

DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD
SHORE INFRASTRUCTURE LOGISTICS CENTER

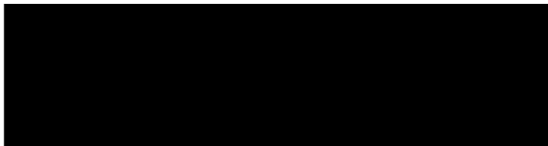
SPECIFICATIONS FOR

REPAIR WATERFRONT
ISSUED FOR CONSTRUCTION - APR 2024

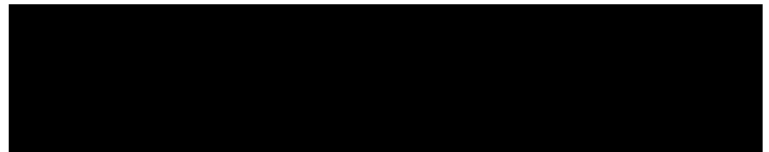
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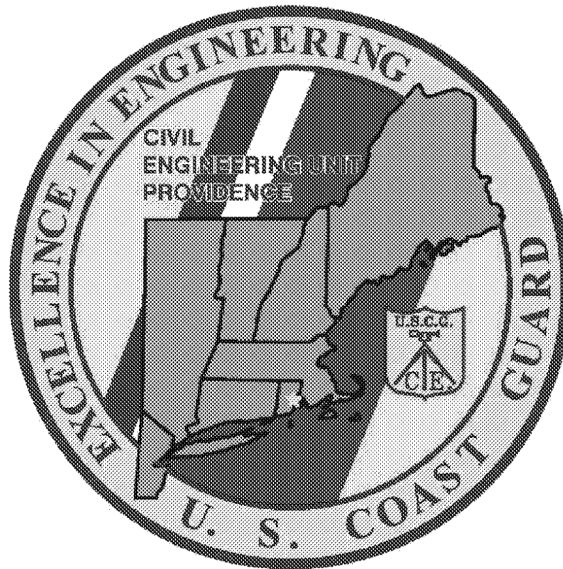
USCG STA MONTAUK
MONTAUK, SUFFOLK COUNTY, NEW YORK



DESIGN PROJECT MANAGER



DESIGN TEAM 1
SUPERVISOR



TECHNICAL DIRECTOR

by direction of the
COMMANDING OFFICER
UNITED STATES COAST GUARD
CIVIL ENGINEERING UNIT PROVIDENCE
475 KILVERT ST, SUITE 100
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SUMMARY OF WORK

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

1.1.1 Summary of Work, Base Bid & Optional Bid Items

The project is defined by the Contract Documents and consists of all work, including all equipment, materials, labor and supervision necessary to replace the Concrete Floating Dock - Small Boat and repair the Fixed Timber Pier, Stone Gabion Bulkhead, and WPB Floating Pier.

The project includes one (1) Base Bid Item (BBI) and two (2) Optional Bid Items (OBIs) as summarized below. Any work that is not specified as being part of an OBI shall be included as part of the base bid scope.

1.1.1.1 BBI No. 1

RPUID 9939, Concrete Floating Dock - Small Boat: Replace the existing floating dock; replace the existing guide piles; install sacrificial anodes on the new guide piles; remove and reinstall the existing shore tie on the proposed floating dock; replace the shore tie electrical lines on the proposed floating dock; repair worn gangway flanges; and replace gangway rollers, transition plate, aluminum wear plate, and UHMW wear pad as specified and shown in the Contract Documents.

RPUID 66185, Fixed Timber Pier: Replace broken sewer line hanger; replace sewer line and water line insulation; remove abandoned water and compressed air lines, connections, and enclosure; and replace missing electrical junction box cover plate as specified and shown in the Contract Documents.

RPUID 9938, Stone Gabion Bulkhead: Replace corroded sections of gabion basket wire; replace missing gabion stone fill; extend gabion basket bulkhead return; and restore eroded areas as specified and shown in the Contract Documents.

1.1.1.2 OBI No. 1:

RPUID 66186, WPB Floating Pier: Tighten all thru-rods and bolted connections; replace damaged and/or seized thru-rods; replace pile guide frames, wear pads, and associated thru-rods; install supplemental buoyancy floats to return dock to level; replace perimeter timber rub strips and D-fenders; replace cleats and associated hardware; repair the light pole-to-floating dock bolted connection; replace the utility gangway; replace the personnel gangway hinge; replace gangway wear pads; repair concrete deck abrasion/spalls; and replace the lower pile cluster dolphin wrap as specified and shown in the Contract Documents.

1.1.1.3 OBI No. 2:

RPUID 66186, WPB Floating Pier: Recoat the existing guide piles; and install aluminum anodes on the guide piles as specified and shown in the Contract Documents.

1.1.2 Location

US Coast Guard Station Montauk
69 Star Island Road
Montauk, NY 11954

The work shall be located at the above location, approximately as indicated. The exact location will be provided by the KO.

1.2 CONTRACT DRAWINGS

Drawings for the project have been prepared using AutoCAD. One set of the electronic files will be provided to the successful contractor for the sole purpose of facilitating the execution of the work specified, including preparation of shop drawings, coordination drawings, record drawings, and other submittals. The KTR shall field verify all information as required to successfully provide the work specified.

1.3 EXISTING WORK

In addition to "FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements":

- a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.
- b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the KO. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

1.4 LOCATION OF UNDERGROUND FACILITIES

Obtain digging permits prior to start of any excavation, pile driving, or any underground work, and comply with installation requirements for locating and marking underground utilities. Contact Dig Safely New York a minimum of 72 hours prior to excavating, to mark utilities, and within sufficient time required if work occurs on a Monday or after a Holiday. Verify the elevations of existing piping, utilities, and any type of submerged or underground obstruction not indicated or specified to be removed but indicated in locations to be dredged or altered for site access.

1.4.1 Notification Prior to Excavation

Notify the KO at least 3 working days (72 hours) prior to starting excavation work. The KTR is responsible for locating and marking all utilities not shown on the Contract Drawings.

1.5 FEDERAL AND OTHER AUTHORITIES HAVING JURISDICTION

All work shall be in compliance with Federal, State, and local regulations and requirements, including but not limited to the environmental regulatory permits received for this project.

1.6 SALVAGE MATERIAL AND EQUIPMENT

Any items designated on the drawings for reuse, shall be carefully removed and stored in safe location on site for reinstallation as indicated in the contract documents, or directed by the COR.

1.7 DEFINITIONS

COR: Contracting Officer Representative

FURNISH: After submittal approval (when required), deliver specified materials, components, equipment, and/or systems to the project site and protect until installed.

INSTALL: Install at location indicated or approved; make ready for service as specified.

KO: Contracting Officer

KTR: Contractor

NEW: As used in these specifications, "new" is indicated for the convenience of the KTR. Unless the word "existing" is used as a qualifier, all devices, components, and equipment indicated shall be new from the manufacturer.

REMOVE AND DISPOSE: Completely remove materials, components, equipment, and/or systems identified; dispose of legally; repair remaining surfaces damaged as a result of removal.

REMOVE AND REINSTALL: Completely remove materials, components, equipment, and/or systems identified to allow for completion of specified work; reinstall as specified afterwards.

REMOVE AND STOCKPILE: Completely remove materials, components, equipment, and/or systems identified; store and protect; and reinstall as specified.

SHALL: Mandatory.

1.8 SUPERVISION

Have at least one qualified Supervisor, Contractor Quality Control (CQC) System Manager, and Site Safety and Health Officer (SSHO) capable of reading, writing, and conversing fluently in the English language on the job site during working hours. For this Contract, the Supervisor, CQC System Manager, and SSHO may be the same individual, provided that they possess the minimum qualifications required as specified herein.

1.9 MEETINGS

The KTR shall attend the Pre-Construction Conference and Construction Progress Meetings with the KO, COR, USCG Construction Inspector, and other project personnel in accordance with the requirements specified herein.

1.10 INSPECTION

The KTR shall keep the KO or duly appointed representative fully informed of contract operations and plans so that a representative may arrange to be present at various times that work is being performed.

1.10.1 KTR's Daily Log

The KTR shall complete the USCG Daily Log form at the end of each working day and deliver it to the Government Inspector and COR. The Government Inspector will attest to its accuracy by initialing the form and forwarding that form to CEU Providence. The form template will be provided to the KTR by the COR.

PART 2 PRODUCTS

2.1 BUY AMERICAN ACT COMPLIANCE

All equipment purchased by U.S. Government agencies must comply with the "Buy American Act" (BAA). In summary, this means that the equipment or systems installed must be made in the USA.

2.2 BASIS OF DESIGN; AND BRAND NAME OR EQUAL

In general, the federal government does not include the name of manufacturers or model numbers to specify various items, equipment, components or systems. However, since equipment or other items of equal capacity is not necessarily available in the same arrangement, size or construction required for the specific use or application required, manufacturers' model numbers, figures or other "Brand Name" information or references are used in the Contract Documents for the convenience of the government and as a service to bidders, in order to generally identify features, performance and level of quality or materials to be provided. The information may appear in the specifications, on the drawings (in the form of drawing notes, schedules or other similar methods), or a combination of these methods.

Use of the name of a manufacturer in conjunction with the words "or equal" or "Design Basis" does not indicate a preference for this equipment, but rather that the government is not aware of all possible or acceptable sources of supply for the particular item but has located at least one source. However, given the impact on the construction schedule and need for coordination during that period, these two conditions have specific meanings relative to contract document requirements.

2.2.1 Basis of Design

Not used.

2.2.2 Brand Name or Equal

Items specified with the words "Brand Name or Equal" (information in square brackets may be a manufacturer plus model number or series of equipment) have been so specified because of their particular significance relative to successfully achieving design requirements and intent. When this specification method is used, the KTR shall, if s/he would like to use a manufacturer/model number other than that specified, include a detailed submittal fully describing the item, including its ability to meet or exceed the required salient characteristics of the specified equipment for evaluation as part of the bidding process. The KTR shall also fully bear any costs associated with use of the alternate equipment or item, if approved (e.g., work by other trades, other modifications required to achieve project requirements).

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PART 3 EXECUTION

Not used.

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SECTION 01 14 00

WORK RESTRICTIONS

PART 1 GENERAL

1.1 SPECIAL SCHEDULING REQUIREMENTS AND WORK RESTRICTIONS

- a. The work is subject to the scheduling requirements and work restrictions specified in the Contract Documents and in the State and Federal regulatory permits provided in Appendix A.
- b. The KTR shall be responsible for issuing the pre- and post-construction notifications required by the State and Federal Permits.
- c. USCG STA Montauk is an active USCG installation and will maintain continuous operation throughout the completion of this project. The KTR shall conduct operations in a manner that will not interfere with Unit operations and will continually allow for USCG equipment and personnel access between upland and waterfront areas. Relocate and secure construction equipment at the end of each work day away from access ways in use. Access to emergency response vessels and the ability to go underway shall be continuously maintained.
- d. The STA Montauk vessels displaced by the proposed work will temporarily moor at adjacent STA floating docks. For scheduling purposes, the KTR shall assume that work will be performed and completed on one floating dock at a time (e.g., Concrete Floating Dock - Small Boat, WPB Floating Pier) in order to minimize impacts to STA operations. The KTR shall maintain upland access to the operational floating docks. The KTR shall also maintain clear access from the operational floating docks to the boat basin entrance for STA Montauk vessels at all times.
- e. The KTR shall be responsible for obtaining approval to begin each phase of work in coordination with the COR and USCG Unit Officer in Charge (OIC).
- f. The KTR shall have all materials, equipment, and personnel required to perform the work at the site prior to the commencement of work.
- g. Areas of the facility not under construction shall remain in operation during construction. Keep all construction activities and personnel clear of facility operations.
- h. The work under this contract requires special attention to the scheduling and conduct of the work in connection with existing operations and construction work at the STA. Identify on the construction schedule each factor which constitutes a potential interruption to operations.
- i. The KTR shall give proper notification to the USCG when operations shall interfere with USCG equipment access to the waterfront piers and floats. Permission to interrupt any activity roads, channels, parking areas, storage areas, access, and/or utility service shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption.

1.2 KTR ACCESS AND USE OF PREMISES

1.2.1 Activity Regulations

Ensure that KTR personnel employed on the Activity become familiar with and obey Activity regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. Wear appropriate personal protective equipment (PPE) in designated areas. Do not enter any restricted areas unless required to do so and not until cleared for such entry. The KTR's equipment shall be conspicuously marked for identification.

1.2.1.1 No Smoking Policy

Smoking/Vaping (use of electronic nicotine delivery systems) of any kind is prohibited within and outside of all buildings on installation, except in designated smoking areas. This applies to existing buildings, buildings under construction and buildings under renovation. Discarding tobacco materials other than into designated tobacco receptacles is considered littering and is subject to fines. The COR will identify designated smoking areas.

1.2.2 Regular Working Hours

Regular working hours shall consist of an 8 1/2 hour period established by the KO Monday through Friday, excluding Government holidays.

1.2.3 Work Outside Regular Hours

Work outside regular working hours requires KO approval. Submit request in writing to the KO at least 2 full working days prior to such work to allow arrangements to be made by the Government for inspecting the work in progress, giving the specific dates, hours, location, type of work to be performed, contract number and project title. Based on the justification provided, the KO may approve work outside regular hours. During periods of darkness, the different parts of the work must be lighted in a manner approved by the KO.

