all required plans, documents, materials are approved, and after copies are at the work site.
- k. Reporting procedures, including proposed reporting formats.
- 1. Procedures for submitting and reviewing design changes/variations prior to submission to the Contracting Officer.
- m. LIST OF DEFINABLE FEATURES: A Definable Feature of Work (DFOW) is a task that is separate and distinct from other tasks and has control requirements and work crews unique to that task. A DFOW is identified by different trades or disciplines, or it is work by the same trade in a different environment. A DFOW is by definition any item or activity on the construction schedule, and the schedule specification provides direction regarding how the DFOWs are to be structured. Include in the list of DFOWs for all activities on the Construction Schedule. Although each section of the specifications can generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. Identify the specification section number and schedule activity ID for each DFOW listed. The DFOW list will be reviewed in coordination with the construction schedule and agreed upon during the Coordination of Mutual Understanding Meeting.
- n. PROCEDURES FOR PERFORMING AND TRACKING THE THREE PHASES OF CONTROL: Identify procedures used to ensure the three phases of control to manage the quality on this project. For each Definable Feature of Work

(DFOW), a Preparatory and Initial phase checklist will be filled out during the Preparatory and Initial phase meetings. Conduct the Preparatory and Initial Phases and meetings with a view towards obtaining quality construction by planning ahead and identifying potential problems for each DFOW.

- o. PROCEDURES FOR COMPLETION INSPECTION: Procedures for identifying and documenting the completion inspection process. Include in these procedures the responsible party for punch out inspection, pre-final inspection, and final acceptance inspection.
- p. TRAINING PROCEDURES AND TRAINING LOG: Procedures for coordinating and documenting the training of personnel required by the Contract.
- q. ORGANIZATION AND PERSONNEL CERTIFICATIONS LOG: Procedures for coordinating, tracking and documenting all certifications required for entities such as subcontractors, testing laboratories, suppliers, and personnel. The QC Manager will ensure that certifications are current, appropriate for the work being performed, and will not lapse during any period of the Contract that the work is being performed.
- 1.5.3 Acceptance of the Quality Control (QC) Plan

The Contracting Officer's acceptance of the Contractor QC Plan, or interim plan applicable to the particular feature of work to be started, is required prior to the start of construction. The Government will consider an interim plan for the first 30 days of operation. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional work. The Contracting Officer reserves the right to require changes in the QC Plan and operations as necessary, including removal or addition of personnel, to ensure the specified quality of work. The Contracting Officer reserves the right to interview any member of the QC organization at any time to verify the submitted qualifications. All QC organization personnel are subject to acceptance by the Contracting Officer. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the Contract.

1.5.4 Notification of Changes

Notify the Contracting Officer, in writing, of any proposed changes in the QC Plan or changes to the QC organization personnel. Proposed changes are subject to acceptance by the Contracting Officer.

- 1.6 QUALITY CONTROL (QC) ORGANIZATION
- 1.6.1 Personnel Requirements

The requirements for the CQC organization are a Site Safety and Health Officer (SSHO), QC Manager, and enough qualified personnel to ensure safety and Contract compliance. The SSHO reports directly to a senior project (or corporate) official independent from the QC Manager. The SSHO will also serve as a member of the CQC Staff Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly. The CQC staff always maintains a presence at the site during progress of the work and have complete authority and responsibility to take any action necessary to ensure Contract compliance. The CQC staff will be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly complete and furnish all letters, material submittals, shop drawing submittals, schedules, and all other project documentation to the CQC organization. The CQC organization is responsible for always maintaining these documents and records at the site, except as otherwise acceptable to the Contracting Officer.

1.6.2 Quality Control (QC) Manager

1.6.2.1 Duties

Provide a QC Manager at the work site to implement and manage the QC program. The QC Manager must be employed by the Prime Contractor. The QC Manager must attend the Coordination and Mutual Understanding Meeting, perform the three phases of control except for those phases of control designated to be performed by QC Specialists, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this Contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by the QC Specialists, testing laboratory personnel and any other inspection and testing personnel required by this Contract. The QC Manager is the manager of all QC activities.

The only duties and responsibilities of the QC Manager are to manage and implement the QC program on this Contract. The QC Manager may not also fulfill the duties of the SSHO or the Project Superintendent.

1.6.2.2 Qualifications

The QC Manager must be an individual with a minimum of 10 years combined experience in the following positions: Project Superintendent, QC Manager, Project Manager, Project Engineer or Construction Manager on similar size and type construction Contracts which included the major trades that are part of this Contract. The individual must have at least 5 years experience as a QC Manager. The individual must be familiar with the requirements of EM 385-1-1 and have experience in the areas of hazard identification, safety compliance, and sustainability.

The QC Manager and all members of the QC organization must be capable of reading, writing, and conversing fluently in the English language.

1.6.2.3 Construction Quality Management Training

In addition to the above experience and education requirements, the QC Manager and all members of the QC team must have completed the CQM for Contractors course. If the QC Manager does not have a current certification, obtain the CQM for Contractors course certification within 90 days of award. This course is periodically offered by the Naval Facilities Engineering Systems Command and the Army Corps of Engineers. Contact the Contracting Officer for information on the next scheduled class.

The Construction Quality Management Training certificate expires after 5 years. If the QC Manager's certificate has expired, retake the course to remain current.

1.6.3 Organizational Changes

Maintain the QC staff with personnel as required by the specification section at all times. When it is necessary to make changes to the QC staff,

revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

1.6.4 Alternate Quality Control (QC) Manager Duties and Qualifications

Designate an alternate for the QC Manager at the work site to serve in the event of the designated QC Manager's absence. The qualification requirements for the Alternate QC Manager must be the same as for the QC Manager.

1.7 SUBMITTAL AND DELIVERABLES REVIEW AND APPROVAL

Procedures for submission, review and approval of submittals are described in Section 01 33 00 SUBMITTAL PROCEDURES. Procedures must include field verification of relevant dimensions and component characteristics by the QC organization prior to submittal being sent to the Contracting Officer. The CQC organization is responsible for certifying that all submittals and deliverables are in compliance with the Contract.

1.8 THREE PHASES OF CONTROL

CQC enables the Contractor to ensure that the construction, including that of subcontractors and suppliers, complies with the requirements of the Contract. At least three phases of control must be conducted by the QC Manager to adequately cover both on-site and off-site work for each definable feature of the construction work as follows:

1.8.1 Preparatory Phase

Document the results of the preparatory phase actions by separate minutes prepared by the QC Manager and attach to the daily CQC report. Instruct applicable workers as to the acceptable level of workmanship required to meet Contract specifications.

Notify the Contracting Officer at least 2 business days in advance of each preparatory phase meeting. The meeting will be conducted by the QC Manager and attended by the Project Superintendent, and the foreman responsible for the DFOW. When the DFOW will be accomplished by a subcontractor, that subcontractor's foreman must attend the preparatory phase meeting. This phase is performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. Perform the following prior to beginning work on each DFOW:

- a. Review each paragraph of the applicable specification sections, reference codes, and standards. Make available during the prepatory inspection a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field. Maintain and make available in the field for use by Government personnel until final acceptance of the work.
- b. Review the Contract drawings.
- c. Verify that field measurements are as indicated on construction or shop drawings or both before confirming product orders, to minimize waste due to excessive materials.
- d. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved

factory test results, when required.

- e. Review the testing plan and ensure that provisions have been made to provide the required QC testing.
- f. Examine the work area to ensure that the required preliminary work has been completed and complies with the Contract and ensure any deficiencies/rework items in the preliminary work have been corrected and confirmed by the Contracting Officer.
- g. Review coordination of product/material delivery to designated prepared areas to execute the work.
- h. Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data and are properly stored.
- i. Check to assure that all materials and equipment have been tested, submitted, and approved.
- j. Discuss specific controls to be used, construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFOW. Ensure any portion of the plan requiring separate Contracting Officer acceptance has been approved.
- k. Review the APP and appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met, and that required Safety Data Sheets (SDS) are submitted.
- 1. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- m. Discuss schedule and execution of the initial control phase and confirmation or construction quality compliance.

1.8.2 Initial Phase

Notify the Contracting Officer at least 2 business days in advance of each initial phase. When construction crews are ready to start work on a DFOW, conduct the initial phase with the Project Superintendent, and the foreman responsible for that DFOW. Observe the initial segment of the DFOW to ensure that the work complies with Contract requirements. Document the results of the initial phase in the daily CQC Report and in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site when acceptable levels of specified quality are not being met. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases. Perform the following for each DFOW:

- a. Check work to ensure that it is in full compliance with Contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full Contract compliance. Verify required control inspection and testing comply with the Contract.
- c. Establish level of workmanship and verify that it meets the minimum

acceptable workmanship standards. Compare with required sample panels as appropriate.

- d. Resolve any workmanship issues.
- e. Ensure that testing is performed by the approved laboratory.
- f. Check work procedures for compliance with the APP and the appropriate AHA to ensure that applicable safety requirements are met.
- g. Review project specific work plans (i.e., HAZMAT Abatement, Stormwater Management) to ensure all preparatory work items have been completed and documented.

1.8.3 Follow-Up Phase

Perform the following for on-going DFOW daily, or more frequently as necessary, until the completion of each DFOW. The Final Follow-Up for any DFOW will clearly note in the daily report the DFOW is completed, and all deficiencies/rework items have been completed in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST. Each DFOW that has completed the Initial Phase and has not completed the Final Follow-up must be included on each daily report. If no work was performed on that DFOW for the period of that daily report, it must be so noted. Document all Follow-Up activities for DFOWs in the daily CQC Report:

- a. Ensure the work including control testing complies with Contract requirements until completion of that particular work feature. Record checks in the CQC documentation.
- b. Maintain the quality of workmanship required.
- c. Ensure that testing is performed by the approved laboratory.
- d. Ensure that deficiencies/rework items are being corrected. Conduct final follow-up checks and correct all deficiencies prior to the start of additional features of work which may be affected by the deficient work.
- e. Do not build upon nor conceal non-conforming work.
- f. Assure manufacturers' representatives have performed necessary inspections if required and perform safety inspections.
- 1.8.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same DFOW if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a DFOW has not started within 45 days of the initial preparatory meeting or has resumed after 45 days of inactivity, or if other problems develop.

1.8.5 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least 2 weeks prior to the start of the preparatory and initial phases.

1.8.6 Deficiency/Rework Items List

The QC Manager must maintain a list of work that does not comply with the Contract, identifying what items need to be corrected, the activity ID number associated with the item, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected.

The QC Manager reviews the list at each weekly QC Meeting:

- a. There is no requirement to report a deficiency/rework item that is corrected the same day it is discovered.
- b. No successor task may be advanced beyond the preparatory phase meeting until all deficiencies/rework items have been cleared by the QC Manager and concurred with by the Contracting Officer. This must be confirmed as part of the Preparatory Phase activities.
- c. Attach a copy of the "Deficiency/Rework Items List" to the last daily CQC Report of each month.
- d. The Contractor is responsible for including those items identified by the Contracting Officer.
- e. All deficiencies/rework items must be confirmed as corrected by the QC Manager, and concurred by the Contracting Officer, prior to commencement of any completion inspections per paragraph COMPLETION INSPECTIONS unless specifically exempted by the Contracting Officer.
- f. Non-Compliance with these requirements is grounds for removal in accordance with paragraph ACCEPTANCE OF THE QUALITY CONTROL (QC) PLAN.
- g. All delays, concurrent or related to failure to manage, monitor, control, and correct deficiencies/rework items are entirely the responsibility of the Contractor and can not be made the subject, or any component of any request for additional time or compensation.

1.9 TESTING

Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to Contract requirements. Upon request, furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and acceptance tests when specified. Procure the services of an U.S. Army Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site or within 5 miles. Perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with Contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all test documentation requirements, have been prepared.

e. Record results of all tests taken, both passing and failing on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test. If approved by the Contracting Officer, actual test reports are submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated results in nonpayment for related work performed and disapproval of the test facility for this Contract.

1.9.1 Laboratory Accreditation Authorities

All testing laboratories must be validated by the USACE Material Testing Center (MTC) for the tests to be performed. Information on the USACE MTC with web-links to both a list of validated testing laboratories and for the laboratory inspection request for can be found at: https://mtc.erdc.dren.mil

1.9.2 Capability Check

The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract. Laboratories utilized for testing soils, concrete, asphalt, and steel must meet criteria detailed in ASTM D3740 and ASTM E329.

1.9.2.1 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$2,500 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the Contract amount due the Contractor.

1.9.2.2 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

1.9.3 Test Results

Cite applicable Contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify the Contracting Officer immediately. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results must be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager.

1.10 COMPLETION INSPECTIONS

1.10.1 Punch-Out Inspection

Near the completion of all work or any increment thereof, established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings, specifications, and Contract. Include in the punch list any remaining items on the "Deficiency/Rework Items List", that were not corrected prior to the Punch-Out Inspection as approved by the Contracting Officer in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST. Include within the punch list the estimated date by which the deficiencies will be corrected. Provide a copy of the punch list to the Contracting Officer.

The QC Manager, or staff, must make follow-on inspections to ascertain that all deficiencies have been corrected. All punch list items must be confirmed as corrected by the QC Manager and concurred by the Contracting Officer. Once this is accomplished, notify the Government that the facility is ready for the Government "Pre-Final Inspection".

1.10.2 Pre-Final Inspection

The Government and QC Manager will perform this inspection to verify that the facility is complete and ready to be occupied. A Government "Pre-Final Punch List" will be documented by the QC Manager as a result of this inspection. The QC Manager will ensure that all items on this list are corrected and concurred by the Contracting Officer prior to notifying the Government that a "Final" inspection with the Client can be scheduled. All items noted on the "Pre-Final" inspection must be corrected and concurred by the Contracting Officer in a timely manner and be accomplished before the Contract completion date for the work, or any increment thereof, if the project is divided into increments by separate completion dates unless exceptions are directed by the Contracting Officer.

1.10.3 Final Acceptance Inspection

Notify the Contracting Officer at least 14 calendar days prior to the date a final acceptance inspection can be held. State within the notice that all items previously identified on the pre-final punch list will be corrected and acceptable, along with any other unfinished Contract work, by the date of the final acceptance inspection. The Contractor must be represented by the QC Manager, the Project Superintendent, and others deemed necessary. Attendees for the Government will include the Contracting Officer, other Government QA personnel, and personnel representing the Client. Failure of the Contractor to have all Contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause entitled "Inspection of Construction."

1.11 QUALITY CONTROL (QC) CERTIFICATIONS

1.11.1 Contractor Quality Control (CQC) Report Certification

Contain the following statement within the CQC Report: "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used, and work performed during this reporting

period is in compliance with the Contract drawings and specifications to the best of my knowledge, except as noted in this report."

1.11.2 Completion Certification

Upon completion of work under this Contract, the QC Manager must furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract." Provide a copy of this final QC Certification for completion to the preparer of the Operation & Maintenance (O&M) documentation.

1.12 DOCUMENTATION AND INFORMATION FOR THE CONTRACTING OFFICER

Maintain current and complete records of on-site and off-site QC program operations and activities.

Contact the Contracting Officer for sample forms or print from RMS-QCS as needed. Prior to commencing work on construction, the Contractor must obtain a copy set of the current report forms. The report forms will consist of the Contractor Quality Control (CQC) Report, CQC Report (Continuation Sheet), Contractor Production Report, Contractor Production Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Testing Plan and Log, and Rework Items List. Unless otherwise provided by the Contracting Officer, Contractor may use the forms provided as related material located at https://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/ufgs-01-45-00.

The Contractor shall prepare and submit two (2) copies of the "Quality Control Report - Bucket/Pipeline Dredge" (RMS Form 4267) for material going to the Disposal Sites. A sample form is attached at the end of this section. This form shall be completed and submitted electronically in the Resident Management System Contractor Mode (RMS CM) with the daily CQC Report within 24 hours after the date covered by the report.

1.12.1 Construction Documentation

Reports are required for each day that work is performed and must be attached to the Contractor Quality Control Report prepared for the same day. Maintain current and complete records of on-site and off-site QC program operations and activities. Reports are required for each day work is performed. Account for each calendar day throughout the life of the Contract.

The Project Superintendent and the QC Manager must prepare and sign the Contractor Production and CQC Reports, respectively. Every space on the forms must be filled in. Use N/A if nothing can be reported in one of the spaces. The reporting of work must be identified by terminology consistent with the construction schedule. In the "Remarks" sections of the reports, enter pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered, a record of visitors to the work site, quality control problem areas, deviations from the QC Plan, construction deficiencies encountered, and meetings held. For each entry in the report(s), identify the Schedule Activity No. that is associated with the entered remark.

1.12.2 Quality Control Activities

CQC and Contractor Production reports will be prepared daily to maintain current records providing factual evidence that required quality control activities and tests have been performed. Include in these records the work of subcontractors and suppliers on an acceptable form that includes, as a minimum, the following information:

- a. The name and area of responsibility of the Contractors and any subcontractors.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When a Network Analysis Schedule (NAS) is used, identify each item of work performed each day by NAS activity number.
- d. Control phase activities performed. Preparatory, and Initial phase Checklists associated with the DFOW referenced to the construction schedule. Follow-up phase activities identified to the DFOW. If testing or specific QC Specialist activities are associated with the Follow-up phase activities for a specific DFOW note this and include those reports.
- e. Test and control activities performed with results and references to specifications and drawings requirements. Identify the control phase (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST.
- f. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications and drawings requirements.
- g. Submittals and deliverables reviewed, with Contract reference, by whom, and action taken.
- h. Offsite surveillance activities, including actions taken.
- i. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- j. Instructions given/received and conflicts in plans and specifications.

1.12.3 Verification Statement

Indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. Cover both conforming and deficient features and include a statement that equipment and materials incorporated in the work and workmanship comply with the Contract.

Furnish the original and one copy of these records in report form to the Government by 10:00 AM the next working day after the date covered by the report. As a minimum, prepare and submit one report for every 7 days of no work and on the last day of a no work period. All calendar days need to be accounted for throughout the life of the Contract. The first report following a day of no work will be for that day only. Reports need to be signed and dated by the QC Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the QC Manager Report.

1.12.4 Quality Control Validation

Establish and maintain the following in an electronic folder. Divide folder into a series of tabbed sections as shown below. Ensure folder is updated at each required progress meeting.

- a. CQC Meeting minutes in accordance with paragraph QUALITY CONTROL (QC) MEETINGS.
- b. All completed Preparatory and Initial Phase Checklists, arranged by specification section, further sorted by DFOW referenced to the construction schedule. Submit each individual Phase Checklist the day the phase event occurs as part of the CQC daily report.
- c. All milestone inspections, arranged by Activity Number referenced to the construction schedule.
- d. An up-to-date copy of the Testing Plan and Log with supporting field test reports, arranged by specification section referenced to the DFOW to which individual reports results are associated. Individual field test reports will be submitted within 2 working days after the test is performed in accordance with the paragraph QUALITY CONTROL ACTIVITIES.
- e. Copies of all Contract modifications, arranged in numerical order. Also include documentation that modified work was accomplished.
- f. An up-to-date copy of the paragraph DEFICIENCY/REWORK ITEMS LIST.
- g. Upon commencement of Completion Inspections of the entire project or any defined portion, maintain up-to-date copies of all punch lists issued by the QC staff to the Contractor and subcontractors and all punch lists issued by the Government in accordance with the paragraph COMPLETION INSPECTIONS.
- 1.12.5 Testing Plan and Log

As tests are performed, the QC Manager will record on the "Testing Plan and Log" the date the test was performed and the date the test results were forwarded to the Contracting Officer. Attach a copy of the updated "Testing Plan and Log" to the last daily CQC Report of each month. Provide a copy of the final "Testing Plan and Log" to the preparer of the Operation & Maintenance (O&M) documentation.

1.13 NOTIFICATION ON NON-COMPLIANCE

The Contracting Officer will notify the Contractor of any detected non-compliance with the Contract. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, is deemed sufficient for the purpose of notification. 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 such stop orders will be made the subject of a claim for extension of time for excess costs or damages by the Contractor.

1.14 DELIVERY, STORAGE, AND HANDLING

Designate receiving/storage areas for incoming material to be delivered according to installation schedule and to be placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. Store and handle materials in a manner as to prevent loss from weather and other damage. Keep materials, products, and accessories covered and off the ground, and store in a dry, secure area. Prevent contact with material that may cause corrosion, discoloration, or staining. Protect all materials and installations from damage by the activities of other trades.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

PAGE 1 OF								. PI				F					
CONTRACT	NO.	CONTRACT TITLE								CONTRACTOR DAT			DATE	REPORT NO		T NO.	
CHARACTE WORK	R OF								ENVIROMENTAL								
DREDGE			NAME SIZE PI				PIPEL	PIPELINE				DIPPER	DIPPER OR BUCKET SIZE				
			HORSEPO	DREDGE PUMP			SUCTION PIPE JET				CUTTER OR BUDGET						
			NO. OF CREW MEMBERS		SHORE			OTHER PLAN	IT TOTAL		WOI SCHEI	K SHIFTS DULE DAY		PER	DAYS PER VEEK		
					L	OCATIO	N/CHA	NNE		к							
LOC	ATION OF WORK		REACH DI STATION. TO	REDGE O STAT	GED DISPOSAL ATION		AREA USED		QTY DEPOSITED GROSS (CY)		D		CUMULATIVE AND DEPOSIT FOR DA		ID QTY A (CY)		
CHAR	ACTER OF		GRAVEL			SAND			CLAY		/ MUD					SILT_	
MAT	ERIAL (%)		HARDPAN			STONE			SHELL			_	OTHER				
CHANNE		N	AVERAGE	E DEPTI	-	BEFORE	DREDGI	NG		AFTER DREDGI				G			
RIV	ER/TIDE		MIN		TIME		MAX	<		ТІМЕ			GAGE LOC	AGE LOCATION			
	STAGE		MIN		TIME		MAX	<		TIME			GAGE DAT	UМ			
WEATHER (CONDITION		WEATHER			TEMP		-		VISIBIL	LITY			WINI	D		
		WC	ORK PERFORME	D							DIS	TRIBUT	ION OF \	WOR	κ		1
ITE	ΞM		UNIT		C	QUANTITY			EFFECTIVE WORKING TIME (CHARGEABLE TO COST OF WORK)					HR.	MIN.		
AVERAGE W	DTH OF CUT	CUT FT				PCT			PUMPING OR DREDGING PCT OF EFFECTIVE TIME %								
TOTAL ADV PER	ANCE THIS		FT					BOOSTER (IN LINE)									
TOTAL A PREVI	DVANCE DUSLY	FT						NON-EFFECTIVE WORKING TIME (CHARGEABLE COST TO WORK)									
TOTAL ADVA	NCE TO DATE	FT						HANDLING PIPE LINES									
FLOATING PIPE SHORE PIPE				SUBMERGED PIPE HANDL				HANDLING ANCHOR LINES									
TOTAL LENGTH OF DISCHARGE PIPE		F	FT			CLEARING PUMP AND PIPE LINES											
H.P. BOOSTER ADDED @FT TO DA				CLEARING CUT					TER OR SUCTION HEAD								
H.P. BOOS	STER ADDED @_	FT	TO DA					WA	ITING FOR SCO	ows							
CUBIC YARD	S REMOVED		GROSS		CREDITED TO				TO AND FROM WHARF OR ANCHORAGE								
AMOUNT DREDGED THIS DATE									CHANGING LOCATION OF PLANT ON JOB								
AMOUNT PREVIOUSLY									LOSS DUE TO OPPOSING NATURAL ELEMENTS								
TOTAL AMOUNT DREDGED						SHORE LINE AND											
TO DATE						WA	ITING FOR BO	OSTER									
PUMPING/C	UTTING HR																
		OPE	RATING SUPPL	IES													
СОММ	COMMODITY CONSUMED				CREDITED			TR				NOBKS					_
ITEM UNIT			QUANTITY		QUANTITY		LAY TIME OFF SHIFT AND SATURDAYS										
FUEI	BBL							SUI	NDAYS AND HO	OLIDAYS	6					┨──	
								FIR	E DRILL							\vdash	
ELECTRICITY	КW	1						МО		WAY OF	TRAFFIC						
								MIS	CELLANEOUS	(EXPLA	IN IN REM	ARKS)					
LUBRICANTS	GAL							то	TAL NON-EFFE	CTIVE T	IME			-11			
MOB DATE.			GE START [.]			TE:		PC ⁻	T. OF NON-EFF	ECTIVE					%		
		UNLU	02 01/301	['				TC (C⊦	ARGEABLE TO	CTIVE	AND NO	ON-EFFI	ECTIVE 1	IME		1	

QUALITY CONTROL REPORT-PIPELINE DREDGE											
CONTRACT NO.		CONTRACT TITLE	T TITLE CONTRACTOR			DATE REPORT NO.					
ATTENDANT PLANT											
ITEM NAME OR NUMBER			H.P.	HOURS	LOST TIME						
					(N	(NOT CHARGEABLE TO COST OF WORK)					
					MAJOR REPAIRS AND ALTERATIONS						
					CESSATION						
					COLLISIONS						
					MISCELLANEOUS						
					TOTAL LOST TIME						
					PERCENTAGE OF	TOTAL TIME		%			
					TOTAL TIME I	N PERIOD					

NARRATIVES
SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 45 01

RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)

- PART 1 GENERAL
 - 1.1 REFERENCES
 - 1.2 MEASUREMENT AND PAYMENT
 - 1.3 CONTRACT ADMINISTRATION
 - 1.3.1 Correspondence and Electronic Communications
 - 1.3.2 Other Factors
 - 1.4 RMS SOFTWARE
 - 1.5 CONTRACT DATABASE GOVERNMENT
 - 1.6 CONTRACT DATABASE CONTRACTOR
 - 1.6.1 Administration
 - 1.6.1.1 Contractor Information
 - 1.6.1.2 Subcontractor Information
 - 1.6.1.3 Correspondence
 - 1.6.1.4 Equipment
 - 1.6.1.5 Reports
 - 1.6.1.6 Request For Information (RFI)
 - 1.6.2 Finances
 - 1.6.2.1 Pay Activity Data
 - 1.6.2.2 Payment Requests
 - 1.6.3 Quality Control (QC)
 - 1.6.3.1 Quality Control (QC) Reports
 - 1.6.3.2 Deficiency Tracking
 - 1.6.3.3 Three-Phase Control Meetings
 - 1.6.3.4 Labor and Equipment Hours
 - 1.6.3.5 Accident/Safety Reporting
 - 1.6.3.6 Definable Features of Work
 - 1.6.3.7 Activity Hazard Analysis
 - 1.6.4 Submittal Management
 - 1.6.5 Schedule
 - 1.6.6 Closeout
 - 1.7 IMPLEMENTATION
 - 1.8 NOTIFICATION OF NONCOMPLIANCE
- PART 2 PRODUCTS
- PART 3 EXECUTION

-- End of Section Table of Contents --

SECTION 01 45 01

RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

```
EM 385-1-1
```

(2024) Safety and Occupational Health (SOH) Requirements

1.2 MEASUREMENT AND PAYMENT

The work of this section is not measured for payment. The Contractor is responsible for the work of this section, without any direct compensation other than the payment received for contract items.

1.3 CONTRACT ADMINISTRATION

The Government will use the Resident Management System (RMS) to assist in its monitoring and administration of this contract. The Government accesses the system using the Government Mode of RMS (RMS GM) and the Contractor accesses the system using the Contractor Mode (RMS CM). The term RMS will be used in the remainder of this section for both RMS GM and RMS CM. The joint Government-Contractor use of RMS facilitates electronic exchange of information and overall management of the contract. The Contractor accesses RMS to record, maintain, input, track, and electronically share information with the Government throughout the contract period in the following areas:

Administration Finances Quality Control Submittal Monitoring Scheduling Closeout Import/Export of Data

1.3.1 Correspondence and Electronic Communications

For ease and speed of communications, exchange correspondence and other documents in electronic format to the maximum extent feasible. Some correspondence, including pay requests and payrolls, are also to be provided in paper format with original signatures. Paper documents will govern, in the event of discrepancy with the electronic version.

1.3.2 Other Factors

Other portions of this document have a direct relationship to the reporting

accomplished through RMS. Particular attention is directed to FAR 52.236-15 Schedules for Construction Contracts; FAR 52.232-27 Prompt Payment for Construction Contracts; FAR 52.232-5 Payments Under Fixed-Priced Construction Contracts; Section 01 33 00 SUBMITTAL PROCEDURES; Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS; and Section 01 45 00 QUALITY CONTROL.

1.4 RMS SOFTWARE

RMS is a web based application. Download, install and be able to utilize the latest version of RMS within 7 calendar days of receipt of the Notice to Proceed. RMS software, user manuals, access and installation instructions, program updates and training information are available from the RMS website (<u>https://rms.usace.army.mil</u>). The Government and the Contractor will have different access authorities to the same contract database through RMS. The common database will be updated automatically each time a user finalizes an entry or change.

1.5 CONTRACT DATABASE - GOVERNMENT

The Government will enter the basic contract award data in RMS prior to granting the Contractor access. The Government entries into RMS will generally be related to submittal reviews, correspondence status, and Quality Assurance(QA)comments, as well as other miscellaneous administrative information.

1.6 CONTRACT DATABASE - CONTRACTOR

Contractor entries into RMS establish, maintain, and update data throughout the duration of the contract. Contractor entries generally include prime and subcontractor information, daily reports, submittals, RFI's, schedule updates and payment requests. RMS includes the ability to import attachments and export reports in many of the modules, including submittals. The Contractor responsibilities for entries in RMS typically include the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

Enter all current Contractor administrative data and information into RMS within 7 calendar days of receiving access to the contract in RMS. This includes, but is not limited to, Contractor's name, address, telephone numbers, management staff, and other required items.

1.6.1.2 Subcontractor Information

Enter all missing subcontractor administrative data and information into RMS CM within 7 calendar days of receiving access to the contract in RMS or within 7 calendar days of the signing of the subcontractor agreement for agreements signed at a later date. This includes name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor is listed separately for each trade to be performed.

1.6.1.3 Correspondence

Identify all Contractor correspondence to the Government with a serial number. Prefix correspondence initiated by the Contractor's site office with "S". Prefix letters initiated by the Contractor's home (main) office

with "H". Letters are numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C" or "RFP".

1.6.1.4 Equipment

Enter and maintain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates in accordance with Section 01 45 00 QUALITY CONTROL.

1.6.1.5 Reports

Track the status of the project utilizing the reports available in RMS. The value of these reports is reflective of the quality of the data input. These reports include the Progress Payment Request worksheet, Quality Control (QC) comments, Submittal Register Status, and Three-Phase Control worksheets in accordance with Sections 01 33 00 SUBMITTAL PROCEDURES and 01 45 00 QUALITY CONTROL.

1.6.1.6 Request For Information (RFI)

Create and track all Requests For Information (RFI) in the RMS Administration Module for Government review and response. The Government has up to 14 calendar days to respond to routine RFIs and up to 21 calendar days for more complex RFI's.

- 1.6.2 Finances
- 1.6.2.1 Pay Activity Data

Develop and enter a list of pay activities in conjunction with the project schedule. The sum of pay activities equals the total contract amount, including modifications. Each pay activity must be assigned to a Contract Line Item Number (CLIN). The sum of the activities assigned to a CLIN equals the amount of each CLIN.

1.6.2.2 Payment Requests

Prepare all progress payment requests using RMS. Update the work completed under the contract at least monthly, measured as percent or as specific quantities. After the update, generate a payment request and prompt payment certification using RMS. Submit the signed prompt payment certification and payment request as well as supporting data either electronically or by hard copy. Unless waived by the Contracting Officer, a signed paper copy of the approved payment certification and request is also required and will govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC)

Enter and track implementation of the 3-phase QC Control System, QC testing, transferred and installed property and warranties in RMS. Prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements in RMS. Maintain all data on a daily basis. Insure that RMS reflects all quality control methods, tests and actions contained within the Contractor Quality Control (CQC) Plan and Government review comments of same within 7 calendar days of Government acceptance of the CQC Plan.

1.6.3.1 Quality Control (QC) Reports

The Contractor's Quality Control (QC) Daily Report in RMS is the official report. The Contractor can use other supplemental formats to record QC data, but information from any supplemental formats are to be consolidated and entered into the RMS QC Daily Report. Any supplemental information may be entered into RMS as an attachment to the report. QC Daily Reports must be finalized and signed in RMS within 24 hours after the date covered by the report. Provide the Government a printed signed copy of the QC Daily Report, unless waived by the Contracting Officer.

1.6.3.2 Deficiency Tracking

Use the QC Daily Report Module to enter and track deficiencies. Deficiencies identified and entered into RMS by the Contractor or the Government will be sequentially numbered with a QC or QA prefix for tracking purposes. Enter each deficiency into RMS the same day that the deficiency is identified. Monitor, track and resolve all QC and QA entered deficiencies. A deficiency is not considered to be corrected until the Government indicates concurrence in RMS.

1.6.3.3 Three-Phase Control Meetings

Maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS. Worksheets for the three-phase control meetings are generated within RMS.

1.6.3.4 Labor and Equipment Hours

Enter labor and equipment exposure hours on a daily basis. Roll up the labor and equipment exposure data into a monthly exposure report.

1.6.3.5 Accident/Safety Reporting

Both the Contractor and the Government enter safety related comments in RMS as a deficiency. The Contractor must monitor, track and show resolution for safety issues in the QC Daily Report area of the RMS QC Module. In addition, follow all reporting requirements for accidents and incidents as required in EM 385-1-1, Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS and as required by any other applicable Federal, State or local agencies.

1.6.3.6 Definable Features of Work

Enter each feature of work, as defined in the approved CQC Plan, into the RMS QC Module. A feature of work may be associated with a single or multiple pay activities, however a pay activity is only to be linked to a single feature of work.

1.6.3.7 Activity Hazard Analysis

Import activity hazard analysis electronic document files into the RMS QC Module utilizing the document package manager. Prepare activity hazard analysis in accordance with Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS.

1.6.4 Submittal Management

Enter all current submittal register data and information into RMS within 7 calendar days of receiving access to the contract in RMS. The information shown on the submittal register following the specification Section 01 33 00

SUBMITTAL PROCEDURES will already be entered into the RMS database when access is granted. Group electronic submittal documents into transmittal packages to send to the Government, except very large electronic files, samples, spare parts, mock ups, color boards, or where hard copies are specifically required. Track transmittals and update the submittal register in RMS on a daily basis throughout the duration of the contract. Submit hard copies of all submittals unless waived by the Contracting Officer.

The Contractor may request submittals to be added to RMS throughout the lifecycle of the project. Approval/disapproval of Contractor requests is at the discretion of the Contracting Officer. Submittals entry into RMS must be updated daily or as practical for performance of the Contract, as approved by the Contracting Officer.

1.6.5 Schedule

Develop a construction schedule in accordance with Section 01 11 00 SUMMARY OF WORK. Enter and update the contract project schedule in RMS manually entering all schedule data.

1.6.6 Closeout

Closeout documents, processes and forms are managed and tracked in RMS by both the Contractor and the Government. Ensure that all closeout documents are entered, completed and documented within RMS.

1.7 IMPLEMENTATION

Use of RMS as described in the preceding paragraphs is mandatory. Ensure that sufficient resources are available to maintain contract data within the RMS system. RMS is an integral part of the Contractor's required management of quality control.

1.8 NOTIFICATION OF NONCOMPLIANCE

Take corrective action within 7 calendar days after receipt of notice of RMS non-compliance by the Contracting Officer.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 50 00

TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

- PART 1 GENERAL
- PART 2 PRODUCTS
- PART 3 EXECUTION
 - 3.1 EMPLOYEE PARKING
 - 3.2 CONTRACTOR'S TEMPORARY FACILITIES
 - 3.2.1 Location of Temporary Facilities
 - 3.2.2 Usage of Fuels and Lubricants
 - 3.3 GOVERNMENT INSPECTION FACILITIES
 - 3.3.1 Resident Engineer's Temporary Office Space
 - 3.3.2 Trailer-Type Mobile Office Space
- -- End of Section Table of Contents --

SECTION 01 50 00

TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

PART 1 GENERAL

Not Used

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 EMPLOYEE PARKING

The Contractor shall be responsible for finding and obtaining parking space for its employees' and subcontractors' privately owned vehicles (POVs). Contractor employee parking shall not interfere with existing and established parking requirements of the parking area or the neighborhood in which it is located.

3.2 CONTRACTOR'S TEMPORARY FACILITIES

3.2.1 Location of Temporary Facilities

A. The Contractor shall be responsible for finding and obtaining its own facilities (docks, piers, ramps, wharves, etc.), including temporary office space, and parking for its employees.

B. The Contractor's temporary facilities shall be a distance from the work area that is no greater than five miles.

C. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance and use of non-government facilities.

3.2.2 Usage of Fuels and Lubricants

Refer to Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, Subpart "Chemical Materials Management and Waste Disposal," Subpart "Fuel and Lubricants."

3.3 GOVERNMENT INSPECTION FACILITIES

In accordance with contract clause 52.246-12(e), Inspection of Construction, the Contractor shall be responsible to provide temporary office space and parking for up to five vehicles for the Resident Engineer's use while performing on-site inspection and Quality Assurance functions. The location shall be a distance from the work area that is no greater than one mile.

3.3.1 Resident Engineer's Temporary Office Space

Provide the Government with an office consisting of work space of

approximately 200 square feet in floor area, and providing space heat, air conditioning, electric light and power, and toilet facilities consisting of one lavatory and one water closet complete with connections to water and sewer services. If connection to a water service is not available, the Contractor shall provide a five gallon water dispenser for drinking water for duration of the project. If connection to a sewer service is not available, field-type portable sanitary facilities, approved by the Contracting Officer, may be substituted for the water closet. The Contractor is responsible for service to the field-type portable sanitary facilities and emptying it on a regular basis. All windows for this space shall have security grates. Provide two sets of office keys. Include office furniture for two people, consisting of two desks, two chairs, two overhead shelves, high speed internet service (T1 line), and access to Marine Radio. Provide a 36 inch by 72 inch plan table. Provide weekly cleaning service. Used furniture and equipment is acceptable provided items are in good condition and fully functional to the satisfaction of the Contracting Officer. The Contractor shall be responsible for snow removal, and mud and dust control of parking areas adjacent to the office. At completion of the project, the office will remain the property of the Contractor and be removed from the site. Utilities will be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer. The resident Engineer temporary office shall be within 5 miles of the dredging site.

3.3.2 Trailer-Type Mobile Office Space

The Contractor may, at its option, furnish and maintain adequate space within a trailer-type mobile office acceptable to the Contracting Officer and providing as a minimum the facilities specified above. Securely anchor the trailer to the ground at all four corners to guard against movement during high winds.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 54 50

DREDGING PLANT AND EQUIPMENT

- PART 1 GENERAL
 - 1.1 REFERENCES
 - 1.2 SUBMITTALS
 - 1.3 PLANT AND EQUIPMENT
 - 1.3.1 Location Data Collection for Dredge Bucket
 - 1.3.2 Sufficient Capacity
 - 1.3.3 Reduction in Capacity
 - 1.3.4 Inspections and Certifications
 - 1.4 LICENSE REQUIREMENTS
 - 1.5 AUTOMATIC IDENTIFICATION SYSTEM REQUIREMENTS
- PART 2 PRODUCTS (Not Used)
- PART 3 EXECUTION (Not Used)
- -- End of Section Table of Contents --

SECTION 01 54 50

DREDGING PLANT AND EQUIPMENT

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.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(2024) Safety and Occupational Health (SOH) Requirements

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

46 CFR Subchapter M Towing Vessels

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 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Plant and Equipment

Submit a schedule of the plant and equipment the Contractor will employ in the performance of the work of this contract. Also, submit copies of all applicable inspections and certifications for all floating plant and equipment.