1.2.4 Exclusionary Period

No work shall be performed during the period excluded in the project permits, if any, without the prior written approval of the KO. This period will not be considered part of the time allowed for the performance of the work.

1.2.5 Occupied and Existing Buildings

The KTR shall be working around existing buildings which are occupied. Do not enter the buildings without prior approval of the KO.

1.2.6 Utility Cutovers and Interruptions

- a. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays unless otherwise directed by the KO. Submit request in writing to the KO at least 10

full working days prior to such work. Conform to procedures required in paragraph WORK OUTSIDE REGULAR HOURS.

- b. Ensure that new utility lines are complete, except for the connection, prior to interrupting existing service. Test new utility lines as applicable prior to interrupting existing service.
- c. Interruption to water, sanitary sewer, storm sewer, telephone service, electric service, air conditioning, heating, fire alarm, and compressed air are considered utility cutovers pursuant the paragraph WORK OUTSIDE REGULAR HOURS.
- d. Operation of USCG Unit Utilities: The KTR must not operate nor disturb the setting of control devices in the USCG Unit utilities system, including water, sewer, electrical, and steam services. The Government will operate the control devices as required for normal conduct of the work. The KTR must notify the KO giving reasonable advance notice when such operation is required.

1.2.7 Unit Specific Requirements

Not used.

1.3 SECURITY REQUIREMENTS

1.3.1 Subcontractors and Personnel Contacts

Provide a list of contact personnel of the KTR and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists. Post the list prominently at the job site in a conspicuous location.

1.3.2 Employee List

The KTR shall provide to the KO, in writing, the names of two (2) designated representatives authorized to request personnel and vehicle passes for employees and subcontractor's employees prior to commencement of work under this contract.

1.3.3 Personnel Entry Approval

Failure to obtain entry approval will not affect the contract price or time of completion.

1.3.4 Areas Not Covered by Contract

The KTR will not be permitted to enter buildings or areas not covered by the work included in this contract, except by prior approval of the KO and the Officer-In-Charge of the facility.

1.3.5 KTR Vehicles and Equipment

Prohibited on any piers and waterfront areas. Do not park on or block the marked fire lanes at any time. Vehicles may stop on the piers or waterfront areas for 15 minutes for loading and unloading. An exception may be made for vehicles which are part of the equipment needed to do the

required work and are attached or connected to the pier or ship; for example, a truck which uses a mounted generator or a vehicle with built-in equipment. Pier weight limits are never to be exceeded under any circumstances. Parking for workers shall be limited to 3 spaces and within the Contractor's Staging Area only. Off base parking may be required. Metal tracked construction vehicles are not permitted on paved areas, utilize rubber tire or rubber tracked vehicles only.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 SEQUENCE OF WORK

Not used.

--End of Section--

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS
03/22

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 (2014) Safety -- Safety and Health
Requirements Manual

1.2 MINIMUM INSURANCE REQUIREMENTS

Provide the minimum insurance coverage required by FAR 52.228-5, Insurance-Work on a Government Installation, during the entire period of performance under this contract. Provide other insurance coverage as required by State law.

1.3 SUPERVISION

1.3.1 Superintendent Qualifications

Provide Project Superintendent with 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 KO may request proof of the Superintendent's qualifications at any point in the project if the performance of the Superintendent is in question.

For this project, the Superintendent is permitted to also serve as the Contractor Quality Control (CQC) System Manager as established in Section 01 45 00.00 10 QUALITY CONTROL, and the Site Safety and Health Officer (SSHO) as established in accordance with Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. The Superintendent must have qualifications in accordance with those sections.

1.3.2 Minimum Communication Requirements

Have at least one qualified Superintendent, CQC System Manager, and SSHO, or competent alternates, capable of reading, writing, and conversing fluently in the English language, on the job-site at all times during the performance of contract work.

1.3.3 Duties

The Project Superintendent is primarily responsible for managing subcontractors and coordinating day-to-day production and schedule adherence on the project. The Superintendent is required to attend project meetings, safety meetings, and quality control meetings. The Superintendent or qualified alternative must be on-site at all times during the performance of this contract until the work is completed and accepted.

1.3.4 Project Manager

Assign a Project Manager with the responsibility for the overall management of the project. The KO may request proof of the Project Manager's qualifications at any point in the project if the performance of the Project Manager is in question.

1.3.4.1 Project Manager Qualifications

The Project Manager must have a minimum 10 years' experience as a Project Manager or Superintendent on projects of similar size and complexity. The Project Manager shall be capable of reading, writing, and conversing fluently in the English language, on the job-site at all times during the performance of contract work.

1.3.4.2 Non-Compliance Actions

The Project Superintendent and Project Manager are subject to removal by the KO for non-compliance with requirements specified in the contract and for failure to manage the project to ensure timely completion. Furthermore, the KO 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 KTR.

1.4 MEETINGS

1.4.1 Preconstruction Meeting Conference

Immediately after award, prior to commencing any work at the site, coordinate with the KO a time and place to meet for the Preconstruction Meeting. The meeting must take place within 30 calendar days after award of the contract, but prior to commencement of any work at the site. The purpose of this meeting conference is to discuss and develop a mutual understanding of the administrative requirements of the Contract including but not limited to: daily reporting, invoicing, value engineering, safety, base-access, outage requests, hot work permits, schedule requirements, quality control, schedule of prices or earned value report, shop drawings, submittals, cybersecurity, prosecution of the work, government acceptance, final inspections and contract close-out. KTR must present and discuss their basic approach to scheduling the construction work and any required phasing. Subcontractors who will engage in the work shall also attend. The KTR will record and distribute the meeting minutes to each party present and to parties requiring information.

1.4.2 Construction Progress Meetings

Construction Progress Meetings (aka 'Job Meetings') will be held on a regular basis in person or via video conference (e.g., MS TEAMS). The need for these meetings shall be at the discretion of the COR, but it is anticipated that

initially, at a minimum, these meetings shall occur biweekly until all submittals are approved. Meetings may increase to weekly as the period for on-site construction approaches, and continue on a weekly basis until no longer required, at the discretion of the COR. The KTR will record and distribute the progress meeting minutes to each party present and to parties requiring information. Review progress since the last meeting. Review items of significance that could affect progress. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to KTR's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1.4.2.1 Progress Meeting Minutes

Progress Meeting Minutes shall include the following:

- a. Project Name, Meeting Date, and List of Attendees,
- b. Project Status(i.e. items On-Time/Ahead-of-Schedule/Behind-Schedule),
- c. Submittal and RFI Status,
- d. Previous Outstanding KTR Concerns/Issues
- e. Previous Outstanding Government Concerns/Issues
- f. Progress/Schedule
- g. New KTR Concerns/Issues
- h. New Government Concerns/Issues

1.4.3 Attendees

KTR attendees must include the Project Manager, Superintendent, SSHO, CQC System Manager and major subcontractors.

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 KO a single (only one) e-mail address for electronic communications from the KO related to this contract including, but not limited to contract documents, invoice information, request for proposals, and other correspondence. The KO may also use email to notify the KTR of base access conditions when emergency conditions warrant, such as hurricanes or terrorist threats. Multiple email addresses are not allowed.

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

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

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SECTION 01 32 00

CONSTRUCTION SCHEDULE/SCHEDULE OF VALUES

PART 1 GENERAL

1.1 SUBMITTALS

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

1.1.1 SD-01 Preconstruction Submittals

Construction Schedule

Schedule of Values

Approval of the above submittals is required prior to the start of construction.

1.2 CONSTRUCTION SCHEDULE AND SCHEDULE OF VALUES

At the Preconstruction Conference, submit a Construction Schedule and Schedule of Values in accordance with FAR Clause 52.236.15. The Schedule of Values shall be based on the actual breakdown of the bid price, and organized to facilitate progress payments as major portions of the Work are completed. The cost of insurance shall not be listed as a separate item but included as part of each item of work. The actual cost of bonds may be paid as the first progress payment when a receipt from the bonding company is presented to the KO. In addition, keep the Government Inspector informed daily of the expected delivery dates for major pieces of equipment and materials.

1.2.1 Schedule Contents

The Construction Schedule and the Schedule of Values shall be incorporated into separate forms which clearly indicate the start and completion dates and unit value of all major work components. Include the following project specific items at a minimum:

1. Bonds
2. Pre-Construction Submittals
3. Mobilization
4. Work Activities:
 - A. Concrete Floating Dock - Small Boat Demolition
 - B. Concrete Floating Dock - Small Boat Replacement
 - C. Concrete Floating Dock - Small Boat Guide Pile Installation
 - D. Concrete Floating Dock - Small Boat Shore Tie and Electrical Line Installation
 - E. Fixed Timber Pier Repair
 - F. Stone Gabion Bulkhead Repairs
 - G. WPB Floating Pier Repairs (OBI No. 1)
 - H. WPB Floating Pier Guide Pile Recoating (OBI No. 2)
 - I. WPB Floating Pier Guide Pile Anode Installation (OBI No. 2)

5. Factors which Constitute Potential Interruptions to Unit Operations
6. In-Progress Submittals
7. Final Government Inspection
8. Demobilization
9. Close-Out Submittals

1.2.1.1 Definitions

- A. Pre-Construction Submittals: Pre-Construction Submittals are those activities which encompass the obtaining, submission, review and approval of submittals necessary prior to the start of the related site work. KTR shall annotate all such activities into the progress schedule with their forecasted time periods. These activity periods shall not be exclusive of the contract performance period. No site work shall commence until the respective submittals have been approved.
- B. Mobilization: Mobilization is defined as having equipment AND having a physical presence of at least one person from the KTR's team on the jobsite.
- C. Work Activities: The value of all major work components within the project shall be identified on the Schedule of Values on a unit quantity and unit cost basis, e.g. number of squares and cost per square of roofing, number of lineal feet and cost per lineal foot of conduit, number of panels and cost per.

1.2.2 Format

The Construction Schedule shall be provided in a horizontal Gantt-chart format and prepared using MS PROJECT or approved equal. Include any constraints and work restrictions (e.g., exclusionary periods, holidays, government scheduled events, etc.), phasing, work performed by the government, staging of construction for major portions of the work, and milestones. Subdivide schedule into sufficient number of work activities to accurately display the work schedule, sequence of work, activity duration, and interdependence of each activity. Clearly show the activities of the critical path. The critical path is defined as the longest path.

The Schedule of Values shall be provided on the attached KTR's Schedule of Values form.

Provide one (1) electronic copy of both the Construction Schedule and Schedule of Values in PDF format as well as one (1) electronic copy of the Construction Schedule in MS PROJECT format prior to the start of construction. Provide updated versions in accordance with paragraph Updated Schedules.

1.2.3 KTR Schedule Responsibilities

The Construction Schedule and Schedule of Values as approved by the Government is not a substitute for quantities conveyed by the specification and drawings and those required for a complete job. Omissions and errors on the Construction Schedule and Schedule of Values

are the responsibility of the KTR. Payments will not be made until the schedule of prices has been submitted to and approved by the KO.

1.2.4 UPDATED SCHEDULES

Update the Construction Schedule, Schedule of Values, and equipment delivery schedule at monthly intervals or when schedule has been revised. Reflect any changes occurring once the last update. Submit copies of the purchase orders and confirmation of the delivery dates as directed.

1.3 PROJECT SCHEDULER QUALIFICATIONS

Designate an authorized representative to be responsible for the preparation of the schedule and all required updating and production of reports. The authorized representative must have a minimum of [2] years of experience scheduling construction projects similar in size and nature to this project with scheduling software that meets the requirements of this specification. Representative must have a comprehensive knowledge of CPM scheduling principles and application. Qualifications shall be submitted upon request of the COR.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

3.1.1 Withholdings / Payment Rejection

Failure to meet the requirements of this specification may result in the disapproval of the preliminary, initial or periodic schedule updates and subsequent rejection of payment requests until compliance is met.

In the event that the KO directs schedule revisions and those revisions have not been included in subsequent Project Schedule revisions or updates, the KO may withhold 10 percent of pay request amount from each payment period until such revisions to the project schedule have been made.

3.2 PROJECT SCHEDULE DETAILED REQUIREMENTS

3.2.1 Level of Detail Required

Develop the Project Schedule to the appropriate level of detail to address major milestones and to allow for satisfactory project planning and execution. Failure to develop the Project Schedule to an appropriate level of detail will result in its disapproval. The KO will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

3.2.2 Procurement Activities

Include activities associated with the critical submittals and their approvals, procurement, fabrication, and delivery of long lead materials, equipment, fabricated assemblies, and supplies. Long lead procurement

activities are those with an anticipated procurement sequence of over 30 calendar days.

3.2.3 Government Activities

Show Government and other agency activities that could impact progress. These activities include, but are not limited to: approvals, environmental permit approvals by State and/or Federal regulators, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.2.4 Phase of Work

Assign Phase of Work to all activities. Examples of phase of work are procurement phase and construction phase.

3.2.5 Out-of-Sequence Progress

Activities that have progressed before all preceding logic has been satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case basis subject to approval by the KO. Propose logic corrections to eliminate out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule.

3.2.6 Added and Deleted Activities

Do not delete activities from the project schedule or add new activities to the schedule without approval from the KO. Activity number and description changes are considered new activities and cannot be changed without KO approval.

3.2.7 Percent Complete

Update the percent complete for each activity started, based on the realistic assessment of earned value.

3.2.8 Remaining Duration

Update the remaining duration for each activity based on the number of estimated work days it will take to complete the activity.