1.3 PLANT AND EQUIPMENT

1.3.1 Location Data Collection for Dredge Bucket

The dredge plant must be equipped to record real time location data for the position of the bucket, to include horizontal and vertical positioning (xyz data). This data must be available on a continuous basis.

1.3.2 Sufficient Capacity

The Contractor shall keep on the job sufficient plant and equipment to meet the requirements of the work. The plant and equipment shall be in satisfactory operating condition and be capable of safely and efficiently performing the work. The plant and equipment shall be subject to inspection by the Contracting Officer and/or his representatives at all times.

1.3.3 Reduction in Capacity

No reduction in the capacity of the plant and equipment employed on the work shall be made except by written permission of the Contracting Officer. The measure of the capacity of the plant and equipment shall be its actual performance on the work covered by this contract.

1.3.4 Inspections and Certifications

Prior to commencement of work at the site, the Contractor shall make available to the Contracting Officer Representative for review, copies of all applicable inspections and certifications of floating plant and equipment as required by Federal, State and local laws and regulations. See also EM 385-1-1, Sections 16, 18, 19, and 20. Such inspections and certifications shall be current and maintained in force for the duration of this contract. Each item of floating plant and equipment shall have on board a waste oil management plan which details the intended disposal method for waste oil.

Each vessel exceeding twenty-six feet in length, excluding sheer, which is used for pushing, hauling alongside, or any other method of towing shall adhere to the requirements set forth in 46 CFR Subchapter M.

The plant and equipment shall be subject to the inspection of the Contracting Officer and/or the COR at all times. The responsibility for actual supervision and direction of dredging operations including the safe and efficient operation of dredge plant and equipment lies with the Contractor.

1.4 LICENSE REQUIREMENTS

Each vessel exceeding twenty-six feet in length, excluding sheer, which is used for pushing, hauling alongside, or any other method of towing, and not required by law to have a valid Certificate of Inspection by the U.S. Coast Guard, shall be under the actual direction and control of a person licensed for towing in the geographic area of the work by the U.S. Coast Guard. Licensed persons shall not perform command or other duties in excess of twelve hours in any consecutive twenty-four hour period except in an emergency.

1.5 AUTOMATIC IDENTIFICATION SYSTEM REQUIREMENTS

All dredge and plant equipment shall be registered with the AUTOMATIC IDENTIFICATION SYSTEM (AIS) in order to ensure that the entire footprint of the Contract's working vessels and scows are available on marine trafficker's electronic chart displays.

- PART 2 PRODUCTS (Not Used)
- PART 3 EXECUTION (Not Used)

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 57 19

TEMPORARY ENVIRONMENTAL CONTROLS

- PART 1 GENERAL
 - 1.1 REFERENCES
 - 1.2 DEFINITIONS
 - 1.2.1 Environmental Pollution and Damage
 - 1.2.2 Environmental Protection
 - 1.2.3 Contractor Generated Hazardous Waste
 - 1.2.4 Waters of the United States
 - 1.2.5 Wetlands
 - 1.3 GENERAL REQUIREMENTS
 - 1.4 SUBCONTRACTORS
 - 1.5 PAYMENT
 - 1.6 SUBMITTALS
 - 1.7 ENVIRONMENTAL PROTECTION PLAN
 - 1.7.1 Compliance
 - 1.7.2 Contents
 - 1.7.3 Appendix
 - 1.8 PROTECTION FEATURES
 - 1.9 SPECIAL ENVIRONMENTAL REQUIREMENTS
 - 1.9.1 Environmental Dredge Window
 - 1.9.2 Operational Requirements and Responsibilities Necessary for Environmental Compliance
 - 1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS
 - 1.11 NOTIFICATION
- PART 2 PRODUCTS
- PART 3 EXECUTION
 - 3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS
 - 3.2 WATER RESOURCES
 - 3.3 AIR RESOURCES
 - 3.3.1 Particulates
 - 3.3.2 Odors
 - 3.3.3 Sound Intrusions
 - 3.4 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL
 - 3.4.1 Solid Wastes
 - 3.4.2 Fuel and Lubricants
 - 3.5 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES
 - 3.6 BIOLOGICAL RESOURCES
 - 3.7 PREVIOUSLY USED EQUIPMENT
 - 3.8 MAINTENANCE OF POLLUTION FACILITIES
 - 3.9 TRAINING OF CONTRACTOR PERSONNEL
 - 3.10 POST CONSTRUCTION CLEANUP
- -- End of Section Table of Contents --

SECTION 01 57 19

TEMPORARY ENVIRONMENTAL CONTROLS

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 within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety and Occupational Health (SOH) Requirements
WETLANDS DELINEATION MANUAL	(1987) Corps of Engineers Wetlands Delineation Manual

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions of Waters of the United States
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
40 CFR 68	Chemical Accident Prevention Provisions
33 CFR 156	Navigation and Navigable Waters, Oil and Hazardous Material Transfer Operations

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is 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; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.5 Wetlands

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland shall be done in accordance with WETLANDS DELINEATION MANUAL.

1.3 GENERAL REQUIREMENTS

Minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. Comply with all applicable environmental Federal, State, and local laws and regulations. Any delays resulting from failure to comply with environmental laws and regulations will be the Contractor's responsibility.

1.4 SUBCONTRACTORS

Ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. Payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor, and payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations are the Contractor's responsibility. All costs associated with this section shall be included in the contract price.

1.6 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. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, DO

1.7 ENVIRONMENTAL PROTECTION PLAN

Prior to commencing construction activities or delivery of materials to the site, submit an Environmental Protection Plan for review and approval by the Contracting Officer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor shall address during construction. Issues of concern shall be defined within the Environmental Protection Plan as outlined in this section. Address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but are considered necessary, shall be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, meet with the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. The Environmental Protection Plan shall be current and maintained onsite by the Contractor.

1.7.1 Compliance

No requirement in this Section will relieve the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During construction, the Contractor will be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

Include in the environmental protection plan, but not limit it to, the following:

- a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.
- b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.
- c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.
- d. Description of the Contractor's environmental protection personnel training program.
- e. Drawings showing locations of proposed temporary material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to contain materials on the site.
- f. Spill control plan with procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. Include in this plan, as a minimum:
 - (1) The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete

documentation. This individual will immediately notify the Contracting Officer and Facility Environmental Office in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. Include in the plan a list of the required reporting channels and telephone numbers.

- (2) The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.
- (3) Training requirements for Contractor's personnel and methods of accomplishing the training.
- (4) A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.
- (5) The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.
- (6) The methods and procedures to be used for expeditious contaminant cleanup.
- g. In conjunction with the Spill Control Plan the Contractor shall incorporate in its accident prevention program, submitted in compliance with the Contract Clause: "ACCIDENT PREVENTION," sufficient information to demonstrate compliance with 33 CFR 156 and any other applicable laws, codes, and regulations pertaining to handling of fuel oil.
- h. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including debris collected during dredging operations. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction.
- i. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.
- j. A contaminant prevention plan that identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be onsite at any given time shall be included in the contaminant prevention plan. Update the plan as new hazardous materials are brought onsite or removed from the site.
- k. Environmental Monitoring. The Contractor shall include in the plan the details of environmental monitoring requirements under the applicable

laws, regulations and permits, as specified in these specifications, and a description of how this monitoring will be accomplished.

 Protection of Wildlife Resources. The Contractor shall prepare and submit a "Marine Mammal Protection Plan" as part of the Environmental Protection Plan. The plan shall include specific details regarding protection of wildlife resources during the work. The Contractor shall also comply with all aspects of the requirements specified below under subparagraph "Special Environmental Requirements".

1.7.3 Appendix

Attach to the Environmental Protection Plan, as an appendix, copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Contracting Officer will make a joint condition survey. Immediately following the survey, the Contractor will prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report will be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the work under the contract.

1.9 SPECIAL ENVIRONMENTAL REQUIREMENTS

1.9.1 Environmental Dredge Window

To protect marine resources and protected species, dredging and disposal operations will only be permitted as specified in Section 01 11 00 SUMMARY OF WORK, Subpart PERIOD OF PEEFORMANCE, ENVIRONMENTAL WINDOW AND DREDGING AND DISPOSAL PERIOD.

1.9.2 Operational Requirements and Responsibilities Necessary for Environmental Compliance

The following conditions shall be met by the Contractor.

1. Year-round, disposal vessels including tugs, barges, and scows transiting between the dredge site and the disposal site shall operate at speeds not to exceed 10 knots. For unanticipated conditions, a vessel may operate at a speed necessary to maintain safe maneuvering speed instead of the required 10 knots. This alternative speed is justified only when the vessel is in an area where oceanographic, hydrographic and/or meteorological conditions severely restrict the maneuverability of the vessel and the need to operate at such speed is confirmed by the vessel captain. If a deviation from the 10-knot speed limit is necessary, the reasons for the deviation, the speed at which the vessel is operated, the latitude and longitude of the area, and the time and duration of such deviation shall be entered into the logbook of the vessel. The master of the vessel shall attest to the accuracy of the logbook entry by signing and dating it. The intent of this condition is to reduce the potential for vessel collisions with endangered turtles, fish, and whales.

2. The captain shall:

a. Check communication media for the latest information regarding North Atlantic right whale sighting locations. These media may include, but are not limited to, the Whale Alert app (https://www.fisheries.noaa.gov/resource/tool-app/whale-alert-smartphone-app), https://portal.nrwbuoys.org/ab/dash/ or https://www.nefsc.noaa.gov/psb/surveys. Check communication media before the initial disposal operation to determine the potential presence of whales in the area; and

b. Lookout for turtles and whales and be aware of turtle or whale sightings.

c. Report any interactions (i.e., vessel strikes, captures, etc.) with any ESA-listed species as soon as possible (within 24-hours) to the NMFS Marine Animal Response Hotline at (866)-755-NOAA or USCG via CH-16 and immediately report any injured or dead marine mammals or sea turtles to NMFS at (866)-755-NOAA.

d. Every three months after the initial dredge action for as long as the dredging and disposal continues and at the end of a disposal operation, submit a report by email to *cenae-nav@usace.army.mil*, and *incidental.take@noaa.gov*, summarizing the vessel route taken, number of trips, sightings of ESA-listed species, and any action taken to avoid interactions with ESA-listed species.

3. The vessel captain shall:

a. Lookout for turtles and whales; and

b. Avoid transit and disposal when visibility is lessened (e.g., at night, fog) to an extent that would preclude an endangered species observer from spotting a whale within 1,500 feet or a sea turtle within 600 feet. Disposal shall not be permitted if these requirements cannot be met due to weather or sea conditions. In that regard, the permittee and contractor should be aware of predicted conditions before departing for the disposal site. The intent of this condition is to reduce the potential for vessel collisions with endangered species, including right whales.

c. Avoid harassment of or direct impact to turtles and whales except when precluded by safety considerations; and

d. Ensure that the disposal vessel adheres to the enclosed NMFS regulations for approaching right whales, 50 CFR 224.103(c), which restrict approaches within 1,500 feet (500 yards) of a right whale and specify avoidance measures for vessels that encounter right whales; and

e. Ensure that dredged material is not released if whales are

within 1,500 feet or turtles are within 600 feet of the specified disposal point. The captain must check in with the endangered species observer prior to releasing the dredged material. If whales or turtles are within these distances and appear to be moving away from the specified disposal point, within these distances and appear to be remaining stationary, or outside these distances but appear to be moving towards the specified disposal point, the vessel captain shall wait until they have cleared the specified disposal point by these distances and are not moving towards it, and then proceed with disposal at the specified disposal point.

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations from the drawings and specifications, requested by the Contractor and which may have an environmental impact, will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.11 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. After receipt of such notice, the Contractor will inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions will be granted or equitable adjustments allowed for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

This Article supplements the Contractor's responsibility under the contract clause PERMITS AND RESPONSIBILITIES to the extent that the Government has received a Water Quality Certification (WQC) and Coastal Zone Consistency Concurrence (CZM). The Contractor shall comply with permit terms and conditions that are applicable to this contract. Such applicable terms and conditions have been extracted from the permit and are specified in the various sections of these specifications and on the contract drawings. The above referenced documents shall not be relied on for contract requirements. In the event a discrepancy is discovered between the reference documents and these specifications or the contract drawings, the Contractor shall notify the Contracting Officer for clarification. The Contracting Officer will rely on contract documents, permit requirements and conditions to resolve perceived conflicts. Copies of the WQC and CZM are attached at the end of this specification for reference only. Note that these documents were developed for a combined maintenance dredging and improvement dredging contract and not all items pertain to maintenance dredging activities. Pertinent maintenance dredging portions of the WQC have been incorporated into the requirements of this specifications package.

3.2 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. All water areas affected by construction activities shall be monitored by the Contractor.

3.3 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.3.1 Particulates

The Contractor shall maintain work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. The Contractor shall comply with all State and local visibility regulations.

3.3.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with the State of Connecticut regulations and/or local ordinances.

3.3.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of COnnecticut and/or local ordinances.

3.4 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

3.4.1 Solid Wastes

Solid wastes shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.4.2 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations. Storage of fuel on the project site shall be in accordance with all Federal, State, and local laws and regulations.

3.5 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

If, during excavation or other construction activities, any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.6 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, sea turtles, marine mammals, and other aquatic wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State and local laws and regulations.

3.7 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits, plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.8 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.9 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.10 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --



79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

Date: October 11, 2019

U.S. Army Corps of Engineers Barbara Blumeris 696 Virginia Road Concord, MA 01742

SUBJECT: #201905657-WQC and #201906504-FCC New Haven Harbor Federal Navigation Project

Dear Ms. Blumeris:

This letter is in response to John Kennelly's September 4, 2019 letter to Susan Jacobson of my staff regarding dredging within a seasonal prohibition period. Terms and Conditions, paragraph 2., of #201905657-WQC and Appendix, paragraph 1., of #201906504-FCC prohibit dredging between February 1st and June 30th in order to protect winter flounder. The U.S. Army Corps of Engineers has requested to begin dredging within the existing navigation channel during February.

Staff has consulted with Bruce Williams of the Department of Energy and Environmental Protection's Fisheries Division regarding work within the winter flounder closure period. Based on this consultation, the following condition has been modified:

Seasonal Work Prohibition North of Breakwater. Unconfined in-water excavation, dredging*, filling, blasting or removal of debris or other material is prohibited between February 1st and September 30th, inclusive, of any year unless otherwise authorized in writing by the Commissioner. The specific closure dates are as follows: February 1st through June 30th in order to protect winter flounder; April 1st through June 30th to protect diadromous fish; March 1st through September 30th to protect nesting birds on Sandy Point; and, June 1st through September 30th in order to protect spawning shellfish.

*Dredging may occur between February 1st and March 1st within existing channels with depths greater than -20' MLLW.

Additionally, the following condition has been added:

January and February Dredging Restrictions. Dredging during January and February shall be conducted by mechanical means only.

The September 4, 2019 letter mentions that "the Corps has agreed to eliminate barge overflow in January and February to aid in reducing suspended sediments during the

U.S. Army Corps of Engineers #201905657-WQC and #201906504-FCC

dredge process." Please note that for dredge and disposal activities, the following general condition always applies:

Barge Control. Spoil scows or barges shall be loaded and navigated in a manner which prevents uncontrollable motion or spillage and washout of dredged or excavated materials.

Please be advised that all other terms and conditions of the water quality certification and conditions of the consistency concurrence shall remain in full force and effect. If you have any questions, please contact Ms. Jacobson at 860-424-3693 or susan.jacobson@ct.gov.

Sincerely,

Brian P. Thompson, Director

Brian P. Thompson, Director Land and Water Resources Division Bureau of Water Protection & Land Reuse

cc: Files #201905657-WQC and #201906504-FCC
E-mail to: Mayor Toni Harp, MayorHarp@newhavenct.gov Mayor Nancy Rossi, nrossi@westhaven-ct.gov Joe Salvatore, CT Port Authority, Joseph.Salvatore@ct.gov Judi Sheiffele, New Haven Port Authority
Bruce Williams, DEEP Fisheries
David Carey, DOA/BOA
Harbormasters, NH and WH
West Haven Harbor Management Commission



79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

AUCUST 14,2019 Date: _

U.S. Army Corps of Engineers Barbara Blumeris 696 Virginia Road Concord, MA 01742

SUBJECT: Water Quality Certificate #201905657-WQC New Haven Harbor Federal Navigation Project

Dear Ms. Blumeris:

Enclosed is the signed certificate which constitutes the approval of your application to conduct regulated activities. Your attention is directed to the conditions of the enclosed permit. Construction or work must conform to that which is authorized.

If you have any questions concerning your certificate, please contact me at 860-424-3693 or susan.jacobson@ct.gov.

Sincerely,

Leeren

Susan Jacobson, Environmental Analyst Land and Water Resources Division Bureau of Water Protection and Land Reuse

Enc. - #201905657-WQC

cc: File #201905657-WQC E-mail to: Mayor Toni Harp, MayorHarp@newhavenct.gov Mayor Nancy Rossi, nrossi@westhaven-ct.gov Joe Salvatore, CT Port Authority, Joseph.Salvatore@ct.gov Judi Sheiffele, New Haven Port Authority Bruce Williams, DEEP Fisheries David Carey, DOA/BOA Harbormasters, NH and WH West Haven Harbor Management Commission



79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

Connecticut Department of Energy and Environmental Protection License*

Section 401 Water Quality Certification

Licensee(s): U.S. Army Corps of Engineers

696 Virginia Road
Concord, MA 01742
201905657-WQC
New Haven and West Haven
Disposal of approximately 4,334,000 cubic yards of dredge sediment from the New Haven Harbor Federal Navigation Project.
Central Long Island Disposal Site; West River Borrow Pit; Morris Cove Borrow Pit; Sandy Point; East and West Breakwaters
New Haven Harbor and Long Island Sound
Section 401 CWA (33 USC 1341)
22a-426-1 to 9
Land & Water Resources Division, Bureau of Water Protection & Land Reuse, 860-424-3019
Five (5) years from the date of issuance of this license.
Plans to be submitted in accordance with Terms and Conditions, paragraph 7, below.
LWRD Dredging and General Conditions, LWRD Dredging Report Form, Work Commencement Form, Compliance Certification Form, Land Record Filing

*Connecticut's Uniform Administrative Procedure Act defines License to include, "the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law"

Authorized Activities:

The Licensee is hereby authorized to conduct the following work as described in application # 201905657-WQC and as depicted on any site plan sheets / sets cited herein:

Dispose of approximately 4,334,000 cubic yards of dredge sediment from the New Haven Harbor Federal Navigation Project, through hydraulic and mechanical means, at the following locations:

- a. Morris Cove Borrow Pit with approximately 623,000 CY;
- b. West River Borrow Pit with approximately 88,000 CY;
- c. North of the East Breakwater to create oyster habitat with approximately 434,000 CY;
- d. North of the West Breakwater with approximately 44,000 CY of rock;
- e. North of Sandy Point with approximately 845,000 CY in accordance with Terms and Conditions paragraph 5., below; and,
- f. Central Long Island Disposal Site with approximately 2,300,000 CY in accordance with Terms and Conditions paragraph 8., below.

Failure to comply with the terms and conditions of this license shall subject the Licensee and / or the Licensee's contractor(s) to enforcement actions and penalties as provided by law.

This license is subject to the following Terms and Conditions:

- 1. License Enclosure(s) and Conditions. The Licensee shall comply with all applicable terms and conditions as may be stipulated within the License Enclosure(s) listed above.
- 2. Seasonal Work Prohibition North of Breakwater. Unconfined in-water excavation, dredging, filling, blasting or removal of debris or other material is prohibited between February 1st and September 30th, inclusive, of any year unless otherwise authorized in writing by the Commissioner. The specific closure dates are as follows: February 1st through June 30th in order to protect winter flounder; April 1st through June 30th to protect diadromous fish; March 1st through September 30th to protect nesting birds on Sandy Point; and, June 1st through September 30th in order to protect spawning shellfish.
- 3. Seasonal Work Prohibition South of Breakwater. Unconfined in-water excavation, dredging, filling, blasting or removal of debris or other material is prohibited between June 1st and September 30th, inclusive, of any year in order to protect spawning shellfish in the area unless otherwise authorized in writing by the Commissioner.
- 4. Sediment Suitability for New Haven Harbor Placement Sites. The Licensee shall submit, no later than 90 days prior to dredging and for the Commissioner's review and final sediment suitability determination, a site-specific sediment placement plan.
- 5. Sandy Point Salt Marsh Creation Area. The Licensee shall submit, for the Commissioner's review and written approval, a final plan for the Sandy Point Salt Marsh Creation Area. Such plan shall be submitted no later than 90 days prior to marsh creation and shall include:
 - a. relevant easements with West Haven;

- b. Final comments from the West Haven Harbor Management Commission;
- c. Final NDDB Determination, including, if applicable, Wildlife Division approved best management practices and mitigation plans
- d. location of Old Field Creek channel, including a maintenance plan;
- e. identification of intertidal flat habitat to be impacted by Marsh Creation Area; and
- f. short-term and long-term maintenance plans for the Marsh Creation Area.
- 6. Aquaculture Coordination. Not later than 60 days prior to the commencement of dredging, the Licensee shall notify the Connecticut Department of Agriculture, Bureau of Aquaculture so that shellfish resources may be removed prior to sediment placement activities.
- 7. **Final Plans.** The Licensee shall submit, not later than 60 days prior to the commencement of dredging, a set of signed and sealed plans to the Commissioner. Such plans shall include proposed dredge conditions within the Federal Navigation Project and sediment disposal sites within New Haven Harbor.
- 8. Sequential Disposal at the Central Long Island Sound Disposal Site. The Licensee shall first dispose of dredge sediment from the north terminus of the project. This sediment shall be sequentially covered by channel sediment from north to south, resulting in inner harbor sediments being covered by outer harbor/entrance channel sediments.

Issued under the authority of the Commissioner of Energy and Environmental Protection on:

Date

Betsey/Wingfield Deputy Commissioner Department of Energy & Environmental Protection



Bureau of Water Protection & Land Reuse Land & Water Resources Division

79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

Dredging and General Conditions for Land & Water Resource Division Licenses

- 1. **Time-of-Year Restriction.** Unless otherwise noted in the License, unconfined in-water excavation, dredging, filling or removal of debris or other material is prohibited, inclusive, in any year from June 1 through September 30 in order to protect spawning shellfish in the area unless otherwise authorized in writing by the Commissioner.
- 2. Dredging Report. Not later than two (2) weeks subsequent to the completion of any dredging activity authorized herein, the Licensee shall submit to the Commissioner a completed Dredging Report. A separate form shall be submitted by the Licensee for each distinct dredging activity conducted pursuant to this license.
- 3. Bottom Disturbance. Dragging the bottom with a spoil barge, scow, vessel, beam or similar equipment outside of any authorized area is prohibited.
- 4. Material Handling. Sidecasting or in-water rehandling of dredged or excavated material is prohibited.
- 5. **Barge Control.** Spoil scows or barges shall be loaded and navigated in a manner which prevents uncontrollable motion or spillage and washout of dredged or excavated materials.
- 6. Sale of Sediment. Sediment dredged pursuant to the license shall not be sold nor shall any fee for its use be charged without the express prior written authorization of the Commissioner and payment of a \$4.00 per yard royalty to the state of Connecticut Department of Energy & Environmental Protection, pursuant to CGS section 22a-361(e).
- 7. Sediment Disposal. The Licensee shall dispose of aquatic sediments in accordance with the terms and conditions of the license.
- 8. Submission of As-Dredged Plans. On or before ninety (90) days after completion of the work authorized herein, the Licensee shall submit to the Commissioner an "as-dredged" survey of the work area showing contours, bathymetries, tidal datums and structures, as applicable. Such survey shall be the original one and be signed and sealed by an engineer, surveyor or architect, as applicable, who is licensed in the State of Connecticut.

Open Water Disposal, if authorized in Project Description

1. **Material Disposal.** The Licensee shall dispose of dredged or excavated material in accordance with the requirements of the United States Army Corps of Engineers-New England District, except that if the authorized disposal site is modified, the Licensee shall submit a request for modification of the location to the Commissioner and shall not dispose of the material until such location modification has been approved in writing by the Commissioner.

- 2. **Disposal Site / Use Modification.** The Commissioner may modify the authorized disposal site and direct dredged sediment to an alternate site for use as cap material, provided that no modification will take effect if such modification imposes uncompensated additional costs solely attributable to such modification on the Licensee.
- 3. **Disposal Monitoring.** The Licensee shall not dispose of dredged or excavated material unless said disposal is supervised and witnessed by an on-board inspector or documented by an automated disposal monitoring program approved by the United States Army Corps of Engineers-New England District.
- 4. **Barge Navigation.** Spoil scows or barges used by the Licensee for disposal of dredged or excavated material shall travel to and from the authorized disposal site utilizing sea lanes defined by the United States Army Corps of Engineers-New England District.
- 5. **Point Dumping.** The Licensee shall point-dump dredged or excavated materials at a specified buoy or set of coordinates identified by United States Army Corps of Engineers-New England District within the authorized disposal site.

LWRD General Conditions

- 1. Land Record Filing. The Licensee shall file the Land Record Filing on the land records of the municipality in which the subject property is located not later than thirty (30) days after license issuance pursuant to Connecticut General Statutes (CGS) Section 22a-363g. A copy of the Notice with a stamp or other such proof of filing with the municipality shall be submitted to the Commissioner no later than sixty (60) days after license issuance. If a Land Record Filing form is not enclosed and the work site is not associated with an upland property, no filing is required.
- 2. Contractor Notification. The Licensee shall give a copy of the license and its attachments to the contractor(s) who will be carrying out the authorized activities prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The Licensee's contractor(s) shall conduct all operations at the site in full compliance with the license and, to the extent provided by law, may be held liable for any violation of the terms and conditions of the license. At the work site, the contractor(s) shall, whenever work is being performed, have on site and make available for inspection a copy of the license and the authorized plans.
- 3. Work Commencement. Not later than two (2) weeks prior to the commencement of any work authorized herein, the Licensee shall submit to the Commissioner, on the Work Commencement Form attached hereto, the name(s) and address(es) of all contractor(s) employed to conduct such work and the expected date for commencement and completion of such work, if any.
 - For water diversion activities authorized pursuant to 22a-377(c)-1 of the Regulations of Connecticut State Agencies, the Licensee shall also notify the Commissioner in writing two weeks prior to initiating the authorized diversion.
 - For emergency activities authorized pursuant Connecticut General Statutes Section

22a-6k, the Licensee shall notify the Commissioner, in writing, of activity commencement at least one (1) day prior to construction and of activity completion no later than five (5) days after conclusion.

- 4. License Notice. The Licensee shall post the first page of the License in a conspicuous place at the work area while the work authorized therein is undertaken.
- 5. Unauthorized Activities. Except as specifically authorized, no equipment or material, including but not limited to, fill, construction materials, excavated material or debris, shall be deposited, placed or stored in any wetland or watercourse on or off-site. The Licensee may not conduct work within wetlands or watercourses other than as specifically authorized, unless otherwise authorized in writing by the Commissioner. Tidal wetlands means "wetland" as defined by section 22a-29 and "freshwater wetlands and watercourses" means "wetlands" and "watercourses" as defined by section 22a-38.
- 6. Excavated Materials. Unless otherwise authorized, all excavated material shall be staged and managed in a manner which prevents additional impacts to wetlands and watercourses.
- 7. Best Management Practices. The Licensee shall not cause or allow pollution of any wetlands or watercourses, including pollution resulting from sedimentation and erosion. In constructing or maintaining any authorized structure or facility or conducting any authorized activity, or in removing any such structure or facility, the Licensee shall employ best management practices to control storm water discharges, to prevent erosion and sedimentation, and to otherwise prevent pollution of wetlands and other waters of the State. For purposes of the license, "pollution" means "pollution" as that term is defined by CGS section 22a-423. Best Management Practices include, but are not limited, to practices identified in the *Connecticut Guidelines for Soil Erosion and Sediment Control* as revised, 2004 Connecticut Stormwater Quality Manual, Department of Transportation's ConnDOT Drainage Manual as revised, and the Department of Transportation Standard Specifications as revised.
- 8. Work Site Restoration. Upon completion of any authorized work, the Licensee shall restore all areas impacted by construction, or used as a staging area or accessway in connection with such work, to their condition prior to the commencement of such work.
- **9. Inspection.** The Licensee shall allow any representative of the Commissioner to inspect the project location at reasonable times to ensure that work is being or has been conducted in accordance with the terms and conditions of this license.

10. Change of Use. (Applies only if a use is specified within the License "Project Description")

a. The work specified in the license is authorized solely for the purpose set forth in the license. No change in purpose or use of the authorized work or facilities as set forth in the license may occur without the prior written approval of the Commissioner. The Licensee shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this license, request permission from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.

- b. A change in the form of ownership of any structure authorized herein from a rental/lease commercial marina to a wholly-owned common interest community or dockominium may constitute a change in purpose as specified in paragraph (a) above.
- 11. De Minimis Alteration. The Licensee shall not deviate from the authorized activity without prior written approval from the Commissioner. The Licensee may request a de minimis change to any authorized structure, facility, or activity. A de minimis alteration means a change in the authorized design, construction or operation that individually and cumulatively has minimal additional environmental impact and does not substantively alter the project as authorized.
 - For diversion activities authorized pursuant to 22a-377(c)-2 of the Regulations of Connecticut State Agencies, a de minimis alteration means an alteration which does not significantly increase the quantity of water diverted or significantly change the capacity to divert water.
- 12. Extension Request. The Licensee may request an extension of the license expiration date. Such request shall be in writing and shall be submitted to the Commissioner at least thirty (30) days prior to the license expiration. Such request shall describe the work done to date, what work still needs to be completed, and the reason for such extension. It shall be the Commissioner's sole discretion to grant or deny such request.
- 13. No Work After License Expiration. Work conducted after the license expiration date is a violation of the license and may subject the license to enforcement action, including penalties, as provided by law.
- 14. License Transfer. The license is not transferable without prior written authorization of the Commissioner. A request to transfer a license shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Licensee's obligations under the license shall not be affected by the passage of title to the license site to any other person or municipality until such time as a transfer is approved by the Commissioner.
- **15. Document Submission.** Any document required to be submitted to the Commissioner under the license or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

Regulatory Section Land & Water Resources Division Department of Energy and Environmental Protection 79 Elm Street Hartford, Connecticut 06106-5127 860-424-3019

16. Date of Document Submission. The date of submission to the Commissioner of any document required by the license shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under the license, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three (3) days after it is mailed by the

Commissioner, whichever is earlier. Except as otherwise specified in the license, the word "day" as used in the license means calendar day. Any document or action which is required by the license to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.

- 17. Certification of Documents. Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under the license shall be signed by the Licensee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."
- 18. Accuracy of Documentation. In evaluating the application for the license, the Commissioner has relied on information and data provided by the Licensee and on the Licensee's representations concerning site conditions, design specifications and the proposed work, including but not limited to representations concerning the commercial, public or private nature of the work or structures, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, the license may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.
- **19. Limits of Liability.** In granting the license, the Commissioner has relied on all representations of the Licensee, including information and data provided in support of the Licensee's application. Neither the Licensee's representations nor the issuance of the license shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.
- **20. Reporting of Violations.** In the event that the Licensee becomes aware that they did not or may not comply, or did not or may not comply on time, with any provision of this license or of any document incorporated into the license, the Licensee shall immediately notify the agency contact specified within the license and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the agency contact, the Licensee shall provide, for the agency's review and written approval, a report including the following information:
 - a. the provision(s) of the license that has been violated;
 - b. the date and time the violation(s) was first observed and by whom;
 - c. the cause of the violation(s), if known;
 - d. if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;

- e. if the violation(s) has not ceased, the anticipated date when it will be corrected;
- f. steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented; and
- g. the signatures of the Licensee and of the individual(s) responsible for actually preparing such report.

If the violation occurs outside of normal business hours, the Licensee shall contact the Department of Energy and Environmental Protection Emergency Dispatch at 860-424-3333. The Licensee shall comply with any dates which may be approved in writing by the Commissioner.

- **21.** Revocation/Suspension/Modification. The license may be revoked, suspended, or modified in accordance with applicable law.
- 22. Other Required Approvals. License issuance does not relieve the Licensee of their obligations to obtain any other approvals required by applicable federal, state and local law.
- 23. Rights. The license is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.
- 24. Condition Conflicts. In the case where a project specific special condition listed on the license differs from, or conflicts with, one of the general conditions listed herein, the project specific special condition language shall prevail. It is the licensee's responsibility to contact the agency contact person listed on the license for clarification if needed prior to conducting any further regulated activities.



79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

Land Record Filing*

<u>To</u>:

City of West Haven Clerk

Signature and Sucon Jacob 8/14/19

Subject: North of Sandy Point License # 201905657-WQC

Pursuant to Section 22a-363g of the Connecticut General Statutes, the Commissioner of Energy and Environmental Protection gives notice that a license has been issued to U.S. Army Corps of Engineers, 696 Virginia Road Concord, MA, 01742 to:

create a 60 – 70 acres salt marsh north of Sandy Point by placing sediment filled geotubes and approximately 845,000 cubic yards of dredge sediment.

If you have any questions pertaining to this matter, please contact the Land & Water Resources Division at 860-424-3019.

Return to:

Land & Water Resources Division State of Connecticut Department of Energy & Environmental Protection 79 Elm Street Hartford, CT 06106-5127

*The Licensee shall file the Land Record Filing on the land records of the municipality in which the subject property is located not later than thirty (30) days after license issuance pursuant to Connecticut General Statutes (CGS) Section 22a-363g. A copy of the Notice with a stamp or other such proof of filing with the municipality shall be submitted to the Commissioner no later than sixty (60) days after license issuance.


Bureau of Water Protection & Land Reuse Land & Water Resources Division

79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

Work Commencement Form

То:	Regulatory Section Department of Energy and Environmental Protection Land & Water Resources Division 79 Elm Street Hartford, CT 06106-5127
Lice	nsee Name
Lice	nsee Address:
Lice	nse No(s):
CO	NTRACTOR(s):
#1	Name:
1	Address:
4	Felephone:
J	E-mail:
Survey S	
#2	Name:
1	Address:
5	ſelephone:
]	3-mail:
#31	Nama
πJ	Address:
1	Celenhone
T	E mail:
1	S-man.
Date	Contractor(s) received a conv

of the license and approved plans:

EXPECTED DATE OF COMMENCEMENT OF WORK: ______

LICENSEE:

(Signature)

(Date)



79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

DREDGING REPORT

(To be completed by Licensee)

License No(s).: Licensee Name: Address of Dredging Activity:				
Dredging Contractor Information:				
Name:				
Mailing Address:				
Business Phone:				
Contact Person:				
E-mail:				
Dates Dredged:				
Total Volume Dredged during this period	:			
Disposal Volume(s) and Location(s):				

**If any portion of the dredged materials was used in a beneficial manner, please identify the beneficial use type (i.e. beach nourishment, habitat restoration, landfill cap, construction materials...), volume of dredged material utilized and the location of beneficial usage.

Document Certification:

"I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

Signature of Licensee

Date

If you have any questions pertaining to this form, please contact the Land & Water Resources Division at 860-424-3034.

Return to: Land & Water Resources Division State of Connecticut Department of Energy & Environmental Protection 79 Elm Street Hartford, CT 06106-5127



79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

Compliance Certification Form

The following certification must be signed by the licensee working in consultation with a Connecticut-licensed design professional and must be submitted to the address indicated at the end of this form within ninety (90) days of completion of the authorized work.

1.	Licensee Name: License Number(s): Site Address:	
2.	Check one: (a) I certify that the final site conditions site plans". Identify and describe any (b) I The final site conditions and / or stru- plans. The enclosed "as-built" plans n	s and / or structures are in general conformance with the approved deviations and attach to this form. uctures are not in general conformance with the approved site note the modifications".
3. 157	"I understand that any false statement in this cer 7b of the General Statutes and under any other ap	tification is punishable as a criminal offence under section 53a- oplicable law."
Signature of Licensee		Date
Na	me of Licensee (print or type) nature of CT-Licensed Design Professional	 Date
Na	me of CT-Licensed Design Professional (print or ty	pe)
Pro	ofessional License Number (if applicable)	Affix Stamp Here
•	As-built plans shall include: elevations or tidal da elevation views and cross sections included in th ones and be signed and sealed by an engineer, so Connecticut.	atums, as applicable, and structures, including any proposed ne approved license plans. Such as-built plans shall be the original surveyor or architect, as applicable, who is licensed in the State of
•	The Licensee will be notified by staff of the Land is necessary. Lack of response by LWRD staff do	and Water Resources Division (LWRD) if further compliance review ses not imply compliance.
Sul Rej De Lar 79 Ha	omit this completed form to : gulatory Section partment of Energy and Environmental Protectio nd & Water Resources Division Elm Street rtford, CT 06106-5127	in

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 71 23

FIELD ENGINEERING FOR DREDGING

- PART 1 GENERAL
 - 1.1 SUMMARY
 - 1.1.1 Engineering Services
 - 1.1.2 Survey Personnel
 - 1.2 REFERENCES
 - 1.3 DEFINITIONS
 - 1.4 SUBMITTALS
 - 1.5 GENERAL HYDROGRAPHIC SURVEY REQUIREMENTS
 - 1.6 HORIZONTAL POSITIONING PROCEDURES AND ACCURACIES
 - 1.7 REFERENCE HORIZONTAL CONTROL DATA
 - 1.8 DEPTH MEASUREMENT PROCEDURES AND CALIBRATION
 - 1.8.1 Depth Measurement Precision and Accuracy
 - 1.9 VERTICAL REFERENCE DATUMS
 - 1.10 FIELD DATA RECORDING, REDUCTIONS, AND PLOTTING REQUIREMENTS
 - 1.11 VOLUME COMPUTATIONS BY THE CONTRACTOR
 - 1.12 MISCELLANEOUS QUALITY CONTROL PROCEDURES
 - 1.12.1 Automated System Synchronization Checks
- PART 2 PRODUCTS

PART 3 EXECUTION

- 3.1 CONTRACTOR SURVEYS
 - 3.1.1 Contractor Quality Control Surveys
 - 3.1.2 Contractor Pre-Dredge Survey
 - 3.1.3 Data Submission Requirements for All Contractor Surveys
 - 3.1.4 Contractor Progress Payment
- 3.2 GOVERNMENT SURVEYS
 - 3.2.1 Survey Equipment
 - 3.2.2 Survey Types
 - 3.2.3 Government Volume Computations
 - 3.2.4 Final Acceptance by the Government
- -- End of Section Table of Contents --

SECTION 01 71 23

FIELD ENGINEERING FOR DREDGING

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Engineering Services

The Contractor shall furnish the required personnel, equipment, instruments, and transportation, as necessary to accomplish all required surveys. The Contractor shall note that volume computations for this project shall be based on the Government's reduced hydrographic 3'x3' average data, and the final after dredge survey acceptance shall be based on the Government's reduced hydrographic 3'x3' minimum data. Reports and other data together with supporting material developed during the prosecution of the work shall be furnished to the Contracting Officer. The Contractor shall also provide adequate professional supervision and quality control to assure the accuracy, quality, completeness, and progress of the work.

The Contractor shall provide and pay for the following field engineering services for the project:

a. Hydrographic and other survey work specified or required in execution of this project, except for surveys performed by the Government, as indicated in these specifications.

b. Civil, structural or other professional engineering services specified, or required to execute Contractor's construction methods.