3.3 REQUESTS FOR TIME EXTENSIONS

Provide a justification of delay to the KO in accordance with the contract provisions and clauses for approval within 10 days of a delay occurring. Also prepare a time impact analysis for each Government request for proposal (RFP) to justify time extensions.

3.3.1 Justification of Delay

Provide a description of the event(s) that caused the delay and/or impact to the work. As part of the description, identify all schedule activities impacted. Show that the event that caused the delay/impact was the responsibility of the Government. Provide a time impact analysis that demonstrates the effects of the delay or impact on the project completion date or interim completion date(s).

3.3.2 Time Extension

The KO must approve the Justification of Delay including the time impact analysis before a time extension will be granted. No time extension will be granted unless the delay consumes all available Project Float and extends the projected finish date ("End Project" milestone) beyond the Contract Completion Date. The time extension will be in calendar days.

Actual delays that are found to be caused by the KTR's own actions, which result in a calculated schedule delay will not be a cause for an extension to the performance period, completion date, or any interim milestone date.

3.4 FAILURE TO ACHIEVE PROGRESS

Should the progress fall behind the approved project schedule for reasons other than those that are excusable within the terms of the contract, the KO may require provision of a written recovery plan for approval. The plan must detail how progress will be made-up to include which activities will be accelerated by adding additional crews, longer work hours, extra work days, etc.

3.4.1 Failure to Perform

Failure to perform work and maintain progress in accordance with the supplemental recovery plan may result in an interim and final unsatisfactory performance rating and may result in corrective action directed by the KO pursuant to FAR 52.236-15 Schedules for Construction Contracts, FAR 52.249-10 Default (Fixed-Price Construction), and other contract provisions.

3.5 MODIFICATIONS

When a modification is issued by the Government, record the modification as the last activity of the Construction Schedule and Schedule of Values and include the value of the modification. Adjust the Schedule of Values to reflect the inclusion of the modification. Revise the Construction Schedule portion of the form to annotate the progress change. Enter all modifications in this manner in sequential order.

--End of Section--

REPAIR WATERFRONT
USCG STA MONTAUK, MONTAUK, NY

13174398
APR 2024

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Contractor's Schedule of Values

Project Title:	REPAIR WATERFRONT	Contractor Name & Address:
Project PSN:	13174398	
Project Location:	STA MONTAUK	
Issue/Date:	Apr-24	
Contract Number:		
Task Order Number:		

Contract Work Item		Estimated Cost	Percentage of Total Contract Cost
1	Bonds	\$ -	
2	Pre-Construction Submittals	\$ -	
3	Mobilization	\$ -	
4	Work Activities	\$ -	
4A	Concrete Floating Dock - Small Boat Demolition	\$ -	
4B	Concrete Floating Dock - Small Boat Replacement	\$ -	
4C	Concrete Floating Dock - Small Boat Guide Pile Installation	\$ -	
4D	Concrete Floating Dock - Small Boat Shore Tie and Electrical Line Installation	\$ -	
4E	Fixed Timber Pier Repair	\$ -	
4F	Stone Gabion Bulkhead Repairs	\$ -	
4G	WPB Floating Pier Repairs (OBI No. 1)	\$ -	
4H	WPB Floating Pier Guide Pile Recoating (OBI No. 2)	\$ -	
4I	WPB Floating Pier Guide Pile Anode Installation (OBI No. 2)	\$ -	
5	Factors which Constitute Potential Interruptions to Unit Operations	\$ -	
6	In-Progress Submittals	\$ -	
7	Final Government Inspection	\$ -	
8	Demobilization	\$ -	
9	Close-Out Submittals	\$ -	
10			
11			
12			
13			
14			
15			
16			
17			
18			
TOTAL COST:		\$ -	0%

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Submittal

Shop drawings, product data, samples, and administrative submittals shall be presented for review and approval. Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals."

1.1.2 Types of Submittals

Submittals shall be classified as indicated in paragraph "Submittal Descriptions (SD)". Submittals may also be grouped as follows:

- a. Shop drawings: As used in this section, drawings, schedules, diagrams, and other data submitted by Contractor prepared specifically for this contract by Contractor, subcontractor, manufacturer, supplier, distributor, or other lower tier contractor, to illustrate portion(s) of work.
- b. Product data: Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate portion of work, but not prepared exclusively for this contract.
- c. Samples: Physical examples of products, materials, equipment, assemblies, or workmanship that are physically identical to the portion of work, illustrating portion of work or establishing standards for evaluating appearance of finished work or both.
- d. Administrative submittals: Data presented for reviews and approval to ensure that administrative requirements of the project are adequately met but not to ensure directly that work is in accordance with design concept and in compliance with contract documents.

1.1.3 Submittal Descriptions (SD)

SD-01 Preconstruction Submittals

Construction Progress Schedule
Submittal Register
Schedule of Values
Health and Safety Plan
Work Plan
Quality Control (QC) Plan
Environmental Protection Plan

SD-02 Shop Drawings

Drawings, diagrams, and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

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-04 Samples

Fabricated or unfabricated physical examples of materials, equipment, or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuing work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion 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 the 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. (Testing must have been within three years of date of contract award for the project.)

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

Report which 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 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 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 purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods, or personnel qualifications.

Confined space entry permits.

SD-08 Manufacturer's Instructions

Preprinted material describing the installation of a product, system, or material, including special notices and Material Safety Data Sheets concerning impedances, hazards, and safety precautions.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative at the job site, in the vicinity of the job site, or on a sample taken from the job site, on a portion of the work, during or after installation, to confirm compliance with manufacturer's standards or instructions. The documentation must be signed by an authorized official of a testing laboratory or agency and must state the test results; and indicate whether the material, product, or system has passed or failed the test.

Factory test reports.

SD-10 Operation and Maintenance Data

Data that is furnished by the manufacturer, or the system provider, to the equipment operating and maintenance personnel, including manufacturer's help and product line documentation necessary to maintain and install equipment. This data is needed by operating and maintenance personnel for the safe and efficient operation, maintenance, and repair of the item.

This data is intended to be incorporated in an operations and maintenance manual or control system.

SD-11 Closeout Submittals

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

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.

SD-12 Facilities Preventative Maintenance Program (FPMP)

The KTR shall develop and submit an FPMP for all newly constructed or installed infrastructure that accurately identifies the preventive maintenance required to professionally maintain each system or piece of equipment provided in this contract.

1.1.4 Approving Authority

Person authorized to approve submittal.

1.1.5 Work

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

1.2 SUBMITTALS

Submit the following in accordance with the requirements of this section.

1.2.1 SD-01 Preconstruction Submittals

Submittal register

Approval of the above submittal is required prior to the start of construction.

1.3 USE OF SUBMITTAL REGISTER

Prepare and maintain submittal register, as the work progresses.

1.3.1 Submittal Register

Submit submittal register. Do not change data in columns (a), (b), (c), and (d) as delivered by the Government. Verify that all submittals required for the project are listed and add missing submittals. Complete the following on the register:

Column (e) Scheduled Submittal Date: Scheduled date for approving authority to receive submittals.

Column (f) Date Forwarded to Approving Authority: Actual date submittal is forwarded to Approving Authority.

1.4 PROCEDURES FOR SUBMITTALS

1.4.1 Reviewing, Certifying, Approving Authority

Government organization shall be responsible for reviewing and certifying that submittals are in compliance with contract requirements. Approving

authority on submittals is the Project Manager unless otherwise specified for specific submittal.

1.4.2 Constraints

- a. Submittals listed or specified in this contract shall conform to provisions of this section, unless explicitly stated otherwise.
- b. Submittals shall be complete for each definable feature of work; components of definable feature interrelated as a system shall be submitted at the same time.
- c. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, the submittal will be returned without review.
- d. Approval of a separate material, product, or component does not imply approval of assembly in which item functions.

1.4.3 Scheduling

- a. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential requirements to resubmit.
- b. Except as specified otherwise, allow review period, beginning with receipt by approving authority, that includes at least 10 working days. Period of review for each re-submittal is the same as for initial submittal. Allow longer time periods where processing must be coordinated with subsequent submittals.
- c. No time extensions shall be authorized because of the Contractor's failure to transmit submittals to the USCG sufficiently in advance of the work.

1.4.4 Variations

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

1.4.4.1 Considering Variations

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

1.4.4.2 Proposing Variations

When proposing variation, deliver a written request to the Contracting Officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to the Government. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals

required for the item. Clearly mark the proposed variation in all documentation.

1.4.4.3 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.

1.4.4.4 Review Schedule Is Modified

In addition to normal submittal review period, a period of 5 working days will be allowed for consideration by the Government of submittals with variations.

1.4.5 Contractor's Responsibilities

- a. Determine and verify field measurements, materials, and field construction criteria; review each submittal; and check and coordinate each submittal with requirements of the work and contract documents.
- b. Transmit submittals to the Contracting Officer in accordance with the schedule on the approved Submittal Register, and to prevent delays in the work, delays to the Government, or delays to separate contractors.
- c. Advise Contracting Officer of variations, as required by paragraph entitled "Variations."
- d. Correct and resubmit submittals as directed by the approving authority. When resubmitting disapproved transmittals or transmittals noted for re-submittal, the Contractor shall provide a copy of that previously submitted transmittal, including all reviewer comments, for use by the approving authority. Direct specific attention in writing or on resubmitted submittal to revisions not requested by the approving authority on previous submissions.
- e. Furnish additional copies of submittals when requested by the Contracting Officer.
- f. Complete work which must be accomplished as basis of a submittal in time to allow submittal to occur as scheduled.
- g. Ensure no work has begun until submittals for that work have been returned as "approved," except to the extent that a portion of work must be accomplished as basis of the submittal.

1.4.6 Government Responsibilities

- a. Note the date on which the submittal was received from the Contractor on each Contract Item Approval Request Form.
- b. Review each submittal and check and coordinate each submittal with requirements of work and contract documents.
- c. Review submittals for conformance with project design concepts and compliance with the contract documents.

- d. Ensure that material is clearly legible.
- e. Review submittals for approval within the scheduling period specified and only for conformance with project design concepts and compliance with the contract documents.
- f. Identify returned submittals with one of the actions defined in the paragraph entitled "Actions Possible" and with markings appropriate for the action indicated.

1.4.7 Actions Possible

Submittals will be returned with one of the following notations:

- a. Submittals marked "approved" "approved as submitted" authorize the Contractor to proceed with the work covered.
- b. Submittals marked "approved" "see below" authorize the Contractor to proceed with the work as noted provided the Contractor takes no exception to the notations.
- c. Submittals marked "disapproved" indicate that the submittal is incomplete or does not comply with the design concept or requirements of the contract documents and shall be resubmitted with the appropriate changes. No work shall proceed for this item until the re-submittal is approved.

1.5 FORMAT OF SUBMITTALS

1.5.1 Transmittal Form

Transmit each submittal electronically, unless otherwise noted in the submittal register and/or where electronic submission is not feasible (i.e. samples), to the office of approving authority. The maximum file size that may be emailed is 10 MB; anything larger must be submitted via hard copy or on a CD. Transmit submittals with the transmittal form prescribed by the Contracting Officer and standard for the project. The transmittal form shall identify the Contractor, indicate the date of submittal, and include information prescribed by the transmittal form and required in the paragraph entitled "Identifying Submittals." Process transmittal forms to record actions regarding sample panels and sample installations. Note: Submittals requiring hard copy submission shall be provided with the carbon copy transmittal form provided by the Government.

1.5.2 Identifying Submittals

Identify submittals, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and transmittal form. The maximum file size for electronic email submittals shall be no larger than 10 MB. Identify each copy of each submittal identically, with the following:

- a. Project title and location.
- b. Construction contract number.

- c. Section number of the specification section by which submittal is required.
- d. Submittal description (SD) number of each component of submittal.
- e. When a resubmission, alphabetic suffix on submittal description, for example, SD-10A, to indicate resubmission.
- f. Name, address, and telephone number of subcontractor, supplier, manufacturer and any other second tier contractor associated with the submittal.
- g. Product identification and location in project.

1.5.3 Format for Product Data

- a. Present product data submittals for each section as a complete, bound volume. Include table of contents, listing page, and catalog item numbers for product data.
- b. Indicate, by prominent notation, each product which is being submitted; indicate specification section number and paragraph number to which it pertains.
- c. Supplement the product data with material prepared for the project to satisfy the submittal requirements for which the product data does not exist. Identify this material as developed specifically for the project.

1.5.4 Format for Shop Drawings

- a. Shop drawings shall not be less than 8 1/2 by 11 inches nor more than 30 by 42 inches.
- b. Present 8 1/2 by 11 inches sized shop drawings as part of the submittals required by section. Present larger drawings in sets.
- c. Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph entitled "Identifying Submittals."
- d. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Shop drawing dimensions shall be the same unit of measure as indicated on the contract drawings. Identify the materials and products for the work shown.

1.5.5 Format of Samples

- a. Furnish samples in sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately same size as specified:
 - (1) Sample of Equipment or Device: Full size.
 - (2) Sample of Materials Less Than 2 by 3 inches: Built up to 8 1/2 by 11 inches.

(3) Sample of Materials Exceeding A4 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.

(4) 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.

(5) Sample of Non-Solid Materials: Pint. Examples of non-solid materials are sand and paint.

(6) Color Selection Samples: 2 by 4 inches.

(7) Sample Panel: 4 by 4 feet.

(8) Sample Installation: 100 square feet.