1.1.2 Survey Personnel

The Contractor survey work to be performed under this contract shall be accomplished by, reviewed by and approved by a surveyor familiar with and having personal experience with hydrographic surveys.

1.2 REFERENCES

The publications listed below form a part of this section to the extent referenced. The publications are referenced in the text by basic designation only. The Army Corps of Engineers references below may be viewed or downloaded free of charge via the Internet (http://www.hnd.usace.army.mil/techinfo/).

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-1-1002 (2012) SURVEY MARKERS AND MONUMENTATIONS

EM 1110-2-1003 (2002) HYDROGRAPHIC SURVEYING

1.3 DEFINITIONS

<u>Survey Datum</u>: The Contract Drawings refer to Mean Lower Low Water (MLLW). The Government will perform all surveys using the Mean Lower Low Water

(MLLW) datum. The Contractor shall perform all surveys using the Mean Lower Low Water (MLLW) datum. The Contractor shall calibrate GPS equipment to the Corps of Engineers existing control indicated on the drawings. Calibration results shall be documented and made available to the Government, if requested. The Contractor shall utilize the Government conversion between MLLW and NAVD88. The Government shall be notified immediately of any discrepancies found using the above referenced conversion.

Federal Navigation Project (FNP): Includes channels, anchorages, turning basins, maneuvering basins, side slopes or any other features of a FNP. The FNP project limits are those authorized by Congress or established by the Chief of Engineers in dredging projects.

1.4 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 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Contractor Quality Control Survey Plan; G, DO

The Contractor shall submit a detailed plan describing the survey methods to be used during the work. The plan shall include the equipment to be utilized, tidal data, general site plan map, line designation map, any corrections to the MLLW datum used, calibration procedures to be used, expected horizontal and vertical accuracies, and pertinent information to describe the methods, and results to be obtained. Field surveys shall not begin until these plans are approved.

Layout Plan; G, DO

A complete plan of the dredging areas showing the horizontal layout of the Federal Navigation Project and any other pertinent features. The drawings shall be drawn at a scale sufficiently large to show all pertinent details. Typical scale of these drawing is 1"=100' or 1"=200'. The drawings shall be submitted as blue or black lines on a white background. The Layout Plan shall match the scale of the contract drawings unless otherwise approved

Charts

Current and tide charts to be used for the areas being dredged shall be submitted.

Survey Personnel

Furnish a listing of the personnel who will perform the survey work required by this contract. The listing shall include a brief summary of the hydrographic survey experience of each person. The list shall be submitted within 10 calendar days of the receipt by the Contractor of the Notice to Proceed.

Pre-Dredge Survey; G, DO

SD-05 Design Data

Contractor Quality Control Surveys; G, DO

Contractor After Dredge Survey; G, DO

1.5 GENERAL HYDROGRAPHIC SURVEY REQUIREMENTS

a. All hydrographic surveys for this project shall be multibeam and follow the mandatory criteria given in EM 1110-2-1003 for the "Navigation and Dredging Support Surveys" class of survey as a minimum.

b. Survey lines shall be spaced so that 200 percent bottom coverage is achieved. The lines shall clearly identify the toe and extend out to a minimum of three times the project depth to accurately depict the side slope.

1.6 HORIZONTAL POSITIONING PROCEDURES AND ACCURACIES

Vessel positioning systems utilized on this contract shall conform to the allowable horizontal positioning criteria in EM 1110-2-1003. The positioning system used shall be capable of meeting or exceeding the accuracy requirements and shall not exceed the allowable ranges where indicated. The Contractor shall submit a layout plan and may be required to demonstrate to the Government that its positioning system is capable of meeting or exceeding the accuracy requirements in EM 1110-2-1003.

1.7 REFERENCE HORIZONTAL CONTROL DATA

At the Preconstruction Conference, the Contracting Officer will provide the Contractor with details of the RTK Base Station(s), Bench Mark(s) and any corrections from the geodetic datum of NAVD88 to the specified datum (MLLW) recommended for use on the project. This control information shall be presumed to meet the accuracy requirements in EM 1110-2-1003. The Contractor shall immediately notify the Contracting Officer if existing control points have been disturbed. In the event new station monumentation is required to perform the work, new stations shall be established in accordance with EM 1110-1-1002 criteria, and an equitable adjustment will be made to the contract.

- 1.8 DEPTH MEASUREMENT PROCEDURES AND CALIBRATION
- 1.8.1 Depth Measurement Precision and Accuracy

Depth measurements including depth observation precision and resolution shall meet the vertical accuracy standards prescribed in EM 1110-2-1003.

1.9 VERTICAL REFERENCE DATUMS

Depth measurements shall be reduced to the specified datum using RTK GPS or staff/gage readings, as described in EM 1110-2-1003. Recording tides using RTK GPS is recommended and can be used in lieu of tide staffs/gages. RTK tide data shall be referenced and documented to an existing tide gage daily. When needed, tide staffs/gages shall be constructed, referenced, maintained, stilled, and read in accordance with the criteria in EM 1110-2-1003.

1.10 FIELD DATA RECORDING, REDUCTIONS, AND PLOTTING REQUIREMENTS

The data format fields for submitting reduced hydrographic data to the District is XY(+)Z. Digital data shall be emailed to the point of contact established at the Preconstruction Conference, unless the data set is too large for email. In such cases, data shall be sent via CD-ROM or file transfer site as established by the Contracting Officer.

1.11 VOLUME COMPUTATIONS BY THE CONTRACTOR

The Contractor shall have the capability to compute excavation quantities from work performed under this contract. The Contractor shall compute volumes using any of the techniques given in Chapter 15 of EM 1110-2-1003. Section drawings shall be made at the horizontal and vertical scales given in EM 1110-2-1003.

- 1.12 MISCELLANEOUS QUALITY CONTROL PROCEDURES
- 1.12.1 Automated System Synchronization Checks

The Contracting Officer reserves the right to check each automated hydrographic survey system to insure adequacy of correlation between position and depth. Methods for performing this check are given in EM 1110-2-1003.

PART 2 PRODUCTS

Not Used

- PART 3 EXECUTION
- 3.1 CONTRACTOR SURVEYS
- 3.1.1 Contractor Quality Control Surveys

The Contractor shall examine their work by conducting one hydrographic survey every two weeks for a total of two surveys per month. Additionally, the Contractor shall conduct a hydrographic survey prior to any request for a Government survey for final acceptance. The final Contractor Quality Control Survey for a specific discrete area, approved by the Contracting Officer, or for the entire FNP, shall constitute the Contractor After Dredge Survey for either that specific discrete area or the entire FNP, as appropriate. Contractor Quality Control Surveys shall be sent to the Contracting Officer upon request, and when a progress payment request is submitted.

3.1.2 Contractor Pre-Dredge Survey

The Contractor shall, at their cost, conduct their own pre-dredge survey for verification of the Government's Pre Dredge survey and submit the data outlined below in subpart "Data Submission Requirements for All Contractor Surveys", to the Contracting Officer upon completion. In addition, prior to starting the Contractor Pre-Dredge Survey, the Contractor shall coordinate with the Corps of Engineers Survey personnel to calibrate Contractor survey equipment settings to be consistent with Government survey equipment settings. It is the Contractor's responsibility to obtain and review the Government's Pre Dredge survey information and notify the Government of any discrepancies between the Government and Contractor Pre-Dredge surveys prior to the start of any dredging. Once the discrepancy evaluation is completed, the Contracting Officer shall determine if any revisions are needed for the Government Pre Dredge survey of record.

CONSIDER ADDING PRE-DREDGE SURVEYS PER DREDGE SEASON OVER THE PoP.

3.1.3 Data Submission Requirements for All Contractor Surveys

Data Submission Requirements for Contractor Surveys

All Contractor Quality Control Surveys submissions (to include the Contractor's pre-dredge survey as noted above under subparagraph "Contractor Pre-Dredge Survey") shall include the following:

a. Field Data:

Raw multibeam data zipped by day

Sound velocity casts zipped by day

Daily tide tables and/or files

Depth sounder rolls (if used) corrected for tide and corresponding boat plots

Reduced hydrographic 3'x3' average and 3'x3' minimum XY(+)Z files. The 3'x3' average file shall have the average sounding in the center of the cell and the 3'x3' minimum file shall have the minimum sounding in its actual location.

Field notes, daily logs, and quantity computations

b. 3'x3' Minimum Plot (an example survey sketch is attached at the end of the this specification section):

(1) Noted Information

Name of project

Name of surveying/contract company

Date(s) of survey

Horizontal Datum

Distance units

Vertical Datum

Sonar system

Sounding frequency

GPS System

Software used

Sounding sort distance and confirmation that soundings shown represent shoalest values

MLLW to NAVD88 correction

V-Datum version used (if applicable)

(2) Plotted Information

FNP limits/dredge area

Minimum sorted soundings

3'x3' minimum contour at design depth

Scale bar

North arrow

Grid

Stationing

Navigation Aids

(3) Sheet Setup

The scale of the plot shall match that of the Contract Drawings and the soundings shall be sorted as appropriate (e.g., 20 feet for 100 scale plot, 40 feet for 200 scale plot, etc). The font size shall be the appropriate size to prevent soundings from being overwritten on the plot.

The above data will be used by the Government to verify achievement of contract depth, and compare actual progress and in-place quantities dredged with scheduled progress.

3.1.4 Contractor Progress Payment

The Contractor shall submit Contractor Quality Control Survey data for any periods for which progress payments are requested. The Contractor shall furnish the data listed above in subpart "Data Submission Requirements for Contractor Surveys", to the Contracting Officer, who will use the data as necessary to determine the amount of progress payments. The Government does not conduct any progress type surveys (See below under paragraph "Government Surveys" for the type of surveys that the Government will perform).

3.2 GOVERNMENT SURVEYS

3.2.1 Survey Equipment

a. All Government surveys will be done with multibeam. Multibeam survey lines usually run parallel with the FNP limits and strive for 200 percent bottom coverage. The sonar beam angle will not exceed 120 degrees. Final FNP clearance will always be based on a contour of the authorized depth created from the 3'x3' minimum soundings collected.

b. Tides will be recorded either by manual tide gage(s) or, when vertical accuracy permits, RTK GPS. When using RTK GPS a water surface/tide gage check will be done daily to verify the accuracy of the RTK data. The

reference used for tide readings may be an existing NOAA bench mark(s), NOAA's V-Datum program, "Hypack KTD file or a point(s) established by the Government. All vertical reference information and methodology used is available upon request or may be found in the general notes on any set of plans issued by the Government. This information will be verified/updated at the Preconstruction Conference.

c. The RTK base station used by the Government for a particular project may be found in the general notes on any set of plans issued by the government. Specific details about the base station are available upon request and will be confirmed at the Preconstruction Conference.

3.2.2 Survey Types

a. <u>Specification (Spec) Surveys</u>: The Government has conducted a Specification (Spec) survey for this particular project, which was used to calculate initial quantities for the purposes of issuing this contract. The quantities calculated were done so using the 3'x3' average soundings. The quantities calculated from the spec survey may be used for payment purposes, unless the Government opts to conduct a pre-dredge survey (see part "B." below).

b. <u>Pre-Dredge Survey</u>: The Government will conduct or has conducted a pre-dredge survey within 180 days of the start of dredging operations. The Government reserves the right to use the specification survey as the pre-dredge survey, even when the specification survey was completed more than 180 days before the start of dredging operations. Pre-dredge drawings and XYZ data files will be provided to the Contractor upon request.

c. The Government's Pre-Dredge survey will be the survey of record for initial volume calculations and determining the total amount of material available to be dredged. Volume calculations will be based on the 3'x3' average soundings.

d. Government After Dredge Surveys (Final Examination by the Government):

(1) The Government will not perform an after dredge survey until the Contractor has conducted its own after dredge survey and submitted the following:

(a) Reduced hydrographic 3'x3' minimum PDF plot, as described in Subpart "Contractor Quality Control Surveys".

(b) Reduced hydrographic 3'x3' minimum and average survey files (XYZ data)

(c) Volume calculations

(2) The above information shall be submitted 3 calendar days (72 hours) prior to the date the Contractor is requesting the Government to mobilize to the site to perform an After Dredge survey. If the above 3'x3' minimum XY(+)Z data does not show the project cleared to the targeted depth, the Government will not perform the After Dredge survey and will require the Contractor to perform additional dredging work to meet the contract requirements. Upon completion of the additional dredging work, the Contractor shall perform a new After Dredge Survey and resubmit the new data to the Government as noted in Paragraph 1 above.

(3) The Contractor will be notified when the Government's After Dredge survey will take place, and shall have all equipment removed from the cleared survey area so as not to impede the Government survey operation. If water, tide and/or weather conditions at the project site prevent the survey from being completed safely, the survey will be conducted as soon as the Government determines that the water, tide and/or weather conditions have improved to the point where the After Dredge survey can be completed safely. Upon completion of the final after dredge survey, the Government shall have 7 days to compile the information, process the data, and review for required depth clearance. The Government's After Dredge survey will be used to verify that the targeted contract depth has been achieved. The Government's first After Dredge survey over a particular area will be performed at no cost to the Contractor.

(4) If the Government's After Dredge survey shows the project clear to the targeted depth using the authorized depth contour created from the 3'x3' minimum soundings it becomes the After Dredge Survey of record. This survey of record will be compared to the Government's Pre-Dredge survey of record to determine the amount of material that was removed from the project. The 3'x3' average soundings will be used for the volume calculation. This calculation will be used to determine the amount of compensation due to the Contractor.

(5) If the Government's After Dredge survey does not show the project clear to the targeted depth, the Contractor will be required to follow the process laid out in paragraph "(1)" above. Should more than one After Dredge survey be necessary by the Government in a particular area because of shoals disclosed during the Government's first After Dredge survey, the cost of such second and any subsequent sounding or sweeping operations will be charged against the Contractor. The rate for each day in which the Government survey plant is engaged in such sounding or sweeping operations, editing data, is en route to or from the site, or is held, for the Contractor's convenience at or near the site for these operations, shall be \$12,880.

(6) This entire process will repeat until the Government After Dredge shows the FNP clear to targeted contract depth. The survey area will be gridded into 3-feet by 3-feet (3'x3') cells. The minimum sounding within each cell will be saved in its actual location. A TIN model will be generated and a required project depth contour will be created. This contour will be used by the Government to determine if the FNP has been cleared to contract project depth. Plotted soundings are not used to determine if the project has been completed to the contract depth.

d. <u>Progress Surveys</u>: The Government does not perform progress type surveys.

3.2.3 Government Volume Computations

a. All Government survey volume computations will be calculated using "Hypack®".

b. A Hypack® CHN channel design will be generated for each project representing the required FNP dredge depth, as well as any allowable over depth, and channel side slopes typically 1 foot vertical over 3 feet horizontal (1V:3H). Any change to the side slope design (i.e., box cutting) must be approved by the Government prior to the start of any

dredging.

c. A separate TIN surface will be generated from each of the XYZ files created from the 3'x3' average Pre-and After Dredge surveys. Hypack®'s TIN model program will do an analysis of the two surveys and determine the amount of compensation due the Contractor. Material removed below the allowable overdepth will not be included in the payable quantity of material.

3.2.4 Final Acceptance by the Government

Final acceptance of the whole or any 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.

-- End of Section --



SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

- 1.1 DEFINITIONS
 - 1.1.1 Co-mingle
 - 1.1.2 Construction Waste
 - 1.1.3 Demolition Debris/Waste
 - 1.1.4 Disposal
 - 1.1.5 Diversion
 - 1.1.6 Final Construction Waste Diversion Report
 - 1.1.7 Recycling
 - 1.1.8 Reuse
 - 1.1.9 Salvage
 - 1.1.10 Source Separation
- 1.2 CONSTRUCTION WASTE (INCLUDES DEMOLITION DEBRIS/WASTE)
- 1.3 CONSTRUCTION WASTE MANAGEMENT
 - 1.3.1 Implementation of Construction Waste Management Program
 - 1.3.2 Oversight
 - 1.3.3 Special Programs
 - 1.3.4 Special Instructions
 - 1.3.5 Waste Streams
- 1.4 SUBMITTALS
- 1.5 MEETINGS
- 1.6 CONSTRUCTION WASTE MANAGEMENT PLAN
- 1.7 RECORDS (DOCUMENTATION)
 - 1.7.1 General
- 1.7.2 Accumulated
- 1.8 FINAL CONSTRUCTION WASTE DIVERSION REPORT
- 1.9 COLLECTION
 - 1.9.1 Source Separation Method
 - 1.9.2 Other Methods
- 1.10 DISPOSAL
 - 1.10.1 Reuse
 - 1.10.2 Recycle
 - 1.10.3 Waste
- PART 2 PRODUCTS
- PART 3 EXECUTION
- -- End of Section Table of Contents --

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

- 1.1 DEFINITIONS
- 1.1.1 Co-mingle

The practice of placing unrelated materials together in a single container, usually for benefits of convenience and speed.

1.1.2 Construction Waste

Waste generated by construction activities, such as scrap materials, damaged or spoiled materials, temporary and expendable construction materials, and other waste generated by the workforce during construction activities.

1.1.3 Demolition Debris/Waste

Waste generated from demolition activities, including minor incidental demolition waste materials generated as a result of Intentional dismantling of all or portions of a building, to include clearing of building contents that have been destroyed or damaged.

1.1.4 Disposal

Depositing waste in a solid waste disposal facility, usually a managed landfill or incinerator, regulated in the US under the Resource Conservation and Recovery Act (RCRA).

1.1.5 Diversion

The practice of diverting waste from disposal in a landfill or incinerator, by means of eliminating or minimizing waste, or reuse of materials.

1.1.6 Final Construction Waste Diversion Report

A written assertion by a material recovery facility operator identifying constituent materials diverted from disposal, usually including summary tabulations of materials, weight in short-ton.

1.1.7 Recycling

The series of activities, including collection, separation, and processing, by which products or other materials are diverted from the solid waste stream for use in the form of raw materials in the manufacture of new products sold or distributed in commerce, or the reuse of such materials as substitutes for goods made of virgin materials, other than fuel.

1.1.8 Reuse

The use of a product or materials again for the same purpose, in its original form or with little enhancement or change.

1.1.9 Salvage

Usable, salable items derived from buildings undergoing demolition or deconstruction, parts from vehicles, machinery, other equipment, or other components.

1.1.10 Source Separation

The practice of administering and implementing a management strategy to identify and segregate unrelated waste at the first opportunity.

1.2 CONSTRUCTION WASTE (INCLUDES DEMOLITION DEBRIS/WASTE)

Divert a minimum of 60 percent by weight of the project construction waste and demolition debris/waste from the landfill. Follow applicable industry standards in the management of waste. Apply sound environmental principles in the management of waste.

A. Practice efficient waste management when sizing, cutting, and installing products and materials.

B. Use all reasonable means to divert construction waste and demolition debris/waste from landfills and incinerators and to facilitate the recycling or reuse of excess construction materials.

1.3 CONSTRUCTION WASTE MANAGEMENT

Implement a Construction Waste Management Program for the project. Take a pro-active, responsible role in the management of construction construction waste, recycling process, disposal of demolition debris/waste, and require all subcontractors, vendors, and suppliers to participate in the Construction Waste Management Program. Establish a process for clear tracking, and documentation of construction waste and demolition debris/waste.

1.3.1 Implementation of Construction Waste Management Program

Develop and document how the Construction Waste Management Program will be implemented in a Construction Waste Management Plan. Submit a Construction Waste Management Plan to the Contracting Officer for approval. Construction waste and demolition debris/waste materials include un-used construction materials not incorporated in the final work, as well as demolition debris/waste materials from demolition activities or deconstruction activities. In the management of waste, consider the availability of viable markets, the condition of materials, the ability to provide material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates.

1.3.2 Oversight

The Quality Control Manager, as specified in Section 01 45 00 QUALITY CONTROL, is responsible for overseeing and documenting results from executing the Construction Waste Management Plan for the project.

1.3.3 Special Programs

Implement special programs involving rebates or similar incentives related

to recycling of construction waste and demolition debris/waste materials. Retain revenue or savings from salvaged or recycling, unless otherwise directed. Ensure firms and facilities used for recycling, reuse, and disposal are permitted for the intended use to the extent required by federal, state, and local regulations.

1.3.4 Special Instructions

Provide on-site instruction of appropriate separation, handling, recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the projects. Designation of single source separating or commingling will be clearly marked on the containers.

1.3.5 Waste Streams

Delineate waste streams and characterization, including estimated material types and quantities of waste, in the Construction Waste Management Plan. Manage all waste streams associated with the project. Typical waste streams are listed below. Include additional waste steams not listed:

- A. Land Clearing Debris
- B. Asphalt
- C. Masonry and CMU
- D. Concrete

E. Metals (e.g. banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized, stainless steel, aluminum, copper, zinc, bronze, etc.)

- F. Wood (nails and staples allowed)
- G. Glass
- H. Paper
- I. Plastics (PET, HDPE, PVC, LDPE, PP, PS, Other)
- J. Gypsum
- K. Non-hazardous paint and paint cans
- L. Carpet
- M. Ceiling Tiles
- N. Insulation
- 0. Beverage Containers

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are 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-01 Preconstruction Submittals

Construction Waste Management Plan; G, RO

SD-11 Closeout Submittals

Final Construction Waste Diversion Report; G, RO

1.5 MEETINGS

Conduct Construction Waste Management meetings. After award of the Contract and prior to commencement of work, schedule and conduct a meeting with the Contracting Officer to discuss the proposed Construction Waste Management Plan and to develop a mutual understanding relative to the management of the Construction Waste Management Program and how waste diversion requirements will be met.

The requirements of this meeting may be fulfilled during the coordination and mutual Understanding meeting outlined in Section 01 45 00 QUALITY CONTROL. At a minimum, discuss and document waste management goals at following meetings:

- A. Preconstruction Conference.
- B. Regular Quality Control meetings.
- C. Work safety meeting (if applicable).

1.6 CONSTRUCTION WASTE MANAGEMENT PLAN

Submit Construction Waste Management Plan within 15 calendar days after notice to proceed. Revise and resubmit Construction Waste Management Plan as necessary, in order for construction to begin.

An approved Construction Waste Management Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations or meeting project cumulative waste diversion requirement. Ensure all subcontractors receive a copy of the approved Construction Waste Management Plan. The plan demonstrates how to meet the project waste diversion requirement. Also, include the following in the plan:

- A. Identify the names of individuals responsible for waste management and waste management tracking, along with roles and responsibilities on the project.
- B. Actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.
- C. Description of the regular meetings to be held to address waste management.
- D. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas on site and equipment to be used for processing, sorting, and temporary storage of materials.
- E. Name of landfill and incinerator to be used.

- F. Identification of local and regional re-use programs, including non-profit organizations such as schools, local housing agencies, and organization that accept used materials such as material exchange networks and resale stores. Include the name, location, phone number for each re-use facility identified, and provide a copy of the permit or license for each facility.
- G. List of specific materials, by type and quantity, that will be salvaged for resale, salvaged and reused on the current project, salvaged and stored for reuse on a future project, or recycled. Identify the recycling facilities by name, address, and phone number.
- H. Identification of materials that cannot be recycled or reused with an explanation or justification, to be approved by the Contracting Officer.
- Description of the means by which materials identified in item (g) above will be protected from contamination.
- J. Description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site).
- K. Copy of training plan for subcontractors and other services to prevent contamination by co-mingling materials identified for diversion and waste materials.

Distribute copies of the waste management plan to each subcontractors, the Quality Control Manager, and the Contracting Officer.

- 1.7 RECORDS (DOCUMENTATION)
- 1.7.1 General

Maintain records to document the types and quantities of waste generated and diverted though re-use, recycling and sale to third parties; through disposal to a landfill or incinerator facility. Provide explanations for materials not recycled, reused or sold. Collect and retain manifests, weight tickets, sales receipts, and invoices specifically identifying diverted project waste materials or disposed materials.

1.7.2 Accumulated

Maintain a running record of materials generated and diverted from landfill disposal, including accumulated diversion rates for the project. Make records available to the Contracting Officer during construction or incidental demolition activities. Provide a copy of the diversion records to the Contracting Officer upon completion of the construction, incidental demolitions or minor deconstruction activities.

1.8 FINAL CONSTRUCTION WASTE DIVERSION REPORT

Maintain current construction waste diversion information on site for periodic inspection by the Contracting Officer. Include in the final reports: the project name, contract information, information for waste generated, diverted and disposed of for the current reporting period and show cumulative totals for the project. Report must identify quantities of waste by type and disposal method. Also include supporting documentation to include manifests, weigh tickets, receipts, and invoices specifically identifying the project and waste material type and weighted sum.

Provide a Final Construction Waste Diversion Report at the completion of the project.

1.9 COLLECTION

Collect, store, protect, and handle reusable and recyclable materials at the site in a manner which prevents contamination, and provides protection from the elements to preserve their usefulness and monetary value. Provide receptacles and storage areas designated specifically for recyclable and reusable materials and label them clearly and appropriately to prevent contamination from other waste materials. Keep receptacles or storage areas neat and clean.

Train subcontractors and other service providers to either separate waste streams or use the co-mingling method as described in the Construction Waste Management Plan. Handle hazardous waste and hazardous materials in accordance with applicable regulations and coordinate with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS . Separate materials by one of the following methods described herein:

1.9.1 Source Separation Method

Separate waste products and materials that are recyclable from trash and sort as described below into appropriately marked separate containers and then transport to the respective recycling facility for further processing. Deliver materials in accordance with recycling or reuse facility requirements (e.g., free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process). Separate materials into the category types as defined in the Construction Waste Management Plan.

1.9.2 Other Methods

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

1.10 DISPOSAL

Control accumulation of waste materials and trash. Recycle or dispose of collected materials off-site at intervals approved by the Contracting Officer and in compliance with waste management procedures as described in the waste management plan. Except as otherwise specified in other sections of the specifications, dispose of in accordance with the following:

1.10.1 Reuse

Give first consideration to reusing construction and demolition materials as a disposition strategy. Recover for reuse materials, products, and components as described in the approved Construction Waste Management Plan. Coordinate with the Contracting Officer to identify onsite reuse opportunities or material sales or donation available through Government resale or donation programs. Sale of recovered materials is not allowed on the site. Consider the use of surplus industrial supply broker services, who match entities with reusable or repurpose industrial materials with entities with need of such materials.

1.10.2 Recycle

Recycle non-hazardous construction and demolition/debris materials that are not suitable for reuse. Track rejection of contaminated recyclable materials by the recycling facility. Rejected recyclables materials will not be counted as a percentage of diversion calculation. Recycle all fluorescent lamps, HID lamps, mercury (Hg) -containing thermostats and ampoules, and PCBs-containing ballasts and electrical components as directed by the Contracting Officer. Do not crush lamps on site as this creates a hazardous waste stream with additional handling requirements.

1.10.3 Waste

Dispose by landfill or incineration only those waste materials with no practical use, economic benefit, or recycling opportunity.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used. -- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 31 - EARTHWORK

SECTION 31 23 01

UNDERWATER BLASTING

- PART 1 GENERAL
 - 1.1 SCOPE
 - 1.2 RELATED WORK SPECIFIED ELSEWHERE
 - 1.3 REFERENCES
 - 1.4 DEFINITIONS
 - 1.4.1 Controlled Blasting
 - 1.4.2 Flyrock
 - 1.4.3 Green Concrete
 - 1.4.4 Pressure Waves
 - 1.4.5 Rock, Hard/Unyielding Material, Weathered Rock, Voids (Bit Drops), Sediment
 - 1.4.5.1 Rock
 - 1.4.5.2 Hard/Unyielding Material
 - 1.4.5.3 Voids
 - 1.4.5.4 Sediment
 - 1.4.6 Unstable Material
 - 1.4.7 Vibrations
 - 1.5 SYSTEM DESCRIPTION
 - 1.5.1 Classification of Excavation
 - 1.5.1.1 Common Submerged Excavation
 - 1.5.1.2 Rock Excavation
 - 1.5.2 Blasting
 - 1.6 SUBMITTALS
 - 1.7 COORDINATION
 - 1.8 LIABILITY
- PART 2 PRODUCTS
 - 2.1 TRANSPORTATION, STORAGE AND USE OF EXPLOSIVES
 - 2.1.1 General
 - 2.1.2 Blasting Products
 - 2.1.2.1 Requirements
 - 2.1.2.2 Prohibited Explosive Materials
 - 2.1.3 Magazines
 - 2.1.4 Magazine Keeper
- PART 3 EXECUTION
 - 3.1 GENERAL EXCAVATION AND REMOVAL
 - 3.1.1 Removal of Submerged Materials
 - 3.1.1.1 Sediment Within the Project Limits for Removal Displacement
 - 3.1.1.2 Breakage of Rock and Hard/Unyielding Materials for
 - Excavation and Disposal
 - 3.1.2 Disposal of Materials Within the Project Limits
 - 3.2 SAFETY PROCEDURES

- 3.2.1 General
- 3.2.2 Weekly Coordination Meeting
- 3.2.3 Public Notice of Blasting Operations
- 3.2.4 Public Meetings
- 3.2.5 Warnings and Signals
- Notification to Navigation 3.2.6
- 3.2.7 Navigation Control During Drilling, Loading, and Blasting Operations
- 3.2.8 Lightning Detection Device
- 3.2.9 Drill-Boat or Barge Safety
- 3.2.10 Inspection for the All-Clear Signal
 - 3.2.10.1 Check for Misfires
 - 3.2.10.2 Misfire-Handling Procedures
- 3.2.11 Natural Resource Protection (Environmental Resource Protection)
 - 3.2.11.1 National Environmental Policy Act
 - 3.2.11.2 Endangered Species Act

 - 3.2.11.3 Marine Mammal Protection Act3.2.11.4 Bald and Golden Eagle Protection Act
 - 3.2.11.5 Marine Protection, Research and Sanctuaries Act
 - 3.2.11.6 Magnuson-Stevens Act
 - 3.2.11.7 Clean Air Act
 - 3.2.11.8 Clean Water Act
 - 3.2.11.9 National Historic Preservation Act
 - 3.2.11.10 Additional Federal Environmental Laws
 - 3.2.11.11 State and Local Environmental Laws and Regulations
- 3.3 OPERATIONAL REQUIREMENTS
 - 3.3.1 Coordination
 - 3.3.1.1 Schedules
 - 3.3.1.2 Permits
 - 3.3.2 Navigational, Lock or Vessel Control During Excavation and Removal
 - 3.3.3 Work Restrictions
 - 3.3.3.1 Confined Detonations
 - 3.3.3.2 Temporal, Weekly and Seasonal Restrictions for Blasting
 - 3.3.3.3 Allowable Vibration
 - Limiting Blast-Induced Vibrations at Green Concrete 3.3.3.4
 - 3.3.3.5 Allowable Airblast
- 3.4 BLASTING PERSONNEL
 - 3.4.1 Blasting Consultant
 - 3.4.1.1 Blasting Consultant's Responsibilities
 - 3.4.1.2 Blasting Consultant's Expercise 3.4.1.3 Blasting Consultant's Qualifications Submissions
 - 3.4.2 Blasting Specialist
 - 3.4.2.1 Blasting Specialist's Responsibilities
 - 3.4.2.2 Blasting Specialist's Expertise
 - 3.4.2.3 Blasting Specialist's Qualifications Submission
 - 3.4.3 Blaster in Charge
 - Blaster-in-Charge's Responsibilities 3.4.3.1
 - 3.4.3.2 Blaster-in-Charge's Expertise
 - 3.4.3.3 Blaster-in-Charge Qualifications Submission
 - 3.4.4 Blasters
 - 3.4.5 Vibration Monitoring Specialty Firm
 - 3.4.6 Vibration Specialist
 - Vibration Specialist's Responsibilities 3.4.6.1
 - 3.4.6.2 Vibration Specialist's Expertise
 - 3.4.6.3 Vibration Specialist Qualifications' Submission
 - 3.4.7 Seismograph Technicians
 - 3.4.8 Structural Inspection/Evaluation Specialist
 - 3.4.9 Magazine Keeper

- 3.5 RECORD KEEPING
 - 3.5.1 Pre-Blast Surveys
 - 3.5.2 Post-Blast Surveys
 - 3.5.3 Daily Explosives' Magazine Inventory and Daily Explosives' Accounting
- 3.6 BLASTING DOCUMENTS
 - 3.6.1 Master Blasting Plan
 - 3.6.1.1 Proposed Blasting Personnel
 - 3.6.1.2 Explosives and Blasting Equipment
 - 3.6.1.3 Blasting Safety Plan
 - 3.6.1.4 Navigation Control Plan
 - 3.6.1.5 Production Blasting Design
 - 3.6.1.6 Test-Blast Plan
 - 3.6.2 Individual Shot Plans
 - 3.6.3 Test-Blast Evaluation Report
 - 3.6.4 Individual Shot Reports
 - 3.6.4.1 Drilling Logs
 - 3.6.4.2 Individual Shot Vibration Monitoring Report
 - 3.6.4.3 Individual Shot Videos
 - 3.6.4.4 Reports of Required Safety, Protective, and Natural
 - Resource Programs
- 3.6.5 Daily Blasting and Removal Log
- 3.7 DRILLING AND BLASTING
 - 3.7.1 Underwater Shot Holes
 - 3.7.2 Shot Hole Logging
 - 3.7.3 Stemming
 - 3.7.3.1 Stemming Material
 - 3.7.3.2 Length of Stemming
 - 3.7.4 Loading Shot Holes
- 3.8 IMPACT MONITORING
 - 3.8.1 Public-Use Area Effects
 - 3.8.2 Airblast and Vibration Monitoring
 - 3.8.3 Individual Shot Videos
 - 3.8.4 Air, Water or Land Protections
 - 3.8.5 Natural Resource Assessments, Mitigation and Monitoring
 - 3.8.5.1 Fish-Repelling Noise
 - 3.8.5.2 Watch Program
 - 3.8.5.3 Post-Blast Fish Surveys
 - 3.8.5.4 Underwater Overpressure Monitoring
- 3.9 EXCAVATION VERIFICATION
- 3.10 SUBMERGED MATERIAL DISPOSAL
- -- End of Section Table of Contents --

SECTION 31 23 01

UNDERWATER BLASTING

PART 1 GENERAL

-GINA/STEVE REMIND ME TO COORDINATE WITH YOU ON WHETHER ANYTHING FROM THE FOLLOWING SPEC SECTION COULD APPLY (PORTIONS PULLED INTO THIS SECTION FOR OUR PURPOSES):

02 32 13 SUBSURFACE DRILLING AND SAMPLING 35 30 00 UNDERWATER DRILLING AND CONFINED BLASTING

1.1 SCOPE

The breakage of rock and hard/unyielding materials may be conducted by any means, unless otherwise stated herein. If the contractor elects to use drilling and blasting for breakage or displacement of any units, this entire section is applicable and covers activities associated with drilling and blasting for rock excavation at the surface. Contained herein are procedures for all activities relating to drilling; blasting and the transportation, storage and use of explosives; breakage and displacement of rock. The Contractor's blasting program and methods are those necessary to accomplish the excavation shown on the Contract drawings in accordance with the provisions specified herein. Control the quantity of explosives fired in all blasting to prevent injuries to persons and to avoid damage to all structures, properties, governmental and nonprofit entities, commerce and businesses, and natural resources and their habitat.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section [____]

COORDINATE WITH ENVIRONMENTAL ON ANY MARINE MAMMAL, SEA TURTLE, OR OTHER FISHERIES RESOURCES NEEDING ADDITIONAL REQUIREMENTS (LIKELY REFERNCE TO 01 57 19 NEEDED)

1.3 REFERENCES

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

NEED TO CHECK FOR ANY CT-STATE OR FIRE MARSHAL BLASTING ITEMS/REFERENCES TO INCLUDE

INTERNATIONAL SOCIETY OF AUTOMATION (ISA)

ISEE PSBS

(2017) ISEE Performance Specification for

	Blasting Seismographs
NATIONAL FIRE PROTECTION	N ASSOCIATION (NFPA)
NFPA 495	(2018) Explosives Materials Code
U.S. ARMY CORPS OF ENGI	NEERS (USACE)
EM 385-1-1	(2024) Safety Safety and Occupational Health (SOH) Requirements
EM 1110-2-3800	(2018) Engineering and Design Blasting for Rock Excavations
U.S. Code (USC)	
16 USC 470	National Historic Preservation Act
16 USC 668	Bald and Golden Eagle Protection Act
16 USC 1361	Marine Mammal Protection Act
16 USC 1531	Endangered Species Act
16 USC 1801	Magnuson-Stevens Act
33 USC 1251	Clean Water Act
33 USC 1401	Marine Protection, Research and Sanctuaries Act
42 USC 4321	National Environmental Policy Act
42 USC 7401	Clean Air Act
U.S. NATIONAL ARCHIVES 2	AND RECORDS ADMINISTRATION (NARA)
49 CFR 177	Carriage by Public Highway

1.4 DEFINITIONS

1.4.1 Controlled Blasting

Controlled blasting refers to blasting techniques used to better distribute the explosive charge to minimize adverse impacts. For underwater blasting, adverse impacts may be cited for the public's and contracted personnel's safety, lessening the fracturing of the rock being blasted, surrounding facilities' protection, and the avoidance of impacting natural resources or their habitats. Controlled blasting techniques must be deployed, such as careful loading to the pattern's design using the drilling log for each shot hole, stemming effectively the top of firm rock and any soft zones or voids, carefully observing maximum charge weight per delay, using delays between holes and rows of 25 milliseconds or greater, and avoiding rifling plumes by proper blasting techniques.

1.4.2 Flyrock

Flyrock is one of the three primary adverse impacts from blasting. Flyrock

is defined as any airborne projectile flying the lesser distance of either 200 ft horizontally from the shot pattern or one-half the distance between the shot pattern and the Contractor work limits, whichever distance is the lesser.

DOUBLE CHECK IF 200 ft FROM ABOVE IS STILL APROPRIATE

1.4.3 Green Concrete

CONCRETE MAY BE WITHIN 1000 ft of project. Current plan is to keep requirement

Green concrete is recently placed concrete that has initiated setting but may have substantial strength reduction from strong vibrations before the concrete has fully cured. Green concrete also includes the materials of shotcrete or cementitious grouts. Each Individual Shot Plan is required to consider vibrations emanating from its blast pattern reaching the location of the reported newly placed concrete to remain below allowable vibration levels depending upon the age of the concrete. Note the paragraph GREEN CONCRETE.

1.4.4 Pressure Waves

Pressure Waves, both Airblast (or noise) and Underwater Pressure Waves, are one of the three, primary adverse impacts from blasting. Airblast and Underwater Pressure Waves are solely compression waves passing through the air or water, respectively. Their units of measure may be in terms of pressure, Pascals (Pa) or pounds per square inch (psi), or in terms of the logarithmic scale, Decibels (dB). Note that pressures in dB have different reference values for Airblast and Underwater Pressure Waves, so the pressure waves through air are of a lower magnitude than pressure waves through water with the same numeric dB value.

1.4.5 Rock, Hard/Unyielding Material, Weathered Rock, Voids (Bit Drops), Sediment

1.4.5.1 Rock

Rock is natural solid, interlocking material with firmly cemented, laminated, and crystalline fabric, foliated masses or conglomerate deposits, none of which can be removed without systematic drilling and blasting, drilling and the use of expansion jacks or feather wedges, or the use of high-energy mechanical devices; and, so classified for this project as submerged large boulders, [masonry, or concrete other than pavement exceeding the capacity of the awarded contractor's underwater excavation capacity,] which may be the minimum volume of 0.50 cubic yard.

1.4.5.2 Hard/Unyielding Material

Hard/Unyielding materials comprise weathered rock, dense consolidated deposits, or conglomerate materials which are not included in the definition of "rock" with stones greater than 1.0 inch in any dimension. These materials usually require the use of heavy excavation equipment or high-energy mechanical devices for breakage or displacement to remove the materials .

NEED TO COORDINATE THESE MATERIAL DESCRIPTIONS TO BE THAT SAME BETWEEN THIS SECTION AND 35 20 23 $\,$

1.4.5.3 Voids

Voids, for underwater percussion-drilling logging, is any rapid bit drop with little or no resistance to the downward drilling pressure. Voids may be water or sediment filled, which may possibly determine that the original rock unit has been altered to a weaker state that will not retain the gaseous detonation products when the explosives are shot.

1.4.5.4 Sediment

Sediment is both: the loose to firm material that may be dredged above the surface of weathered or firm rock, which cannot be easily dredged; and the infill of voids as solid particles.

1.4.6 Unstable Material

Unstable materials are loose, submerged sediment that are easily displaced by water flow or turbulence and by vibrations or incidental impact.

1.4.7 Vibrations

Vibrations are one of the three, primary adverse impacts from blasting. Vibrations are the result of various wave forms emanating from the detonation or deflagration of ignited materials from a shot pattern. Peak particle velocity (PPV) is defined as the maximum absolute value among the three ground vibration velocities measured in the vertical, longitudinal, and transverse directions over a time of a record. Peak, total vector-sum particle velocity is the peak value over the full, time history of each time-unit's value of the square-root sum of the squared, component velocities. Velocity units are expressed in centimeters per second (cps) or inches per second (ips).

1.5 SYSTEM DESCRIPTION

Boring logs are [shown on the drawings] [appended to the SPECIAL CONTRACT REQUIREMENTS or GDR]. Bottom-sounding surveys are provided as contoured maps, as precise to the vertical and lateral tolerance on the date of the survey.

BORINGS AND CORES SHOWN ON DRAWINGS

The subsoil investigation report and samples of materials taken from subsurface investigations may be examined at [____]. These data represent the best subsurface information available; however, variations may exist in the subsurface between boring locations.

REFER READER TO 00 32 00? FOR LOCATION OF GEOPHYS REPORT

1.5.1 Classification of Excavation

1.5.1.1 Common Submerged Excavation

Include common excavation with the satisfactory removal and disposal of all materials not classified as rock or hard/unyielding materials. Include the removal of any concrete or masonry structures or pavements that may be encountered in the submerged excavation zone under this classification.

Does this apply? There will be two classifications of material, soil and

rock. Third classification for debris? No weathered rock category

1.5.1.2 Rock Excavation

Submit notification of encountering rock and/ or hard/unyielding materials in the project. Include rock excavation with blasting, excavating, grading, disposing of material classified as rock, and the satisfactory removal and disposal of boulders 1/2 cubic yard or more in volume; solid rock; rock material that is in ledges, bedded deposits, and unstratified masses, which cannot be removed without systematic drilling and blasting; firmly cemented conglomerate deposits possessing the characteristics of solid rock impossible to remove without systematic drilling and blasting; and hard materials as defined herein [requires inclusion of appropriate definition of hard materials for the project].

If at any time during excavation, including excavation from borrow areas, the Contractor encounters material that may not be classified as rock excavation, uncover such material, and notify the Contracting Officer. Do not proceed with the excavation of this material until the Contracting Officer has classified the materials as common excavation or rock excavation and has taken cross sections as required. Failure on the part of the Contractor to uncover such material, notify the Contracting Officer, and allow ample time for classification and cross sectioning of the undisturbed surface of such material will cause the forfeiture of the Contractor's right of claim to any classification or volume of material to be paid for other than that allowed by the Contracting Officer for the areas of work in which such deposits occur.

1.5.2 Blasting

Should the Contractor elect to conduct drilling and blasting, the Contractor must perform the blasting in accordance with this section. The Contractor is responsible for all claims for damages and injuries caused by, or arising out of, blasting activities and its adverse impacts, as noted in the FAR.