- b. Samples Showing Range of Variation: Where variations are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range.
- c. Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples are to be in undamaged condition at time of use.
- d. Recording of Sample Installation: Note and preserve the notation of area constituting sample installation but remove notation at final clean up of project.
- e. When color, texture or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

1.5.6 Format of Administrative Submittals

- a. When the submittal includes a document which is to be used in the project or become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document, but to a separate sheet accompanying document.
- b. Operation and Maintenance Manual Data: Submit in accordance with Section 01 78 23, OPERATION AND MAINTENANCE DATA. Include components required in that section and the various technical sections.

1.6 QUANTITY OF SUBMITTALS

1.6.1 Number of Copies of Product Data

When a hard copy submission is required, submit four (4) copies of the submittals of product data.

1.6.2 Number of Copies of Shop Drawings

Submit shop drawings in compliance with the quantity requirements specified for the product data.

1.6.3 Number of Samples

- a. Submit two (2) samples, or two (2) sets of samples showing 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 (1) sample panel. Include components listed in the technical section or as directed.
- c. Submit one (1) sample installation, where directed.
- d. Submit one (1) sample of non-solid materials.

1.6.4 Number of Copies SD-05 Design Data and SD-07 Certificates

Submit in compliance with quantity requirements specified for shop drawings.

1.6.5 Number of Copies of Administrative Submittals

- a. Unless otherwise specified, submit administrative submittals in compliance with the quantity requirements specified for the product data.
- b. Submit administrative submittals required under "SD-10 Operation and Maintenance Manuals" to conform to Section 01 78 23, OPERATION AND MAINTENANCE DATA.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

--End of Section--

TITLE: REPAIR WATERFRONT - APR 2024

PSN: 13174398

LOCATION: USCG STA MONTAUK, MONTAUK, NY

CONTRACT NO:

CONTRACTOR:

SUBMITTAL REGISTER

						CONTRACTOR ACTION		APPROVING AUTHORITY				CCE	
(a)	(b)	(c)			(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
Line	Specification Section	SD #	Submittal Description	Item Submitted	Paragraph #	Scheduled Submittal Date	Date FWD to APPR / Auth Date RCD From CONTR	Date FWD To Other Revwr	Date RCD From Other Revwr	Action Code	Date Of Action	Date Reviewed	Status
1	01 32 00	01	Preconstruction Submittals	Construction Schedule	1.2								
2		01	Preconstruction Submittals	Schedule of Values	1.2								
3	01 33 00	01	Preconstruction Submittals	Submittal Register	1.2								
4	01 35 26	01	Preconstruction Submittals	Accident Prevention Plan (APP)	1.8								
5		06	Test Reports	Monthly Exposure Report	1.4								
6		06	Test Reports	Notifications and Reports	1.13								
7		06	Test Reports	Accident Reports	1.13.2								
8		06	Test Reports	LHE Inspection Reports	1.13.3								
9		07	Certificates	Crane Operator/Riggers	1.7.1.6								
10		07	Certificates	Standard Lift Plan	1.8.3.2								
11		07	Certificates	Critical Lift Plan	1.8.3.3								
12		07	Certificates	Naval Architecture Analysis	1.8.3.4								
13		07	Certificates	Activity Hazard Analysis (AHA)	1.9								
14		07	Certificates	Hot Work Permit	1.14								
15		07	Certificates	Certificate of Compliance	1.13.4								
16		07	Certificates	Third Party Certification of Barge-Mounted Mobile Cranes	1.13.5								
17		07	Certificates	License Certificates	3.6.3								
18		07	Certificates	Machinery and Mechanized Equipment Certification Form	3.6.3								
19	01 45 00.00 10	01	Preconstruction Submittals	Contractor Quality Control Plan	3.2								
20		01	Preconstruction Submittals	Soils Testing Laboratory Qualifications	3.7								
21		06	Test Reports	Verification Statement	3.9.2								
22	01 50 00	01	Preconstruction Submittals	Construction Site Plan	1.3								
23	01 57 19	01	Preconstruction Submittals	Preconstruction Survey	1.6.1								
24		01	Preconstruction Submittals	Preconstruction Regulatory Notifications	1.6.2								
25		01	Preconstruction Submittals	Environmental Protection Plan	1.7								
26		01	Preconstruction Submittals	Dirt and Dust Control Plan	1.7.6.1								
27		06	Test Reports	Waste Determination Laboratory Analysis	3.7.3.3.1.3								
28		11	Closeout Submittals	Records	1.9								
29		11	Closeout Submittals	Waste Determination Documentation	3.7.1								
30		11	Closeout Submittals	Disposal Documentation for Hazardous and Regulated Waste	3.7.2.1								
31		11	Closeout Submittals	Project Solid Waste Disposal Documentation Report	3.7.2.2								

TITLE: REPAIR WATERFRONT - APR 2024

PSN: 13174398

LOCATION: USCG STA MONTAUK, MONTAUK, NY

CONTRACT NO:

CONTRACTOR:

SUBMITTAL REGISTER

						CONTRACTOR ACTION		APPROVING AUTHORITY				CCE	
(a)	(b)	(c)			(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
32		11	Closeout Submittals	Contractor Hazardous Material Inventory Log	3.8.1								
33		11	Closeout Submittals	Post Construction Regulatory Notifications	1.6.2								
34	01 77 00	11	Closeout Submittals	As-Built Drawings (Provide Monthly w/ Pay Application)	2.1, 3.1								
35		11	Closeout Submittals	Record Drawings	2.2, 3.2								
36		11	Closeout Submittals	Final Approved Shop Drawings	3.3								
37	01 78 23	10	Operation and Maintenance Data	O&M Data Files: Concrete Floating Dock - Small Boat	1.3 - 1.6								
38		11	Closeout Submittals	Validation of Training Completion: Concrete Floating Dock - Small Boat	3.1, 3.2								
39	01 80 00	12	Facilities Preventative Maintenance Program	Equipment Enrollment Form	1.1, 2.1								
40		12	Facilities Preventative Maintenance Program	Job Plan	1.1, 2.1								
41	02 41 00	01	Preconstruction Submittals	Existing Conditions Survey Drawings and Photographs	1.4								
42		01	Preconstruction Submittals	Demolition and Deconstruction Plan	1.5								
43		07	Certificates	Notifications	1.7								
44	05 50 15	01	Preconstruction Submittals	Welder's Certification	1.3.5								
45		01	Preconstruction Submittals	Welding Procedures	3.1.2								
46		02	Shop Drawings	Fabrication Drawings	1.3.1								
47		03	Product Data	Welding Electrods and Rods	2.2								
48		07	Certificates	Steel Material Certifications	1.3.2								
49		07	Certificates	Coating Certificates	1.3.3								
50		07	Certificates	Manufacturer's Certification of Compliance	1.3.4								
51	09 97 13.26	01	Preconstruction Submittals	Coating Removal Containment and Waste Processing Plan	1.8								
52		01	Preconstruction Submittals	Coating Work Plan	1.4.4								
53		01	Preconstruction Submittals	Quality Control Plan	1.4.1								
54		01	Preconstruction Submittals	Corrective Action Plan	1.4.5.1								
55		01	Preconstruction Submittals	Qualifications	1.4.2								
56		01	Preconstruction Submittals	Inspection Plan	1.4.6								
57		03	Product Data	Coating System	2.1								
58		04	Samples	Coating Test Samples	2.1								
59		06	Test Reports	Final Coating Thickness and Holiday Test Reports	1.4.6.1, 3.5								
60		07	Certificates	Coating System	2.1								
61		07	Certificates	Blast Material	2.1.2								
62	26 05 19.00 10	03	Product Data	Installation Instructions	1.2, 1.5.1								
63		06	Test Reports	Test, Inspections, and Verifications	1.2, 1.5.2								
64	26 27 29	02	Shop Drawings	Installation Instructions	1.3								
65		03	Product Data	Test, Inspections, and Verifications	1.3								
66		06	Test Reports	Coating System Instructions for Shop Application and Field Repair	1.3								

TITLE: REPAIR WATERFRONT - APR 2024

PSN: 13174398

LOCATION: USCG STA MONTAUK, MONTAUK, NY

CONTRACT NO:

CONTRACTOR:

SUBMITTAL REGISTER

					CONTRACTOR ACTION		APPROVING AUTHORITY				CCE		
(a)	(b)		(c)		(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
67	26 42 13.00 20	01	Preconstruction Submittals	Anode Installation Plan	1.4								
68		03	Product Data	Catalog Cuts for Anodes	1.5								
69		03	Product Data	Technical Data for Anodes	1.5								
70		11	Closeout Submittals	Record Documents and As-Built Drawings	1.6								
71	31 00 00	01	Preconstruction Submittals	Earthwork Permits (Dig Safe)	1.7								
72		01	Preconstruction Submittals	Notification Prior to Excavation	1.7.1								
73		03	Product Data	Construction Equipment	1.5								
74		05	Design Data	Shoring Plan (if shoring is proposed)	3.3								
75		06	Test Reports	Source Investigation Soils Testing Reports in Accordance with 01 45 00.00 10, Table 1	1.4.4								
76		06	Test Reports	During Placement Soils Testing Reports in Accordance with 01 45 00.00 10, Table 1	1.4.4								
77		06	Test Reports	As-Placed Soils Testing Reports in Accordance with 01 45 00.00 10, Table 1	1.4.4								
78		06	Test Reports	Contaminant Soil Testing	2.1								
79	31 05 19	03	Product Data	Geotextile	1.3.1								
80		07	Certificates	Geotextile Certificate of Compliance	1.3.1, 2.1								
81		07	Certificates	Geotextile Roll Mill Certificates	1.3.1								
82	31 36 00	03	Product Data	Gabion Baskets and Gabion Repair Patches	1.6.1								
83		03	Product Data	Ring Fasteners and Lacing Wire	1.6.1								
84		04	Samples	Gabion Baskets and Gabion Repair Patches	1.6.2								
85		04	Samples	Ring Fasteners and Lacing Wire	1.6.2								
86		04	Samples	Stone Fill	1.6.2								
87		06	Test Reports	Gabion Baskets and Gabion Repair Patches	1.6.3								
88		06	Test Reports	Ring Fasteners	1.6.3								
89		06	Test Reports	Source Investigation Soils Testing Reports in Accordance with 01 45 00.00 10, Table 1	1.5.3								
90		06	Test Reports	During Placement Soils Testing Reports in Accordance with 01 45 00.00 10, Table 1	1.5.3								
91		07	Certificates	Gabion Baskets and Gabion Repair Patches	1.6.1, 2.1.1								
92		07	Certificates	Ring Fasteners and Lacing Wire	1.6.1, 2.1.3								
93		07	Certificates	Stone Fill	1.6.1, 2.1.4								

TITLE: REPAIR WATERFRONT - APR 2024	
PSN: 13174398	
LOCATION: USCG STA MONTAUK, MONTAUK, NY	
CONTRACT NO:	
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SUBMITTAL REGISTER

					CONTRACTOR ACTION		APPROVING AUTHORITY				CCE		
(a)	(b)		(c)		(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
94	31 62 16.16	02	Shop Drawings	Guide Pile Layout Drawings and Installation Procedures	1.3.1								
95		02	Shop Drawings	Pile Splices	2.1.2								
96		03	Product Data	Pile Cap	2.1.3								
97		03	Product Data	Pile Driving Equipment	3.1								
98		03	Product Data	Pile Driving Record Form	3.2.2								
99		03	Product Data	Delivery, storage, and handling	1.4								
100		07	Certificates	Steel Material Certifications	1.3.2								
101		11	Closeout Submittals	Pile Driving Records	3.2.2								
102		11	Closeout Submittals	Pile As-Built Location Survey	3.2.3.1								
103	32 92 19	2	Shop Drawings	Site Restoration and Seeding Plan	1.7								
104		3	Product Data	Fertilizer	1.3.2, 3.2.4								
105		6	Test Reports	Topsoil Composition Tests	3.2.3								
106		7	Certificates	State Certification and Approval for Seed	2.1.1								
107		8	Manufacturer's Instructions	Erosion Control Materials	2.6								
108	35 51 13.00 20	1	Preconstruction Submittals	Concrete Floating Dock System Manufacturer's Qualifications	1.4								
109		1	Preconstruction Submittals	Concrete Floating Dock System Manufacturer's Warranty	1.4, 1.9								
110		2	Shop Drawings	Drawings of Precast Float System	1.8.1								
111		3	Product Data	Floating Dock System Catalogs, Illustrations, and Brochures	1.3								
112		3	Product Data	Anchorage and Lifting Insert Devices	1.3								
113		3	Product Data	Fender Elements	2.5								
114		3	Product Data	Mooring Hardware	2.2.7.6								
115		3	Product Data	Pile Guide Frame, Rub Blocks, and Rollers	2.7								
116		5	Design Data	Precast Concrete Float and Guide Pile Design Calculations	1.8.2								
117		5	Design Data	Concrete Mix Design	1.8.3								
118		6	Test Reports	Contractor-Furnished Performance Reports	1.3, 3.8								
119		6	Test Reports	Concrete Field and Lab Test Reports	1.5.3.1								
120		6	Test Reports	Chloride Ion Penetration Test Results	1.8.4								
121		7	Certificates	Fabrication Certificates	1.8.1								
122		8	Manufacturer's Instructions	Handling and Dock System Installation Instructions	1.8.5								
123		11	Closeout Submittals	As-Built Drawings	1.3								
124		11	Closeout Submittals	Operation and Maintenance Data	1.8.5								

SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS
02/22

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 MECHANICAL ENGINEERS (ASME)

ASME B30.3	(2020) Tower Cranes
ASME B30.5	(2021) Mobile and Locomotive Cranes
ASME B30.7	(2021) Winches
ASME B30.8	(2020) Floating Cranes and Floating Derricks
ASME B30.9	(2018) Slings
ASME B30.20	(2018) Below-the-Hook Lifting Devices
ASME B30.22	(2016) Articulating Boom Cranes
ASME B30.23	(2016) Personnel Lifting Systems Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings
ASME B30.26	(2015; R 2020) Rigging Hardware

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.22	(2007; R 2017) Safety Requirements for Rope- Guided and Non-Guided Workers' Hoists
ASSP A10.34	(2021) Protection of the Public on or Adjacent to Construction Sites
ASSP A10.44	(2020) Control of Energy Sources (Lockout/Tagout) for Construction and Demolition Operations
ASSP Z244.1	(2016) The Control of Hazardous Energy Lockout, Tagout and Alternative Methods
ASSP Z359.0	(2018) Definitions and Nomenclature Used for Fall Protection and Fall Arrest
ASSP Z359.1	(2020) The Fall Protection Code

ASSP Z359.2	(2017) Minimum Requirements for a Comprehensive Managed Fall Protection Program
ASSP Z359.3	(2019) Safety Requirements for Lanyards and Positioning Lanyards
ASSP Z359.4	(2013) Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components
ASSP Z359.6	(2016) Specifications and Design Requirements for Active Fall Protection Systems
ASSP Z359.7	(2019) Qualification and Verification Testing of Fall Protection Products
ASSP Z359.11	(2014) Safety Requirements for Full Body Harnesses
ASSP Z359.12	(2019) Connecting Components for Personal Fall Arrest Systems
ASSP Z359.13	(2013) Personal Energy Absorbers and Energy Absorbing Lanyards
ASSP Z359.14	(2014) Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems
ASSP Z359.15	(2014) Safety Requirements for Single Anchor Lifelines and Fall Arresters for Personal Fall Arrest Systems
ASSP Z359.16	(2016) Safety Requirements for Climbing Ladder Fall Arrest Systems
ASSP Z359.18	(2017) Safety Requirements for Anchorage Connectors for Active Fall Protection Systems
ASSP Z490.1	(2016) Criteria for Accepted Practices in Safety, Health, and Environmental Training

ASTM INTERNATIONAL (ASTM)

ASTM F855	(2019) Standard Specifications for Temporary Protective Grounds to Be Used on De-energized Electric Power Lines and Equipment
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INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 1048	(2016) Guide for Protective Grounding of Power Lines
IEEE C2	(2017; Errata 1-2 2017; INT 1 2017) National Electrical Safety Code

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

NASA NPR 8621.1 (2020d) NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping

NASA NPR 8715.3 (2017d; Change 1) NASA General Safety Program Requirements

NASA-STD 8719.12 (2021a; Change 2) Safety Standard for Explosives, Propellants, and Pyrotechnics

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA Z535.2 (2011; R 2017) Environmental and Facility Safety Signs

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10 (2022) Standard for Portable Fire Extinguishers

NFPA 51B (2019; TIA 20-1) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

NFPA 70 (2020; ERTA 20-1 2020; ERTA 20-2 2020; TIA 20-1; TIA 20-2; TIA 20-3; TIA 20-4) National Electrical Code

NFPA 70E (2021) Standard for Electrical Safety in the Workplace

NFPA 241 (2022) Standard for Safeguarding Construction, Alteration, and Demolition Operations

NFPA 306 (2019) Standard for the Control of Gas Hazards on Vessels

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety -- Safety and Health Requirements Manual

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

29 CFR 1910 Occupational Safety and Health Standards

29 CFR 1910.146 Permit-required Confined Spaces

29 CFR 1910.147 The Control of Hazardous Energy (Lock Out/Tag Out)

29 CFR 1910.333 Selection and Use of Work Practices

29 CFR 1915 Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment

29 CFR 1915.89	Control of Hazardous Energy (Lockout/Tags-Plus)
29 CFR 1919	Gear Certification
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.16	Rules of Construction
29 CFR 1926.450	Scaffolds
29 CFR 1926.500	Fall Protection
29 CFR 1926.552	Material Hoists, Personal Hoists, and Elevators
29 CFR 1926.553	Base-Mounted Drum Hoists
29 CFR 1926.1400	Cranes and Derricks in Construction
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
CPL 02-01-056	(2014) Inspection Procedures for Accessing Communication Towers by Hoist
CPL 2.100	(1995) Application of the Permit-Required Confined Spaces (PRCS) Standards, 29 CFR 1910.146

1.2 DEFINITIONS

1.2.1 Competent Person (CP)

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

1.2.2 Competent Person, Confined Space

The CP, Confined Space, is a person meeting the competent person requirements as defined EM 385-1-1 Appendix Q, with thorough knowledge of OSHA's Confined Space Standard, 29 CFR 1910.146, and designated in writing to be responsible for the immediate supervision, implementation and monitoring of the confined space program, who through training, knowledge and experience in confined space entry is capable of identifying, evaluating and addressing existing and potential confined space hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.3 Competent Person, Cranes and Rigging

The CP, Cranes and Rigging, as defined in EM 385-1-1 Appendix Q, is a person meeting the competent person requirements, who has been designated in writing to be responsible for the immediate supervision, implementation and monitoring of the Crane and Rigging Program, who through training, knowledge and experience in crane and rigging is capable of identifying, evaluating and addressing existing and potential hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.4 Competent Person, Excavation/Trenching

A CP, Excavation/Trenching, is a person meeting the competent person requirements as defined in EM 385-1-1 Appendix Q and 29 CFR 1926, who has been designated in writing to be responsible for the immediate supervision, implementation and monitoring of the excavation/trenching program, who through training, knowledge and experience in excavation/trenching is capable of identifying, evaluating and addressing existing and potential hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.5 Competent Person, Fall Protection

The CP, Fall Protection, is a person meeting the competent person requirements as defined in EM 385-1-1 Appendix Q and in accordance with ASSP Z359.0, who has been designated in writing by the employer to be responsible for immediate supervising, implementing and monitoring of the fall protection program, who through training, knowledge and experience in fall protection and rescue systems and equipment, is capable of identifying, evaluating and addressing existing and potential fall hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.6 Competent Person, Scaffolding

The CP, Scaffolding is a person meeting the competent person requirements in EM 385-1-1 Appendix Q, and designated in writing by the employer to be responsible for immediate supervising, implementing and monitoring of the scaffolding program. The CP for Scaffolding has enough training, knowledge and experience in scaffolding to correctly identify, evaluate and address existing and potential hazards and also has the authority to take prompt corrective measures with regard to these hazards. CP qualifications must be documented including experience on the specific scaffolding systems/types being used, assessment of the base material that the scaffold will be erected upon, load calculations for materials and personnel, and erection and dismantling. The CP for scaffolding must have a documented minimum of 8-hours of scaffold training to include training on the specific type of scaffold being used (e.g. mast-climbing, adjustable, tubular frame), in accordance with EM 385-1-1 Section 22.B.02.

1.2.7 Competent Person (CP) Trainer

A competent person trainer as defined in EM 385-1-1 Appendix Q, who is qualified in the training material presented, and who possesses a working knowledge of applicable technical regulations, standards, equipment and systems related to the subject matter on which they are training Competent Persons. A competent person trainer must be familiar with the typical hazards and the equipment used in the industry they are instructing. The training provided by the competent person trainer must be appropriate to

that specific industry. The competent person trainer must evaluate the knowledge and skills of the competent persons as part of the training process.

1.2.8 High Risk Activities

High Risk Activities are activities that involve work at heights, crane and rigging, excavations and trenching, scaffolding, electrical work, and confined space entry.

1.2.9 High Visibility Accident

A High Visibility Accident is any mishap which may generate publicity or high visibility.

1.2.10 Load Handling Equipment (LHE)

LHE is a term used to describe cranes, hoists and all other hoisting equipment (hoisting equipment means equipment, including crane, derricks, hoists and power operated equipment used with rigging to raise, lower or horizontally move a load).

1.2.11 Medical Treatment

Medical Treatment is treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even when provided by a physician or registered personnel.

1.2.12 Near Miss

A Near Miss is a mishap resulting in no personal injury and zero property damage, but given a shift in time or position, damage or injury may have occurred (e.g., a worker falls off a scaffold and is not injured; a crane swings around to move the load and narrowly misses a parked vehicle).

1.2.13 Operating Envelope

The Operating Envelope is the area surrounding any crane or load handling equipment. Inside this "envelope" is the crane, the operator, riggers and crane walkers, other personnel involved in the operation, rigging gear between the hook, the load, the crane's supporting structure (i.e. ground or rail), the load's rigging path, the lift and rigging procedure.

1.2.14 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.

1.2.15 Qualified Person, Fall Protection (QP for FP)

A QP for FP is a person meeting the definition requirements of EM 385-1-1 Appendix Q, and ASSP Z359.2 standard, having a recognized degree or professional certificate and with extensive knowledge, training and

experience in the fall protection and rescue field who is capable of designing, analyzing, and evaluating and specifying fall protection and rescue systems.

1.2.16 Recordable Injuries or Illnesses

Recordable Injuries or Illnesses are any work-related injury or illness that results in:

- a. Death, regardless of the time between the injury and death, or the length of the illness;
- b. Days away from work (any time lost after day of injury/illness onset);
- c. Restricted work;
- d. Transfer to another job;
- e. Medical treatment beyond first aid;
- f. Loss of consciousness; or
- g. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (a) through (f) above

1.2.17 Government Property and Equipment

Interpret "USACE" property and equipment specified in USACE EM 385-1-1 as Government property and equipment.

1.2.18 Load Handling Equipment (LHE) Accident or Load Handling Equipment Mishap

A LHE accident occurs when any one or more of the eight elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; or collision, including unplanned contact between the load, crane, or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents, even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, or roll over). Document any mishap that meets the criteria described in the Contractor Significant Incident Report (CSIR).

1.3 SUBMITTALS

Government approval is required for submittals in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

1.3.1 SD-01 Preconstruction Submittals

Accident Prevention Plan (APP);

Approval of the above submittal is required prior to the start of construction.

1.3.2 SD-06 Test Reports

Monthly Exposure Reports
Notifications and Reports
Accident Reports
LHE Inspection Reports

Refer herein for submittal scheduling requirements.

1.3.3 SD-07 Certificates

Crane Operators/Riggers
Standard Lift Plan
Critical Lift Plan
Naval Architecture Analysis
Activity Hazard Analysis (AHA)
Hot Work Permit
Certificate of Compliance
Third Party Certification of Barge-Mounted Mobile Cranes
License Certificates
Machinery and Mechanized Equipment Certification Form

Approval of the above submittals is required prior to commencing the subject activities.

1.4 MONTHLY EXPOSURE REPORTS

Provide a Monthly Exposure Report when required and attach to the monthly billing request. 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 payment.

1.5 CONTRACTOR CHECKLIST

Not used.

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, and applicable federal, state, and local laws, ordinances, criteria, rules and regulations. 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 Personnel Qualifications

1.7.1.1 Site Safety and Health Officer (SSHO)

Provide an SSHO that meets the requirements of EM 385-1-1 Section 1. The SSHO must ensure that the requirements of 29 CFR 1926.16 are met for the project. Provide a Safety oversight team that includes a minimum of one person at each project site to function as the SSHO. The SSHO or an equally-qualified Alternate SSHO must be at the work site at all times to implement and administer the KTR's safety program and government-accepted Accident Prevention Plan. The SSHO and Alternate SSHO must have the required training, experience, and qualifications in accordance with EM 385-1-1 Section 01.A.17, and all associated sub-paragraphs.

If the SSHO is off-site for a period longer than 24 hours, an equally-qualified alternate SSHO must be provided and must fulfill the same roles and responsibilities as the primary SSHO. When the SSHO is temporarily (up to 24 hours) off-site, a Designated Representative (DR), as identified in the AHA may be used in lieu of an Alternate SSHO, and must be on the project site at all times when work is being performed. Note that the DR is a collateral duty safety position, with safety duties in addition to their full time occupation.

1.7.1.1.1 Additional Site Safety and Health Officer (SSHO) Requirements and Duties

For this Contract, the SSHO may also serve as the Quality Control Manager and Superintendent, provided that this individual meets the qualification requirements as specified herein.

The SSHO must have completed a 40 hour contract safety awareness course based on the content and principles of EM 385-1-1, and instructed in accordance with the guidelines of ASSP Z490.1, by a trainer meeting the qualifications of paragraph QUALIFIED TRAINER REQUIREMENTS. If the SSHO does not have a current certification, certification must be obtained within 60 days, maximum, of Contract award.

1.7.1.2 Competent Person Qualifications

Provide Competent Persons in accordance with EM 385-1-1, Appendix Q and herein. Competent Persons for high risk activities include confined space, cranes and rigging, excavation/trenching, fall protection, and electrical work. The CP for these activities must be designated in writing, and meet the requirements for the specific activity (i.e. competent person, fall protection).

The Competent Person identified in the KTR's Safety and Health Program and accepted Accident Prevention Plan, must be on-site at all times when the work that presents the hazards associated with their professional expertise

is being performed. Provide the credentials of the Competent Persons(s) to the KO for information in consultation with the Safety Office.

1.7.1.2.1 Competent Person for Confined Space Entry

Not used.