Perform blasting in accordance with EM 385-1-1 and in conformance with all Federal, State, and local laws, regulations, and ordinances. Submit notice 30 days prior to starting work. Submit a Master Blasting Plan for approval, prepared and signed by the Blasting Specialist that includes: a listing of all federal, state and local regulations and ordinances to conduct blasting at the project; the support documentation and certifications for all proposed blasting personnel; information and data sheets for all the explosives to be used at the project; the design approach to blasting; outlines of all required reports and formats for all the forms of the respective reports; and, the procedures to control all the adverse effects of blasting. Use the non-electric blasting caps for all underwater blasting. Obtain written approval prior to performing any blasting and notify the Contracting Officer 24 hours prior to blasting. Include provisions for storing, handling, and transporting explosives as well as for the blasting operations in the plan.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are 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-01 Preconstruction Submittals
    Master Blasting Plan; G, DO
    Blasting Safety Plan; G, DO
    Navigation Control Plan; G, DO
    Test-Blast Plan; G, DO
    Certified Marine Survey; G, DO
    Pre-Blast Surveys; G, DO
    Blasting Consultant's Qualifications; G, DO
    Blasting Specialist's Qualifications; G, DO
    Blaster-In-Charge Qualifications; G, DO
    Blaster Qualifications; G, DO
    Blasting Administrator's Qualifications; G, DO
    Vibration Monitoring Specialty Firm; G, DO
    Public Notice Of Blasting Operations; G, DO
    Structural Inspection/Evaluation Specialist; G, DO
    Natural Resource Subcontractor; G, DO
SD-03 Product Data
    Explosives and Blasting Equipment; G, DO
    Lightning Detection Device; G, DO
    Seismographs; G, DO
SD-05 Design Data
    Individual Shot Plan; G, DO
SD-06 Test Reports
    Test-Blast Evaluation Report; G, DO
    Individual Shot Reports; G, DO
    Drilling Logs; G, DO
    Individual Shot Vibration Monitoring Report; G, DO
    Individual Shot Videos; G, DO
```

Daily Blasting And Removal Log; G, DO

SECTION 31 23 01 Page 9

Not for Construction

Blasting Consultant's Report; G, DO

Post-Blast Surveys; G, DO

Reports of Required Safety, Protective, and Natural Resource Programs

SD-07 Certificates

Blasting Licenses and Credentials; G, DO

Vibration Specialist; G, DO

Seismograph Technicians; G, DO

Magazine Keeper; G, DO

1.7 COORDINATION

Blasting will be in the vicinity of the [existing lock, railroad, and highway, and river barge, train, highway traffic, utilities and businesses: NOTE CROSS SOUND CABLE HERE? BREAKWATERS?] and their operation will not be impeded or delayed beyond that which has been coordinated with [, U.S. Coast Guard, U.S. Army Corps of Engineers - New England District, CT-DEEP environmental or natural resources offices, CT Department of Transportation [CHECK IF CTDOT RUNS FERRIES?], CT New Haven Port Authority, [____] Railroad, regional or local utilities, and/private businesses]. A coordination plan, with the appropriate authorities that mitigates [navigation and traffic delays], in the Master Blasting Plan.

Coordinate, through the Contracting Officer, with other Contractors working onsite to minimize work stoppages during blasting.

1.8 LIABILITY

Compliance with provisions in the contract will not relieve the Contractor of their responsibility for any damages or injuries caused by, related to, or arising out of blasting or associated blasting activities. Notwithstanding federal, state, and local laws, regulations and ordinances, the Contractor assumes all liability and hold and save the Government, its agents, officers, and employees harmless for any and all claims for personal injuries, property damage, or other claims arising out of or in connection with the handling of explosives or blasting under this contract.

PART 2 PRODUCTS

2.1 TRANSPORTATION, STORAGE AND USE OF EXPLOSIVES

2.1.1 General

Store, transport, handle, use, and otherwise secure explosives in accordance with best practices as approved by the Contracting Officer and in accordance with all Federal, State and Local laws and regulations. Comply with all special rules and regulations that may be made by the authorities having jurisdiction, or by the Contracting Officer, regarding construction of, and storage in magazines and precautions in blasting. Times and imposed restrictions concerning the use of explosives must be conducted in accordance with local, State, and Federal regulations. The Contracting Officer reserves the right to establish restrictions or time windows when blasting will not be allowed.

2.1.2 Blasting Products

GINA COMMENT: SECTION LOOKS FINE

2.1.2.1 Requirements

All explosive materials to be used on site must be proposed for approval in the Master Blasting Plan. Cartridged and bulk explosives may be used in different sections of the project. All explosive materials used on the project must be six months or less of age or no older than one half the shelf life shown on the explosives manufacturer's technical data sheet for that product. Millisecond delay, shock-tube initiators, must be used as the initiation system. To ensure the accuracy of firing times of blasting caps, it is required that each cap period come from one lot number. Mixing of lot numbers for any single cap delay period within a shot pattern is strictly prohibited. For underwater blasting's ability to displace rock against the water load, the minimum delay both between shot holes and shot rows will be 25 milliseconds.

2.1.2.2 Prohibited Explosive Materials

Explosives that do not meet the manufacturer's specifications must not be used. When, in the opinion of the Contracting Officer, any explosive materials is either of excessive age or appears to be in a deteriorated condition, all work must cease until the products age and quality can be determined. Blasting products without date batch codes will not be permitted on site. The Contracting Officer may require any explosive materials to be tested by an independent organization to determine its performance as compared to the manufacturer's data sheet. If explosive materials' performance or composition deviates by more than 10 percent in any manner from the manufacturer's data sheet, that lot number will be rejected. The Contractor is responsible for any required testing and no additional compensation will be made for any product testing directed by the Contracting Officer.

Bulk explosives, which are water sensitive, are strictly prohibited.

Detonation Cord is strictly prohibited for initiation transmission through the air and water to the shot holes. An approved non-electric shock tubing, proposed in the Master Blasting Plan, must be used to transmit the firing initiation to each shot hole. Detonation cord may be used within the shot hole by proper connection to the shock tubing beneath the highest elevation of firm-rock stemming.

2.1.3 Magazines

[

] When the Contractor will maintain the explosive magazines, obtain all necessary Federal and State magazine permits for the magazines. Magazines must be located at safe distances as defined by the Bureau of Alcohol, Tobacco and Firearms (ATF), in addition to the State of Connecticut's requirements. Procure off-site explosive storage and expect to transport the daily volume of explosives to the site. Secure a permit to transport explosives from the State of Connecticut's Highway Patrol when and if required, and transport explosives in accordance with 49 CFR 177 when carried on public highways.

The Contractor must have two temporary magazines on board the drilling and loading barge of sufficient volume to hold the largest day's use of explosives and initiators separately. These temporary magazines must meet all ATF requirements and all regulations and ordinances of state and local government. No explosives may remain overnight in the temporary magazines. [Okay for permanent ones on board. Need to coord transportation from dock to loading onto barge. Usually done early morning. Up to them to find location for transfer.] A daily-use log of explosives delivered, loaded by shot hole through the day, and removed at the last shift must account for the use of all explosives.

2.1.4 Magazine Keeper

Each magazine keeper must be experienced and familiar with the laws and general practices concerning the handling, care, use, and storage of explosives and detonators. The magazine keeper is responsible for maintaining a cleared area around each magazine. The magazine keeper will not be required to perform any duties that will in any way interfere with their duties as magazine keeper and being physically present at the magazines for every entry to the magazines for delivery, disbursement, and review of explosives at the magazines.

If explosives are delivered and returned daily from the manufacturer or supplier to the project, the driver of the truck will serve as the magazine keeper.

PART 3 EXECUTION

3.1 GENERAL EXCAVATION AND REMOVAL

Perform the excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Dredging, breakage, displacement, and excavation of all the materials will be accomplished by appropriate techniques and with special care, such that no individuals, cited natural resources, structures, navigation and other sensitive features, and activities suffer any adverse effects from blasting. Perform the submerged removal in accordance with the typical sections shown and the tolerances specified in paragraph SUBMERGED MATERIAL DISPOSAL.

The Contractor's blasting program and methods will be those controlled blasting techniques necessary to accomplish the excavation shown on the contract drawings in accordance with the procedures specified in this section. Make necessary plans, examinations, surveys, and test blasts to determine the quantity of explosives that can be fired to accomplish the breakage (or displacement) and removal of materials without injuries to persons, and aquatic wildlife (or other natural resources), or damage to personal or public property. Test blasts will be performed to slowly build to acceptable loading and timing of production shot patterns, to verify that the monitoring network performs as designed, to begin to assemble monitoring data collection, and to resolve that the submerged material is adequately broken or displaced for removal. Use the test blasting results to optimize remainder of work. The blasting program must abide by all applicable Federal, state, and local laws, regulations, and ordinances established for the project's location.

Process any and all claims of public entities, companies and private

citizens arising from the transportation, storage, and use of explosives promptly in an acceptable time period set by the Contracting Officer Representative (COR); in particular, all injury and property damage claims must be acknowledged by the Contractor, or their representative, and be submitted immediately as directed by the COR to the Contracting Officer providing name of claimant, location, time and description of alleged injury, and damage, and estimated value. The claimed injury or damage will be evaluated and inspected by an appropriate specialist within 48 hours following initial notification, and processed to a conclusion (honored, denied, or compromised) within 90 days after cessation of all blasting on the contract; but, in no case will the claims remain unresolved for a period exceeding 6 months (180 calendar days). Submit evaluation and inspection results and actions taken to the Contracting Officer on a weekly basis.

3.1.1 Removal of Submerged Materials

3.1.1.1 Sediment Within the Project Limits for Removal Displacement

Sediment vertically above the project limits for removal may be excavated, removed, or displaced by any means, including dredging, prior to action upon deeper materials. Sediment may be left in place for removal by mechanical means after the breakage of deeper materials allows those materials to be removed. Unless the Disposal of Materials requires differentiation of materials below or above the water surface, the sediment may be removed and placed in the disposal zone before or after the excavation of deeper materials.

3.1.1.2 Breakage of Rock and Hard/Unyielding Materials for Excavation and Disposal

Blasting may be conducted to break or displace the rock and hard/underlying materials into sizes that may be removed by dredging or excavation equipment. Test blasting will be conducted to determine the parameters for the following production blasting. Care must be taken to prevent damage to any of the remaining specified materials, features or structures noted in the drawings; and avoid adverse effects from blasting to personnel, the public, natural resources, structures, and features. The Contractor must curtail blasting activities in designated areas when, in the opinion of the Contracting Officer, damage to in-place units or adverse impacts may have occurred. Blasting will be curtailed in these designated areas until both remediation, as directed by the Contracting Officer, has been completed, and the Contractor has resolved a means to conduct the blasting without the damage or adverse impacts.

GINA NOTE: Do we need to specify limits for lateral dimensions? They won't extend beyond the rock.... performance-based

3.1.2 Disposal of Materials Within the Project Limits

Transport and place all dredged, displaced, or excavated materials within the limits of the disposal zones below the specified elevations, according to the requirements specified in paragraph SUBMERGED MATERIAL DISPOSAL.

3.2 SAFETY PROCEDURES

3.2.1 General

Ensure all work completed under this Contract is executed safely. Follow

the safety procedures outlined in EM 385-1-1. EM 385-1-1 will govern all activity unless more stringent safety requirements are specified in other applicable Federal, State, and local laws, regulations, and ordinances.

3.2.2 Weekly Coordination Meeting

Coordinate all blasting schedules with the Resident Engineer's Office and Contracting Officer at least one week in advance and hold a weekly blasting coordination meeting with the Resident Office. Provide an agenda for the blasting coordination meeting that lists project's prior week's shots, the forecasted shot schedule, and displays a scale site plan showing the locations of the schedule shots. The Blasting Specialist, Blaster in Charge, and Vibration Specialist are required to participate in discussion of agenda items and lessons learned.

3.2.3 Public Notice of Blasting Operations

Thirty days, prior to any blasting operations, prepare and submit to the Contracting Officer a public government notification letter of the proposed blasting activities. The Government will distribute copies of this notification letter by certified mail to local governments, law enforcement, public utilities, public users of project recreational facilities, and residents and commercial interests located within one half mile of the blast site. This notification letter must contain at minimum:

- a. Name, address, telephone number and e-mail address of the Contractor;
- b. Plan maps identifying the specific areas in which blasting will take place, and major and secondary roads, geographic features and auxiliary features;
- c. Duration of blasting activities, and on which days of the week and hours of the day that blasts can be expected to occur;
- d. Vehicular and pedestrian traffic control measures to be taken;
- e. Methods to limit access to the blasting area; and,
- f. Types, patterns and duration of audible warning and all-clear signals to be used before and after blasting.

3.2.4 Public Meetings

Fifteen calendar days prior to any blasting operations, provide the approved Blasting Specialist, Blasting Consultant, and Vibration Specialist to attend a public-relations meeting to be conducted on an evening to be determined by the Contracting Officer. This meeting will inform the public about the anticipated blasting operations. The Blasting Specialist, Blasting Consultant, and Vibration Specialist must each make a short presentation of blasting operations and answer any questions pertaining to public concerns dealing with the blasting operations, the magnitude of vibrations, airblast and potential for flyrock that may impact the public, and the project's required natural resource activities. Distribute points of contact should the public and local entities have an event of concern related to the blasting program.

3.2.5 Warnings and Signals

Establish a method of warning all employees on the job site of an impending
blast following the guidance of EM 385-1-1. The signals must consist of a five-minute warning signal to notify all in the area that a blast will be initiated in five minutes. A second warning signal must be sounded one-minute before the blast. After the blast is over, sound an all-clear signal, once the blast site has been inspected for misfires by the Blaster in Charge to notify all in the area that the blasting operation is finished. No personnel other than the Blaster in Charge must enter the blast area, until it has been determined to be all clear.

3.2.6 Notification to Navigation

Notify the U.S. Coast Guard a minimum of [14] [fourteen] calendar days prior to the commencement of blasting operations to allow for sufficient time to send out navigation notices. The information to be supplied will include the dates and time window of blasting operations.

3.2.7 Navigation Control During Drilling, Loading, and Blasting Operations

Notify the Coast Guard 24 hours prior to a scheduled blast and 2 hours prior to the actual blast's initiation. Contact should be made with: US Coast Guard's contact, whose name and an alternate's name will be provided at time of contract award.

Operate [two] patrol vessel[s] during blasting operations equipped with a visible yellow flashing light, audible horn, and radio with a hailer, whose sole function will be to monitor and maintain security in the blast area. Use patrol vessels during all blasting operations. Inspect and insure there is no vessel traffic within the work area prior to the firing of the blasting caps and until such time as the Contractor has sounded the "All-Clear Signal".

Establish and maintain a warning system as required by EM 385-1-1 and as stated in paragraph WARNINGS AND SIGNALS. Equip and maintain the floating plant with radio equipment capable of communications with the Coast Guard. The Contractor, after each blast, upon inspecting the area, notify the Coast Guard and Contracting Officer if all clear or misfire is noted. Buoy the area with warning signs. The warning signs are to be legible from a distance of [200] ft and contain the message "DANGER - EXPLOSIVES IN USE" visible on either side of the sign. Station patrol vessels at the drill barge and remain in the blasting area during all blasting operations. Land oriented access control and visual observation locations will be determined and approved by the Contracting Officer.

3.2.8 Lightning Detection Device

Furnish, maintain, and operate lightning detection equipment during the entire period of blasting operations and during the periods that explosives are used at the site. Equipment must provide real time audio and visual alarm/signal and detection based on combined detection of electromagnetic, electrostatic, light wave spectral and audio disturbances, or a commercial service based on these, as a minimum for approved. Equipment must be capable of detecting lightning within 25 miles as a minimum of the blast area. Provide the equipment after approval. When and where the lightning detection device indicates a blasting hazard potential, immediately evacuate personnel from all areas where drilling is being conducted or explosives are present. When a lightning detector indicates a blasting hazard, perform the following actions.

a. Clear the blasting area of all personnel. Place guards at all access

points to the blast area.

- b. Immediately notify the Contracting Officer of the potential hazards and precautions being taken.
- c. Terminate the loading of holes and secure the unused explosives to an approved location.
- d. When the hazard dissipates, inform the Contracting Officer that the drilling and loading of holes will continue.
- 3.2.9 Drill-Boat or Barge Safety

All onboard day magazines must be permanently secured to the deck as required by the Coast Guard. No high explosives will be stored on the boat or barge deck in the open except for the one case that is to be loaded immediately into the shot holes. Any explosives remaining on deck must be returned to the day magazine prior to the firing of any blast. The firing line reel or spool will be mounted on the rig in a manner that it cannot be lost overboard. An approved blasting machine will be used for detonation regardless of the number of caps used. No electric blasting system can be used. The amount of explosives permitted aboard the drill boat or barge at any one time will be subject to the approval of the Contracting Officer, but in no case will such amount exceed the amount permitted by appropriate codes and regulations.

Make necessary arrangements to prevent damage to any vessel, moored or underway, building or structure and to preserve the crew or occupants thereon from exposure to injury because of the Contractor's operations. Automatic fire extinguishers of an appropriate type must be installed on air compressors and in all engine compartments abroad vessels (drill boats, barges) where explosives are stored, handled, and used. The Contracting Officer may require additional arrangements. Have a Certified Marine Survey of all floating plant proposed for underwater blasting work on this contract performed prior to starting any work and provide the results to the Contracting Officer. Remote fuel shut-offs and fire-signaling devices must be provided aboard the drill boat.

3.2.10 Inspection for the All-Clear Signal

The Blaster in Charge must thoroughly inspect the entire blast area for a minimum of five minutes following a blast. The five-minute delay between blasting and commencing work is needed to ensure that no misfires have occurred. Details of the misfire procedures were provided in the Blasting Safety Plan, including the distance of the restricted area when a misfire is discovered.

3.2.10.1 Check for Misfires

During the five-minute delay, it is the responsibility of the Blaster in Charge to enter and inspect the shot-pattern area and verify for all loaded shot holes that all explosives have been detonated.

3.2.10.2 Misfire-Handling Procedures

Should an inspection indicate that complete detonation of all charges did not occur, only critical personnel involved in the blasting operation or excavation of the unexploded material are allowed within the established shot-pattern area. Restrict the site until the Blaster in Charge or the Blasting Specialist indicate the site is safe. If the misfire poses problems that cannot be safely corrected by the Blaster in Charge or the Blasting Specialist, a consultant, or an explosives company representative skilled in correcting misfires must be called to resolve the problem. Provide within 60 minutes of the recognition of a misfire, a notice to the Contracting Officer and all applicable agencies and offices for public safety. Compliance with this or any other provision in the Contract will not relieve the Contractor of responsibility for any damages or injuries caused by, related to, or arising out of blasting or associated blasting activities.

Provide the details of the misfire and the correction measures in the Individual Shot Report for shot with the misfire to the Contracting Officer and the emailed addressees the next business day.

3.2.11 Natural Resource Protection (Environmental Resource Protection)

GINA COMMENT: Should we have Todd review this section? Look in EIS. Needs to dovetail with enviro spec sections.

The Contractor is required to utilize the following to avoid and minimize techniques designed to mitigate the impacts of underwater blasting that have been developed, in coordination with other Federal agencies, in compliance with the federal, state, and local environmental laws and regulations and with applicable regulations and requirements of Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS. All activities requiring the Contractors' action or coordination are included in paragraph NATURAL RESOURCE ASSESSMENTS, Mitigation and Monitoring. The Contractor has full responsibility for not violating all the mitigation requirements. Associated fines for violations will be borne by the Contractor.

[3.2.11.1 National Environmental Policy Act

GINA COMMENT: Should be able to reference enviro spec sections and delete these sections

Write detailed description of work to be performed by the Contractor here. If there is no required work under 42 USC 4321 then the section should be deleted and renumbered.

][3.2.11.2 Endangered Species Act

Write detailed description of work to be performed by the Contractor here. If there is no required work under $16\ \text{USC}\ 1531$ then the section should be deleted and renumbered.

][3.2.11.3 Marine Mammal Protection Act

Write detailed description of work to be performed by the Contractor here. If there is no required work under $16\ USC\ 1361$ then the section should be deleted and renumbered.

][3.2.11.4 Bald and Golden Eagle Protection Act

Write detailed description of work to be performed by the Contractor here. If there is no required work under $16\ \text{USC}\ 668$ then the section should be deleted and renumbered.

][3.2.11.5 Marine Protection, Research and Sanctuaries Act

Write detailed description of work to be performed by the Contractor here. If there is no required work under 33 USC 1401 then the section should be deleted and renumbered.

][3.2.11.6 Magnuson-Stevens Act

Write detailed description of work to be performed by the Contractor here. If there is no required work under 16 USC 1801 then the section should be deleted and renumbered.

][3.2.11.7 Clean Air Act

Write detailed description of work to be performed by the Contractor here. If there is no required work under 42 USC 7401 then the section should be deleted and renumbered.

][3.2.11.8 Clean Water Act

Write detailed description of work to be performed by the Contractor here. If there is no required work under 33 USC 1251 then the section should be deleted and renumbered.

][3.2.11.9 National Historic Preservation Act

Write detailed description of work to be performed by the Contractor here. If there is no required work under 16 USC 470 then the section should be deleted and renumbered.

][3.2.11.10 Additional Federal Environmental Laws

Write detailed description of work to be performed under Federal environmental laws by the Contractor that are not listed in paragraph REFERENCES. If there is no required work under this Federal law, then the section should be deleted and renumbered.

][3.2.11.11 State and Local Environmental Laws and Regulations

Write detailed description of work to be performed by the Contractor here. If there is no required work under an applicable state and local laws and regulations, then the section should be deleted and renumbered.

-]3.3 OPERATIONAL REQUIREMENTS
- 3.3.1 Coordination
- 3.3.1.1 Schedules

Coordinate schedules for blasting with the proper authorities, federal, state, local. No blasting will be conducted unless the Contractor is notified by the appropriate parties that blasting may proceed. In addition, if channel restrictions of navigable waters are required for drilling and blasting, the Contractor will coordinate with the U.S. Coast Guard.

3.3.1.2 Permits

Obtain all necessary permits from the state and local authorities to transport explosives and all blasting agents necessary, and to perform blasting operations on site. The Contracting Officer will be notified in writing that all permits have been obtained and will be furnished copies of all permits.

3.3.2 Navigational, Lock or Vessel Control During Excavation and Removal

Various agencies and offices, U.S. Coast Guard, must be notified of the scheduled blasting times for coordination. The Contractor must assure that no vessels are within, nor on a heading and speed to be within, [1000] ft of the shot pattern during the 5-minute warning.

Double check the 1,000 ft input above

GINA NOTE: Should be a call down list so everyone is notified of blasting schedule

3.3.3 Work Restrictions

There are a variety of restrictions upon blasting to assure that there are no adverse impacts to the public and upon commerce, and to avoid harm to surrounding structures and to the natural resources and their habitats. The restrictions include: [___]. Several restrictions that are not fully detailed elsewhere within this chapter are noted in this paragraph.

GINA NOTE: environmental windows for TOY Would like to do continuous underwater overpressure monitoring and vibration monitoring on every shot.

3.3.3.1 Confined Detonations

The rock excavation after blasting will be more effective if each loaded drill hole is well confined by stemming within sound rock. The intent is to confine the gaseous detonation products of each shot hole, such that no rifling plumes, the visual result, are produced in any shot patterns. The premature release of the gaseous products reduces or eliminates effective fracturing and displacement and causes large water-borne pressures potentially damaging to natural resources. Drill-hole logging is required to recognize the depth of firm rock and voids, and to adjust the designed Individual Shot Plan loading of each shot hole with explosives and stemming according to the position of sound rock relative to the paid elevation of removal. Video recording of each blast will detail the effectiveness of avoiding rifling plumes.

3.3.3.2 Temporal, Weekly and Seasonal Restrictions for Blasting

GINA NOTE: Boston:

Blasting shall be confined to daylight hours during the period from sunrise to sunset. Blasting shall not be conducted when temperature inversions (in the atmosphere, a layer of cool air at the surface is overlain by a layer of warmer air) or heavy, low-level cloud cover exists

Portsmouth: The Contractor will be allowed to perform blasting work 7 days per week, including holidays. Blasting shall be confined to daylight hours during the

period from 2 hours after sunrise to 1 hour before sunset but shall not be conducted before 9:00 A.M. or after 6:00 P.M. on the day of blasting. Blasting shall not be conducted when temperature inversions or heavy, low-level cloud cover exists.

Talk with nav PM's about what they want to set for hours. Probably every day. Offset sunrise/sunset requirements? Temp requirements are for surface blasting and don't apply to underwater blasting

Blast initiation is permitted: during daylight, business hours on business days; on Saturdays to [____]; and, on Sundays and federal holidays to [____]. Regardless of the season, blast initiation is only permitted, during the period from one-hour after sunrise to one-hour before sunset. The Contractor will not be constrained by weather conditions, except for lightning, for underwater blasting in depths of water greater than 3.0 ft for which airblast is often negligible. Drilling and blasting will not be permitted during the following seasonal periods: [____].

3.3.3.3 Allowable Vibration

The Contractor must conduct all the required monitoring as noted in paragraph IMPACT MONITORING. The Contractor must conduct all blasting by controlled blasting methods to avoid exceeding the allowable vibration in applicable federal, state, and local laws, regulations and ordinances at all structures and facilities, as monitored by blast seismographs.

The allowable vibration at any structure or facility must not exceed the maximum PPV of 2.0 inches/second (ips), nor exceed the PPV amplitude in the Frequency versus Particle Velocity Graph Figure in NFPA 495 (Figure 11.2.1) for the frequency of the half-cycle amplitude.

3.3.3.4 Limiting Blast-Induced Vibrations at Green Concrete

During the performance period, other construction activities may be placing concrete at varied locations on or near the project. The Contractor will coordinate with other project contractors or will be informed on the prior business day by the Contracting Officer concerning the likely placement of concrete near the project.

- a. The Contractor will assure that a seismograph is monitoring vibrations from blasting at a location, which is closer to the blast pattern than the Green Concrete. Vibration monitoring must be conducted near the concrete placement from prior to placement until 72 hours after placement.
- b. The table below indicates that maximum allowable peak particle velocity (PPV) permitted, relative to the age of the recently-place concrete, as measured at an acceptable location or within 50 ft of the most recently placed concrete on the side of closest approach to the blast.

Age of Concrete (hours)	less than 12	12 to 24	24 to 72
PPV (inch/second)	0.1	1.0	2.0

c. Adjust all blasting to conform to the table's maximum allowable PPV at the seismograph near the Green Concrete. See paragraph IMPACT MONITORING.

3.3.3.5 Allowable Airblast

The Contractor must conduct all the required monitoring as noted in paragraph IMPACT MONITORING. The Contractor must conduct all blasting by controlled blasting methods to avoid exceeding the allowable airblast in applicable federal, state, and local laws, regulations and ordinances at all structures and facilities, as monitored by blast seismographs. Peak airblast overpressure must be held below [133 dB (linear peak scale), 0.015 pounds/square inch (psi)][This is default. Confirm State of CT limits/regs] at the nearest residential or inhabited structure or other designated location.

3.4 BLASTING PERSONNEL

3.4.1 Blasting Consultant

The Blasting Consultant, Blasting Specialist, Blaster in Charge, and Vibration Specialist cannot be the same person. Retain a recognized Blasting Consultant to assist both with the project's blast design and with the resolution of any blasting issues for the project. The Contractor must submit the Blasting Consultant's expertise submission within [15] [____] days of the Notice to Proceed. The Blasting Consultant must be approved by the Contracting Officer's Representative two weeks prior to the submission of the Master Blasting Plan.

3.4.1.1 Blasting Consultant's Responsibilities

The Contractor's Blasting Consultant must be available to review the Master Blasting Plan, assist with controlled blasting techniques, and resolve difficult or complex issues with blasting for the project. The Blasting Consultant will recommend controlled blasting methods, as necessary, to meet safety and natural resource requirements, retain airblast and vibration within the allowable limits, and protect the rock foundation. Proposed controlled blasting methods must be submitted in the Master Blasting Plan.

The Blasting Consultant must provide advice for, and review, the Master Blasting Plan, attend the public meeting(s), and be available for consultation on an "as needed" basis, as determined separately by the Contractor or by the Contracting Officer. The Blasting Consultant is not required to be at the project site for review of the Master Blasting Plan or of any specific shot plans or records. The Blasting Consultant must be present at the project site for any required shot issue or, if requested, for the subsequent shot following a misfire or significant exceedance of any onsite blasting issues.

The Blasting Consultant must provide a written summary of all site visits and special assignments within [2] [____] business days of performing such actions to both the Contractor and the Contracting Officer's representative.

The Blasting Consultant must submit a short, signed Blasting Consultant's Report each month stating that he/she has briefly reviewed the individual shot documents, including blast videos, and has collaborated with the Contractor on all issues, concerns, or errors in the individual shot documents. This report is due within [3] [____] business days after the

end of the month.

If problems with vibration, airblast, rifling of a shot hole producing a water column plume, or production blasting occur, the Contracting Officer will require the Contractor to immediately summon the approved Blasting Consultant and have their presence on site within 10 days after the problem develops to:

- a. Approve each Individual Shot Plan;
- b. Observe in person shot-hole drilling, logging, revision to that hole's plan, and loading with the full authority to stop or delay any blast he/she considers unsafe;
- c. Review and sign each Individual Shot Record at no additional cost to the Government; and,
- d. Submit and sign a written checklist that all necessary precautions were reviewed and followed by the drilling and blasting crews.

The checklist must be as defined under the section on Individual Shot Reports. The signed checklist must be attached to each Individual Shot Report.

3.4.1.2 Blasting Consultant's Expertise

The consultant must be able to demonstrate involvement in at least 15 projects with controlled blasting. The consultant must provide, as a minimum, the credentials and experience for each outlined following items:

- a. The consultant must have at least 10 years of experience in construction blasting within 250 ft of protected structures, and had consultation on three underwater blasting programs;
- b. The consultant must be able to demonstrate that he has attended at least 15 short courses, seminars, or conferences on blasting technology, or university engineering class studies on blast design during the past 20 years, including a complete understanding of blasting seismology with emphasis on vibration frequency, acceleration, and displacement (ground strain);
- c. For the past 10 years the consultant must have derived their primary source of income from providing specialized blasting consulting services;
- d. A list of recent projects containing a description of the projects' details, summarize the blasting plans, and any modifications made during the projects from your consulting;
- e. Provide the names and telephone numbers of contacts, who have sufficient stature with, and knowledge of, their individual project to verify the submitted information in competency and ability, for at least three recent projects;
- f. Hands-on experience as a blaster for at least 3 years; and,
- g. The Blasting Consultant, Blasting Specialist, Blaster in Charge, and Vibration Specialist cannot be the same person.

3.4.1.3 Blasting Consultant's Qualifications Submissions

Submit the resume, education, experience, current blasting licenses and credentials, and training of the proposed Blasting Consultant, and a formal letter of commitment from the consultant verifying their availability on an "as needed" basis for the duration of the Contract. The consultant must be a drilling and blasting expert, who has derived their primary source of income by providing specialized blasting and blasting consulting services. The provided consultation must have included at least three, large underwater blasting projects. The consultant must not be an employee of the Contractor, an explosives manufacturer, an explosives distributor, or any other sub-contractor. There must be no additional cost to the Government for the Blasting Consultant's duties, even when required by the Government.

3.4.2 Blasting Specialist

The Blasting Specialist is the Contractor's employee most responsible for the project's blasting and conducting all coordination and providing all documentation for the underwater blasting. The Blasting Specialist must coordinate with the Contracting Officer on all issues dealing with blasting. The Blasting Specialist must be on the job site each day. The Contractor must submit the Blasting Specialist's expertise submission within [15] [____] days of the Notice to Proceed. The Blasting Specialist must be approved by the Contracting Officer's Representative two weeks prior to the submission of the Master Blasting Plan.

3.4.2.1 Blasting Specialist's Responsibilities

The Blasting Specialist is responsible for the project's blast design, preparing and submitting all necessary blasting documentation, and conducting quality control. The Contractor may employ a documentation assistant to aid the Blasting Specialist with all the blasting documentation creation and submissions. The Blasting Specialist is solely responsible for the accuracy and timely submission of all blast documentation.

3.4.2.2 Blasting Specialist's Expertise

The Blasting Specialist must be able to demonstrate involvement in at least three projects with underwater blasting. The Blasting Specialist must provide, as a minimum, the credentials and experience for each outlined following items:

- a. The proposed individual must have at least 10 years of verifiable experience utilizing controlled blasting techniques and have had conducted controlled blasting on three underwater projects;
- b. Within the last five years, the proposed individual must have completed at least five days of classroom training that has familiarized the person with the most current drilling and controlled blasting methods;
- c. The proposed individual must be a licensed blaster in the State of [____] and hold all credentials that may be required by local jurisdictions;
- d. In the last five years the proposed individual must have been responsible for the blast design or execution of underwater rock excavation projects, similar in scope and complexity as this project;

- e. The names and telephone numbers of contacts, who have sufficient stature with, and knowledge of, their individual project to verify the submitted information in competency and ability, for at least three underwater blasting projects; and,
- f. The Blasting Consultant, Blasting Specialist, Blaster in Charge, and Vibration Specialist cannot be the same person.

3.4.2.3 Blasting Specialist's Qualifications Submission

Submit the resume, education, experience, current blasting licenses and credentials, and training of the proposed Blasting Specialist. Their credentials must include a list of the projects, including the location, duration, scope, description, geologic conditions, and the challenges that developed though the course of the projects and how the challenges were resolved.

3.4.3 Blaster in Charge

The Blaster in Charge may create the Individual Shot Plan for approval by the Blasting Specialist. The Blaster in Charge, in the absence of the Blasting Specialist, is the Contractor's employee responsible for on-deck supervision of all underwater blasting activities and its documentation. The Contractor must submit the Blaster-in-Charge's expertise submission within [15] [____] days of the Notice to Proceed. The Blaster in Charge must be approved by the Contracting Officer's Representative two weeks prior to the submission of the Master Blasting Plan.

3.4.3.1 Blaster-in-Charge's Responsibilities

The Blaster in Charge, in the absence of the Blasting Specialist, is responsible for on-deck supervision of the drilling, shot-hole logging, possible revisions of the Individual Shot Plan, loading or abandoning of individual shot holes, and firing the blast. The Blaster in Charge is responsible for: the accurate placement of the shot holes' locations for drilling; conducting the drilling and shot-hole logging accurately; accounting for the relevant geology within each shot-hole's log; assuring the careful recording of every shot-hole's log and their submission with the Individual Shot Report; loading the blastholes according to the Individual Shot Plan or the revision thereto based on the shot-hole's log; coordinating the likely time of the blast pattern's initiation; coordinating all notices of imminent blasting and providing the signaling before and after the shot; initiating the blast; performing the post-blast inspection; providing the All-Clear signal or instituting the notices and actions for a misfire; and, providing the documentation for, and signing, the Individual Shot Report.

3.4.3.2 Blaster-in-Charge's Expertise

The Blaster in Charge must be able to demonstrate involvement in at least two projects with underwater blasting. The Blaster in Charge must provide, as a minimum, the credentials and experience for each outlined following items:

a. The proposed individual must have verifiable experience in equivalently responsible roles for controlled blasting projects for at least 3 years and with underwater projects;

- b. Within the last 5 years, the proposed individual must have completed at least five days of classroom training that has familiarized the person with the most current drilling and controlled blasting methods;
- c. The proposed individual must be a licensed blaster in the State of [____] and hold all credentials that may be required by local jurisdictions; and,
- d. The Blasting Consultant, Blasting Specialist, Blaster-in-Charge, and Vibration Specialist cannot be the same person.

3.4.3.3 Blaster-in-Charge Qualifications Submission

Submit the resume, experience, current blasting licenses and credentials, and training of the proposed Blaster-in-Charge. Their credentials must include a list of the projects, including the location, duration, scope, description, geologic conditions, and the challenges that developed though the course of the projects and how the challenges were resolved.

3.4.4 Blasters

The Contractor may elect to employ multiple Blasters. Each Blaster is a Contractor's employee responsible for on-deck, underwater drilling and blasting activities under the supervision of the on-deck, Blasting Specialist or Blaster in Charge, whoever is present. The Blaster in Charge or a Blaster will log each shot hole, as the hole is being drilled. Each Blaster must be approved by the Contracting Officer's Representative after the submission of the Master Blasting Plan.

Blaster qualifications require each Blaster must be able to demonstrate prior experience with drilling and blasting. The proposed individuals must be a licensed or certified blaster in the State of [____] and hold all credentials that may be required by local jurisdictions. Submit the resume, experience, current blasting licenses and credentials, and training of each proposed Blaster with the Master Blasting Plan.

3.4.5 Vibration Monitoring Specialty Firm

Retain the services of a vibration monitoring specialty firm that specializes in the prediction, monitoring, and control of ground vibration and airblasts. The firm must have experience conducting installation of seismographs for vibration monitoring, communicating vibration and airblast results, and developing and maintaining a site attenuation curve. The firm must have on staff at least two Vibration Specialists that specialize in vibration monitoring and analysis. The firm must have on staff at least four Seismograph Technicians that have five years or more experience with seismograph installation and vibration monitoring. Submit resumes for all personnel and for the firm for approval citing, in additional to other pertinent data, experience, training, and education, at least 60 days prior to the commencement of blasting. The Seismograph Technicians must be persons capable of setting up the seismographs at designated locations, effectively recording the blast, and appropriately interpreting results. The Vibration Specialists must interpret the seismograph records to ensure that the vibration data must be effectively utilized in the control of the blasting operations with respect to the existing structures. The Seismograph Technicians must supervise the placement, operation, and maintenance of the seismographs. The Vibration Specialists must conduct the airblast and particle velocity regression analysis as described in this Section. The Contracting Officer may require the Vibration Specialists and Seismograph Technicians to be present during the test blast program, production blasting, or both.

3.4.6 Vibration Specialist

The Contractor will retain the services of an independent, vibration -monitoring firm with employees capable of monitoring, assessing, and predicting vibrations and airblast due to blasting. The Vibration Specialist must be an employee of the independent, vibration-monitoring firm, and must not be an employee of the Contractor. The Vibration Specialist will conduct, or assure the actions are being taken to obtain, the required blast seismograph monitoring for the project. The Vibration Specialist will supervise all Seismograph Technicians deployed to the project to deploy and maintain all the seismographs for recording vibrations and airblast, and to properly retain, store and submit all vibration records of the blasting. The Contractor must submit the independent, vibration-monitoring firm's, Vibration Specialist's expertise submission within [15] days of the Notice to Proceed. The firm and Vibration Specialist must be approved by the Contracting Officer's Representative two weeks prior to the submission of the Master Blasting Plan.

3.4.6.1 Vibration Specialist's Responsibilities

The Vibration Specialist must be a person able to deploy blast seismographs, effectively record and transmit the vibration data, comprehensively assess, and interpret vibration data regarding the monitored blast's parameters, and remotely supervise the firm's Seismograph Technicians. The Vibration Specialist must also interpret the vibration records to ensure that the vibration data will be effectively utilized in the control of the blasting operations with respect to the existing structures and conduct of an optimized blasting program.

3.4.6.2 Vibration Specialist's Expertise

The Vibration Specialist must be able to demonstrate monitoring deployment, vibration data assessment and interpretation, prediction of vibration and airblast from blasting, and remote supervision of field personnel for five blasting projects. The Vibration Specialist must provide, as a minimum, the credentials and experience for each outlined following items:

- a. The proposed individual must have verifiable experience in equivalently responsible roles for controlled blasting projects for at least 3 years;
- b. Within the last five years, the proposed individual must have completed at least five days of classroom training concerning vibration monitoring equipment, data telemetry, and vibration data interpretation;
- c. The Blasting Consultant, Blasting Specialist, Blaster in Charge, and Vibration Specialist cannot be the same person. The proposed Vibration Specialist and Structural Inspection/Evaluation Specialist may be the same person.

3.4.6.3 Vibration Specialist Qualifications' Submission

Submit the credentials of the proposed vibration-monitoring firm with documentation for the Vibration Specialist. Submit the firm's history for this office, if there are multiple offices, years under the present office's leadership, the regional extent of clients, the approximate number

of projects in the past year, and the number of present employees at this office. Submit the resume, education, experience, credentials, and training of the proposed Vibration Specialist. Their credentials must include a list of the projects, including the location, duration, scope, description, and the monitoring challenges that developed though the course of the projects and how the challenges were resolved. The documentation must provide experience and capability for the proposed Vibration Specialist to provide remote blast monitoring and supervision of support personnel while the individual is not on site.

3.4.7 Seismograph Technicians

The approved, independent, vibration-monitoring firm may provide Seismograph Technicians to assist the Vibration Specialist with the project's vibration and airblast monitoring. Each Seismograph Technician must be approved by the Contracting Officer's Representative after the submission of the Master Blasting Plan.

Each Seismograph Technician must be able to demonstrate prior experience with blast vibration monitoring on a prior project of equivalent size and similar telemetry requirements. The proposed individuals must have the required training and hold all credentials that may be required by local jurisdictions. Submit the resume, experience, credentials, and training of each proposed Seismograph Technician with the Master Blasting Plan.

3.4.8 Structural Inspection/Evaluation Specialist

Pre- and Post-Blast structural inspections must be performed by specialists with at least five years' experience in pre-blast and post-blast surveys.[Submit the resume, education, experience, credentials, and training of the proposed Structural Inspection/Evaluation Specialist to the Contracting Officer with the Master Blasting Plan. The proposed Vibration Specialist and Structural Inspection/Evaluation Specialist may be the same person.

3.4.9 Magazine Keeper

The Magazine Keeper and an Alternate are the Contractor's employees responsible for explosive magazines and its record keeping. The position of Magazine Keeper is required only if the Contractor elects to have explosives' magazines under his control. The Magazine Keeper must be approved by the Contracting Officer's Representative after the submission of the Master Blasting Plan.

The Magazine Keeper must be familiar with the laws and general practices concerning the handling, care, use, and storage of explosives and detonators. The Magazine Keeper must be responsible for maintaining a cleared area around each magazine, and accounting for by record the throughput of explosives and detonators. The Magazine Keeper must be present for any transfer of explosives and detonators into or out of the magazines. The Magazine Keeper must not be required to perform any duties that will in any way interfere with his or her duties as Magazine Keeper.

The Magazine Keeper must be able to demonstrate prior experience explosives' magazines. The proposed individual must hold all credentials that may be required by the State of [____] and local jurisdictions. Submit the resume, experience, credentials, and training of the proposed Magazine Keeper with the Master Blasting Plan.

3.5 RECORD KEEPING

3.5.1 Pre-Blast Surveys

Prior to the commencement of blasting, conduct a pre-blast survey of nearest buildings, structures, and utilities within 1,000 ft from the blast area by azimuth [GINA AND BRENDAN TO CONFIRM DISTANCES AROUND BLASTING AREAS] about the blasting zone to document pre-existing conditions. The pre-blast surveys will be conducted by, or under the supervision of, the Structural Inspection/Evaluation Specialist, who will also sign and date each survey. The survey extent and method used must be acceptable to both the Contractor's insurance company and the Contracting Officer. Submit a copy of all pre-blast surveys at least two weeks prior to the first Test Blast. Provide owners of surveyed structures a copy of their Pre-Blast Survey before, or with the notice of, blasting commencement. Notify owners and occupants of local buildings 10 days prior to the commencement of blasting.

Perform the following when conducting pre-blast survey.

- a. Provide methodology to be used in conducting the pre-blast survey and listing of structures, determined from the survey to be sensitive, with reasons for these structures being sensitive.
- b. Each structure must be documented (including photography and video recordings) as to its construction, foundation type, condition, and closest distance to excavation blasting. The general condition and all observable defects of each structure must be documented.
- c. The Commodity storage facilities that may be impacted by blasting must be addressed by the Contractor for safety and continued operation during the blasting program.
- d. Freestanding structures (such as retaining walls) must be inspected on the exterior and on the interior as a room. All concrete walks, driveways, etc. must be inspected for cracks, level condition, holes, and defects.
- e. Industrial structures, silo/elevators and special facilities, and office space must be described relative to their present conditions and tolerance to vibration. Besides the inspection of walls, columns and stairwells, the Contractor must survey the work areas and structures for distress.
- f. An inspection of accessible structures must be made and a list of all structures, which could not be surveyed or refused to allow survey, must be completed. The dates of possible subsequent surveys and physical constraints prohibiting the survey must be documented.
- g. Certify that the survey was prepared prior to the start of any blasting under this Contract.

3.5.2 Post-Blast Surveys

Post-blast surveys are not typically required. Post-blast surveys must be conducted at any location, where a reasonable notice of damage from blasting has been provided. Post-blast surveys will be conducted by, or under the supervision of, the Structural Inspection/ Evaluation Specialist, who will also sign and date each survey. The survey extent and method used must be acceptable to both the Contractor's insurance company and the Contracting Officer. The post-blast surveys must be conducted within a week of the notice of damage from blasting. Submit a copy of all post-blast surveys within two business days of the on-premises surveys to both the structure's owner and the Contracting Officer.

3.5.3 Daily Explosives' Magazine Inventory and Daily Explosives' Accounting

Accurate daily records must be kept by the Magazine Keeper, who must account for each piece of explosive, detonator, and equipment from the time of delivery at the magazine until its discharge in use or return to the magazine. If explosive products will be delivered and returned daily, the records of the driver must agree with the amount used in the day and a copy of each driver's record must be provided with the Daily Blasting and Removal Log submission. No explosive can be accepted until it has been plainly labeled and delivered as new stock in sound condition. Dates of manufacture and lot numbers will be recorded for all explosives delivered to the site. No explosive material older than 1 year will be used. Containers for explosives must be approved in advance by the Contracting Officer. Remaining inventory must be checked each day and any discrepancies must be immediately reported, regardless of the potential of accounting error, loss, or theft of explosive material.

Should a loss or theft of explosives occur, all circumstances and details of the loss or theft must be immediately reported to the nearest office of Alcohol, Tobacco and Firearms, as well as to the local law enforcement authorities and the Contracting Officer's representative.

3.6 BLASTING DOCUMENTS

3.6.1 Master Blasting Plan

The Master Blasting Plan must be submitted for approval by the Contracting Officer 45 days before the first anticipated Test Blast. No blasting may be conducted prior to the approval of the Master Blasting Plan. No deviation from the Master Blasting Plan will be conducted by the Contractor. Any request for change or revision to the Master Blasting Plan must be provided in writing and approved by the Contracting Officer before such change or revision can be performed. The Contractor will submit a Test Blasting Plan within the Master Blasting Plan that includes calculations for all noted adverse impacts. Non-electric blasting caps must be used for all underwater shots. The Master Blasting Plan must contain provisions for storing, handling, and transporting explosives, as well as for the blasting operations. The means of surveying and locating the shot-hole positions horizontally and vertically must be described in detail within the Master Blasting Plan. Provide a signed statement by the Blasting Consultant that the plan represents a safe and efficient set of means and methods with which to achieve the goals of the work. The Master Blasting Plan must be submitted with the signature and date of the Blasting Specialist. The Contracting Officer will have a minimum of 30 calendar days review of the revised plan. The Contractor may elect, or may be required, to revise and resubmit the Master Blasting Plan or a portion thereof; additional time will be allotted for review by the Contracting Officer.

3.6.1.1 Proposed Blasting Personnel

Submit all the approved and proposed blasting personnel and their required information from paragraph BLASTING PERSONNEL. List and copies of

licenses, permits, and clearances required, including permit numbers, when applied for, and date of approval or anticipated approval by Federal, State, and local concerns. Provide their police records for every approved and proposed blasting individual. Submit the complete Project Team Organization with duties, responsibilities and authorities clearly defined. Identify the on-site Safety Officer and include a listing of all personnel authorized to sign for, receive and use explosives on this contract.

3.6.1.2 Explosives and Blasting Equipment

Submit all the explosives, their use, and their data sheets for the project. Data sheets, which include the products' specific gravity and water resistance, for all explosives and blasting agents that may be used.

3.6.1.3 Blasting Safety Plan

Submit Blasting Safety Plan, that is in accordance with EM 385-1-1, Section 29, and all other Federal, state, and local regulations. Implement all other applicable safety requirements in addition to that required below. Include, as a minimum, the following items.

- a. Permanently secure all onboard magazines to the deck as required by all applicable Code of Federal Regulations.
- b. Do not store explosives on the boat or barge deck in the open except for the one case that is to be loaded immediately into the shot holes. Return explosives remaining on deck to the day magazine prior to the firing of any blast. Clearly identify the location of the day magazine in the 'Blasting Safety Plan'.
- c. Mount the non-electric, shock tubing spool on the rig in a manner that it cannot be lost overboard. Use an approved blasting machine for detonation regardless of the number of caps used. Do not use an electric blasting system.
- d. Limit the amount of explosives aboard the drill boat at any one time to be in accordance with the amount permitted by appropriate codes and regulations. Do not exceed the amount permitted.
- e. Make arrangements to prevent damage to any vessel, moored or underway, building or structure and preserve the crew or occupants thereon from exposure to injury as a result of the Contractor's operations. The Contracting Officer may require additional arrangements.
- f. Perform a certified marine survey of all floating plant proposed for underwater blasting work on this contract prior to starting any work.
- g. Install automatic fire extinguishers of an appropriate type on air compressors and in all engine compartments aboard vessels including but not limited to (drill boats, barges) where explosives are stored, handled, and used.
- h. Provide remote fuel shut-offs and fire signaling devices aboard the drill boats.
- i. Coordination Plans with the local Coast Guard office to provide notice of blasting and for vessel traffic control.

j. Alert sequence signals and public notice of blasting and all clear. See paragraph PUBLIC NOTICE OF BLASTING OPERATIONS in this section.

3.6.1.4 Navigation Control Plan

Submit the Navigation Control Plan in accordance with EM 385-1-1, Section 29, and all other Federal, state, and local laws and regulations. Implement all other applicable safety requirements in addition to that are required below.

Develop a Navigation Control Plan, which is incorporated into the Master Blasting Plan, that will provide the procedures required to maintain safe passage of all vessels within [1000 ft? TBD], during the project. The Contractor will maintain a 1/2 channel to a depth of [____] ft below the low water datum for [___] for all marine traffic through [___] during the project. The 1/2 channel will always be maintained, except during blasting events.

[GINA NOTE: Not sure if they can do this 1/2 channel plan for drilling? Might be able to keep some channel open?]

The Contractor will buoy the area with floating warning signs. The warning signs will be legible from a distance of 200 ft and must contain the message "DANGER - EXPLOSIVES IN USE" visible on either side of the sign.

Operate two or more patrol vessels during blasting operations equipped with a visible yellow flashing light, audible horn, and radio with a hailer, whose sole function will be to monitor and maintain security in the blast area. A patrol vessel will be stationed at the drill barge and remain in the blasting area during all blasting operations. Land oriented access control and visual observation locations should be determined and approved by the Contracting Officer. Inspect and insure there is no vessel traffic within the buoyed work area prior to providing the Shot's Warning Signals and until such time as the "All Clear Signal" has sounded. Establish and maintain a warning system as required by the Corps of Engineers Safety Manual. Equip and maintain floating plant with radio equipment capable of communications with the Coast Guard. After each blast, upon inspecting the area, immediately notify the U.S. Coast Guard and the Contracting Officer of the all clear or of a misfire.

Maintain the work areas that are not completed and accepted by the Corps to a depth of [____] ft below the low water datum for [____]. In addition, for work located along the channel centerline, remove immediately obstructions that have impacted the main channel above a depth of [____] ft below the low water datum for [___], prior to the "All Clear Signal," for marine traffic to resume.

The Corps of Engineers will provide clearance surveys, following rock blasting activities along the centerline of the main channel. The clearance surveys will be conducted immediately following a blast, to ensure that no rock material has fallen into the 1/2 channel used for marine traffic.

NOTE: NEed to double check these work area requirements and measure against what is noted in 01 71 23 $\,$

3.6.1.5 Production Blasting Design

No blasting, including the Test Blasting, may differ from the approved

Master Blasting Plan. Shot-hole drilling must not begin until the Master Blasting Plan is approved in writing. Reflect changes to the blasting or monitoring procedures, equipment, plant, products or personnel in a revised Master Blasting Plan or portion thereof. Obtain approval from the Contracting Officer, in writing, prior to implementation of any Master Blasting Plan changes or revisions.

Confine the loaded charge with angular, granular stemming materials, placed within competent rock, to perform the most work and to avoid a rifling plume from occurring within any shot hole. See paragraph STEMMING. The shortest delay period both between two adjacent shot holes and between two adjacent shot rows in the shot pattern is 25 milliseconds (ms). The maximum charge weight per delay may not exceed [___] pounds of all combined explosives and blasting agents in each 25-ms delay period.

GINA NOTE: TBD? Not sure we need this... performance-based

Include in the Production Blasting Design Section, as a minimum, the following items.

- a. Proposed method of transportation, storage, and handling of explosives.
- b. Procedure for monitoring the blast operations and handling misfires.
- c. Plan showing the intended layout of the shot-hole patterns, timing and sequence, anticipated burden dimensions and depth of sub-drilling for a specified maximum charge weight per delay. Identify each drill hole by a unique, sequential identifier.
- d. Typical size, depth, and spacing of blast holes; methodology to assure loading of explosives is only within sound rock; the maximum load density (in pounds per foot of drill hole length) and the maximum powder factor (in pounds of explosive per cubic yard of rock shot); type of explosive and method of loading and detonating; procedure to confine the charge with stemming; and maximum number of holes to be detonated for a production shot pattern. Initiation system to be deployed and the means to assure each shot hole fires on its own delay.
- e. Sequencing of delays for each shot hole that will be employed during blasting and the maximum explosive loading in pounds of explosive per delay.
- f. Indication as to whether decking or boosters will be used.
- g. Type and number of drill frames, including drill hole diameter, and expected production rates/day.
- h. Type of blast seismographs to be used, manufacturer, and when last calibrated or certified, and types of video cameras.
- i. The formats of all logs and reports to be used throughout the life of the project designed to record pertinent data before, during, and after the blasting operation. Pertinent information includes, but not be limited to, those items specified in paragraphs detailing the submittals.
- j. Names, office mailing addresses and phone numbers of Contractor's representatives (Blasting Consultant, Blasting Specialist, Blaster in Charge, and Vibration Specialist) to which any informational inquiries

may be addressed.

- k. Location plan, manufacturer's literature, and parameters to be used in site selection for the blast seismographs and video cameras. The location of any other monitoring equipment, when used.
- The methods that will be used to prevent all cited adverse impacts during the blasting activities, including protection of natural resources.
- m. Complete list of floating plant involved in production blasting operations.
- n. Within the blasting plan consider the multiple types of commercial vessels that will be on the water over the period of the excavation and removal program. Notify the sail/yacht clubs, etc., of plans to blast in advance and what traffic control and proximity restrictions will be implemented.
- o. Submit the means and methods to be used to recover and dispose of all shock cord/tubing and initiation transmission-line debris immediately following each shot.

3.6.1.6 Test-Blast Plan

Test Blasting is the initial blasting for the project starting with lower explosive loading in shot holes and fewer shot-holes in each initial shot pattern. The purpose of the Test Blasting is to safely build to the level of Production Blasting and to accumulate data to avoid shot-hole rifling and the cited adverse effects from blasting. An Individual Shot Plan must be provided for each Test Blast.

A minimum of three shots are required for the Test Blasting. Increase the number of shot holes loaded and the maximum charge weight per delay of subsequent test and production shot patterns only if the prior test shot was apparently successful. An apparently successful shot pattern is defined as a properly fired pattern without riffling plumes that has seemed to have been effective prior to excavation and has remained below the maximum, peak particle velocity values, as prescribed in paragraph ALLOWABLE VIBRATION. For the next immediate test shot pattern, use a smaller number of loaded drill holes and a smaller maximum charge weight per delay, if (1) the prior shot pattern had a rifling plume [and][or] (2) underestimated the recorded, PPV by 25 percent at any monitoring location [and][or] (3) had any type of misfire, damage or injury or accident or claim thereof.

- a. Limit the first test shot to [3] [____] total drilled shot holes in a single row and have a maximum charge weight per delay of [____] lb of explosive materials per 25-ms delay. TBD
- b. Limit the second test shot to [7] [____] total shot holes in a single row of the shot pattern of the Contractor's choosing and to a maximum charge weight per delay of double the first shot's maximum charge weight per delay, if the first test shot was completely satisfactory.
- c. The third and any further test shot patterns may use double the number of the shot holes of the preceding satisfactory shot, included within two or more shot rows, and double maximum charge weight per delay of the preceding satisfactory shot[to the production-shot maximum

allowable charge weight per delay of [____] lb of explosive materials per 25-ms delay]. TBD

A Test-Blast Evaluation Report must be provided within two business days to the Contracting Officer's representative in writing and by e-mail to the cited e-mail address listing once the last Test Blast has reached the explosive load per shot hole and the number of shot holes and rows to conduct Production Blasting.

3.6.2 Individual Shot Plans

The Contractor must submit an Individual Shot Plan 24 hours prior to any subsequent drilling and blasting for that shot pattern. The format may utilize a spreadsheet for ease data entry but requires an actual signature and handwritten date for its submission.

Prior to each blast, including Test Blasts, the Contractor must submit for the Contracting Officer's documentation a plan detailing all the data required in the Individual Shot Plan's format of the approved Master Blasting Plan. The plan will provide all the pertinent aspects of the blast design including, but not limited to, the loading, firing, delay sequence, and special considerations. The Individual Shot Plan will provide the location and depth of holes, inclination of all holes that will not be vertical, the proposed depth and the spacing of the blast holes, amount, and strength of explosives per hole and per pattern, the proposed sequence of firing and time delays, and estimated time and day for the pattern's initiation. Each proposed shot pattern will be designed by the Contractor's Blasting Specialist with changes being determined by observation of the way the rock breaks as the operations progress. The Contractor must take such precautions as are necessary to prevent displacement, cracking or damaging the rock outside the prescribed limits of dredging or excavation. The rock outside the limits of the dredging must be left in as sound and undamaged a condition as possible.

- a. Submit an Individual Shot Plan to the Contracting Officer, with the anticipated plan for the next shot pattern prior to drilling the shot holes. Furnish each submitted Individual Shot Plan as a signed paper copy and in digital form to the e-mail listing required by the Contracting Officer. The Individual Shot Plan may be developed in a format that easily provides data that remains the same for the actual shot information in the Daily Blasting and Removal Log and the Individual Shot Report with its included reports.
- b. The Individual Shot Plan includes, as a minimum, the following items:
 - (1) The shot pattern's name/number, coordinate locations of the outermost holes of the shot pattern, any specific purpose for the shot, the anticipated time, date, weather conditions, and the water conditions and its elevation at the anticipated time of the shot;
 - (2) The total number of holes to be shot, the shot-hole diameter, the total weight of explosives, number of delays, load density and powder factor for the shot, the maximum charge weight per delay, the closest approach, scaled distance and estimated PPV and airblast overpressures at each monitoring location;
 - (3) A large-scale plan map depicting the proposed layout of shot hole pattern, timing and delay sequence;

- (4) An elevation sketch showing a typical hole's loading from the water surface to the bottom of the drill hole with an elevation scale, including the elevation of the removal grade, the top of sound rock, the top and bottom elevation of stemming, the top and bottom position of explosive materials, and the position of all detonators, boosters and primers in the hole;
- (5) A tabular listing, which may be a printed spreadsheet page, by hole in the ascending total delay time order by the describing: row and number within the row of the shot hole, total delay time, the total charge weight of explosive materials for the entire hole, the largest charge weight of any deck within a hole on a separate 25-ms delay if any, top of sound rock elevation, bottom hole elevation or the top of stemming elevation at the bottom of a shot hole that was over-drilled in depth and backfilled, stemming elevations, and detonator, primer and booster elevations in the hole;
- (6) The estimated PPV and airblast overpressure at each seismograph location and the lateral close approach distance from the shot pattern to each seismograph;
- (7) the means to remove and dispose of all shock cord/tubing and/or initiation transmission-line debris immediately following the shot;
- (8) The name, title, and signature of the Blasting Specialist providing the form with the date of the signature.

3.6.3 Test-Blast Evaluation Report

Provide a report summarizing the Test Blasting and submit the report with the Individual Shot Report of the first apparently successful production shot.

3.6.4 Individual Shot Reports

The Contractor must submit an Individual Shot Reports, both in writing to the Contracting Officer and by e-mail distribution to the required e-mail addresses, on the next business day and prior to any subsequent drilling and blasting for the next shot pattern. The supporting reports related to each shot pattern, which was not included with the Individual Shot Report, must be provided with their required data by the submission date of each supporting submission. The Individual Shot Report may utilize the spreadsheets, maps, and sketches of that shot's Individual Shot Plan, which have been corrected or revised for the actual shot-hole use, loading, timing firing, and observed or recorded impacts.

The Contractor must submit for the Area Office's documentation a specific set of reports of all the actual information from an initiated shot pattern, including Test Blasts, required in the Individual Shot Report's format of the approved Master Blasting Plan. The record will provide all the pertinent aspects of the blast design including, but not limited to: the time, date and weather conditions at the blast's initiation; proposed shot holes that were abandoned; the actual shot holes' positions and elevations of stemming, loading, decking, its delay and firing sequence, and special considerations; the total weight of explosives and the maximum charge weight per delay for the pattern; all pertinent factors about signaling and providing the all-clear signal; the peak particle velocity of all seismographs; and, any delays to shot initiation and all blast impediments, including by not limited to, shot-hole rifling plumes, observed impacts from blasting, misfiring, and reports of damage from blasting. The Individual Shot Report will include or be followed with all the supporting reports from the shot pattern. Each Individual Shot Report will be signed by the Contractor's Blasting Specialist or Blaster in Charge, whoever initiated the shot pattern's firing. The Contractor must take such precautions as are necessary to prevent displacement, cracking or damaging the rock outside the prescribed limits of dredging or excavation. The rock outside the limits of the dredging must be left in as sound and undamaged a condition as possible.

- a. The Individual Shot Report may be developed in a format that easily provides data that remains the same from the proposed design of the Individual Shot Plan and the actual shot information for the shot's supporting reports and in the Daily Blasting.
- b. The Individual Shot Record includes, as a minimum, the following items:
 - (1) The shot pattern's name/number, coordinate locations of the outermost holes of the shot pattern, any specific purpose for the shot, the anticipated time, date, weather conditions, water conditions and its elevation at the time of the shot;
 - (2) The total number of holes to be shot, the shot-hole diameter, the total weight of explosives, number of delays, load density and powder factor for the shot, the maximum charge weight per delay, the closest approach, scaled distance and recorded PPV and airblast overpressures at each monitoring location;
 - (3) A large-scale plan map depicting the layout of shot hole pattern, timing, and delay sequence;
 - (4) A tabular listing, which may be a printed spreadsheet page, by the loaded shot hole in the ascending total delay time order by the describing: row and number within the row of the shot hole, total delay time, the total charge weight of explosive materials for the entire hole, the largest charge weight of any deck within a hole on a separate 25-ms delay if any, top of sound rock elevation, bottom hole elevation or the top of stemming elevation at the bottom of a shot hole that was over-drilled in depth and backfilled, stemming elevations, and detonator, primer and booster elevations in the hole;
 - (5) The recorded PPV and airblast overpressure at each seismograph location and the lateral close approach distance from the shot pattern to each seismograph;
 - (6) The removal and disposal of all shock cord/tubing and initiation transmission-line debris immediately following the shot[; each required safety, protective, and natural-resource action conducted for the initiated shot with their supporting data];
 - (7) A short narrative of any peculiarities or impediments or adverse impacts or accident/misfire with the shot, if any;
 - (8) The name, title, and signature of the Blasting Specialist

providing the form with the date of the signature.

3.6.4.1 Drilling Logs

The Blaster in Charge or a Blaster with the assistance of the driller will log each shot hole, as the hole is being advanced. No drilling will be initiated without the Blaster in Charge or a Blaster to log the hole by a measurement means of drill bit's depth, the downward rig pressure, advancement rate of drilling, and air-water return of cutting with the driller's full assistance. The log must record the material encountered at the drill bit's depth to a precision of 0.1 ft. The drilling for each shot hole must be assessed to determine, and the log must record, the vertical depth/elevation of encountering sediment, weathered rock, the Top of Firm Rock, and voids to the total drilled depth. The shot-hole logs for all the shot holes in a shot pattern must be provided at the same time as the Individual Shot Report. An acceptable sample drilling log is provided in EM 1110-2-3800.

3.6.4.2 Individual Shot Vibration Monitoring Report

After each shot, submit an Individual Shot Vibration Monitoring Report, which will require the use of blast seismographs, to measure the vibration created from the blasting activities. Submit the Individual Shot Vibration Report to the Contracting Officer by or before Noon of the second business day following the shot, which is being reported. Submit each Individual Shot Vibration Report as a signed paper copy and in digital form to the e-mail listing required by the Contracting Officer. This will be provided at the pre-construction meeting.

Direct the specialty firm providing the Vibration specialist, with approval of the Contracting Officer, to place blast seismographs, consisting of three component seismographs, (1) at important structures, and (2) other locations designated by the Contracting Officer. At least [(6) six] [____] seismograph locations will be required for every blast during this project.[Place additional seismographs at each specified monitoring locations. Use language from Boston specs about monitoring between blast and structure. Need input from CSC on vibration limits and location on where cable will be.]

Samples of possible Individual Shot Vibration Report formats are in EM 1110-2-3800, pp B-9 and B-10. The minimum required information to be submitted in the Individual Shot Vibration Report includes:

- a. Date and time of recording from each seismograph;
- b. Type (brand and model) of three-component seismographs used, serial #, and position name;
- c. Who performed, and the date of, the most recent calibration of each seismograph, and its sensitivity;
- d. The firm and employee who placed the blast seismograph;
- e. Seismograph installation procedures to prevent disturbance during monitoring, vandalism, and damage, and whether the vibration data is being telemetered or downloaded individually;
- f. Set trigger levels;

- g. Maximum for each of the three, component PPV in units of inches per second (ips), the maximum total vector-sum peak particle velocity in units of inches per second (ips), and a log-log graph of all maximum total vector-sum peak particle velocity versus square-root scaled distance in units of sqr feet/pound (sqr ft/lb) for all vibration records of all prior shots for this project;
- h. A graph of the PPV versus frequency for each seismograph location that triggered;
- i. The maximum airblast overpressures in units of pounds per square inch (psi) at any triggered monitoring location and the results from noise tests before blasting in the first report;
- j. A narrative description of any peculiarities or impediments or adverse impacts or accident/misfire for the shot; and,
- k. The name, title, and signature of the Vibration Specialist processing and interpreting the data and providing the report with the date of the signature.

3.6.4.3 Individual Shot Videos

The Contractor will make a video recording of each shot pattern in a clear and consistent manner. Video recording must include date, time, and location. The digital video file must be furnished with the Individual Shot Report in a format noted within the Master Blasting Plan and approved by the Contracting Officer. The submission must be made to the Project Office and to all on the e-mail address listing. A library of blast videos will be maintained for all blasts and will be readily cross referenced with individual blast plans and post blast evaluations.

3.6.4.4 Reports of Required Safety, Protective, and Natural Resource Programs

Specify the data submission for required safety, protective, and natural-resource actions. A summary report must be submitted by noon [2] [____] business days after the shot of the [special monitoring of a critical or essential facility or of a government or commercial structure, [and][or] an avian or mammalian watch program for assurance that a shot is not initiated at a time when the cited species is present, [and][or] underwater pressure wave monitoring, [and][or] other agreed/negotiated program]. ** Come back to this... fish monitor, marine mammal observers, check Boston

3.6.5 Daily Blasting and Removal Log

The Contractor must submit a Daily Blasting and Removal Log, both in writing to the Contracting Officer and by e-mail distribution to the required e-mail addresses, on the next business day. The Daily Blasting and Removal Log summarizes all the drilling and blasting activities, surveying, dredging and removal of spoils, and disposal operations for any day that one or more of those operations were conducted. The Daily Blasting and Removal Log will be signed by the designated representative of the Contractor, approved in the Master Blasting Plan.

3.7 DRILLING AND BLASTING

3.7.1 Underwater Shot Holes

No drilling will be initiated without the Blaster in Charge or a Blaster to log the hole and confirm the proper positioning of the shot hole. For underwater blasting, the Contractor must be prepared to: drill; log the hole; resolve the units encountered in drilling; reassess the Shot Plan's intent for that particular shot hole; load explosives, boosters, initiators and delays, place stemming in sound rock; and raise the firing line. If a shot hole cannot be drilled or cleaned out, the Contractor will be required to re-drill that shot hole or properly correct the shot design to delete that hole.

3.7.2 Shot Hole Logging

The Blaster in Charge or a Blaster will log each drilled hole, as the hole is being drilled. The Blaster in Charge or a Blaster will log the shot hole by a measurement means of drill bit's elevation, the downward rig pressure, advancement rate of drilling, and air-water return of cutting with the driller's full assistance. The shot holes must be logged during drilling and measured upon completion with a weighted tape for its full depth before any explosives are loaded into any of the holes.

If any holes are too deep, then these holes will be filled to the proper depth with stemming. Repeated, significant voids, 0.5 ft or larger, must be reported to the Contracting Officer. The Blasting Consultant may need to assess the issue of voids. Should voids become confinement issue blasting will be delayed until the Contracting Office is satisfied that potential problems related to blasting around the void have been properly addressed.

3.7.3 Stemming

All shot holes must have appropriately sized stemming material of the proper vertical placement length to optimize the blast design. Loss of explosive confinement can be due to improper stemming material type and poorly placed stemming. Tamped stemming must be placed from the top of firm rock (or hard material), as determined from the drilling log, to the top of the explosive charge. Stemming must also be used to fill voids, if any, as noted on the drilling log of that shot hole.

3.7.3.1 Stemming Material

Stemming must consist of well-graded, crushed, angular stone without fines. The gradation of the crushed, angular stone is between 1/8 inch and 3/8 inch in diameter. No soil or drill cuttings or rounded particles of the noted grading may be used as stemming material.

3.7.3.2 Length of Stemming

The minimum vertical length of tamped stemming within rock, or hard materials, of a shot hole must be the greater of 2.0 ft or eight times the shot hole's diameter. This minimum length of stemming must be placed in firm rock, or hard materials, to contain the gaseous products of detonation both below the top of firm rock and on either side of (above or below) voids, if any, with an explosive charge.

3.7.4 Loading Shot Holes

Stemming, decking, shot hole explosives' loading, and shot plan revisions for each shot hole must be made upon completion of drilling to the total depth from the logging of that underwater shot hole. Resolve whether to abandon the shot hole or load the hole from the Shot Plan's intent and the information resolved by the shot hole's log.

3.8 IMPACT MONITORING

Monitoring of the blasting may be required for public safety or natural-resource protection. The Contractor will be responsible for the payment and services of one or more, independent, third-party firms to conduct the required monitoring. The Contractor will make available the schedule and blasting documents to coordinate with other specialists monitoring issues for: the public's safety; environmental concerns for air, water, and property; natural resource protection; and the safety of structures and features.

3.8.1 Public-Use Area Effects

The Contractor will provide personnel, patrolling vessels or vehicles, and the signage necessary to assure safe distances from all shot patterns are maintained and physically monitored at public-use areas on land or on water, and at occupied structures or highways or other features requiring control.

3.8.2 Airblast and Vibration Monitoring

Airblast and vibration monitoring must conform to current industry standards and use equipment developed for blast monitoring. The Contractor will hire a subcontracted specialty firm, independent of the Contractor's firm and other sub-contractors to locate, maintain, and record the airblast and vibrations from every shot. The subcontracted vibration firm through their employee, the Vibration Specialist, will monitor the [three] vibration positions shown on the plans or accepted by the Contracting Officer. Additional seismographs may be required temporarily for (green) concrete placement or other temporary considerations or as required by the Contracting Officer for specific airblast or vibration issues due to blasting suspected at locations without seismographs. The vibration records and the Individual Shot Vibration Monitoring Reports will inform the Contractor of the actual airblast and vibration parameters from every shot and assure the government that the blasting has remained within the allowable airblast and vibration levels.

GINA NOTE: There is a beach at the lighthouse... people could be swimming in the summer. And definitely shouldn't be while we're blasting. Run by the city of New Haven... coord with city.

Provide 6 blast Seismographs capable of sampling rates of 15,000 samples per second or higher that meets ISEE PSBS. The 15,000 samples per second accuracy is required to acquire reproducible vibration readings. Each seismograph provided to the project must have been calibrated by the manufacturer within six months of its installation. No seismograph may be used at the project may have manufacturer's calibration longer than eleven months prior to its date of use. The units must be self-contained except for external geophones and microphones. The seismographs without erasing the stored data must be capable of telemetering the digital data or downloading the digital data to a portable device. The units must be programmed with specific data for each site of seismograph placement, which includes seismograph location, geophone burial or mounting method, calibration signal, date, and time of the record. The seismographs must be housed in protective enclosures, if vandalism or high-traffic concerns or weather or other conditions could limit the continuous, proper recording by the seismographs.

The blast seismographs must not be placed inside of a structure, unless required for the designated purpose and authorized by the Contracting Officer. The seismographs should not be placed near a structure unless the intent is to measure that particular structure's specific response to the blast. The microphone must be positioned to avoid wave reflections of the airblast from the vertical, front or side of a structure, wall or rock face. The microphone should be placed at a height of 3.0 ft. The geophone for each seismograph must appropriate for buried in soil or for being physically secured to rock or sidewalk or pavement or a concrete foundation.

The seismographs must be operated continuously beginning [seven] days before the first anticipated Test Blast. All The airblast and vibration amplitudes' maximal, frequencies of those amplitudes, repeated occurrences, and other parameters for the first period of operation before the first Test Blast will be reported as the project's background conditions in the first Individual Shot Vibration Monitoring Report.

The seismographs must be operated continuously until the excavation has been approved by the Contracting Officer. The seismograph may be removed from the project and replaced after their initial deployment, if there will be no blasting for a period of seven days or longer and if there will be no explosives stored onsite during that period.

3.8.3 Individual Shot Videos

Record every shot pattern's blast with Full High Definition, 1080p, digital video recordings with a minimum of 30 frames per second from two designated locations, approximately perpendicular to one another, that provide side and front or rear views of the blast and area above it. The video images must not contain any other text than the shot number. Include metadata consisting of the blast ID, date, and time of the blast. Index the two video recordings to properly identify each blast. Submit the proposed locations of the two video recorders on a map with the Individual Shot Plan. Furnish electronic file copies of video recordings on the sFTP within 24 hours of a blast. If the Contracting Officer requests that a copy of the video be submitted earlier, then deliver a copy within one hour of the request. Maintain a digital video library of all blasts.

3.8.4 Air, Water or Land Protections

The Contractor will assure that all escaping or released gases, fluids, and solids are within applicable limits of all federal, state, and local laws, regulations, ordinances, and guidelines. Any releases of fluids or solids that are not such limits will be immediately reported, mitigated, retained, and removed from the project.

The Contractor will remove all shock cord/tubing and initiation transmission-line debris immediately following each shot. Submit means and methods for removal in Master Blasting Plan.

[____]

3.8.5.1 Fish-Repelling Noise

GINA NOTE: Use scare charge language from cut sheets from Boston submittals. Acoustic deterrent system from Boston was good.

3.8.5.2 Watch Program

Fisheries observers, marine mammal observers. Language can stay the same from Boston/Portsmouth. Should be in environmental specs

3.8.5.3 Post-Blast Fish Surveys

Same as Boston & Portsmouth. Also in enviro section

3.8.5.4 Underwater Overpressure Monitoring

Boston had a section on underwater overpressure monitoring plan and another for report. See 35 30 00 Section 1.9.5 and 1.10.8

3.9 EXCAVATION VERIFICATION

Conduct the verification of the completed excavation, as specified in Section [EXCAVATION], Paragraph [SURVEYS].

3.10 SUBMERGED MATERIAL DISPOSAL

Transport and place all dredged, displaced, or excavated materials within the limits of the disposal zones below the specified elevations, as specified in Section [DISPOSAL].

-- End of Section -

Range	2																					Blast No			AU-00	6	
					Feet on Deck		Deck to Water		Raw Read	ings		Tide & D	eck Corre	cted Depth	s (MLLW)		Face to	Thick	of Hole		In-Hole Delay	Surface Delay	LBs Loaded	LBs Hvdromite	Stem Collar	Real Time	
Hole #	Start	Finish	Easting	Northing		Tide		Top of OB	Top of Rock	Hole Bottom	Tape Check	Survey Before	Top of OB	Top of Rock	Hole Bottom	Tape Check	ŧ	ов i1		Booster		,		Lost			Comments/Notes
1																											
2																											
3	_			-						_																	
5	20.23	20.33	2781632.1	104551.2	65	3	13	51	58			30.5	35	42			٩	7									GRADED
6	20:34	20:57	2781624.3	104560.3	77	3	13	48	55	64	64	30.0	32	39	48	48		2 7	9	1	2	2	69	0	25	84	GIVIDED
7	20:58	21:17	2781616.4	104569.4	89	2	13	49	54	63	63	30.8	34	39	48	48		2 5	9	1	2	0	69	0	2.5	109	
8	20:25	21:02	2781608.6	104578.5	101	2	13	49	54	63	63	31.7	34	39	48	48		25	9	1	2	0	69	0	2.5	134	
9	21:04	21:24	2781600.8	104587.6	113	2	13	48	52	61	61	31.7	33	37	46	46		4 4	9	1	2	0	69	0	2.5	159	
10	21:26	21:36	2781593.0	104596.7	125	1	13	44	56			29.4	30	42			9	12	2								GRADED
11	20:01	20:13	2781585.2	104605.8	137	3	13	45	57			28.2	29	41				0 12	2								GRADED
12	20:13	20:23	2781577.4	104614.9	149	3	13	47	57			28.8	31	41			1	0 10	,								GRADED
13																											
14																											
15																											
16																											
17																											
18																											
19																											
20																											
																							Blas	t of the Day			
																						Sta	nt drilling		19:	39	
																						En	d Drilling		01:	19	
																					Pov	wder Facto	or avg/hole		1.8	35	
																						Powder F	-actor Tota	1	1.8	39	
											Time	of Blast	t 8:5	9:00	Total Hydr	omite Metere	d 1626	lbe									

Date

7-Feb-22

AU-006

						1020 100.	
Min. Lbs./ Loaded Hole	71.0 lbs.	Total Lbs.	Loaded	1667.00 lbs.			
Max. Lbs./ Loaded Hole	123.0 lbs.	Total D	rill Feet	204.00			
Max holes/delay 1	Max. Lbs./Delay	123.0 lbs.		Total	Delays	21	
	Total Holes Loaded	21		Min./ Max. Hol	e Depth	7.0 ft.	14.0
	Northing B	urden	104564		Easting	Spacing	2781601
	Sten	nming	10		Drill	Diameter	12
			2.5				5 in

Prod Blast

SECTION TABLE OF CONTENTS

DIVISION 35 - WATERWAY AND MARINE CONSTRUCTION

SECTION 35 20 23

MECHANICAL DREDGING

- PART 1 GENERAL
 - 1.1 REFERENCES
 - 1.2 GENERAL INFORMATION
 - 1.3 ENVIRONMENTAL COMPLIANCE AND PROTECTION
 - UNDERWATER DIVING OPERATIONS 1.4
 - 1.5 DEFINITIONS
 - 1.5.1 Federal Navigation Project (FNP)
 - 1.5.2 Improvement Dredging
 - 1.5.3 Maintenance Material
 - 1.5.4 Improvement Material
 - 1.5.5 Ordinary Material and Hard Material
 - 1.5.6 No Spud Zones
 - 1.6 SUBMITTALS
 - 1.7 ORDER OF WORK
 - 1.8 ENVIRONMENTAL WINDOWS
 - 1.9 NOTIFICATIONS
 - 1.9.1 Notice of Misplaced Material
 - 1.9.2 Notice of Need for Dredging Survey
 - 1.9.3 Relocation of Navigation Aids
 - 1.9.4 Placement of Dredging Aids
 - MATERIAL TO BE DREDGED 1.10
 - 1.10.1 Results of Explorations
 - 1.10.1.1 Ordinary Dredge Material
 - Hard (Rock) Material 1.10.1.2
 - 1.10.2 Interpretation
 - 1.10.3 Debris
 - Artificial Obstructions and Other Material 1.10.4
 - 1.10.5 Hard Material
 - 1.11 DEBRIS MANAGEMENT
 - 1.12 EXISTING SITE CONDITIONS
 - 1.13 WORK AREA
 - Access 1.13.1
 - 1.13.1.1 Contractor Access
 - 1.13.1.2 Emergency Access
 - 1.13.2 Protection of Existing Waterways
 - 1.13.3 Protection of Existing Structures
 - 1.13.4 Protection of Utility Lines
 - 1.13.5 Unidentified Pipelines or Utilities
 - 1.13.6 Safety of Structures
 - 1.14 INSPECTION OF WORK
 - 1.14.1 Method of Communication
 - 1.14.2 Transportation
 - 1.15 FUEL OIL HANDLING
 - DOCKS, PIERS, AND MOORINGS 1.16
 - 1.16.1 Derelict Moorings
 - 1.17 PERMITS
 - 1.18 BASIS FOR BIDS
- part 2 PRODUCTS

PART 3 EXECUTION

- 3.1 DREDGING PLANT AND ASSOCIATED EQUIPMENT
 - 3.1.1 General Requirements
 - 3.1.2 Dredging Plant
 - 3.1.3 Associated Equipment
 - 3.1.3.1 Tow Boats
 - 3.1.3.2 Scows
 - 3.1.4 Other Equipment
- 3.2 CONDUCT OF DREDGING WORK
 - 3.2.1 General
 - 3.2.2 Dredging Operation Plan
 - 3.2.3 Interference with Navigation
 - 3.2.4 Dredge Positioning System
 - 3.2.5 Signal Lights
 - 3.2.6 Salvaged Material
 - 3.2.7 Method of Communication
 - 3.2.8 Plant and Equipment Removal
- 3.3 VESSELS USED FOR TRANSPORTING DREDGED MATERIAL
- 3.4 DISPOSAL OF DREDGED MATERIAL
 - 3.4.1 Disposal Sites
- 3.4.2 Non-Designated Disposal Sites
- 3.5 DREDGING LIMITS
 - 3.5.1 Allowable Overdepth
 - 3.5.2 Side Slopes
 - 3.5.3 Excessive Dredging
- 3.6 CONTRACTOR QUALITY CONTROL
- 3.7 SHOALING
- 3.8 FINAL CLEANUP AND DEMOBILIZATION
- -- End of Section Table of Contents -

SECTION 35 20 23

MECHANICAL DREDGING

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 the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1

(2024) Safety and Occupational Health (SOH) Requirements

1.2 GENERAL INFORMATION

This Section covers the performance for 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 designated disposal site. 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 Contractor shall verify site conditions in advance of dredging operations.

1.3 ENVIRONMENTAL COMPLIANCE AND PROTECTION

The Contractor shall comply with conditions and requirements of environmental permit(s). The Government will secure the environmental permit(s) for dredging and placement of material as indicated under Subpart ENVIRONMENTAL PERMITS AND COMMITMENTS in Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

During the life of the contract, the Contractor shall provide and maintain environmental protective measures. Also, the Contractor shall be prepared and responsible for providing environmental clean-up and protective measures required to correct conditions, such as hazardous material, oil spills, or loss of debris, that occur during the dredging operations. The Contractor shall comply with Federal, State, and local regulations pertaining to water, air, and noise pollution. Refer to Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

1.4 UNDERWATER DIVING OPERATIONS

In the event that underwater diving operations become necessary due to the work of this contract, such operations shall be conducted in accordance with EM 385-1-1, Section 30.

- 1.5 DEFINITIONS
- 1.5.1 Federal Navigation Project (FNP)

The FNP under this contract is defined as the 35-foot deep entrance channel, the 35-foot deep main channel, and a 35-foot deep turning basin.

1.5.2 Improvement Dredging

Improvement Dredging under this contract is defined as the removal of shoaled and virgin material within the Federal Navigation Project (FNP) since the completion of the last maintenance dredging to achieve the new depths and widths.

1.5.3 Maintenance Material

Maintenance material is defined as shoals and sediments that have accumulated within the Federal Navigation Project after previous maintenance dredging operations. Maintenance material also includes accumulated sediment material that sloughs off side slopes.

1.5.4 Improvement Material

Improvement material is defined as sediments that are present within the new Federal Navigation Project limits which has likely never been dredged before this contract work

1.5.5 Ordinary Material and Hard Material

[Coordinate this definition between this sewction and the blasting spec]

1.5.6 No Spud Zones

For the purposes of this contract, a "No Spud Zone", as shown on the contract drawings, is an area in which anchors and/or spuds shall not be used.

1.6 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 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Dredging Operation Plan; G, RO

Submit a work plan for accomplishing the dredging work of this contract.

Debris Management Plan

Develop and submit a debris management plan to the Contracting Officer for review.

Scows

Submit scow cards for each scow to be used for contract work. Scow cards shall have information specified in paragraph "Scows".

SD-05 Design Data

Equipment and Performance Data

The Contractor shall furnish proof of electronic positioning equipment calibration to the Contracting Officer.

Daily Report of Operations

Submit Daily Report of Operations for each dredge. This report shall be submitted on a daily basis as specified under subpart below titled "Contractor Quality Control."

Monthly Report of Operations

Submit a Monthly Report of Operations for each month or partial month's work as specified under subpart below titled "Contractor Quality Control."

- 1.7 ORDER OF WORK
 - a. The Contractor shall prepare and submit to the Contracting Officer for review and approval a progress schedule in accordance with Section 01 11 00 SUMMARY OF WORK, Paragraph "Work Sequence" and Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, Subpart titled "Environmental Dredge Window".
 - b. There is no specific order of work for this project. The dredging performed by all dredges shall be continuous within reaches approved by the Contracting Officer.However, Dredging and disposal of non-sand and non-hard/rock material, designated on the contract drawings, shall begin at the northern most extent of the FNP and proceed in a southerly fashion.
 - c. The Government reserves the right to change the order of work at any time.
- 1.8 ENVIRONMENTAL WINDOWS

All work shall be accomplished within the designated environmental windows specified under Subpart PERIOD OF PERFORMANCE, ENVIRONMENTAL WINDOW, AND DREDGING AND DISPOSAL PERIOD in Section 01 11 00 SUMMARY OF WORK and Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, Subpart 1.9.1, "Environmental Dredge Window".

- 1.9 NOTIFICATIONS
- 1.9.1 Notice of Misplaced Material

The Contractor shall immediately notify the Contracting Officer and the U.S. Coast Guard Marine Safety Office of any misplaced material once identified.

1.9.2 Notice of Need for Dredging Survey

Refer to Section 01 71 23 FIELD ENGINEERING FOR DREDGING for method of measurement, quality control surveys, Government and Contractor surveys, volume computations, and required notice to the Contracting Officer.

1.9.3 Relocation of Navigation Aids

The Contractor shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation.

The Contractor shall notify the U.S. Coast Guard District Commander, in writing, with a copy to the Contracting Officer, 30 days in advance of the time he plans to dredge adjacent to any aids which require relocation to facilitate the dredging operation. A copy of the notification shall be provided to the Contracting Officer.

Note that most, if not all, navigation aids are within the work footprint of the improvement dredging activities.

1.9.4 Placement of Dredging Aids

The Contractor shall notify and obtain approval from the U.S. Coast Guard for all buoys, dredging aid markers to be placed in the water, and dredging aid markers affixed with a light prior to the installation. Dredging aid markers and lights shall not be colored or placed in a manner that they will obstruct or be confused with navigation aids.

- 1.10 MATERIAL TO BE DREDGED
- 1.10.1 Results of Explorations

1.10.1.1 Ordinary Dredge Material