1.7.1.2.2 Competent Person for Scaffolding

Provide a Competent Person for Scaffolding who meets the requirements of EM 385-1-1, Section 22.B.02 and herein.

1.7.1.2.3 Competent Person for Fall Protection

Provide a Competent Person for Fall Protection who meets the requirements of EM 385-1-1, Section 21.C.04, 21.B.03, and herein.

1.7.1.3 Qualified Trainer Requirements

Individuals qualified to instruct the 40 hour contract safety awareness course, or portions thereof, must meet the definition of a Competent Person Trainer, and, at a minimum, possess a working knowledge of the following subject areas: EM 385-1-1, Electrical Standards, Lockout/Tagout, Fall Protection, Confined Space Entry for Construction; Excavation, Trenching and Soil Mechanics, and Scaffolds in accordance with 29 CFR 1926.450, Subpart L.

1.7.1.4 Requirements for all KTR Jobsite Personnel Holding H-1B or H-2B Visas:

All KTR jobsite workers holding an H-1B or H-2B visa must complete a minimum 16 hours of classroom training on the requirements of the latest version of EM 385-1-1 prior to their first day on the jobsite to include but not limited to the following topics: Sanitation; Medical and First Aid Requirements; Temporary Facilities; Personal Protective Equipment; Electrical; Hand and Power Tools; Material Handling and Storage; Motor Vehicles; Fall Protection; Work Platforms and Scaffoldings; Demolition; Safe Access, Ladders, Floor & Wall Openings, Stairs and Railing Systems; Excavations and Trenching; and Confined Spaces, prior to reporting to the jobsite.

Submit a list of workers who have completed the training to the KO prior to them reporting to the jobsite. Update the list as additional workers are added. Maintain the updated list at the jobsite for review by the Government's designated authority. Include the name and qualifications of qualified trainer(s) that provided the training. Personnel who have taken the 40 Hour Construction Safety Hazard Awareness Training Course for Contractors or similar course that includes emphasis on EM 385-1-1 compliance, are not required to take the 16 hours of classroom training on the requirements of the latest version of the EM 385-1-1. The 16 hours classroom training may be provided by the Guam Contractors Association (GCA), Trades Academy, or other qualified trainers as outlined in paragraph QUALIFIED TRAINER REQUIREMENTS.

1.7.1.5 Dredging Contract Requirements

Not used.

1.7.1.6 Crane Operators/Riggers

Provide Operators, Signal Persons, and Riggers meeting the requirements in EM 385-1-1, Section 15.B for Riggers and Section 16.B for Crane Operators and Signal Persons. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacities of 50,000 pounds or greater, designate crane operators qualified by a source that qualifies crane operators (i.e., union, a Government agency, or an organization that tests and qualifies crane operators). Provide proof of current qualification.

1.7.2 Personnel Duties

1.7.2.1 Duties of the Site Safety and Health Officer (SSHO)

The SSHO must:

- a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the KTRs' daily production report.
- b. Conduct mishap investigations and complete required accident reports. Report mishaps and near misses.
- c. Use and maintain OSHA's Form 300 to log work-related injuries and illnesses occurring on the project site for Prime KTRs and subcontractors, and make available to the KO upon request. Post and maintain the Form 300A on the site Safety Bulletin Board.
- d. Maintain applicable safety reference material on the job site.
- e. Attend the pre-construction meeting conference, pre-work meetings including preparatory meetings, and periodic in-progress meetings.
- f. Review the APP and AHAs for compliance with EM 385-1-1, and approve, sign, implement and enforce them.
- g. Establish a Safety and Occupational Health (SOH) Deficiency Tracking System that lists and monitors outstanding deficiencies until resolution.
- h. Ensure subcontractor compliance with safety and health requirements.
- i. Maintain a list of hazardous chemicals on site and their material Safety Data Sheets (SDS).
- j. Maintain a weekly list of high hazard activities involving energy, equipment, excavation, entry into confined space, and elevation, and be prepared to discuss details during QC Meetings.
- k. Provide and keep a record of site safety orientation and indoctrination for KTR employees, subcontractor employees, and site visitors.

Superintendent, QC Manager, and SSHO are subject to dismissal if the above or any other 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.

1.7.3 Meetings

1.7.3.1 Preconstruction Conference

- a. KTR 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 KTR and the KO 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.
- c. Deficiencies in the submitted APP, identified during the KO'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 KO.

1.7.3.2 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, foremen, or CDSOs 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 KO on request. Notify the KO of all scheduled meetings 7 calendar days in advance.

1.8 ACCIDENT PREVENTION PLAN (APP)

1.8.1 APP - Construction

A qualified person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1, Appendix A, and as supplemented herein. Cover all paragraph and subparagraph elements in EM 385-1-1, Appendix A. 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 KTR's overall safety and 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 KTR to be the "controlling authority" for all work site 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 by an officer of the firm (Prime KTR senior person), the individual preparing the APP, the on-site superintendent, the designated SSHO, the KTR Quality Control Manager, and any designated Certified Safety Professional (CSP) or Certified Health Physicist (CIH). 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 KO. If English is not the foreman's primary language, the Prime KTR must provide an interpreter.

Submit the APP to the KO prior to the date of the preconstruction meeting conference for acceptance. Work cannot proceed without an accepted APP. Once reviewed and accepted by the KO, 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 KO, 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 KO, 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 KO within 24 hours of discovery. Eliminate and remove the hazard. In 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 ASSP A10.34), and the environment.

1.8.2 Names and Qualifications

Provide plans in accordance with the requirements outlined in Appendix A of 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.

1.8.3 Plans

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

1.8.3.1 Confined Space Entry Plan

Not used.

1.8.3.2 Standard Lift Plan (SLP)

Plan lifts to avoid situations where the operator cannot maintain safe control of the lift. Prepare a written SLP in accordance with EM 385-1-1, Section 16.A.03, using Form 16-2 for every lift or series of lifts (if duty cycle or routine lifts are being performed). The SLP must be developed, reviewed and accepted by all personnel involved in the lift in conjunction with the associated AHA. Signature on the AHA constitutes acceptance of the plan. Maintain the SLP on the LHE for the current lift(s) being made. Maintain historical SLPs for a minimum of three months.

1.8.3.3 Critical Lift Plan - Crane or Load Handling Equipment

Provide a Critical Lift Plan as required by EM 385-1-1, Section 16.H.01, using Form 16-3. In addition, Critical Lift Plans are required for the following:

- a. Lifts over 50 percent of the capacity of barge mounted mobile crane's hoist.
- b. When working around energized power lines where the work will get closer than the minimum clearance distance in EM 385-1-1 Table 16-1.
- c. For lifts with anticipated binding conditions.
- d. When erecting cranes.

1.8.3.3.1 Critical Lift Plan Planning and Schedule

Critical lifts require detailed planning and additional or unusual safety precautions. Develop and submit a critical lift plan to the KO 30 calendar days prior to critical lift. Comply with load testing requirements in accordance with EM 385-1-1, Section 16.F.03.

1.8.3.3.2 Lifts of Personnel

In addition to the requirements of EM 385-1-1, Section 16.H.02, for lifts of personnel, demonstrate compliance with the requirements of 29 CFR 1926.1400 and EM 385-1-1, Section 16.T.

1.8.3.4 Barge Mounted Mobile Crane Lift Plan

Provide a Naval Architecture Analysis and include an LHE Manufacturer's Floating Service Load Chart in accordance with EM 385-1-1, Section 16.L.03. The Floating Service Load Chart must provide a table of rated load versus boom angle and radius. The Floating Service Load Chart must also provide the maximum allowable machine list and trim associated with the tabular loads and radii provided. If the Manufacturer's Floating Service Load Chart is not available, a floating service load chart may be developed and provided by a qualified Registered Professional Engineer (RPE), competent in the field of floating cranes. The Load Chart must be in accordance with the criteria from the selected standard in EM 385-1-1, Section 16.L; provide a table of rated load versus boom angle and radius; provide the maximum allowable machine list and machine trim associated with the tabular loads and radii provided; and be stamped by a RPE qualified and competent in the field of floating cranes. The RPE, competent in the field of

floating cranes must stamp and certify (sign) that the Naval Architectural Analysis (NAA) meets the requirements of EM 385-1-1, Section 16.L.03.

1.8.3.5 Multi-Purpose Machines, Material Handling Equipment, and Construction Equipment Lift Plan

Multi-purpose machines, material handling equipment, and construction equipment used to lift loads that are suspended by rigging gear, require proof of authorization from the machine OEM that the machine is capable of making lifts of loads suspended by rigging equipment. Written approval from a qualified registered professional engineer, after a safety analysis is performed, is allowed in lieu of the OEM's approval. Demonstrate that the operator is properly trained and that the equipment is properly configured to make such lifts and is equipped with a load chart.

1.8.3.6 Fall Protection and Prevention (FP&P) Plan

The plan must be in accordance with the requirements of EM 385-1-1, Section 21.D and ASSP Z359.2, be site specific, and address all fall hazards in the work place and during different phases of construction. Address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A competent person or qualified person for fall protection must prepare and sign the plan documentation. Include fall protection and prevention systems, equipment and methods employed for every phase of work, roles and responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Review and revise, as necessary, the Fall Protection and Prevention Plan documentation as conditions change, but at a minimum every six months, for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. Keep and maintain the accepted Fall Protection and Prevention Plan documentation at the job site for the duration of the project. Include the Fall Protection and Prevention Plan documentation in the Accident Prevention Plan (APP).

1.8.3.7 Rescue and Evacuation Plan

Provide a Rescue and Evacuation Plan in accordance with EM 385-1-1 Section 21.N and ASSP Z359.2, and include in the FP&P Plan and as part of the APP. Include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility.

1.8.3.8 Hazardous Energy Control Program (HECP)

Develop a HECP in accordance with EM 385-1-1 Section 12, 29 CFR 1910.147, 29 CFR 1910.333, 29 CFR 1915.89, ASSP Z244.1, and ASSP A10.44. Submit this HECP as part of the Accident Prevention Plan (APP). Conduct a preparatory meeting and inspection with all effected personnel to coordinate all HECP activities. Document this meeting and inspection in accordance with EM 385-1-1, Section 12.A.02. Ensure that each employee is familiar with and complies with these procedures.

1.8.3.9 Excavation Plan

Identify the safety and health aspects of excavation, and provide and prepare the plan in accordance with EM 385-1-1, Section 25.A and Section 31 00 00 EARTHWORK.

1.8.3.10 Lead, Cadmium, and Chromium Compliance Plan

Not used.

1.8.3.11 Asbestos Hazard Abatement Plan

Not used.

1.8.3.12 Site Safety and Health Plan

Identify the safety and health aspects of the contract.

1.8.3.13 Polychlorinated Biphenyls (PCB) Plan

Not used.

1.8.3.14 Site Demolition Plan

Identify the safety and health aspects, and prepare in accordance with Section 02 41 00 DEMOLITION AND DECONSTRUCTION and referenced sources. Include engineering survey as applicable.

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 KTR, subcontractor, or supplier performing the work, and provided for Prime KTR review and approval before submitting to the KO. 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, Section 1 or as directed by the KO. Submit the AHA for review prior to the start of onsite work. The Government reserves the right to require the KTR 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 KTR 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 DFOV 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 DISPLAY OF SAFETY INFORMATION

1.10.1 Safety Bulletin Board

Prior to commencement of work, erect a safety bulletin board at the job site. Where size, duration, or logistics of project do not facilitate a bulletin board, an alternative method, acceptable to the KO, that is accessible and includes all mandatory information for employee and visitor review, may be deemed as meeting the requirement for a bulletin board. Include and maintain information on safety bulletin board as required by EM 385-1-1, Section 01.A.07. Additional items required to be posted include:

- a. Confined space entry permit.
- b. Hot work permit.

1.10.2 Safety and Occupational Health (SOH) Deficiency Tracking System

Establish a SOH deficiency tracking system that lists and monitors the status of SOH deficiencies in chronological order. Use the tracking system to evaluate the effectiveness of the APP. A monthly evaluation of the data must be discussed in the QC or SOH meeting with everyone on the project. The list must be posted on the project bulletin board and updated daily, and provide the following information:

- a. Date deficiency identified;
- b. Description of deficiency;
- c. Name of person responsible for correcting deficiency;
- d. Projected resolution date;
- e. Date actually resolved.

1.11 SITE SAFETY REFERENCE MATERIALS

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

1.12 EMERGENCY MEDICAL TREATMENT

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

1.13 NOTIFICATIONS AND REPORTS

1.13.1 Mishap Notification

Notify the KO, COR, and Inspector as soon as practical, but no more than twenty-four hours, after any mishaps, including recordable accidents, incidents, and near misses, as defined in EM 385-1-1 Appendix Q, any report of injury, illness, or any property damage. For LHE or rigging mishaps, notify the KO as soon as practical but not more than four hours after mishap. The KTR is responsible for obtaining appropriate medical and emergency assistance and for notifying fire, law enforcement, and regulatory agencies. Immediate reporting is required for electrical mishaps, to include Arc Flash; shock; uncontrolled release of hazardous energy (includes electrical and non-electrical); load handling equipment or rigging; fall from height (any level other than same surface); and underwater diving. These mishaps must be investigated in depth to identify all causes and to recommend hazard control measures.

Within notification include KTR 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 mishap.

1.13.2 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. Complete the applicable USACE Accident Report Form 3394, and provide the report to the KO within 5 calendar days of the accident. The KO will provide copies of any required or special forms.
- b. Near Misses: Report all "Near Misses" to the GDA, using local mishap reporting procedures, within 24 hrs. The KO will provide the KTR the required forms.] Near miss reports are considered positive and proactive KTR safety management actions.
- c. Conduct an accident investigation for any load handling equipment accident (including rigging accidents) to establish the root cause(s) of the accident. Complete the LHE Accident Report (Crane and Rigging Accident Report) form and provide the report to the KO within 30 calendar days of the accident. Do not proceed with crane operations until cause is determined and corrective actions have been implemented to the satisfaction of the KO. The KO will provide a blank copy of the accident report form.

1.13.3 LHE Inspection Reports

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

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

Provide a FORM 16-1 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, Section 16.H.03 using Form 16-2 Standard Pre-Lift Crane Plan/Checklist for each lift planned. Submit SLP to the KO for approval within 15 calendar days in advance of planned lift.

1.13.5 Third Party Certification of Floating Cranes and Barge-Mounted Mobile Cranes

Floating cranes and barge-mounted mobile cranes used to perform work under the terms of this Contract must be certified in accordance with 29 CFR 1919 by an OSHA accredited person prior to submitting the required Lift Plan. Include proof of certification with the initial Lift Plan submission.

1.14 HOT WORK

1.14.1 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 Unit Commanding Officer/Officer in Charge. A permit is required from the Explosives Safety Office for work in and around where explosives are processed, stored, or handled. 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 one 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 Unit Commanding Officer/Officer in Charge and the KO IMMEDIATELY.

1.14.2 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, Section 06.H.

1.15 CONFINED SPACE ENTRY REQUIREMENTS

Not used.

1.16 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 KO or Government Designated Authority (GDA), 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.

1.17 SEVERE STORM PLAN

In the event of a severe storm warning, the KTR 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. Hard Hat
- b. Long Pants
- c. Appropriate Safety Shoes
- 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 Use

Each hazardous material must receive approval from the Contracting Office or their designated representative prior to being brought onto the job site or prior to any other use in connection with this Contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material.

3.1.3 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 KO, upon written request by the KTR, 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 KO approval. Notify the Radiation Safety Officer (RSO) prior to excepted items of radioactive material and devices being brought on base.

3.1.4 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 construction operations, stop that portion of work and notify the KO immediately. If material is not hazardous or poses no danger, the Government will direct the KTR 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 pursuant to FAR 52.236-2 Differing Site Conditions.

3.2 UTILITY OUTAGE REQUIREMENTS

Apply for utility outages at least 15 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, Section 11.A.02 (Isolation). Some examples of energy isolation devices and procedures are highlighted in EM 385-1-1, Section 12.D. In accordance with EM 385-1-1, Section 12.A.01, 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 HECF and HEC procedures, as well as applicable Activity Hazard Analyses (AHAs). In accordance with EM 385-1-1, Section 11.A.02 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.

3.2.1 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, Section 12.A. This meeting must include the Prime KTR, the Prime and subcontractors performing the work, the KO, and the Installation 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 HEC training in accordance with EM 385-1-1, Section 12.C. Clarify when personal protective equipment is required during switching operations, inspection, and verification.

3.3 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1 Section 12, 29 CFR 1910.333, 29 CFR 1915.89, ASSP A10.44, NFPA 70E, and paragraph HAZARDOUS ENERGY CONTROL PROGRAM (HECP).

3.4 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 ASSP Z359.2 and EM 385-1-1, Sections 21.A and 21.D.

3.4.1 Training

Institute a fall protection training program. As part of the Fall Protection Program, provide training for each employee who might be exposed to fall hazards and using personal fall protection equipment. Provide training by a competent person for fall protection in accordance with EM 385-1-1, Section 21.C. Document training and practical application of the competent person in accordance with EM 385-1-1, Section 21.C.04 and ASSP Z359.2 in the AHA.

3.4.2 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, Section 21.

Provide personal fall protection equipment, systems, subsystems, and components that comply with EM 385-1-1 Section 21.I, 29 CFR 1926.500 Subpart M, ASSP Z359.0, ASSP Z359.1, ASSP Z359.2, ASSP Z359.3, ASSP Z359.4, ASSP Z359.6, ASSP Z359.7, ASSP Z359.11, ASSP Z359.12, ASSP Z359.13, ASSP Z359.14, ASSP Z359.15, ASSP Z359.16 and ASSP Z359.18.

3.4.2.1 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, Sections 21.0 through 21.0.06. 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.

3.4.2.2 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, Section 21.I.06.

3.4.3 Fall Protection for Roofing Work

Implement fall protection controls based on the type of roof being constructed and work being performed. Evaluate the roof area to be accessed for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

- (1) For work within 6 feet from unprotected edge of a roof having a slope less than or equal to 4:12 (vertical to horizontal), protect personnel from falling by the use of conventional fall protection systems (personal fall arrest/restraint systems, guardrails, or safety nets) in accordance with EM 385-1-1, Section 21 and 29 CFR 1926.500. A safety monitoring system is not adequate fall protection and is not authorized.

(2) For work greater than 6 feet from the unprotected roof edge, addition to the use of conventional fall protection systems the use of a warning line system is also permitted, in accordance with 29 CFR 1926.500 and EM 385-1-1, Section 21.L.

- b. Steep-Sloped Roofs: Work on a roof having a slope greater than 4:12 (vertical to horizontal) requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also applies to residential or housing type construction.

3.4.4 Horizontal Lifelines (HLL)

Provide HLL in accordance with EM 385-1-1, Section 21.I.08.d.2. Commercially manufactured horizontal lifelines (HLL) must be designed, installed, certified and used, under the supervision of a qualified person, for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500). The competent person for fall protection may (if deemed appropriate by the qualified person) supervise the assembly, disassembly, use and inspection of the HLL system under the direction of the qualified person. Locally manufactured HLLs are not acceptable unless they are custom designed for limited or site specific applications by a Registered Professional Engineer who is qualified in designing HLL systems.

3.4.5 Guardrails and Safety Nets

Design, install and use guardrails and safety nets in accordance with EM 385-1-1, Section 21.F.01 and 29 CFR 1926 Subpart M.

3.4.6 Rescue and Evacuation Plan and Procedures

When personal fall arrest systems are used, ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. Prepare a Rescue and Evacuation Plan and include a detailed discussion of the following: methods of rescue; methods of self-rescue or assisted-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. Include the Rescue and Evacuation Plan within the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP). The plan must be in accordance with the requirements of EM 385-1-1, ASSP Z359.2, and ASSP Z359.4.

3.5 WORK PLATFORMS

3.5.1 Scaffolding

Provide employees with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Comply with the following requirements:

- a. Scaffold platforms greater than 20 feet in height must be accessed by use of a scaffold stair system.
- b. Ladders commonly provided by scaffold system manufacturers are prohibited for accessing scaffold platforms greater than 20 feet maximum in height.

- c. An adequate gate is required.
- d. Employees performing scaffold erection and dismantling must be qualified.
- e. Scaffold must be capable of supporting at least four times the maximum intended load, and provide appropriate fall protection as delineated in the accepted fall protection and prevention plan.
- f. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward.
- g. Special care must be given to ensure scaffold systems are not overloaded.
- h. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material are prohibited. The first tie-in must be at the height equal to 4 times the width of the smallest dimension of the scaffold base.
- i. Scaffolding other than suspended types must bear on base plates upon wood mudsills (2 in x 10 in x 8 in minimum) or other adequate firm foundation.
- j. Scaffold or work platform erectors must have fall protection during the erection and dismantling of scaffolding or work platforms that are more than 6 feet.
- k. Delineate fall protection requirements when working above 6 feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

3.5.2 Elevated Aerial Work Platforms (AWPs)

Workers must be anchored to the basket or bucket in accordance with manufacturer's specifications and instructions (anchoring to the boom may only be used when allowed by the manufacturer and permitted by the CP). Lanyards used must be sufficiently short to prohibit worker from climbing out of basket. The climbing of rails is prohibited. Lanyards with built-in shock absorbers are acceptable. Self-retracting devices are not acceptable. Tying off to an adjacent pole or structure is not permitted unless a safe device for 100 percent tie-off is used for the transfer.

Use of AWPs must be operated, inspected, and maintained as specified in the operating manual for the equipment and delineated in the AHA. Operators of AWPs must be designated as qualified operators by the Prime KTR. Maintain proof of qualifications on site for review and include in the AHA.

3.6 EQUIPMENT

3.6.1 Material Handling Equipment (MHE)

- a. Material handling equipment such as forklifts must not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions. Material handling equipment fitted with personnel work platform

attachments are prohibited from traveling or positioning while personnel are working on the platform.

- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions. Material Handling Equipment Operators must be trained in accordance with OSHA 29 CFR 1910, Subpart N.
- c. Operators of forklifts or power industrial trucks must be licensed in accordance with OSHA.

3.6.2 Load Handling Equipment (LHE)

The following requirements apply. In exception, these requirements do not apply to commercial truck mounted and articulating boom cranes used solely to deliver material and supplies (not prefabricated components, structural steel, or components of a systems-engineered metal building) where the lift consists of moving materials and supplies from a truck or trailer to the ground; to cranes installed on mechanics trucks that are used solely in the repair of shore-based equipment; to crane that enter the activity but are not used for lifting; nor to other machines not used to lift loads suspended by rigging equipment. However, LHE accidents occurring during such operations must be reported.

- a. Equip cranes and derricks as specified in EM 385-1-1, Section 16.
- b. Notify the KO 15 working days in advance of any LHE entering the activity, in accordance with EM 385-1-1, Section 16.A.02, so that necessary quality assurance spot checks can be coordinated. KTR's operator must remain with the crane during the spot check. Rigging gear must be in accordance with OSHA, ASME B30.9 Standards and safety standards.
- c. Comply with the LHE manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in ASME B30.5). Perform all testing in accordance with the manufacturer's recommended procedures.
- d. Comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, ASME B30.8 for floating cranes and floating derricks, ASME B30.9 for slings, ASME B30.20 for below the hook lifting devices and ASME B30.26 for rigging hardware.
- e. When operating in the vicinity of overhead transmission lines, operators and riggers must be alert to this special hazard and follow the requirements of EM 385-1-1 Section 11, and ASME B30.5 or ASME B30.22 as applicable.
- f. Do not use crane suspended personnel work platforms (baskets) unless the KTR proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Do not lift personnel with a line hoist or friction crane. Additionally, submit a specific AHA for this work to the KO. Ensure the activity and AHA are thoroughly reviewed by all involved personnel.

- g. Inspect, maintain, and recharge portable fire extinguishers as specified in NFPA 10, Standard for Portable Fire Extinguishers.
- h. All employees must keep clear of loads about to be lifted and of suspended loads, except for employees required to handle the load.
- i. Use cribbing when performing lifts on outriggers.
- j. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
- k. A physical barricade must be positioned to prevent personnel access where accessible areas of the LHE's rotating superstructure poses a risk of striking, pinching or crushing personnel.
- l. Maintain inspection records in accordance by EM 385-1-1, Section 16.D, including shift, monthly, and annual inspections, the signature of the person performing the inspection, and the serial number or other identifier of the LHE that was inspected. Records must be available for review by the KO.
- m. Maintain written reports of operational and load testing in accordance with EM 385-1-1, Section 16.F, listing the load test procedures used along with any repairs or alterations performed on the LHE. Reports must be available for review by the KO.
- n. Certify that all LHE operators have been trained in proper use of all safety devices (e.g. anti-two block devices).
- o. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. At wind speeds greater than 20 mph, the operator, rigger and lift supervisor must cease all crane operations, evaluate conditions and determine if the lift may proceed. Base the determination to proceed or not on wind calculations per the manufacturer and a reduction in LHE rated capacity if applicable. Include this maximum wind speed determination as part of the activity hazard analysis plan for that operation.
- p. Under no circumstance must a Contractor make a lift at or above 90 percent of the cranes rated capacity in any configuration.
- q. Follow FAA guidelines when required based on project location.

3.6.3 Machinery and Mechanized Equipment

- a. Proof of qualifications for operator must be kept on the project site for review.
- b. Manufacture specifications or owner's manual for the equipment must be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.

3.6.4 Base Mounted Drum Hoists

- a. Operation of base mounted drum hoists must be in accordance with EM 385-1-1 and ASSP A10.22.
- b. Rigging gear must be in accordance with applicable ASME/OSHA standards.
- c. When used on telecommunication towers, base mounted drum hoists must be in accordance with TIA-1019, TIA-222, ASME B30.7, 29 CFR 1926.552, and 29 CFR 1926.553.
- d. When used to hoist personnel, the AHA must include a written standard operating procedure. Operators must have a physical examination in accordance with EM 385-1-1 Section 16.B.05 and trained, at a minimum, in accordance with EM 385-1-1 Section 16.U and 16.T. The base mounted drum hoist must also comply with OSHA Instruction CPL 02-01-056 and ASME B30.23.
- e. Material and personnel must not be hoisted simultaneously.
- f. Personnel cage must be marked with the capacity (in number of persons) and load limit in pounds.
- g. Construction equipment must not be used for hoisting material or personnel or with trolley/tag lines. Construction equipment may be used for towing and assisting with anchoring guy lines.

3.6.5 Use of Explosives

Explosives must not be used or brought to the project site without prior written approval from the KO. Such approval does not relieve the KTR 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 EXCAVATIONS

Soil classification must be performed by a competent person in accordance with 29 CFR 1926 and EM 385-1-1.