The ordinary material to be removed to accomplish the dredging work in the 40-foot deep federal channel and turning basin is anticipated to be medium to fine sands in the entrance channel, and fine sands, silts, and organic material north of the breakwaters.

- a. Explorations consisting of core samples to determine the character of materials to be removed have been made by the Government for selected areas of this project. Grain size analysis results are attached at the end of Section 00 32 00 GEOTECHNICAL DATA. Although the results of such explorations are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations in the subsurface materials are to be expected and, if encountered, will not be considered materially different within the purview of the contract.
- b. 26 sediment samples (A through Z) were collected in 2017 by USACE, New England District to analyze and measure the grain sizes of the material to be removed from within the Federal Navigation Project. An additional 18 suplimental samples were also taken in July of 2024 (A though R). Test results indicated that the material was predominantly fine-grained sediment. For sampling locations within the Federal Navigation Project, refer to the sediment sampling data attachment at the end of the specification document.
- c. It is the responsibility of the Contractor to carefully examine the conditions that exist at the site of the proposed work, and to review the contract documents and any other information gathered for use in determining equipment, means, and methods for the execution of the work required in this contract. This is not only for the purpose of making their own determination regarding the character of the material to be dredged, but also for the purpose of noting the presence of any conditions which may impact their productivity or ability to complete the work. Impacts to the project which are found to be resulting from a lack of appropriate due diligence on behalf of the Contractor shall not be recognized as a legitimate basis for renegotiating the terms of payment for, or the prosecution or completion of, the Work.

d. Prior to bidding, the Contractor may, at its discretion and expense, conduct additional investigations to further determine conditions at the site and determine the character of the material.

1.10.1.2 Hard (Rock) Material

The improvement dredging work will also require the removal of hard (rock) material by drilling and blasting, hydro-hammer, or removal by other appropriate mechanical means.

THe horizontal and vertical locations of hard (rock) material shown on the contract drawings are based on the interpretation of data collected during the geotechnical investigations (refer to Section 00 32 00 GEOTECHNICAL DATA). The Contractor shall be aware that actual conditions may vary slightly from what is shown on the Contract Drawings. It is up to the Contractor to analyze subsurface data as specified in Section 00 32 00 GEOTECHNICAL DATA.

Conduct operations and protect exposed structures from the effects of the blast in strict accordance with applicable regulations and Section 31 23 01 UNDERWATER BLASTING.

The Contractor is expected to examine the site of the work and decide the character of the material for himself. Prior to bidding, the Contractor may, at its discretion and expense, conduct additional investigations to further determine conditions at the site and determine the character of the material.

1.10.2 Interpretation

Subsurface investigation data is provided for informational purposes only and is for the convenience of the Contractor. The data pertains to the specific locations indicated only and no assurance is given that these conditions are representative of conditions between borings or areas adjacent thereto. The responsibility lies with the Contractor to interpret subsurface conditions that may affect the Work.

1.10.3 Debris

All debris removed from the dredging area will be separated and stockpiled for disposal by the Contractor, in accordance with local, Federal and state laws and regulations, at an upland site supplied by the Contractor. Disposal shall be the responsibility of the Contractor and disposal shall be outside of the project limits.

1.10.4 Artificial Obstructions and Other Material

Except for the utility locations indicated on the contract drawings, the Government has no additional knowledge of existing debris, boulders, 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. If actual conditions differ from those stated or shown, or both, an adjustment in contract price or time for completion, or both, will be made in accordance with "FAR 52.236-2, Differing Site Conditions".
1.10.5 Hard Material

The Government has identified the presence of hard material (fragments too large to be removed in one piece by the dredge) such as existing boulders, wrecks or wreckage, or other material of such size or character as to require the use of explosives or special or additional equipment for its economical removal. Refer to specification section 00 32 00 GEOTECHNICAL DATA for more information on hard material findings. In case the actual conditions differ from those stated or shown, or both, an adjustment in contract price or time of completion, or both, will be made in accordance with "FAR 52.236-2, Differing Site Conditions."

1.11 DEBRIS MANAGEMENT

A Debris Management Plan shall be developed, reviewed by the Contracting Officer, and followed by the Contractor. Debris removed from the bottom during dredging operations, which is not suitable for disposal at the designated disposal site, shall be collected and removed from the work site. All objects that become dislodged from the bottom sediments during dredging activities and float to the surface shall be collected, separated and stockpiled for disposal upland. Disposal of debris shall not be permitted on riverbanks, navigable waterways, or at the disposal site. Each day during dredging operations, the Contractor shall use a boat to collect and remove floating debris resulting from project activities. This debris shall become the property of the Contractor and shall be removed from the jobsite. Containers for temporary storage of the collected debris shall be maintained on the dredge or support barge. The removal and disposal of this debris shall be accomplished at no additional cost to the Government.

1.12 EXISTING SITE CONDITIONS

It is highly recommended that the bidders examine the site of the work, including the disposal area and decide for themselves as to the conditions affecting their operations. See Contract Clause entitled: "SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK."

- 1.13 WORK AREA
- 1.13.1 Access

1.13.1.1 Contractor Access

The Contractor shall be responsible for providing and maintaining access necessary for its equipment and plant to and from the work site, mooring area, and disposal area. The Contractor shall ascertain the environmental conditions which can affect the access such as climate, winds, currents, waves, depths, shoaling, and scouring tendencies.

1.13.1.2 Emergency Access

The Contractor shall be responsible for providing and maintaining access necessary for fireboats and first responders in the event of a fire or emergency.

1.13.2 Protection of Existing Waterways

The Contractor shall conduct his operations in such a manner that material or other debris are not pushed outside of dredging limits or otherwise

deposited in existing side channels, basins, docking areas, or other areas being utilized by vessels. The Contractor will be required to change his method of operations as may be required to comply with the above requirements. Should any bottom material or other debris be pushed into areas described above, as a result of the Contractor's operations, the material must be promptly removed at no additional cost to the Government.

1.13.3 Protection of Existing Structures

- a. The Contractor shall conduct the dredging operation such that it does not undermine, weaken or otherwise impair existing structures located in or near the areas to be dredged. The Contractor shall investigate the existing structures at the site and plan the dredging work accordingly.
- b. The Contractor shall be held responsible for any damage to any existing structures or facilities resulting from dredging. Damage resulting from dredging operations shall be repaired promptly by the Contractor at the Contractor's expense. Damage to structures or facilities resulting from the Contractor's negligence will result in suspension of dredging and require prompt repair at the Contractor's expense as a prerequisite to the resumption of dredging.

1.13.4 Protection of Utility Lines

Existing utility lines that are made known to the Contractor prior to or during dredging shall be protected from damage during dredging, and if damaged, shall be satisfactorily repaired by the Contractor at no additional cost to the Government. Additional location and depth information on the known utility lines will be provided to the contractor during the pre-construction period.

In the event that the Contractor damages any existing utility lines that are not shown on the Contract Drawings or the locations of which are not known to the Contractor, report shall be made immediately to the Contracting Officer. If the Contracting Officer determines that repairs shall be made by the Contractor, such repairs will be ordered under the Contract Clause entitled DIFFERING SITE CONDITIONS.

1.13.5 Unidentified Pipelines or Utilities

Any unidentified pipelines or utilities that may be found within the limits of the work, during the course of dredging shall not be disturbed nor shall excavation be performed at this location unless approved by the Contracting Officer. If actual conditions differ from those stated or shown, or both, an adjustment in contract price or time for completion, or both, will be made in accordance with "FAR 52.236-2, Differing Site Conditions."

1.13.6 Safety of Structures

The prosecution of work shall ensure the stability of piers, bulkheads, and any 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, 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.

1.14 INSPECTION OF WORK

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. See Section 01 45 00 CONTRACTOR QUALITY CONTROL, and Section 35 20 23.13 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM: SCOW - MONITORING PROFILE.

1.14.1 Method of Communication

For the duration of the contract provide the Contracting Officer with two portable two-way VHF marine radios capable of communicating with the Contractor's marine plant and to provide communication between the dredge crew, disposal crew, and the Contracting Officer.

1.14.2 Transportation

The Contractor shall provide, at the request of the Contracting Officer's Representative (COR), the use of such boats, boatmen, laborers, and material forming a part of the ordinary and usual equipment and crew of the equipment or marine plant as may be reasonably necessary in inspecting and monitoring the work. The Contractor shall provide, at the request of the COR, suitable transportation from all points on shore designated by the COR to and from the various pieces of plant, and the work site.

1.15 FUEL OIL HANDLING

The Contractor shall assure that all fuel oil transfer operations to or from its plant comply with all Federal, state, and local laws, codes and regulations.

1.16 DOCKS, PIERS, AND MOORINGS

1.16.1 Derelict Moorings

No known moorings are anticipated within the work area. In the event derelict moorings are encountered by the Contractor during dredging operations, or otherwise made known to the Contractor, shall be handled as debris.

1.17 PERMITS

The Contractor shall comply with conditions and requirements of the Corps of Engineers Permit and other State or Federal permits. The Contracting Officer will secure the permit for dredging and disposal of material as indicated.

1.18 BASIS FOR BIDS

For unit price bid, see SF 1442, "Solicitation, Offer and Award" and "Schedule of Bid Items."

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

- 3.1 DREDGING PLANT AND ASSOCIATED EQUIPMENT
- 3.1.1 General Requirements

Plant and equipment shall meet the requirements of Section 01 54 50 DREDGING PLANT AND EQUIPMENT.

- 3.1.2 Dredging Plant
 - a. All dredging under this contract shall be performed using a mechanical type dredge with scows. The use of hydraulic dredging will not be permitted on this project. No dragging of material will be allowed except as directed by the Contracting Officer.
 - b. Material removed by dredging shall be loaded onto scows, transported, and disposed of at the approved disposal site as specified below. Overflow of scows while dredging shall not be permitted.
- 3.1.3 Associated Equipment

3.1.3.1 Tow Boats

All tow boats used for towing to disposal areas shall be equipped with DGPS and track recording navigational equipment or approved equivalent electronic navigation equipment, radar, corrected compass, marine radio, and depth sounding equipment which is to be maintained in operating condition during each tow. The tow boats utilized by the Contractor for this purpose shall be of a size adequate for towing in large rivers with significant current and shall have necessary reserve power for maneuvering with scows and under emergency conditions as well as for control of scows at the disposal point.

3.1.3.2 Scows

- a. Failure to repair leaks or a change in the method of operation which is resulting in spillage will result in suspension of dredging operations and require prompt repair or change of operation to prevent spillage as a prerequisite to the resumption of dredging.
- b. The Contractor shall provide and maintain markings on all scows clearly indicating the draft of the scow and shall provide scow cards for each scow used on the contract work. The scow cards shall show dimensions and volumes of individual pockets of scows and total volumes for varying depths below coaming or top of pockets. The Contractor shall also provide draft verses displacement curves for all scows. This is to enable the Contracting Officer personnel to make a determination of scow volume and corresponding drafts under partial and full load conditions. These measurements are to be made at the time of initial use of each scow. The scow volume estimates are for use in connection with disposal area monitoring studies and are not intended to be used in determining quantities dredged. At the beginning of the work and as additional scows arrive on the project, sufficient time shall be allowed by the Contractor and assistance of Contractor personnel shall be made available by the Contractor for the purpose of obtaining the measurements of each scow under various partial and full load conditions. During the entire period of contract work, the Contractor shall provide and maintain sufficient spot or floodlights to permit the

reading of the draft on the sides of scows at bow and stern from the tow boat at night and when visibility is impaired.

c. The Contractor shall achieve proper closure and watertightness of pocket doors to eliminate seepage or leakage of material. The use of plastic material to cover cracks in scow pockets will not be allowed.

3.1.4 Other Equipment

Submit all other equipment specifications and operating parameters for review and approval by the Contracting Officer prior to mobilization. No additional compensation shall be considered if other equipment is allowed.

3.2 CONDUCT OF DREDGING WORK

3.2.1 General

Dredging shall consist of the removal and satisfactory disposal of all material encountered to achieve the required depths and side slopes as shown on the Contract Drawings and as specified herein.

3.2.2 Dredging Operation Plan

At least 30 calendar days prior to initiating any dredging, the Contractor shall submit a detailed dredging operation plan for review and comment by the Contracting Officer. Dredging shall not commence until plan has been accepted, to the satisfaction, of the Contracting Officer. The plan shall include, but not be limited to, description of mechanical dredging (bucket, clamshell (grab) or dipper (backhoe)) operations, sequence of work, anticipated plant and equipment; Expected coordination requirements; access, layout of dredging limits, dredging to project depths, retention of material, survey requirements; proposed measures to avoid overdredging; side slope material removal methodology; side slopes or box cut; anchoring locations; quality control survey procedures; anticipated problem areas of project; and all anticipated navigation channel closures.

3.2.3 Interference with Navigation

Minimize interference with the use of channels and passages. The Contracting Officer will direct the shifting or moving of dredges or the interruption of dredging operations to accommodate the movement of recreational and commercial vessels and floating equipment, if necessary. The Contractor shall comply with all requests from the Contracting Officer to move or interrupt dredging operations for a period of 2 hours or less at no additional cost to the Government.

3.2.4 Dredge Positioning System

The dredge shall be equipped with an electronic dredge bucket positioning system (DBPS) consisting of Real-time Kinematic Differential Global Positioning System (RTK-DGPS), and positioning and tracking software, to enable accurate positioning of the dredge. At a minimum, the RTK-DBPS shall be capable of presenting a dredge prism file on a grid, and provide the operator a real-time, heads-up display of the bucket and dredge in relation to site bathymetry, required elevation and allowable overdepth surfaces, and any obstacles, in plan and section views.

3.2.5 Signal Lights

Each night, between sunset and sunrise and during periods of restricted visibility, provide lights for floating plants and equipment, applicable pipeline, 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 shall conform to United States Coast Guard requirements for visibility and color.

3.2.6 Salvaged Material

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

3.2.7 Method of Communication

For the duration of the contract, the Contractor shall provide the Contracting Officer with two (2) portable two-way VHF marine radios. One of which is capable of communicating with the Contractor's marine plant and another which is capable of providing communication between the dredge and disposal crews and the Contracting Officer.

3.2.8 Plant and Equipment Removal

Upon completion of the work, promptly remove plant and equipment, including ranges, buoys, piles, and other markers or obstructions.

3.3 VESSELS USED FOR TRANSPORTING DREDGED MATERIAL

All nautical vessels and conveyance systems shall be operated, loaded and unloaded in such a manner as to prevent overflow, spills, leaks, or other loss of dredged materials between point of pick-up and point of deposition within the disposal area. Under no conditions shall any barge or scow transporting dredged materials have less than 1 foot of freeboard. This means there shall be at least 1 foot between the top of dredged materials and/or water inside the scow or barge and the top edge of the barge or scow. All vessels for transporting dredged materials shall be watertight, with all weep holes or openings sealed to prevent any leakage of water or dredged materials. Any modifications to vessels to allow additional freeboard shall be approved by the Contracting Officer. All vessels for transporting dredged material must be inspected and approved by the Contracting Officer 7 days prior to the start of dredging. The Contractor shall demonstrate that all vessels are sound and watertight.

3.4 DISPOSAL OF DREDGED MATERIAL

- 3.4.1 Disposal Sites
 - a. General:

(1) Dredged material shall be placed in scows and transported to and disposed of at the designated disposal site. Provide for safe transportation and disposal of dredged materials. Material shall be deposited and distributed evenly at the disposal site.

(2) Notify the COR when scows are returned to the dredge area.

(3) Provide for safe transportation and disposal of dredged materials. Transport and dispose of dredged material at the disposal site specified. Anticipated weather conditions shall be determined prior to departing for the disposal site.

(4) Year-round, disposal vessels including tugs, barges, and scows transiting between the dredge site and the disposal site shall operate at speeds not to exceed 10 knots. For unanticipated conditions, a vessel may operate at a speed necessary to maintain safe maneuvering speed instead of the required 10 knots. The intent of this condition is to reduce the potential for vessel collisions with endangered turtles, fish, and whales.

- b. Designated Disposal Sites
 - (1) Central Long Island Sound Disposal Site (CLDS):

CLDS is located 10 miles South from the New Haven Harbor FNP. The disposal site is situated in Central Long Island Sound. The specific disposal locations will be provided by the Government and will include sequential disposals at a series of target coordinates within CLDS. For bidding purposes, the furthest disposal shall occur at the target point defined by the coordinates provided below.

Disposal Target Coordinates at CLDS (CT State Plane NAD83 US Feet): N 6122215.98, E 958380.34

(2) Shellfish Habitat Disposal Area:

The Shellfish Habitat Disposal Area is located just inland of the New Haven Harbor FNP's Eastern Breakwater. The specific disposal locations are presented on the Contract Drawings.

(3) Morris Cove Borrow Pit Disposal Area:

The Morris Cove Borrow Pit Disposal Area is located east of the New Haven Harbor FNP's Lighthouse Reach. The specific disposal locations are presented on the Contract Drawings.

(4) West River Borrow Pit Disposal Area:

The West River Borrow Pit Disposal Area is located just to the nortwest of the New Haven Harbor FNP, along the West River FNP. The specific disposal locations are presented on the Contract Drawings.

(5) Rock Reef Habitat Disposal Area:

The Rock Reef Habitat Disposal Area is located to the west of the New Haven Harbor FNP's Entrance Channel. The specific disposal locations are presented on the Contract Drawings.

(6) USACE electronic coordinates of the CLDS boundary will be documented and monitored by Government inspectors during the course of the work. Disposal at the Central Long Island Sound Disposal Site may be performed with the scow in motion at a speed no greater than 2 knots as long as the release of the material from the scow (as determined by the draft change recorded by the Dredging Quality Management (DQM) System) can be achieved within 300 feet of the specified target.

- 3.4.2 Non-Designated Disposal Sites
 - a. The deposit of dredged materials at unauthorized or non-designated disposal sites is prohibited and shall be considered misplaced material and will result in the suspension of dredging operations until misplaced material is removed and properly disposed of to the satisfaction of the Government. Contractor furnished disposal areas will not be permitted.
 - b. The Contractor shall immediately notify the Contracting Officer and the U.S. Coast Guard Marine Safety Office of any misplaced material. Costs for the removal and re-disposal of misplaced material shall be at the expense of the Contractor.
- 3.5 DREDGING LIMITS
- 3.5.1 Allowable Overdepth

To cover unavoidable inaccuracies of dredging processes, dredge materials removed to the overdepths and within the dredging limits as shown on the Contract Drawings will be measured and paid for at full contract price. For specified overdepths refer to Contract Drawings.

- 3.5.2 Side Slopes
 - a. Material dredged to provide for final indicated side slopes will be measured and paid for at the applicable unit price. The material may be dredged from the original position or by dredging the space below the pay slope plane at the bottom of the slope for upslope material capable of falling into the cut. Note that the presence of utilities may impact the ability to perform the dredging below pay slope plane approach in certain areas. The Dredging Operation Plan submittal shall indicate the plan for achieving side slopes within each type of areas where utilities are present and not present. Payment will not be made for material in excess of the amount originally lying above the pay slope plane. The limiting amount of side-slope overdepth will be measured vertically.
 - b. Dredging on side slopes shall follow, as closely as practicable, the lines indicated on the Contract Drawings. An allowance will be made for dredging beyond the lines indicated or specified for side slopes. 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.
 - c. The Contractor shall exercise care in dredging along the side slopes near wharfs, docks, and piers so as not to overdredge to such an extent as to undermine the structures or in any way impair the stability of such structures.

3.5.3 Excessive Dredging

Material taken from beyond the limits, as specified above under subparagraphs "Allowable Overdepth" and "Side Slopes", will be deducted

from the total amount dredged as excessive overdepth dredging, or excessive side-slope dredging for which payment will not be made.

- 3.6 CONTRACTOR QUALITY CONTROL
 - a. The Contractor shall prepare, maintain, and submit for approval a Daily Report of Operations using Eng Form No. 4267 (Mechanical Dredging), and shall provide the Contracting Officer with signed copies thereof with the Daily Quality Control Reports as required in Section 01 45 00 QUALITY CONTROL. A copy of the form used for Report of Operations is attached at the end of Section 01 45 00 QUALITY CONTROL.
 - b. In addition to the daily report(s), the Contractor shall prepare a Monthly Report of Operations for each month or partial month's work on ENG Form No. 4267 (Mechanical Dredging). The monthly report(s) shall be submitted to the Contracting Officer on or before the 7th of each month, consolidating the previous month's work. Upon completion of the project, the Contractor shall submit a consolidated project report, combining the monthly reports.
 - c. Additionally, one copy of the reports shall be maintained by the Contractor on each dredge for the Contracting Officer's inspection purpose. Further instructions on the preparation and submission of the reports will be provided at the Preconstruction Conference.
- 3.7 SHOALING

If, before the contract is completed, shoaling occurs in any section of the Federal Navigation Project (FNP) previously accepted, including shoaling in the finished channel, anchorage and turning basin because of the natural lowering of the side slopes, redredging at contract price, within the limits of available funds may be done if agreeable to both the Contractor and the Contracting Officer. For sections where material is still found to be above the required depths and have not yet been accepted by the Government, refer to Section 01 11 00 SUMMARY OF WORK, under subpart titled "Work Limits".

- 3.8 FINAL CLEANUP AND DEMOBILIZATION
 - a. Final cleanup shall include the removal of all the Contractor's plant and equipment either for disposal or reuse. Plant, equipment, and materials to be disposed of shall only be disposed in a manner and at locations approved by the Contracting Officer. Unless otherwise approved by the Contracting Officer, the Contractor will not be permitted to abandon any equipment in the disposal area or other areas adjacent to the worksite.
 - b. Failure to promptly remove all plant, equipment, temporary construction facilities, and materials upon completion of the dredging will be considered a delay in the completion of the final cleanup and demobilization work. In such case, the Government will exercise its right to remove any plant, equipment, and materials at the Contractor's expense.
 - c. Failure to remove such items will result in the Contracting Officer withholding final contract payment until items are appropriately removed. The entire site shall be restored to pre-mobilization conditions to the Contracting Officer's satisfaction.

-- End of Section --



CENTRAL LONG ISLAND SOUND DISPOSAL SITE

Description: The Central Long Island Sound Disposal Site (CLDS) is one of four regional dredged material disposal sites located in the waters of Long Island Sound. CLDS covers a 11.04 km² (3.2 nmi²) area and is centered at 41° 08.950' N, 72° 52.950' W (NAD 83). It is located approximately 10.89 km (5.6 nmi) south of South End Point, East Haven, Connecticut. Since 1977, the management strategy at CLDS has entailed the controlled placement of small to moderate volumes of sediment to form individual disposal mounds on the seafloor. The authorized disposal point (within the overall disposal area) is specified for each dredging project in other project documents.



SECTION TABLE OF CONTENTS

DIVISION 35 - WATERWAY AND MARINE CONSTRUCTION

SECTION 35 20 23.13

NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM - SCOW MONITORING PROFILE

PART 1 GENERAL

- 1.1 DESCRIPTION
- 1.2 SUBMITTALS
- 1.3 PAYMENT
- 1.4 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM CERTIFICATION
- 1.4.1 Certification
- 1.4.2 Quality Assurance (QA)
- 1.4.3 Recertification
- 1.5 DREDGE PLANT INSTRUMENTATION PLAN (DPIP)
- PART 2 PRODUCTS
- PART 3 EXECUTION
 - 3.1 REQUIREMENTS FOR REPORTED DATA
 - 3.1.1 Scow Name
 - 3.1.2 Contract Number
 - 3.1.3 Load Number
 - 3.1.4 Horizontal Positioning
 - 3.1.5 Date and Time
 - 3.1.6 Hull Status
 - 3.1.6.1 Open-Water Disposal
 - 3.1.7 Offloading
 - 3.1.8 Course
 - 3.1.9 Speed
 - 3.1.10 Heading
 - 3.1.11 Draft
 - 3.1.12 Displacement
 - 3.1.13 Bin Ullage Sounding
 - 3.1.14 Bin Volume
 - 3.2 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM SYSTEM REQUIREMENTS
 - 3.2.1 Telemetry
 - 3.2.2 Data Reporting Frequency
 - 3.2.3 Data Transmission to the Web Service
 - 3.2.4 XML-Formatted Sensor Data String
 - 3.2.5 Contractor Data Backup
 - 3.3 PERFORMANCE REQUIREMENTS
 - 3.4 LIST OF ITEMS TO BE PROVIDED BY THE CONTRACTOR
- -- End of Section Table of Contents --

SECTION 35 20 23.13

NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM - SCOW MONITORING PROFILE

PART 1 GENERAL

1.1 DESCRIPTION

The work under this contract requires use of the National Dredging Quality Management Program (DQM)to monitor the dredge's status at all times during the contract and to manage data history. For the purpose of these specifications, a scow is defined as any non-self-propelled vessel used to transport dredged material. This includes, but is not limited to, split-hull scows, pocket scows, hopper barges, and deck barges.

This performance-based specification section identifies the minimum required output and the precision and instrumentation requirements. The requirements may be satisfied using equipment and technical procedures selected by the Contractor.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are 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-07 Certificates

National Dredging Quality Management Program Certification; G, RO

1.3 PAYMENT

Separate payment for installation, operation, and maintenance of the DQM-certified system as specified herein for the duration of the dredging operations is not allowed; all costs in connection therewith are considered a subsidiary obligation of the Contractor and are covered under the contract unit price for dredging in the bidding schedule.

1.4 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM CERTIFICATION

1.4.1 Certification

The Contractor is required to have a current certification from DQM for the scow instrumentation system to be used under this contract. Criteria for certification is based on the most recent specification posted on the DQM website

https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/Dredging-Quality-Management/ Verify compliance with these criteria by onsite quality assurance (QA) checks conducted by the DQM Support Center Data Acquisition and Analysis Team and by periodic review of the transmitted data. If a system is installed specifically for this contract, in order to ensure that it is capable of transmitting quality data to the DQM database, the QA checks should take place either prior to the start of the contract or, with prior approval of the local USACE District, as soon as practical after dredging commences. DQM Certification is valid for one year from the date of certification and is contingent upon the system's ability to meet the performance requirements as outlined in paragraph PERFORMANCE REQUIREMENTS. If issues with data quality are not corrected within 48 hours, the system certification will be revoked and additional QA checks by the Data Acquisition and Analysis Team may be necessary. Annual DQM Certification must be based on the following:

A series of QA checks as outlined on the DQM website https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/Dredging-Quality-Managem

Verification of data acquisition and transfer as described in paragraph PERFORMANCE REQUIREMENTS

Review of the Dredge Plant Instrumentation Plan (DPIP) as described in paragraph DREDGE PLANT INSTRUMENTATION PLAN (DPIP)

1.4.2 Quality Assurance (QA)

The Dredging Contractor must have personnel who are familiar with the system instrumentation and who have the ability to recalibrate the sensors on site during the QA process. The Dredging Contractor must coordinate pickup times and locations and provide transportation to and from any platform with a DQM system to team personnel in a timely manner. The Dredging Contractor must also have on site for the QA checks a tug capable of towing the scow. As a general rule, DQM Data Acquisition and Analysis Team personnel will come with personal protective equipment (PPE) consisting of hardhats, steel toe boots, and life jackets. If additional safety equipment is needed, such as eye protection, safety harnesses, work gloves, or personal location beacons, provide these items to the team while on site. Submit a test data package to the DQM database from the system on each scow and have it accepted by the DQM Support Center prior to scow compliance checks. Also submit data collected during the QA Checks from the scow monitoring system to the DQM database and the Data Acquisition and Analysis Team personnel while on site. It is the Dredging Contractor's obligation to inform the QA team if the location designated for the QA checks has any site-specific safety concerns prior to their arrival on site.

The owner or operator of the scow must contact DQM at

https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/Dredging-Quality-Management/ on an annual basis, or at least three weeks prior to the proposed beginning of dredging, to schedule QA checks. This notification is meant to make the Data Acquisition and Analysis Team aware of a target date and the contract on which the plant will be used. At least one week prior to the target date, the Dredging Contractor must contact the Data Acquisition and Analysis Team and verbally coordinate a specific date and location. The Contractor must then follow up this conversation with a written email confirmation. The owner/operator must coordinate the QA checks with all local authorities including, but not limited to, the local USACE Contracting Officer's Representative (COR).

1.4.3 Recertification

Recertification is required for any yard work which produces modification to displacement (for example, a change in scow lines, or repositioning or repainting hull marks), modification to bin volume (change in bin dimensions or addition or subtraction of structure), or changes in sensor type or location; report these changes in the sensor log section of the DPIP. A system does not have to be transmitting data between jobs; however, in order to retain certification during this period, the system sensors or hardware should not be disconnected or removed from the scow. If the system is powered down, retain calibration coefficients.

1.5 DREDGE PLANT INSTRUMENTATION PLAN (DPIP)

The Contractor must have a digital copy of the DPIP on file with the DQM Support Center. While working on site, the Contractor must also maintain on the dredge a copy of the DPIP which is easily accessible to Government personnel at all times. This document must describe the sensors used, configuration of the system, how sensor data will be collected, how quality control on the data will be performed, and how sensors/data reporting equipment will be calibrated and repaired if they fail. A description of computed scow-specific data and how the sensor data will be transmitted to the DQM database must also be included. The Contractor must submit to the DQM Support Center any addendum or modifications made to the plan, subsequent to its original submission, prior to start of work.

A complete list of the required DPIP contents is provided on the DQM website

https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/Dredging-Quality-Management/ Submit to the DQM Support Center any addendum or modifications made to the plan, subsequent to its original submission, prior to the start of work. Any changes to the computation methods must be approved by the DQM Support Center prior to their implementation.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 REQUIREMENTS FOR REPORTED DATA

Provide, operate, and maintain all hardware and software to meet these specifications. The Contractor is responsible for replacement, repair, and calibration of sensors and other necessary data acquisition equipment needed to supply the required data. Complete repairs within 48 hours of any sensor failure. Notify the Contracting Officer's Representative (COR) upon completion of a repair, replacement, installation, modification, or calibration. The COR may request recalibration of sensors or other hardware components at any time during the contract as deemed necessary.

Keep a log of sensor repair, replacement, installation, modification, and calibration in the onsite copy of the DPIP. The log must contain a three-year history of sensor maintenance, including the time of sensor failures (and subsequent repairs), the time and results of sensor calibrations, the time of sensor replacements, and the time that backup sensor systems were initiated to provide the required data. It must also contain the name of the person responsible for the sensor work. Install sensors that are capable of collecting parameters within specified accuracies and resolutions indicated in the following subparagraphs.

With the exception of position and any value calculated, reported sensor values should represent a weighted average with the highest and lowest values not included in the calculated average for the given interval. The averaging routine used should be consistent across all event triggers. This information should be documented in the DPIP sections that say "Calculations done external to the instrumentation." These data-reporting requirements cover the collection of electronic data on a scow through the entire dredging cycle. Disposal events can consist of both open-water disposal and offloading. Open-water disposal is the placement of material via bottom doors or split hull. Offloading is the placement of material via either hydraulic or mechanical means.

3.1.1 Scow Name

Assign a unique name for each scow that will remain constant from one dredging operation to the next.

3.1.2 Contract Number

The USACE-assigned contract number for the project will be reported.

3.1.3 Load Number

A DQM load number must document the end of a disposal event for a given scow.

3.1.4 Horizontal Positioning

Record horizontal positioning as the geographic coordinates of the vessel as indicated by the location of the Global Positioning System (GPS) antenna. Obtain all locations using a positioning system operating with a minimum accuracy level of 3 to 10 feet horizontal Circular Error Probable (CEP). Report positions as Latitude/Longitude WGS 84 in decimal degrees. West Longitude and South Latitude values are reported as negative.

3.1.5 Date and Time

Report the date and time to the nearest second and referenced to Universal Time Coordinated (UTC) based on a 24-hour format: yyyy-mm-dd hh:mm:ss.

3.1.6 Hull Status

Hull status is meant to reflect a condition when material could be removed or released from the scow. For this contract, hull status must register closed prior to leaving the disposal area.

3.1.6.1 Open-Water Disposal

Indicate an open split hull or open bottom door of a scow by reporting an "OPEN" value. Indicate a closed split hull or closed bottom door of a scow by reporting a "CLOSED" value. An open status must be indicated as the bin starts to open, and a closed status must be indicated only once the bin is fully closed. For pocket scows, the open/closed status must correspond to the compartment which is first to open and last to close.

3.1.7 Offloading

Offloading occurs when the scow is being unloaded, either by hydraulic or mechanical means. When offloading is occurring, a value of "true" must be reported; otherwise, a "false" value must be reported. The only permissible values are "true" and "false".

3.1.8 Course

Provide scow course-over-ground (COG) using industry-standard equipment. Provide scow course-over-ground (to the nearest whole degree) with values from 000 (true north) to 359 degrees referenced to a clockwise positive direction convention.

3.1.9 Speed

Provide scow speed-over-ground in knots using industry-standard equipment with a minimum accuracy of 1.0 knot and resolution to the nearest 0.1 knot.

3.1.10 Heading

Provide scow heading using industry-standard equipment. The scow heading must be accurate to within 5 degrees and reported to the nearest whole degree with values from 000 (true north) to 359 degrees referenced to a clockwise positive direction convention.

3.1.11 Draft

Report all draft measurements in feet, tenths, and hundredths with an accuracy of plus or minus 0.1 foot relative to observed physical draft readings. Report the measurements at a resolution of two decimal places (hundredths of a foot). The reported forward draft value must be equal to the sum of the visual forward port and starboard draft mark readings divided by two. The reported aft draft value must be equal to the sum of the visual aft port and starboard draft mark readings divided by two. Forward draft, aft draft, and average draft will be reported. Place sensors at an optimum location on the scow to be reflective of observed physical draft mark readings at any trim or list. Minimum accuracies are conditional to relatively calm water. The reported sensor value is an average of at least ten samples per event, with at least one maximum value and one minimum value removed, and the minimum eight remaining values averaged. When the average draft is calculated for the purpose of determining displacement, maintain significant digits for average draft such that if forward draft were 0.15 and aft draft were 0.1, then the average draft would be 0.125.

3.1.12 Displacement

Report scow displacement in long tons, based on the most accurate method available for the scow. The minimum standard of accuracy for displacement is interpolation from the displacement table, based on the average draft. For this contract the density of water used to calculate displacement is 64.11 - 64.30 lbs/cubic foot and is used for an additional interpolation between the fresh and salt water tables.

3.1.13 Bin Ullage Sounding

Report all ullage soundings in feet, tenths, and hundredths with an accuracy of plus or minus 0.1 foot with respect to the combing and be representative of the forward and aft extents of the hopper as close to the centerline as is possible. Report the measurements at a resolution of two decimal places (hundredths of a foot). If sensors must be offset from the centerline of the bin, they should be offset to opposite sides of the vessel. Forward ullage, aft ullage, and average ullage soundings will be reported. The reported sensor value is an average of at least ten samples per event, with at least one maximum value and one minimum value removed, and the minimum eight remaining values averaged. When the average ullage is calculated for the purpose of determining the hopper volume, maintain significant digits for the average ullage such that if the forward ullage were 0.15 and aft ullage were 0.1, then the average ullage would be 0.125. Special arrangements for pocket scows may be made in consultation with the DQM Support Center.

3.1.14 Bin Volume

Report scow bin volume in cubic yards based on the most accurate method available for the scow. The minimum standard of accuracy for bin volume is interpolation from the bin volume table based on the average ullage soundings.

3.2 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM SYSTEM REQUIREMENTS

The Contractor's DQM system must be capable of collecting, displaying, and transmitting information to the DQM database. The parameters which must be reported to the DQM database include trip number, date and time, hull status, offloading status, scow course, scow speed, scow heading, draft, and displacement. Provide an easily accessible, permanent visual display on the scow to show in real time the parameters collected by the system in the same units as the data submitted to the DQM database. In the event a reported parameter is calculated based on multiple sensors, the sensor values as used in the equation must be able to be viewed in addition to the required parameter. If a hardware problem occurs, or if a part of the system is physically damaged, the Contractor is be responsible for repairing it within 48 hours of determination of the condition.

3.2.1 Telemetry

The Contractor may select any commercial satellite, cellular phone, or other data communications systems available, as long as it is capable of transmitting real-time data as well as enough additional bandwidth to clear historically queued data when a connection is reobtained. If connectivity is lost, que and transmit unsent data upon restoration of connectivity. Delays in pushing real-time data to the DQM database should not exceed four hours. Exceptions to these requirements may be granted by the DQM Center on a case-by-case basis with consideration for contract-specific requirements, site-specific conditions, and extreme weather events.

The data transmission process from the scow to the DQM database must be automated. The data may be sent from the scow directly to the DQM database or to a shore-based system. Data transmitted to the DQM database should be raw data; use repeatable automated software or programming routine to process any shoreside data. Include a description of this process in the DPIP.

3.2.2 Data Reporting Frequency

Log disposal activities with high temporal and spatial resolution. Log data as a series of events. Each set of measurements (time, position, etc.) will be considered an event. Collect any required information in paragraph REQUIREMENTS FOR REPORTED DATA, that is not an averaged variable (that is, draft and ullage) within 1 second of the reported time. Measure data with sufficient frequency by the scow system to resolve the events to the accuracy specified in the following table. Any averaged variable must be collected and computed within this sampling interval. Reporting intervals must be consistent and not change for the data collected on a

given scow. This interval should be documented by the Contractor in the DPIP.

Event Type	Event Trigger Descriptions	Event	Event
		Perolution	Position
Loading	No change in position with hull status closed An elapsed time of 1 hour since the last event. NONCLOSURE In the event a scow has completed an open water disposal and transited back to a holding station without closing	1 minute	N/A
	the hull, the sampling must be changed to once per hour.		
Sailing	Change in position with hull status closed Time from the last sample equals 1 minute.	1 second	plus or minus 10 ft
Offloading	Offloading material, hull status reported as open A position must be recorded within 1 minute arrival at the offload location and within one secnd of the material starting to be removed from scow. The time from the last sample equals 1 minute. STANDBY OFFLOADING In the even a scow is not being actively offloaded at the offload location for a time equal to one hour, the sampling interval must be equal to once an hour.	1 second	plus or minus 10 ft
Open Water Disposal	Hull status open A data point must be recorded within 1 second of the hull status going from closed to open and again within 1 second of the hull status going from open to closed. Between these events, report the data at equal interval from 6 to 12 seconds. This interval must always remain consistent for the dredge plant.	1 second	plus or minus 10 ft

Example: The scow is stationary for 1 hour and 15 minutes, and then it sails to the disposal area. You should have a "Loading/Stationary" event at time 0, time 1 hour, and time 1 hour and 15 minutes. Then, for "Sailing," within 1 second of an elapsed time of 1 minute from the 1 hour and 15 minutes event, another event occurs.

3.2.3 Data Transmission to the Web Service

Use a Simple Object Access Protocol (SOAP) web service to report sensor data to the DQM database. Transmit data as it is collected in real time

and pushed to the DQM web service. If the web service is not available or returns an error message, store the data in a queue and transmit upon re-establishment of the connection, starting with the oldest data in the queue and continuing until real-time transmission is restored. Delays in pushing real-time data to the DQM database should not exceed four hours. Exceptions to these requirements may be granted by the DQM Support Center on a case-by-case basis with consideration for contract-specific requirements, site-specific conditions, and extreme weather events.

Contact <u>dqm-support@usace.army.mil</u> to obtain the web service URL and the appropriate key credentials and communication protocol.

The data transmission method call takes two arguments: a string containing the plant identifier assigned by the DQM Support Center and a second string containing the XML-formatted sensor data. The method returns the string "OK" if the data is received. If the data is not received, either the web service or the client application throws an error.

3.2.4 XML-Formatted Sensor Data String

Pass each scow event as a string on one continuous line of data. The example below is broken up by variable for ease of reading:

<?xml version="1.0"?> <SCOW_DREDGING_DATA version="2.5"> <SCOW_NAME>AU1994</SCOW_NAME> <PLANT_IDENTIFIER>1999</PLANT_IDENTIFIER> <CONTRACT>W123BA-09-D-0087_RL01</CONTRACT> <TRIP_NUMBER>34</TRIP_NUMBER> <X POSITION>-81.670632</X POSITION> <Y_POSITION>41.528987</Y_POSITION> <DATE_TIME>2010-08-14 10:50:15</DATE_TIME> <SCOW_SPEED>0.0</SCOW_SPEED> <SCOW_COURSE>0.0</SCOW_COURSE> <HULL_STATUS>OPEN</HULL_STATUS> <OFFLOADING>FALSE</OFFLOADING> <SCOW_HEADING></SCOW_HEADING> <SCOW_FWD_DRAFT></SCOW_FWD_DRAFT> <SCOW_AFT_DRAFT></SCOW_AFT_DRAFT> <SCOW_AVG_DRAFT></SCOW_AVG_DRAFT> <ULLAGE_FWD></ULLAGE_FWD> <ULLAGE AFT></ULLAGE AFT> <ULLAGE_AVG></ULLAGE_AVG> <SCOW_BIN_VOLUME></SCOW_BIN_VOLUME> <SCOW_DISPLACEMENT></SCOW_DISPLACEMENT> <ADDITIONAL_DATA>Some more scow info, if needed</ADDITIONAL_DATA> </SCOW_DREDGING_DATA>

Format DATE_TIME values as YYYY-MM-DD HH:MM:SS, as shown above. If, for any reason, a field has no value, the enclosing XML tags should be sent with nothing between them (for example, <DRAFT_AFT></DRAFT_AFT>). The web service cannot handle a "null" value or any other indicators of no value collected.

3.2.5 Contractor Data Backup

Maintain an archive of all data sent to the DQM database during the dredging contract. The Contracting Officer's Representative (COR) may require, at no increase in the contract price, that the Contractor provide

a copy of these data covering specified time periods. Provide the data in the HTML format which would have been transmitted to the DQM database. Submit data via storage medium acceptable to the COR.

At the end of the dredging contact, contact the DQM Support Center prior to discarding the data. The DQM Support Center will verify that all data has been received and appropriately archived before giving the Contractor discard permission. Record in a separate section at the end of the scow's onsite copy of the DPIP the following information:

Person who made the call Date of the call DQM representative who gave permission to discard

3.3 PERFORMANCE REQUIREMENTS

The Contractor's DQM system must be fully operational at the start of dredging operations and fully certified prior to moving dredge material on the contract (see paragraph NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM CERTIFICATION). To meet contract requirements for operability, in addition to certification, the Contractor's system must provide a data string with values for all parameters while operating, as described within the specifications. Additionally, all hardware must be compliant with DPIP requirements (see paragraph DREDGE PLANT INSTRUMENTATION PLAN (DPIP)). Quality data strings are considered to be those providing values for all parameters reported when operating according to the specification. Make repairs necessary to restore data return compliance within 48 hours. Failure by the Contractor to report the required data within the specified time window for scow measurements (see paragraph DATA REPORTING FREQUENCY, and paragraph DATA TRANSMISSION TO THE WEB SERVICE) and failure to receive DQM certification prior to dredging will result in withholding of up to 10 percent of the contract progress payment.

3.4 LIST OF ITEMS TO BE PROVIDED BY THE CONTRACTOR

DPIP - https://dqm.usace.army.mil

https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/Dredging-Quality-Mar. Paragraph DREDGE PLANT INSTRUMENTATION PLAN (DPIP) DOM SYSTEM

Sensor instrumentation - Paragraph REQUIREMENTS FOR REPORTED DATA

SCOW DATA

Event documentation - Paragraph DATA REPORTING FREQUENCY Data reports - Paragraph DATA TRANSMISSION TO THE WEB SERVICE

QA EQUIPMENT ON THE DREDGE

Clear and accurate draft marks

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 35 - WATERWAY AND MARINE CONSTRUCTION

SECTION 35 25 00

UNDERWATER DIVING WORK

- PART 1 GENERAL
 - 1.1 SUMMARY
 - 1.1.1 Location of Diving Operations
 - 1.1.2 Underwater Work
 - 1.1.3 Time of Year and Weather
 - 1.1.4 Depths of Diving Operations and Visibility
 - 1.1.5 Types of Diving Operations
 - 1.1.6 Diving Tasks
 - 1.2 REFERENCES
 - 1.3 SUBMITTALS
 - 1.3.1 Accepted Submittals
 - 1.3.2 Unaccepted Submittals
 - 1.3.3 Submittal Procedure
 - 1.3.3.1 Procedures
 - 1.3.3.2 District Diving Coordinator Review
 - 1.3.3.3 Information on Submittal Status
 - 1.3.3.4 Deviations
 - 1.3.4 Government Accepted Submittals
 - 1.4 ITEMS FOR SUBMISSION
 - 1.4.1 CONTRACTOR SAFE PRACTICES MANUAL
 - 1.4.2 DIVING OPERATIONS PLAN
 - 1.4.3 ACTIVITY HAZARD ANALYSIS (AHA)
 - 1.4.4 EMERGENCY MANAGEMENT PLAN
 - 1.4.5 DIVE PERSONNEL QUALIFICATIONS
 - 1.5 REGULATORY REQUIREMENTS
 - 1.5.1 Policy
 - 1.6 DIVING INSPECTION AND MONITORING
 - 1.7 PRE-DIVE CONFERENCE
 - 1.8 MANNING LEVELS FOR DIVE TEAMS
- PART 2 PRODUCTS
 - 2.1 DIVING EQUIPMENT REQUIREMENTS
- PART 3 EXECUTION
 - 3.1 SURFACE SUPPLIED AIR OPERATIONS
 - 3.2 MIXED GAS DIVING OPERATIONS
- -- End of Section Table of Contents --

SECTION 35 25 00

UNDERWATER DIVING WORK

PART 1 GENERAL

- 1.1 SUMMARY
- 1.1.1 Location of Diving Operations

The location of diving services that may be performed under this contract is in the Boston Harbor Federal Navigation Project, as shown on the contract drawings.

1.1.2 Underwater Work

Provide diving services and equipment as necessary to perform the work of this contract.

1.1.3 Time of Year and Weather

Diving operations may be conducted year round and in all weather conditions.

1.1.4 Depths of Diving Operations and Visibility

Depths of diving operations will extend to -55 feet MLLW, and may include both clear and limited visibility conditions.

1.1.5 Types of Diving Operations

The surface supplied air mode of diving shall be used for all underwater work.

1.1.6 Diving Tasks

A partial list of potential underwater tasks that may be necessary due to the work performed under this contract are as follows:

- a. Diving operations may be required to charge drill holes manually.
- b. Services may include conducting underwater surveys to see what is on the bottom prior to dredging.
- c. Diving operations may be necessary for the attachment of rigging equipment for removal of debris and obstructions.
- d. Diving operations may be necessary for locating and marking underwater utilities with buoys to reduce the risk of damage due to the dredging operation.
- e. Diving operations may be necessary for assisting in retrieving dredge equipment lost in the water during the dredging operation.
- f. Diving operations may be necessary to investigate charge misfires.

1.2 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety and Health Requirements Manual

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910

Occupational Safety and Health Standards

1.3 SUBMITTALS

Government acceptance is required for submittals with an "A" designation; submittals not having an "A" designation are for information only. When used, a designation following the "A" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

The items listed shall be submitted to the Contracting Officer for review and acceptance by the New England District Diving Coordinator.

SD-01 Preconstruction Submittals

Contractor Safe Practices Manual; A, DO

Diving Operations Plan: A, DO

Activity Hazard Analysis; A, DO

Emergency Management Plan; A, DO

Dive Personnel Qualifications; A, DO

1.3.1 Accepted Submittals

The acceptance of submittals by the District Diving Coordinator shall not be construed as a complete check, but will indicate only that the submittal generally complies with regulatory requirements. Acceptance will not relieve the Contractor of the responsibility for compliance with EM 385-1-1, Section 30. After submittals have been accepted by the District Diving Coordinator or his designated representative, no resubmittal will be given consideration unless accompanied by an explanation as to why changes are necessary.

1.3.2 Unaccepted Submittals

The Contractor or his designated representative shall make all corrections required by the District Diving Coordinator and promptly furnish a corrected submittal in the form and number of copies as specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, notice shall be given promptly to the Contracting Officer and the District Diving Coordinator.

1.3.3 Submittal Procedure

Submittals shall be made as follows:

1.3.3.1 Procedures

Submit three (3) copies of each submittal item to the Contracting Officer for review by the District Diving Coordinator. For work of an urgent nature, hand carry a copy of a complete dive plan. In extreme situations, review actions may take place at the dive site, just prior to the dive operation.

1.3.3.2 District Diving Coordinator Review

Review action on all submittals of this section is by the New England District Diving Coordinator, Mr. Byron Rupp, Telephone Number 978-318-8172.

1.3.3.3 Information on Submittal Status

All Contractor requests for current status of submittal reviews shall be made through the Contracting Officer.

1.3.3.4 Deviations

For submittals which include proposed deviations requested by the Contractor, the Contractor shall set forth in writing the reason for the deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.3.4 Government Accepted Submittals

Upon completion of review of submittals requiring District Diving Coordinator acceptance, the submittals will be identified as having received acceptance by being so noted and dated. Two copies of the submittal will be retained by the District Diving Coordinator and one copy of the submittal will be returned to the Contractor.

1.4 ITEMS FOR SUBMISSION

The Contractor shall submit all items listed below. The District Diving Coordinator may request submittals in addition to those listed when deemed necessary to adequately describe the work to be performed. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and shall be stamped, signed, and dated by the CQC representative certifying that the submittal complies with the contract requirements. Proposed deviations from the contract requirements shall be clearly identified. These documents shall be at the diving location at all times.

1.4.1 CONTRACTOR SAFE PRACTICES MANUAL

The Contractor shall develop and maintain a safe practices manual. The safe practices manual shall contain all of the information required by 29 CFR 1910, Part 420, and the additional information as specified below. This manual shall encompass the Contractor's entire diving program and be available at all times at the dive location to each dive team member and

the Government representative. The safe practices manual shall include the items listed in EM 385-1-1, Section 30, paragraph 30.A.16, and verification of dive team qualifications and experience. Verification of dive team qualifications and experience includes divers, diving supervisor, and tenders. Evidence that each dive team member has current certification in cardiopulmonary resuscitation (CPR) and first aid shall be submitted. A lack of experience or qualifications to perform the tasks stated in the dive plan will be cause for rejection or cessation of operations.

1.4.2 DIVING OPERATIONS PLAN

The Contractor shall develop a site specific diving operations plan for each separate diving operation. Prior to commencement of each diving operation the plan shall be submitted to the Contracting Officer for review and acceptance by the New England District Dive Coordinator. The accepted plan shall be at the diving location at all times and be made available to the Government diving inspector upon request. As a minimum, the plan shall contain the information required by EM 385-1-1, Section 30, Paragraph 30.A.17.

1.4.3 ACTIVITY HAZARD ANALYSIS (AHA)

The Contractor shall develop and maintain an AHA plan for each separate diving operation that represents the dive team's effort to anticipate and mitigate or prevent the adverse effects of equipment failure, extreme weather and environmental conditions, or other hazardous or unexpected situations. The AHA shall contain information required by EM 385-1-1, Section 30, Paragraph 30.A.18. Prior to commencement of each diving operation the AHA shall be submitted to the Contracting Officer for review and acceptance.

1.4.4 EMERGENCY MANAGEMENT PLAN

The Contractor shall develop and maintain an emergency management plan for each separate diving operation. The plan shall contain information required by EM 385-1-1, Section 30, Paragraph 30.A.19. Prior to commencement of each diving operation, this plan shall be submitted to the Contracting Officer for review and acceptance.

1.4.5 DIVE PERSONNEL QUALIFICATIONS

Prior to commencement of each diving operation, the Contractor shall submit to the Contracting Officer the name and qualifications of each diver to participate in each diving operation. Information shall be as required by EM 385-1-1, Section 30, Paragraphs 30.A.06 through 30.A.10.

1.5 REGULATORY REQUIREMENTS

All diving operations performed under this contract shall comply with EM 385-1-1, Section 30.

The New England District may elect to implement and enforce more stringent diving requirements than stated in the above reference, but under no circumstances will the operational requirements be less than specified in the reference.

1.5.1 Policy

It is the policy of the Corps of Engineers that all contract diving

operations be conducted in a prudent manner that will provide for maximum efficiency and minimize the potential for personal injury, loss of life, occupational illness and/or property damage. The Contractor shall not utilize divers if the objective can be more safely and efficiently accomplished by another means, e.g., using remote controlled television systems in lieu of divers.

The Contractor shall demonstrate that each diver is:

(1) Medically fit to dive and meets the medical requirements of EM 385-1-1, Section 30.

(2) Adequately trained and have the required proficiency for the work assigned.

(3) Provided with and adheres to prescribed safe operating procedures.

(4) Trained with and required to use all equipment and/or tools to safely perform the assigned tasks.

1.6 DIVING INSPECTION AND MONITORING

All Contractor diving operations will be inspected or monitored by the New England District Diving Coordinator or a designated representative who holds a current U.S. Army Corps of Engineers diving inspection certification. Diving shall not be permitted unless a U.S. Army Corps of Engineers certified diving inspector is present on-site, unless the District Diving Coordinator has granted permission for off-site monitoring. Off-site monitoring will only be granted after an initial on-site inspection to verify the Contractors compliance with EM 385-1-1, Section 30. Dive operation monitoring consists of occasional telephone contact with the Contractor's on-site dive supervisor and occasional site inspections. Failure to adhere to these requirements will be considered a serious violation of this contract and cause for an immediate stop-work order issued by the Contracting Officer.

- 1.7 PRE-DIVE CONFERENCE
 - See EM 385-1-1, Section 30, Paragraph 30.A.20.
- 1.8 MANNING LEVELS FOR DIVE TEAMS

See EM 385-1-1, Appendix O.

PART 2 PRODUCTS

2.1 DIVING EQUIPMENT REQUIREMENTS

See EM 385-1-1, Section 30, Paragraph 30F.

PART 3 EXECUTION

3.1 SURFACE SUPPLIED AIR OPERATIONS

See EM 385-1-1, Section 30, Paragraph 30D.

3.2 MIXED GAS DIVING OPERATIONS

Mixed gas diving operations shall not be permitted for the work of this

contract.

-- End of Section --

CENAE-PDE

7 June 2018

MEMORANDUM FOR: Barbara Blumeris, Project Manager, CENAE-PDP

SUBJECT: Suitability Determination for the New Haven Harbor Navigation Improvement Project, New Haven, Connecticut.

1. Summary:

This memorandum addresses the suitability of dredged material from the proposed improvement dredging of the New Haven Harbor Federal Navigation Project (FNP) for unconfined open water placement at the Central Long Island Sound Disposal Site (CLDS) and at beneficial use sites in and around New Haven Harbor. The New England District (NAE) of the U.S. Army Corps of Engineers (USACE) finds that sufficient data has been provided to satisfy the evaluation and testing requirements of Section 103 of the Marine Protection, Research and Sanctuaries Act (MPRSA) and Section 404 of the Clean Water Act (CWA). Based on an evaluation of the project site and the material proposed to be dredged, these sediments have been found to be suitable for unconfined open water placement as proposed with the exception of the material around Composites 6 and 7 for which additional analysis may be conducted at a later date.

2. **Project Description:**

The New England District is currently preparing a feasibility study to evaluate improvements to the New Haven Harbor FNP. Aspects of the proposed project alternatives include: deepening and widening the main ship channel, widening the channel bend at Southwest Ledge, straightening the channel bend downstream of the existing turning basin; and relocating and deepening the turning basin. These combined actions would require the mechanical or hydraulic removal of up to 4,500,000 cubic yards of sediment and the mechanical removal of up to 32,000 cubic yards of rock depending on the selected channel alignment and dimensions.

Dredged sediments are expected to be a mix of poorly graded sand and fine grained material within the existing channel profile and adjacent harbor seafloor with glaciofluvial deposits at depth. To the extent practical suitable dredged material will be beneficially reused for marsh creation, habitat restoration/creation, and to cover historic dredged material disposal mounds at CLDS.

CENAE-PDE

SUBJECT: Suitability Determination for the New Haven Harbor Navigation Improvement Project, New Haven, Connecticut.



CENAE-PDE

SUBJECT: Suitability Determination for the New Haven Harbor Navigation Improvement Project, New Haven, Connecticut.



CENAE-PDE SUBJECT: Suitability Determination for the New Haven Harbor Navigation Improvement Project, New Haven, Connecticut.

Appendix A

Sediment Grain Size Results

Appendix A - Grain Size

New Haven Harbor Grain Size Results

	NHH-A-TOP 0 - 2.2'	NHH-A- BOTTOM 2.2 - 9.9'	NHH-B 0-4.2'	NHH-C-TOP 0 - 2.8'	NHH-C- BOTTOM 2.8 – 8.0'	NHH-D-TOP 0 - 4.8'	NHH-D- BOTTOM 4.8 – 10.3'	NHH-E-TOP 0 - 6.5'	NHH-E- BOTTOM 6.5 – 8.1'	NHH-F-TOP 0 – 3.2'	NHH-F-REF- TOP 0 – 3.2'	NHH-F- BOTTOM 3.5 – 10.5'	NHH-G-TOP 0 - 4.3'	NHH-G- BOTTOM 4.3 – 13.7'	NHH-H-TOP 0 – 5.4'	NHH-H-REP- TOP 0 – 5.4'	NHH-H- BOTTOM 5.4 – 7.7'	NHH-I-TOP 0 – 0.7'	NHH-I- BOTTOM 0.7' – 2.5'	NHH-J 0 – 5.4'
% Total Fines (<0.125 mm)	9.6	3.3	15.6	27	37.5	79	86.5	96.8	97.6	96.3	96.6	95.4	91.7	92.1	85.4	82.8	78.4	78.7	88.3	73.1
% Fine Sand (0.125 - 0.25 mm)	42.6	68	57	59.2	45.3	10.1	7.9	1	2	2	1.7	1.8	4	4.7	6.8	5.9	19.9	9.8	4.8	7.6
% Medium Sand (0.25 - 0.5 mm)	41.8	26.9	23.2	12.8	11.4	8	4.1	0.4	0.4	1	0.9	1.1	2.8	2.5	4.5	5.9	1.5	8.8	5.1	9.2
% Coarse Sand (0.5 - 2 mm)	4.5	1.8	2.8	0.9	3.8	1.9	1.2	0.8	0	0.3	0.8	1.4	1	0.7	3.3	5	0.2	2.7	1.8	10.1
% Total Gravel (>2 mm)	1.5	0	1.4	0.1	2	1	0.3	1	0	0.4	0	0.3	0.5	0	0	0.4	0	0	0	0

	NHH-K-TOP 0 – 5.5'	NHH-K- BOTTOM 5.5 – 8.2'	NHH-L 0 – 6.7'	NHH-M 0 – 6.8'	NHH-N-TOP 0 – 6.0'	NHH-N- BOTTOM 6.0 – 7.5'	NHH-O-TOP 0 – 8.3'	NHH-O- BOTTOM 8.7 – 10.9'	NHH-P-TOP 0 – 5.8'	NHH-P- BOTTOM 5.8 – 12.3'	NHH-Q-TOP 0 - 5.3'	NHH-Q- BOTTOM 5.3 – 29.4'	NHH-R-TOP 0 – 4.2'	NHH-R- BOTTOM 4.2 – 7.7'	NHH-S-TOP 0 – 6.0'	NHH-S- BOTTOM 6.0 – 6.4'	NHH-T-TOP 0 – 4.8'	NHH-T- BOTTOM 4.8 – 16.3'	NHH-U-TOP 0 – 5.8'	NHH-U- BOTTOM 5.8 – 30.0'
% Total Fines (<0.125 mm)	80.3	1.6	84.3	98.2	71.8	18.6	95.6	22.4	90.4	91.2	96.6	89.5	83.9	88.4	87.6	22	98.6	97.7	94.7	84.3
% Fine Sand (0.125 - 0.25 mm)	0	38.7	6.1	1.5	11.2	78.6	2.9	76.9	4.2	1.7	1.4	2.6	2.9	2.6	8.3	74.3	1.4	1.2	2.5	5.5
% Medium Sand (0.25 - 0.5 mm)	3.7	51.3	5	0.3	12	2.6	1.2	0.7	2,1	3.3	1.3	3.1	5.3	5.4	3.1	3.3	0	1	2.5	5.9
% Coarse Sand (0.5 - 2 mm)	15.2	8.1	4.4	0	2.6	0.2	0.3	0	2.9	3.8	0.7	3.9	7.9	3.6	1	0.4	0	0.1	0.3	4
% Total Gravel (>2 mm)	0.8	0.3	0.2	0	2.4	0	0	0	0.4	0	0	0.9	0	0	0	0	0	0	0	0.3

	NHH-V-		NHH-W-		NHH-X-REP-	NHH-X-		NHH-Y-		NHH-Z-
NHH-V-TOP 0 – 4.8'	BOTTOM 4.8 – 8.6'	0 – 5.5'	BOTTOM 5.5 – 8.2'	0 – 5.2'	10P 0 – 5.2'	BOTTOM 5.2 – 8.0'	NHH-Y-TOP 0 – 5.9'	BOTTOM 5.9 – 8.5'	0 – 5.0'	BOTTOM 5.0 – 8.7'
92.4	88	57.5	36.7	87.8	91.1	29.7	90.3	7.9	94.6	80.2
2	3.3	36.7	63.2	11	7.9	55	6.3	74.3	4.5	18.6
2.5	5	5.3	0.1	1.2	1	15.1	2	15.2	0.9	1.1
3.1	3.4	0.5	0	0	0	0.2	0.9	2.6	0	0.1
0	0.3	0	0	0	0	0	0.5	0	0	0
	NHH-V-TOP 0-4.8' 92.4 2 2.5 3.1 0	NHH-V-TOP 0 - 4.8' NHH-V- BOTTOM 4.8 - 8.6' 92.4 88 2 3.3 2.5 5 3.1 3.4 0 0.3	NHH-V-TOP 0-4.8' NHH-V- BOTTOM 4.8 - 8.6' NHH-W-TOP 0-5.5' 92.4 88 57.5 2 3.3 36.7 2.5 5 5.3 3.1 3.4 0.5 0 0.3 0	NHH-V- 0 - 4.8' NHH-V- BOTTOM 4.8 - 8.6' NHH-W-TOP 0 - 5.5' NHH-W- BOTTOM 5.5 - 8.2' 92.4 88 57.5 36.7 2 3.3 36.7 63.2 2.5 5 5.3 0.1 3.1 3.4 0.5 0 0 0.3 0 0	NHH-V- 0 - 4.8' NHH-W- BOTTOM 4.8 - 8.6' NHH-W-TOP 0 - 5.5' NHH-W- BOTTOM 5.5 - 8.2' NHH-X-TOP 0 - 5.2' 92.4 88 57.5 36.7 87.8 2 3.3 36.7 63.2 11 2.5 5 5.3 0.1 1.2 3.1 3.4 0.5 0 0 0 0.3 0 0 0	NHH-V- 0 - 4.8'NHH-V- BOTTOM 4.8 - 8.6'NHH-W-TOP 0 - 5.5'NHH-W- BOTTOM 5.5 - 8.2'NHH-X-TOP 0 - 5.2'NHH-X-REP- TOP 0 - 5.2'92.48857.536.787.891.123.336.763.2117.92.555.30.11.213.13.40.500000.30000	NHH-V- 0 - 4.8' NHH-W- BOTTOM 4.8 - 8.6' NHH-W- 0 - 5.5' NHH-X-TOP 5.5 - 8.2' NHH-X-TOP 0 - 5.2' NHH-X- BOTTOM 5.2 - 8.0' 92.4 88 57.5 36.7 87.8 91.1 29.7 2 3.3 36.7 63.2 11 7.9 55 2.5 5 5.3 0.1 1.2 1 15.1 3.1 3.4 0.5 0 0 0 0.2 0 0.3 0 0 0 0 0	NHH-V- 0 - 4.8'NHH-V- BOTTOM 4.8 - 8.6'NHH-W-TOP 0 - 5.5'NHH-W- BOTTOM 5.5 - 8.2'NHH-X-TOP 0 - 5.2'NHH-X-TOP BOTTOM 0 - 5.2'NHH-X-TOP BOTTOM 0 - 5.2'NHH-Y-TOP 0 - 5.2'92.48857.536.787.891.129.790.323.336.763.2117.9556.32.555.30.11.2115.123.13.40.50000.20.900.300000.50.5	NHH-V- 0 - 4.8'NHH-V- BOTTOM 4.8 - 8.6'NHH-W- 0 - 5.5'NHH-X- BOTTOM 5.5 - 8.2'NHH-X-TOP 0 - 5.2'NHH-X- BOTTOM 0 - 5.2'NHH-Y- BOTTOM D - 5.2'NHH-Y- 	NHH-V- 0 - 4.8'NHH-W- BOTTOM 4.8 - 8.6'NHH-W-TOP 0 - 5.5'NHH-W-TOP 5.5 - 8.2'NHH-X-TOP TOP 0 - 5.2'NHH-X- BOTTOM 5.2 - 8.0'NHH-Y-TOP 0 - 5.9'NHH-Y- BOTTOM 5.5 - 8.2'NHH-Z-TOP 0 - 5.9'92.48857.536.787.891.129.790.37.994.623.336.763.2117.9556.374.34.52.555.30.11.2115.1215.20.93.13.40.50000.20.92.6000.300000.500

2024 Sediment Sampling






NAE ENVIRONMENTAL LABORATORY

Project Name: New Haven FNP Project Location: New Haven, CT
 Date Collected:
 06/13/24

 Date Recieved:
 06/13/24

 Date Analyzed:
 07/26/24

Preparation Method: ASTM D421-85

Analysis Method: ASTM D 422-63 - Sieve Nos. 4, 10, 40, 100, 200

Lab SOP: Particle Size Analysis of Sediments - Without Hydrometer

Received By: RBL

Analyzed By: SVT

Checked By: RBL

Discussion: Two samples were received by the lab upon completion of core processing activities. There were no deviations from the established laboratory testing protocols during preparation or analysis.

Summary o	Summary of Results:										
Sample ID	% Cobblo	%Gravel %Sand					% Finos				
	78CODDIe	Coarse	Fine	Coarse	Medium	Fine	70F11165				
A	0.0	0	.2	0.9	27.7	70.6	0.6				
В	0.0	33.4		19.2	25.0	21.5	0.9				



Project Name: New Haven FNP **Project Location:** New Haven, CT Sample ID: A

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



-							
%Cobble	%Gravel			%Sand	%Fines		
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.2		0.9	27.7	70.6	0.6	
D10	D15	D30	D50	D60	D85	Сс	Cu
0.1826	0.2024	0.2619	0.3411	0.3808	1.2125	7.53	2.09

Origina	I Sample W	eight (g)	572.7	Post	Post Wash Weight (g)		
Sieve	Sieve Size (mm)	Sieve Weight (g)	Shaken Weight (g)	Weight Retained (g)	Percent Retained	Cum. Percent Retained	Percent Finer
#4	4.750	488.5	489.9	1.4	0.2	0.2	99.8
#10	2.000	463.0	468.2	5.2	0.9	1.2	98.8
#40	0.425	354.6	513.2	158.6	27.7	28.8	71.2
#100	0.150	325.6	722.9	397.3	69.4	98.2	1.8
#200	0.075	315.5	322.5	7.0	1.2	99.4	0.6
Pan	-	457.6	460.8	3.2	0.6	100.0	-

Sample Notes: Tan, poorly graded medium to fine sand with few shell fragments



Project Name: New Haven FNP **Project Location:** New Haven, CT Sample ID: P2 (0-0.7)

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel			%Sand	%Fines		
70C0DDIe	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	33.4		19.2	25.0	21.5	0.9	
D10	D15	D30	D50	D60	D85	Сс	Cu
0.2596	0.3259	0.8996	2.3665	3.7983	-	1.82	14.63

Origina	Sample W	eight (g)	330.1	Post	Post Wash Weight (g)		
Sieve	Sieve Size (mm)	Sieve Weight (g)	Shaken Weight (g)	Weight Retained (g)	Percent Retained	Cum. Percent Retained	Percent Finer
#4	4.750	496.3	606.4	110.1	33.4	33.4	66.6
#10	2.000	467.7	531.1	63.4	19.2	52.6	47.4
#40	0.425	358.0	440.4	82.4	25.0	77.5	22.5
#100	0.150	334.2	402.7	68.5	20.8	98.3	1.7
#200	0.075	316.5	319.1	2.6	0.8	99.1	0.9
Pan	-	458.4	461.5	3.1	0.9	100.0	-

Sample Notes: Crepidula shell and shell fragments with some fine sand. Sieves #4 and 10 are all shell. Sieve #40 is a mix of shell and sediment.



Client:	Alpha Ana	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	C		Test Date:	08/26/24	Checked By:	ank
Depth :	0-3.7		Test Id:	781817		
Test Comm	ient:					
Visual Desc	cription:	Moist, very da	ark gray clay			
Sample Co	mment:					
	^				0 / D 7 0	





L244587 n: CT ID:	3			Draiget No.	
n: CT ID:				Draiget No.	
ID:				Project NO:	GTX-319627
		Sample Type:	: Jar	Tested By:	ajl
ID: C2		Test Date:	08/29/24	Checked By:	ank
0-2		Test Id:	781799		
mment:					
Description:	Moist, ve	ry dark gray silt wi	th sand		
Comment:					
r	D: ID: C2 0-2 nment: escription: Comment:	D: ID: C2 0-2 nment: escription: Moist, ver Comment:	D: Sample Type ID: C2 Test Date: 0-2 Test Id: nment: escription: Moist, very dark gray silt wi Comment:	D: Sample Type: Jar ID: C2 Test Date: 08/29/24 0-2 Test Id: 781799 nment: escription: Moist, very dark gray silt with sand Comment:	D: Sample Type: Jar Tested By: ID: C2 Test Date: 08/29/24 Checked By: 0-2 Test Id: 781799 nment: escription: Moist, very dark gray silt with sand Comment:





	Client:	Alpha Anal	ytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
	Boring ID:			Sample Type:	Jar	Tested By:	GA
	Sample ID:	C2		Test Date:	08/28/24	Checked By:	ank
	Depth :	2-4		Test Id:	781800		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, dark gr	ay silty sand			
	Sample Cor	mment:					
~	o Sizo	\ Ana	lycic	Λςτι	D601	2/070	າວ



Spec. Percent

Separation of Sample: #200 Sieve

0.0347

0.0216

0.0126 0.0089

0.0064

0.0045

0.0032

0.0015

42

37

32

28

25

21

19



	Client:	Alpha Anal	ytical								
	Project:	L2445878									
	Location:	СТ				Project No:	GTX-319627				
	Boring ID:			Sample Type:	Jar	Tested By:	GA				
	Sample ID:	C2		Test Date:	08/28/24	Checked By:	ank				
	Depth :	4-6		Test Id:	781791						
[Test Comm	ent:									
	Visual Desc	ription:	Moist, very da	rk gray silty sa	nd						
	Sample Cor	mment:									
cl	cle Size Analysis - ASTM D6913/D7928										
<u> </u>		<i>, ,</i> , , , , , , , , , , , , , , , , ,	<u>.,</u>			0, 0, 7,					





	Client:	Alpha Anal	lytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
	Boring ID:			Sample Type:	Jar	Tested By:	ajl
	Sample ID:	C2		Test Date:	08/29/24	Checked By:	ank
	Depth :	6-6.5		Test Id:	781792		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, dark bi	rown sand with	silt		
	Sample Cor	mment:					
_		•				0 / 5 7 0	





	Client:	Alpha Anal	ytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
1	Boring ID:			Sample Type:	Jar	Tested By:	GA
	Sample ID:	C4		Test Date:	08/28/24	Checked By:	ank
	Depth :	6-7.6		Test Id:	781793		
ſ	Test Comm	ent:					
	Visual Desc	ription:	Moist, dark gr	ay clay			
	Sample Cor	mment:					



0.0121

0.0086

0.0062

0.0044

0.0032

0.0014

70

62 55

46

41

32



	Client:	Alpha Anal	lytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
	Boring ID:			Sample Type:	Jar	Tested By:	ajl
	Sample ID:	C4		Test Date:	08/28/24	Checked By:	ank
	Depth :	0-2		Test Id:	781806		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, very da	ark gray silt			
	Sample Cor	mment:					
						- •	
_	-C:-	- Λ			n/n4	$\gamma / \nabla = \gamma $	$\gamma \gamma$





Client:	Alpha Anal	ytical							
Project:	L2445878								
Location:	СТ				Project No:	GTX-319627			
Boring ID:			Sample Type:	Jar	Tested By:	ajl			
Sample ID:	C4		Test Date:	08/29/24	Checked By:	ank			
Depth :	2-4		Test Id:	781807					
Test Comm	ent:								
Visual Desc	ription:	Moist, very da	rk gray clay						
Sample Cor	mment:								





	Client:	Alpha Anal	ytical								
	Project:	L2445878									
	Location:	СТ				Project No:	GTX-319627				
	Boring ID:			Sample Type:	Jar	Tested By:	ajl				
	Sample ID:	C4		Test Date:	08/27/24	Checked By:	ank				
	Depth :	4-6		Test Id:	781808						
	Test Comm	ent:									
	Visual Desc	ription:	Moist, very da	rk gray clay							
	Sample Cor	mment:									
_											



Dispersion Period : 1 minute

Est. Specific Gravity: 2.65



	Client:	Alpha Anal	ytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
	Boring ID:			Sample Type:	Jar	Tested By:	GA
	Sample ID:	C5		Test Date:	08/28/24	Checked By:	ank
	Depth :	2-4		Test Id:	781794		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, dark gr	ay clay			
	Sample Cor	mment:					
_						- • -	



0.0015



Client:	Alpha Anal	ytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	GA
Sample ID:	C5		Test Date:	08/28/24	Checked By:	ank
Depth :	4-6		Test Id:	781795		
Test Comm	ent:					
Visual Desc	ription:	Moist, dark gr	ay silt			
Sample Cor	mment:					
 					- • -	





Client:	Alpha Ana	ytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	C5		Test Date:	08/28/24	Checked By:	ank
Depth :	6-8		Test Id:	781796		
Test Comm	ent:					
Visual Desc	cription:	Moist, very da	ark grayish brov	vn clay		
Sample Cor	mment:					
	^				0 / D 7 0	~~





Client:	Alpha Ana	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	C5		Test Date:	08/27/24	Checked By:	ank
Depth :	8-10		Test Id:	781797		
Test Comm	ent:					
Visual Desc	ription:	Moist, very da	irk gray clay			
Sample Cor	mment:					



Dispersion Period : 1 minute Est. Specific Gravity : 2.65



	Client:	Alpha Ana	lytical							
	Project:	L2445878								
	Location:	СТ				Project No:	GTX-319627			
	Boring ID:			Sample Type:	Jar	Tested By:	ajl			
	Sample ID:	: C5		Test Date:	08/27/24	Checked By:	ank			
	Depth :	10-12		Test Id:	781798					
	Test Comm	ient:								
	Visual Desc	cription:	Moist, very da	ark gray clay						
	Sample Co	mment:								
-1	la Siza Analysis - ASTM D6013/D7028									





	Client:	Alpha Anal	ytical							
	Project:	L2445878								
	Location:	СТ				Project No:	GTX-319627			
	Boring ID:			Sample Type:	Jar	Tested By:	ajl			
	Sample ID:	C5		Test Date:	08/26/24	Checked By:	ank			
	Depth :	02		Test Id:	781884					
	Test Comm	ent:								
	Visual Desc	ription:	Moist, black cl	ау						
	Sample Cor	mment:								
_										





Client:	Alpha Anal	ytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	GA
Sample ID:	D		Test Date:	08/28/24	Checked By:	ank
Depth :	0-7.9		Test Id:	781818		
Test Comm	ent:					
Visual Desc	ription:	Moist, dark gr	ay silt			
Sample Cor	mment:					
 	_		_			



Dispersion Device : Apparatus A - Mech Mixer Dispersion Period : 1 minute Est. Specific Gravity : 2.65

0.0032

0.0014

16



	Client:	Alpha Anal	ytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
	Boring ID:			Sample Type:	Jar	Tested By:	ajl
	Sample ID:	E		Test Date:	08/29/24	Checked By:	ank
	Depth :	0-4.5		Test Id:	781819		
	Test Comm	ent:					
	Visual Desc	cription:	Moist, very da	irk gray clay			
	Sample Cor	mment:					
_							





Client:	Alpha Ana	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	: F/C3		Test Date:	08/28/24	Checked By:	ank
Depth :	0-2		Test Id:	781820		
Test Comm	ient:					
Visual Desc	cription:	Moist, very da	ark gray clay			
Sample Co	mment:					



Dispersion Period : 1 minute

Est. Specific Gravity: 2.65



Client:	Alpha Anal	ytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	F/C3		Test Date:	08/29/24	Checked By:	ank
Depth :	2-4		Test Id:	781821		
Test Comm	ent:					
Visual Desc	ription:	Moist, very da	irk gray clay			
Sample Cor	mment:					





	Client:	Alpha Anal	ytical				
P	Project:	L2445878					
L	ocation:	СТ				Project No:	GTX-319627
E	Boring ID:			Sample Type:	Jar	Tested By:	ajl
S	Sample ID:	F/C3		Test Date:	08/26/24	Checked By:	ank
	Depth :	4-6		Test Id:	781822		
Т	Test Comm	ent:					
V	/isual Desc	ription:	Moist, very da	rk gray clay			
S	Sample Cor	mment:					
-							



0.0033

0.0014

27



Client:	Alpha Anal	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	F/C3		Test Date:	08/27/24	Checked By:	ank
Depth :	6-7.1		Test Id:	781823		
Test Comm	ent:					
Visual Desc	ription:	Moist, very da	irk gray clay			
Sample Cor	mment:					



Est. Specific Gravity: 2.65



	Client:	Alpha Anal	ytical				
octina	Project:	L2445878					
county	Location:	СТ				Project No:	GTX-319627
XPRESS	Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sercel Business	Sample ID:	G/C1		Test Date:	08/29/24	Checked By:	ank
	Depth :	0-2		Test Id:	781824		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, very da	irk gray clay			
	Sample Cor	nment:					
Particl	e Size	e Ana	lysis -	ASTM	D691	3/D792	28
			U				



Est. Specific Gravity: 2.65



Client:	Alpha Anal	ytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	GA
Sample ID:	G/C1		Test Date:	08/28/24	Checked By:	ank
Depth :	2-4		Test Id:	781825		
Test Comm	ent:					
Visual Desc	ription:	Wet, very darl	k gray silt			
Sample Cor	mment:					



Sample/Test Description Sand/Gravel Particle Shape : ---Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer Dispersion Period : 1 minute Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

0.0119

0.0086

0.0062

0.0044

0.0032

0.0014

68

59

50

44

38

26



Client:	Alpha Anal	ytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	GA
Sample ID:	G/C1		Test Date:	08/28/24	Checked By:	ank
Depth :	4-6		Test Id:	781809		
Test Comm	ent:					
Visual Desc	ription:	Moist, dark gr	ay clay			
Sample Co	mment:					



Dispersion Device : Apparatus A - Mech Mixer Dispersion Period : 1 minute Est. Specific Gravity : 2.65

0.0032

0.0015

40



Client:	Alpha Ana	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	GA
Sample ID:	G/C1		Test Date:	08/28/24	Checked By:	ank
Depth :	6-8		Test Id:	781810		
Test Comm	ent:					
Visual Desc	ription:	Moist, very da	irk gray silt			
Sample Co	mment:					



Sample/Test Description Sand/Gravel Particle Shape : ---Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer Dispersion Period : 1 minute Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

0.0087

0.0063

0.0045

0.0032

0.0014

60 53

47

42



	Client:	Alpha Anal	ytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
	Boring ID:			Sample Type:	Jar	Tested By:	ajl
	Sample ID:	Н		Test Date:	08/29/24	Checked By:	ank
	Depth :	0-5.3		Test Id:	781811		
	Test Comm	ent:					
	Visual Desc	cription:	Moist, very da	ırk gray clay			
	Sample Co	mment:					
_		-				a / D D a	~ ~





Client:	Alpha Ana	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	: 1		Test Date:	08/27/24	Checked By:	ank
Depth :	0-5.0		Test Id:	781812		
Test Comm	ent:					
Visual Desc	cription:	Moist, black c	lay			
Sample Co	mment:					





	Client:	Alpha Ana	ytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
Ī	Boring ID:			Sample Type:	Jar	Tested By:	GA
	Sample ID:	: J		Test Date:	08/28/24	Checked By:	ank
	Depth :	0-6.5		Test Id:	781813		
	Test Comm	ient:					
	Visual Desc	cription:	Wet, very dar	k gray silt			
	Sample Co	mment:					



Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

0.0032

0.0014

37



Client:	Alpha An	alytical				
Project:	L244587	8				
Location	n: CT				Project No:	GTX-319627
Boring I	D:		Sample Type:	Jar	Tested By:	GA
Sample	ID: K		Test Date:	08/28/24	Checked By:	ank
Depth :	0-3.8		Test Id:	781814		
Test Cor	nment:					
Visual D	escription:	Wet, very da	ark gray silt			
Sample	Comment:					



Sample/Test Description Sand/Gravel Particle Shape : ---Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer Dispersion Period : 1 minute Est. Specific Gravity : 2.65

Separation of Sample: #200 Sieve

0.0087

0.0062

0.0045

0.0032

0.0015

63 52

45

40



Client:	Alpha Anal	ytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	L		Test Date:	08/27/24	Checked By:	ank
Depth :	0-7.7		Test Id:	781815		
Test Comm	ent:					
Visual Desc	cription:	Moist, black cl	ау			
Sample Cor	mment:					
	•				0 /D 70	<u></u>





	Client:	Alpha Anal	ytical				
octina	Project:	L2445878					
county	Location:	СТ				Project No:	GTX-319627
XPRESS	Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sercel Business	Sample ID:	Μ		Test Date:	08/29/24	Checked By:	ank
	Depth :	0-3.8		Test Id:	781816		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, very da	irk gray clay			
	Sample Cor	mment:					
Particl	e Size	e Ana	lysis -	ASTM	D691	3/D792	28



0.0032

0.0013

38



Client:	Alpha Ana	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	: N		Test Date:	08/27/24	Checked By:	ank
Depth :	0-4.2		Test Id:	781801		
Test Comm	ient:					
Visual Desc	cription:	Moist, black c	lay			
Sample Co	mment:					
	_					





Client:	Alpha Ana	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID:	: O		Test Date:	08/27/24	Checked By:	ank
Depth :	0-2.9		Test Id:	781802		
Test Comm	nent:					
Visual Desc	cription:	Moist, black o	lay			
Sample Co	mment:					




Client:	Alpha Ana	lytical				
Project:	L2445878					
Location:	СТ				Project No:	GTX-319627
Boring ID:			Sample Type:	Jar	Tested By:	ajl
Sample ID	: P		Test Date:	08/29/24	Checked By:	ank
Depth :	0-4.2		Test Id:	781803		
Test Comm	nent:					
Visual Des	cription:	Moist, black o	clay			
Sample Co	mment:					



Est. Specific Gravity: 2.65

Separation of Sample: #200 Sieve



	Client:	Alpha Ana	lytical				
	Project:	L2445878					
	Location:	СТ				Project No:	GTX-319627
	Boring ID:			Sample Type:	Jar	Tested By:	GA
	Sample ID:	: Q		Test Date:	08/28/24	Checked By:	ank
	Depth :	0-4.4		Test Id:	781804		
	Test Comm	ient:					
	Visual Desc	cription:	Wet, very dar	k gray silt			
	Sample Co	mment:					
_							



Separation of Sample: #200 Sieve



	Client:	Alpha Anal	ytical				
	Project:	L2445878					
9	Location:	СТ				Project No:	GTX-319627
	Boring ID:			Sample Type:	Jar	Tested By:	ajl
	Sample ID:	R		Test Date:	08/27/24	Checked By:	ank
	Depth :	0-3.9		Test Id:	781805		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, black cl	ау			
	Sample Co	mment:	Sample contai	ns organics			
icl	\circ Size	Ana	lycic	Λςτν	D601	2/070	າວ



Geo	Testina
	EXPRESS A SERCEL COMPANY

Client:	Alpha Ana	lytical				0:07232418:59
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: C		Test Date:	06/27/24	Checked By:	ank
Depth :	0-3.7		Test Id:	774581		
Test Comm	nent:					
Visual Desc	cription:	Wet, dark grag	y clay			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C		0-3.7	127	111	38	73	1.2	

Sample Prepared using the WET method

Dry Strength: MEDIUM Dilatancy: SLOW Toughness: LOW



					Sorial N	0.07232/18.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C2		Test Date:	06/25/24	Checked By:	ank
Depth :	4-6		Test Id:	774595		
Test Comm	ent:					
Visual Description: Moist, very dark gray sandy silt						
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C2		4-6	26	n/a	n/a	n/a	n/a	

Dry Strength: LOW Dilatancy: RAPID Toughness: n/a The sample was determined to be Non-Plastic



				Serial N	<u>07232418.59</u>
Client: Alph	na Analytical				0.07202410.00
Project: L243	34171				
Location:				Project No:	GTX-319325
Boring ID:		Sample Type:	Jar	Tested By:	cam
Sample ID: C2		Test Date:	06/25/24	Checked By:	ank
Depth : 6-6.	.5	Test Id:	774596		
Test Comment:					
Visual Description	on: Moist, dark re	ddish gray silty	sand		
Sample Comme	nt:				



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C2		6-6.5	19	n/a	n/a	n/a	n/a	

Dry Strength: LOW Dilatancy: RAPID Toughness: n/a The sample was determined to be Non-Plastic

|--|

					Sorial N	07232/18.50
Client:	Alpha Anal	ytical				5.07252410.05
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C2		Test Date:	07/01/24	Checked By:	ank
Depth :	0-2		Test Id:	774529		
Test Comm	ent:					
Visual Desc	ription:	Moist, very da	rk gray clay			
Sample Cor	mment:	Sample contai	ns shell fragme	ents		
	Client: Project: Location: Boring ID: Sample ID: Depth : Test Comm Visual Desc Sample Cor	Client: Alpha Anal Project: L2434171 Location: Boring ID: Sample ID: C2 Depth : 0-2 Test Comment: Visual Description: Sample Comment:	Client: Alpha Analytical Project: L2434171 Location: Boring ID: Sample ID: C2 Depth : 0-2 Test Comment: Visual Description: Moist, very da Sample Comment: Sample contai	Client:Alpha AnalyticalProject:L2434171Location:Boring ID:Sample ID:C2Depth :0-2Test Comment:Visual Description:Moist, very dark gray claySample Comment:Sample contains shell fragment	Client: Alpha Analytical Project: L2434171 Location: Boring ID: Sample ID: C2 Depth : 0-2 Test Id: 774529 Sample Comment: Visual Description: Moist, very dark gray clay Sample Comment: Sample contains shell fragments	Serial_No Client: Alpha Analytical Serial_No Project: L2434171 Project No: Location: Project No: Boring ID: Sample Type: Jar Sample ID: C2 Test Date: 07/01/24 Depth: 0-2 Test Id: 774529 Test Comment: Visual Description: Moist, very dark gray clay Sample Comment: Sample contains shell fragments Sample contains shell fragments



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C2		0-2	72	78	34	44	0.9	

Sample Prepared using the WET method

|--|--|

					Sorial N	077222/18.50
Client:	Alpha Anal	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C2		Test Date:	07/01/24	Checked By:	ank
Depth :	2-4		Test Id:	774530		
Test Comm	ent:					
Visual Desc	cription:	Moist, very da	irk gray clay			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C2		2-4	51	52	24	28	1	

Sample Prepared using the WET method

|--|

					Sorial N	0.07232/12.50
Client:	Alpha Anal	ytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C4		Test Date:	07/01/24	Checked By:	ank
Depth :	2-4		Test Id:	774537		
Test Comm	ent:					
Visual Desc	ription:	Wet, very darl	k gray clay			
Sample Cor	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C4		2-4	129	105	43	62	1.4	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS A SERCEL COMPANY

						Sorial No	07222/18.50
	Client:	Alpha Ana	lytical				5.07232410.03
	Project:	L2434171					
	Location:					Project No:	GTX-319325
	Boring ID:			Sample Type:	Jar	Tested By:	cam
	Sample ID:	C4		Test Date:	06/27/24	Checked By:	ank
	Depth :	4-6		Test Id:	774538		
ſ	Test Comm	ent:					
	Visual Desc	ription:	Wet, olive grag	y clay			
	Sample Cor	nment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C4		4-6	130	111	44	67	1.3	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS

					Sorial N	0.07232/18.50
Client:	Alpha Anal	lytical				5.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C4		Test Date:	07/03/24	Checked By:	ank
Depth :	6-7.6		Test Id:	774539		
Test Comm	ent:					
Visual Desc	cription:	Wet, dark grag	y clay			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C4		6-7.6	119	97	37	60	1.4	

Sample Prepared using the WET method



					Sorial N	0.07232/18.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C4		Test Date:	06/28/24	Checked By:	ank
Depth :	0-2		Test Id:	774552		
Test Comm	ent:					
Visual Desc	ription:	Wet, very darl	k gray silt			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C4		0-2	144	72	42	30	3.4	

Sample Prepared using the WET method

|--|

					Sorial N	0.07232/118.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C5		Test Date:	06/26/24	Checked By:	ank
Depth :	4-6		Test Id:	774525		
Test Comm	ent:					
Visual Desc	ription:	Wet, olive grag	y silt			
Sample Cor	nment:					



Symbol	Sample I D	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C5		4-6	157	131	52	79	1.3	

Sample Prepared using the WET method



						o:07232418:59 —
Client:	Alpha Ana	lytical				
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C5		Test Date:	06/28/24	Checked By:	ank
Depth :	6-8		Test Id:	774526		
Test Comm	ent:					
Visual Desc	cription:	Wet, very darl	k gray clay			
Sample Co	mment:					



Symbol	Sample I D	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C5		6-8	137	131	50	81	1.1	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS A SERCEL COMPANY

					Sorial N	0.07232/18.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: C5		Test Date:	06/28/24	Checked By:	ank
Depth :	8-10		Test Id:	774527		
Test Comm	ient:					
Visual Desc	cription:	Wet, olive gra	y silt			
Sample Co	mment:					



Symbol	Sample I D	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C5		8-10	157	115	76	39	2.1	

Sample Prepared using the WET method

|--|

					Sorial N	0.07232/118.50
Client:	Alpha Anal	ytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C5		Test Date:	06/26/24	Checked By:	ank
Depth :	10-12		Test Id:	774528		
Test Comm	ent:					
Visual Desc	cription:	Moist, black si	ilt			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C5		10-12	110	120	48	72	0.9	

Sample Prepared using the WET method

Dry Strength: MEDIUM Dilatancy: SLOW Toughness: LOW



					<u> </u>	07232418 59
Client:	Alpha Anal	lytical			Cona_n	0.01202110.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	C5		Test Date:	07/08/24	Checked By:	ank
Depth :	0-2		Test Id:	774540		
Test Comm	ent:					
Visual Desc	ription:	Wet, very darl	k gray clay			
Sample Cor	mment:					



Symbol	Sample I D	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C5		0-2	227	145	41	104	1.8	

Sample Prepared using the WET method



Client:	Alpha Ana	Ivtical				0:07232418:59
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: C5		Test Date:	07/01/24	Checked By:	ank
Depth :	2-4		Test Id:	774541		
Test Comm	ient:					
Visual Description: Moist, very da			irk gray clay			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	C5		2-4	120	140	48	92	0.8	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS A SERCEL COMPANY

Cliont	Alpha Apa	lytical			Serial_N	0.07232418:59
Client.	Арна Ана	iyucai				
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: D		Test Date:	06/28/24	Checked By:	ank
Depth :	0-7.9		Test Id:	774582		
Test Comm	ient:					
Visual Description: Wet, very dar			k gray silt			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	D		0-7.9	143	55	42	13	7.8	

Sample Prepared using the WET method

|--|

Client:	Alpha Ana	lytical				0:07232418:59
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID	: E		Test Date:	06/27/24	Checked By:	ank
Depth :	0-4.5		Test Id:	774583		
Test Comm	nent:					
Visual Desc	cription:	Wet, very dar	k gray clay			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	E		0-4.5	141	108	40	68	1.5	

Sample Prepared using the WET method

G	
	A SERCEL COMPANY

					Sorial N	07222/18.50
Client:	Alpha Anal	ytical				5.07232410.05
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	F/C3		Test Date:	06/27/24	Checked By:	ank
Depth :	0-2		Test Id:	774584		
Test Comm	ent:					
Visual Desc	ription:	Wet, dark gray	y clay			
Sample Cor	nment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	F/C3		0-2	182	112	42	70	2	

Sample Prepared using the WET method

Geo	Testing
	A SERCEL COMPANY

					Sorial N	0.07232/18.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: F/C3		Test Date:	06/28/24	Checked By:	ank
Depth :	2-4		Test Id:	774585		
Test Comm	ient:					
Visual Desc	cription:	Wet, dark grag	y silt			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	F/C3		2-4	157	108	47	61	1.8	

Sample Prepared using the WET method

Geo	Testing
	A SERCEL COMPANY

					Sorial N	0.07232/18.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: F/C3		Test Date:	06/28/24	Checked By:	ank
Depth :	4-6		Test Id:	774586		
Test Comm	ient:					
Visual Desc	cription:	Wet, olive gra	ıy silt			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	F/C3		4-6	130	85	63	22	3	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS A SERCEL COMPANY

					Sorial No	07222/18.50
Client:	Alpha Ana	lytical				5.07232410.05
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	F/C3		Test Date:	06/27/24	Checked By:	ank
Depth :	6-7.1		Test Id:	774569		
Test Comm	ent:					
Visual Desc	ription:	Wet, very darl	k gray silt			
Sample Cor	nment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	F/C3		6-7.1	122	110	47	63	1.2	

Sample Prepared using the WET method

Dry Strength: MEDIUM Dilatancy: SLOW Toughness: LOW

|--|--|

					<u>Serial Nr</u>	0/232418.59
Client:	Alpha Anal	lytical				5.07202110.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	G/C1		Test Date:	07/01/24	Checked By:	ank
Depth :	0-2		Test Id:	774570		
Test Comm	ent:					
Visual Desc	ription:	Wet, very darl	k gray clay			
Sample Cor	mment:					
	Client: Project: Location: Boring ID: Sample ID: Depth : Test Comm Visual Desc Sample Cor	Client:Alpha AnalProject:L2434171Location:Boring ID:Sample ID:G/C1Depth :0-2Test Comment:Visual Description:Sample Comment:	Client:Alpha AnalyticalProject:L2434171Location:Boring ID:Sample ID:G/C1Depth :0-2Test Comment:Visual Description:Wet, very darkSample Comment:	Client:Alpha AnalyticalProject:L2434171Location:Boring ID:Sample ID:G/C1Test Date:Test Date:Depth :0-2Test Comment:Visual Description:Wet, very dark gray claySample Comment:	Client: Alpha Analytical Project: L2434171 Location: Boring ID: Sample ID: G/C1 Sample ID: 0-2 Test Id: 774570 Test Comment: Visual Description: Wet, very dark gray clay Sample Comment:	Serial_NC Client: Alpha Analytical Serial_NC Project: L2434171 Project No: Location: Project No: Boring ID: Sample Type: Jar Sample ID: G/C1 Test Date: 07/01/24 Checked By: Depth : 0-2 Test Id: 774570 Test Comment: Visual Description: Wet, very dark gray clay Sample Comment:



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	G/C1		0-2	128	110	44	66	1.3	

Sample Prepared using the WET method

Dry Strength: MEDIUM Dilatancy: SLOW Toughness: LOW

|--|

					Sorial N	0.07232/118.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	G/C1		Test Date:	06/28/24	Checked By:	ank
Depth :	2-4		Test Id:	774571		
Test Comm	ent:					
Visual Desc	ription:	Wet, olive grag	y silt			
Sample Cor	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	G/C1		2-4	151	110	49	61	1.7	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS A SERCEL COMPANY

					Sorial N	0.07232/18.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	G/C1		Test Date:	06/28/24	Checked By:	ank
Depth :	4-6		Test Id:	774572		
Test Comm	ent:					
Visual Desc	ription:	Wet, olive gra	y silt			
Sample Co	mment:					



Symbol	Sample I D	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	G/C1		4-6	155	116	69	47	1.8	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS A SERCEL COMPANY

					Sorial N	0.07232/18.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	G/C1		Test Date:	06/27/24	Checked By:	ank
Depth :	6-8		Test Id:	774573		
Test Comm	ent:					
Visual Desc	cription:	Wet, olive gra	y clay			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	G/C1		6-8	125	119	45	74	1.1	

Sample Prepared using the WET method

Ge	
	EXPRESS A SERCEL COMPANY

					<u>Serial N</u>	<u>h:07232418:50</u>
Client:	Alpha Anal	ytical				0.01202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	Н		Test Date:	06/27/24	Checked By:	ank
Depth :	0-5.3		Test Id:	774574		
Test Comm	ent:					
Visual Desc	ription:	Wet, dark grag	y clay			
Sample Cor	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	Н		0-5.3	186	121	45	76	1.9	

Sample Prepared using the WET method

|--|

					Sorial N	0.07232/18.50
Client:	Alpha Ana	lytical				0.07202410.00
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: I		Test Date:	06/27/24	Checked By:	ank
Depth :	0-5.0		Test Id:	774559		
Test Comm	ent:					
Visual Desc	cription:	Wet, olive gra	y clay			
Sample Co	mment:					

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	Ι		0-5.0	172	136	43	93	1.4	

Sample Prepared using the WET method

GeoTe	
-------	--

-					<u>Serial Ne</u>	3:07232418:59
Client:	Alpha Ana	lytical				
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: J		Test Date:	07/01/24	Checked By:	ank
Depth :	0-6.5		Test Id:	774560		
Test Comm	ient:					
Visual Desc	cription:	Wet, very dar	k gray silt			
Sample Co	mment:					



Symbol	Sample I D	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	J		0-6.5	215	145	59	86	1.8	

Sample Prepared using the WET method

|--|--|

Client:	Alpha Ana	lytical				0:07232418:59
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID	: K		Test Date:	06/28/24	Checked By:	ank
Depth :	0-3.8		Test Id:	774561		
Test Comm	nent:					
Visual Dese	cription:	Wet, black cla	ıy			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	К		0-3.8	171	135	48	87	1.4	

Sample Prepared using the WET method

|--|

Client:	Alpha Ana	lytical			Serial_IN	0:07232418:59
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: L		Test Date:	06/28/24	Checked By:	ank
Depth :	0-7.7		Test Id:	774562		
Test Comm	ient:					
Visual Desc	cription:	Wet, very dar	k gray silt			
Sample Co	mment:					



Symbol	Sample I D	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	L		0-7.7	198	124	54	70	2.1	

Sample Prepared using the WET method

|--|--|

					<u>— Serial No</u>	30/232418.59
Client:	Alpha Anal	lytical			eenal_n	
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID	: M		Test Date:	07/01/24	Checked By:	ank
Depth :	0-3.8		Test Id:	774563		
Test Comm	nent:					
Visual Dese	cription:	Wet, very darl	k gray silt			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	М		0-3.8	144	104	46	58	1.7	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS A SERCEL COMPANY

						0:07232418:59
Client:	Alpha Ana	lytical			_	
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID	: N		Test Date:	06/28/24	Checked By:	ank
Depth :	0-4.2		Test Id:	774547		
Test Comm	nent:					
Visual Desc	cription:	Wet, very dar	k gray silt			
Sample Co	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	Ν		0-4.2	188	118	53	65	2.1	

Sample Prepared using the WET method

Geo	Testina
	EXPRESS A SERCEL COMPANY

г						<u> — Serial No</u>	3:07232418:59
	Client:	Alpha Anal	lytical				
	Project:	L2434171					
	Location:					Project No:	GTX-319325
	Boring ID:			Sample Type:	Jar	Tested By:	cam
	Sample ID:	0		Test Date:	07/01/24	Checked By:	ank
	Depth :	0-2.9		Test Id:	774548		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, very da	rk gray silt			
	Sample Cor	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	0		0-2.9	104	106	45	61	1	

Sample Prepared using the WET method
|--|

					- Serial N	0/232418·59
Client:	Alpha Ana	lytical			eenai_n	5101202110100
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	:Р		Test Date:	06/28/24	Checked By:	ank
Depth :	0-4.2		Test Id:	774549		
Test Comm	ient:					
Visual Desc	cription:	Wet, very dar	k gray silt			
Sample Co	mment:					

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	Ρ		0-4.2	190	110	50	60	2.3	

Sample Prepared using the WET method

Dry Strength: VERY HIGH Dilatancy: SLOW Toughness: LOW

|--|--|

					<u>— Serial N</u>	3:07232418:59
Client:	Alpha Ana	lytical			••••••_•	
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	Q		Test Date:	06/28/24	Checked By:	ank
Depth :	0-4.4		Test Id:	774550		
Test Comm	ent:					
Visual Desc	cription:	Wet, very dar	k gray clay			
Sample Co	mment:					

Atterberg Limits - ASTM D4318



Symbol	Sample I D	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	Q		0-4.4	185	136	48	88	1.6	

Sample Prepared using the WET method

Dry Strength: VERY HIGH Dilatancy: SLOW Toughness: LOW

|--|--|

Client	Alpha Ana	lytical				0:07232418:59
Dreiset		rytical				
Project:	L2434171					
Location:					Project No:	GTX-319325
Boring ID:			Sample Type:	Jar	Tested By:	cam
Sample ID:	: R		Test Date:	07/02/24	Checked By:	ank
Depth :	0-3.9		Test Id:	774551		
Test Comm	ient:					
Visual Desc	cription:	Wet, black cla	ıу			
Sample Co	mment:					

Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	R		0-3.9	191	138	52	86	1.6	

Sample Prepared using the WET method

Dry Strength: MEDIUM Dilatancy: SLOW Toughness: LOW



				Sorial No	07222/18.50
Client:	Alpha Analytical				.07202410.00
Project:	L2434171				
Location:				Project No:	GTX-319325
Boring ID:		Sample Type:		Tested By:	ajl
Sample ID:		Test Date:	07/02/24	Checked By:	ank
Depth :		Test Id:	774531		

Boring ID	Sample I D	Depth	Visual Description	Specific Gravity	Comment
	С	0-3.7	Wet, dark gray clay	2.67	
	C2	4-6	Moist, very dark gray sandy silt	2.68	
	C2	6-6.5	Moist, dark reddish gray silty sand	2.67	
	C2	0-2	Moist, very dark gray clay	2.69	
	C2	2-4	Moist, very dark gray clay	2.66	
	C4	2-4	Wet, very dark gray clay	2.58	
	C4	4-6	Wet, olive gray clay	2.74	
	C4	6-7.6	Wet, dark gray clay	2.62	
	C4	0-2	Wet, very dark gray silt	2.69	
	C5	4-6	Wet, olive gray silt	2.60	



				Sorial No	07222/12.50
Client:	Alpha Analytical				.07232410.33
Project:	L2434171				
Location:				Project No:	GTX-319325
Boring ID:		Sample Type:		Tested By:	ajl
Sample ID:		Test Date:	07/02/24	Checked By:	ank
Depth :		Test Id:	774592		

Boring ID	Sample I D	Depth	Visual Description	Specific Gravity	Comment
	C5	6-8	Wet, very dark gray clay	2.76	
	C5	8-10	Wet, olive gray silt	2.67	
	C5	10-12	Moist, black silt	2.67	
	C5	0-2	Wet, very dark gray clay	2.62	
	C5	2-4	Moist, very dark gray clay	2.68	
	D	0-7.9	Wet, very dark gray silt	2.63	
	E	0-4.5	Wet, very dark gray clay	2.73	
	F/C3	0-2	Wet, dark gray clay	2.69	
	F/C3	2-4	Wet, dark gray silt	2.59	
	F/C3	4-6	Wet, olive gray silt	2.69	



			Sprial No:07232/18:50			
Client:	Alpha Analytical				.07202410.00	
Project:	L2434171					
Location:				Project No:	GTX-319325	
Boring ID:		Sample Type:		Tested By:	ajl	
Sample ID:		Test Date:	07/02/24	Checked By:	ank	
Depth :		Test Id:	774567			

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity	Comment
	F/C3	6-7.1	Wet, very dark gray silt	2.67	
	G/C1	0-2	Wet, very dark gray clay	2.68	
	G/C1	2-4	Wet, olive gray silt	2.67	
	G/C1	4-6	Wet, olive gray silt	2.67	
	G/C1	6-8	Wet, olive gray clay	2.70	
	Н	0-5.3	Wet, dark gray clay	2.50	
	I	0-5.0	Wet, olive gray clay	2.59	
	J	0-6.5	Wet, very dark gray silt	2.75	
	К	0-3.8	Wet, black clay	2.68	
	L	0-7.7	Wet, very dark gray silt	2.64	



		Sprial No:07232/18:50			
Client:	Alpha Analytical				
Project:	L2434171				
Location:				Project No:	GTX-319325
Boring ID:		Sample Type:		Tested By:	ajl
Sample ID:		Test Date:	06/29/24	Checked By:	ank
Depth :		Test Id:	774557		

Boring ID	Sample I D	Depth	Visual Description	Specific Gravity	Comment
	М	0-3.8	Wet, very dark gray silt	2.66	
	N	0-4.2	Wet, very dark gray silt	2.65	
	0	0-2.9	Moist, very dark gray silt	2.63	
	Р	0-4.2	Wet, very dark gray silt	2.58	
	Q	0-4.4	Wet, very dark gray clay	2.74	
	R	0-3.9	Wet, black clay	2.63	