3.7.1 Utility Locations

Provide a third party, independent, private utility locating company to positively identify underground utilities in the work area in addition to any station locating service and coordinated with the station utility department.

3.7.2 Utility Location Verification

Physically verify underground utility locations, including utility depth, by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within 3 feet of the underground system.

3.7.3 Utilities Within and Under Concrete, Bituminous Asphalt, and Other Impervious Surfaces

Utilities located within and under concrete slabs or pier structures, bridges, parking areas, and the like, are extremely difficult to identify. Whenever Contract work involves chipping, saw cutting, or core drilling through concrete, bituminous asphalt or other impervious surfaces, the existing utility location must be coordinated with station utility departments in addition to location and depth verification by a third party, independent, private locating company. The third party, independent, private locating company must locate utility depth by use of Ground Penetrating Radar (GPR), X-ray, bore scope, or ultrasound prior to the start of demolition and construction. Outages to isolate utility systems must be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the KTR from meeting this requirement.

3.8 ELECTRICAL

Perform electrical work in accordance with EM 385-1-1, Sections 11 and 12.

3.8.1 Conduct of Electrical Work

As delineated 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 KO. 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 shoes, 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 KTR's AHA. Ensure that each employee is familiar with and complies with these procedures and 29 CFR 1910.147.

3.8.2 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 and local requirements applicable to where work is being performed.

3.8.3 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.

3.8.4 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.

Check grounding circuits to ensure that the circuit between the ground and a grounded power conductor has a resistance low enough to permit sufficient current flow to allow the fuse or circuit breaker to interrupt the current.

3.8.5 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.

-- End of Section --

SECTION 01 45 00.00 10

QUALITY CONTROL
02/10

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.

ASTM INTERNATIONAL (ASTM)

ASTM D1557	(2012; E 2015) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³) (2700 kN-m/m ³)
ASTM D3740	(2012a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM D4318	(2010; E 2014) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D6938	(2015) Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
ASTM D7928	(2017) Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
ASTM E329	(2014a) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1110-1-12	(2006; Change 1) Engineering and Design -- Quality Management
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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 in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

1.3.1 SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan

Soils Testing Laboratory Qualifications

Approval of the above submittal is required prior to the start of construction.

1.3.2 SD-06 Test Reports

Verification Statement

Refer herein for submittal scheduling requirements.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system that complies with FAR 52.246-12 Inspection of Construction. QC consist of plans, procedures, and organization necessary to produce an end product which complies with the Contract requirements. The QC system covers all construction operations, both onsite and offsite, and be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work and is subject to removal by the KO for non-compliance with the quality requirements specified in the contract. In this context the highest level manager responsible for the overall construction activities at the site, including quality and production is the project superintendent. The project superintendent maintains a physical presence at the site at all times and is responsible for all construction and related activities at the site, except as otherwise acceptable to the KO.

3.2 QUALITY CONTROL PLAN

Submit the Contractor Quality Control (CQC) Plan proposed to implement the requirements FAR 52.246-12 Inspection of Construction. Construction will be permitted to begin only after acceptance of the CQC Plan 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.

3.2.1 Content of the CQC Plan

Include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, designers of record, architect/engineers (AE), and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff will implement the three phase control system for all aspects of the work specified. Include a CQC System Manager who reports to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. Letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities will be issued by the CQC System Manager.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors designers of record, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures must be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer must be used.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal and replacement of personnel, as necessary, to obtain the quality specified.

3.2.3 Notification of Changes

After acceptance of the CQC Plan, notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 QUALITY CONTROL ORGANIZATION

3.3.1 Personnel Requirements

The requirements for the CQC organization are a Site Safety and Health Officer (SSHO), CQC System Manager and sufficient number of additional qualified personnel to ensure safety and Contract compliance. 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 will also be included as part of the CQC organization. The KTR's CQC staff maintains a presence at the site at all times 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 KO. 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 to maintain these documents and records at the site at all times, except as otherwise acceptable to the KO.

3.3.2 CQC System Manager

Identify as CQC System Manager an individual within the onsite work organization who is responsible for overall management of CQC and have the authority to act in all CQC matters for the KTR. The CQC System Manager must be a construction person with a minimum of 5 years construction experience on construction similar to this contract. This CQC System Manager must be on the site at all times during construction and be employed by the prime KTR. Identify in the plan an alternate to serve in the event of the CQC System Manager's absence. The requirements for the alternate are the same as the CQC System Manager.

3.3.2.1 Additional CQC System Manager Requirements and Duties

The CQC System Manager must be assigned as CQC System Manager but may have duties as project Superintendent and SSHO in addition to quality control.

3.3.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: electrical, civil, structural, submittals clerk, materials technician. These individuals or specialized technical companies may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the

Quality Control Plan. A single person may cover more than one area provided that they are qualified to perform QC activities in each designated and that workload allows.

Experience Matrix	
Area	Qualifications
Civil	Bachelor of Science in Civil Engineering or Construction Manager with 2 years' experience in the type of work being performed on this project or technician with 5 yrs related experience
Electrical	Bachelor of Science in Electrical Engineering with 2 years related experience or person 5 years of experience supervising electrical features of work in the field with a construction company
Structural	Bachelor of Science in Civil Engineering (with Structural Track or Focus) or Construction Manager with 2 years experience or person 5 years of experience supervising structural features of work in the field with a construction company
Submittals	Submittal Clerk with 1 year experience
Concrete, Pavements and Soils	Materials Technician with 2 years experience for the appropriate area

3.3.4 Organizational Changes

Maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.4 SUBMITTALS AND DELIVERABLES

Submittals, if needed, must comply with the requirements in Section 01 33 00 SUBMITTAL PROCEDURES. The CQC organization is responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.5 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control must be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.5.1 Preparatory Phase

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. This phase includes:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. Make available during the preparatory 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 of the contract drawings.
- c. Check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. Examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. Review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. Check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government must be notified at least 24 hours in advance of beginning the preparatory control phase. Include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. Document the results of the preparatory phase actions by separate minutes prepared by the CQC System Manager and attach to the daily CQC report. Instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.5.2 Initial Phase

This phase is accomplished at the beginning of a definable feature of work. Accomplish the following:

- 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 are in compliance with the contract.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government must be notified at least 24 hours in advance of beginning the initial phase for definable feature of work. Prepare separate minutes of this phase by the CQC System Manager and attach to the daily CQC report. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases.
- g. The initial phase for definable feature of work should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.5.3 Follow-up Phase

Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. Record the checks in the CQC documentation. 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. Do not build upon nor conceal non-conforming work.

3.5.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.6 TESTS

3.6.1 Testing Procedure

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/or acceptance tests when specified. Procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. 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 of the 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 may be 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 may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.6.2 Testing Laboratories

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/>.

3.6.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel must meet criteria detailed in ASTM D3740 and ASTM E329.

3.6.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge 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.

3.6.3 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.

3.7 CONSTRUCTION TESTING

Sampling and testing are the responsibility of the Contractor, to be performed by an approved testing laboratory. Submit soils testing laboratory qualifications for review and approval by the Contracting Officer. Perform tests at the specified frequency. No work requiring testing will be permitted until the testing laboratory has been inspected and approved. Test the materials to establish compliance with the specified requirements.

3.7.1 Sampling

Take the number and size of samples required to perform the specified testing.

3.7.2 Testing Requirements

Independent certified testing laboratories shall perform inspections, tests, and other services specified. Further material testing may be necessary if alternative sources of material are required during construction or, if based on visual inspection during delivery to the site, it appears that a material change (color, grain size, plasticity, etc.) as occurred. Additional source testing due to change of material shall be borne by the Contractor and will not be applied to any unit price items.

3.7.2.1 Sieve Analysis

Make sieve analysis in conformance with ASTM C136, ASTM D7928, and ASTM D2487. Sieves shall conform to ASTM E11.

3.7.2.2 Liquid Limit and Plasticity Index

Determine liquid limit and plasticity index in accordance with ASTM D4318.

3.7.2.3 Moisture-Density Determinations

Determine the laboratory maximum dry density and optimum moisture in accordance with ASTM D1557.

3.7.2.4 Field Density and Water Content Tests

Nuclear density methods (ASTM D6938) shall be used for as-placed density and water content testing due to the ease of testing and the relatively large number of tests which can be run in a specified period of time. Check the moisture content with at least two samples and correct nuclear gauge moisture readings if appropriate.

Check and adjust the calibration curves, if necessary, using only the sand cone method as described in paragraph Calibration, of the ASTM publication. Tests performed in accordance with ASTM D6938 result in a wet unit weight of soil and ASTM D6938 will be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D6938. The calibration checks of both the density and moisture gauges shall be made by the prepared containers of material method, as described in paragraph Calibration, in ASTM D6938, on each different type of material to be tested at the beginning of a job and at intervals as directed.

At locations where the field testing indicates densities below the requirements of the specifications, rework and re-compact the location.

3.7.2.5 California Bearing Ratio (CBR)

Determine CBR in accordance with ASTM D1883.

3.7.3 Reporting

Reports and test results shall be submitted by the independent certified testing laboratory indicating observations and results of the tests and

indicating compliance or noncompliance with the requirements of the specifications, within the time period specified. Documentation and the report of test results shall be the responsibility of the Contractor. Prompt turn-around is required for all analyses so as not to impact the project schedule.

- a. Submit certified copies of test results for approval not less than 30 days before material is required for the work.
- b. Submit calibration curves and related test results prior to using the device or equipment being calibrated.
- c. Submit copies of field test results within 24 hours after the tests are performed.

3.7.4 QC Testing Frequency

- A. All QC testing shall be conducted in accordance with the approved Contractor's QC Plan. Documentation and reporting of test results shall be the responsibility of the Contractor.
- B. Testing frequencies for material evaluation and construction quality evaluation are presented in Table 1 of this section.
- C. Sampling locations shall be approved by the Contracting Officer.
- D. A special testing frequency shall be used at the discretion of the Contracting Officer when visual observations of construction performance indicate a potential problem. Additional testing for suspected areas shall be considered when:
 1. Rollers slip during rolling operations.
 2. Lift thickness appears greater than specified.
 3. Fill appears to be at improper and/or variable moisture content.
 4. Dirt-clogged rollers are used to compact the material.
 5. Rollers may not have used optimum ballast.
 6. Materials appear substantially different from those specified.
 7. The degree of compaction is doubtful.
 8. Directed by the Contracting Officer.
- E. During construction, the frequency of testing may also be increased in the following situations.
 1. Adverse weather conditions.
 2. Breakdown of equipment.
 3. At the start and finish of grading.
 4. Material fails to meet specification.
 5. The work area is reduced.

TABLE 1
Schedule of Quality Control Testing
SECTION 01 45 00.00 10, QUALITY CONTROL

Material	Situation	Test	Minimum Frequency
•Select Backfill	Source Investigation	•Grain Size through 0.002 mm •Moisture Density Relationship	•1 •1
	As-Placed	•Dry Density and Moisture Content	•1 per compacted lift per 1,500 SF
Select Granular Subgrade	Source Investigation	•Grain Size through 0.002 mm •Moisture Density Relationship	•1 per source •1 per source
	During Placement	•Grain Size through 0.002 mm •Moisture Density Relationship	•1 per 300 tons •1 per 300 tons
	As-Placed	•Dry Density and Moisture Content	•1 per compacted lift per 1,500 SF
•Bedding Material	Source Investigation	•Grain Size through 0.002 mm	•1 per source •1 per source
•Gabion Stone Fill	During Placement	•Grain Size through 0.002 mm	•1 per 300 tons •1 per 300 tons

3.7.5 QA Testing Frequency

- A. If required, Quality Assurance (QA) testing will be performed by the Contracting Officer at a frequency equal to about 10 percent of the QC testing frequency or as directed by the Contracting Officer.

3.7.6 Defects

- A. If a defect is discovered, the Contractor shall immediately determine the extent and nature of the defect.
1. If the defect is indicated by unsatisfactory test results, the Contractor shall determine the extent of the deficient area by additional tests, observations, a review of records, or other means that the Contractor deems appropriate. Costs for additional testing shall be borne by the Contractor and not applied to any unit price items.
 2. If the defect is related to adverse site conditions, such as overly wet soils or surface desiccation, the Contractor shall define the limits and nature of the defect.

- B. After determining the extent and nature of a defect, the Contractor shall notify the Contracting Officer and schedule for defect repair and retesting.
- C. The Contractor shall correct the deficiency to the satisfaction of the Contracting Officer. If the project specification criteria cannot be met, or if unusual weather conditions hinder work, then the Contractor shall develop and present to the Contracting Officer suggested solutions for his approval.
- D. All retests by the Contractor must verify that the defect has been corrected before any additional work is performed by the Contractor in the area of the deficiency. The Contractor shall also verify that all installation requirements are met and that all required submittals are provided.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Conduct an inspection of the work by the CQC System Manager near the end of the work, or any increment of the work established by a time stated in the SPECIAL CONTRACT REQUIREMENTS Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications. Prepare and include in the CQC documentation a punch list of items which do not conform to the approved drawings and specifications, as required by paragraph DOCUMENTATION. Include within the list of deficiencies the estimated date by which the deficiencies will be corrected. Make a second inspection the CQC System Manager or staff to ascertain that all deficiencies have been corrected. Once this is accomplished, notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. Ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Correct any items noted on the Pre-Final inspection in a timely manner. These inspections and any deficiency corrections required by this paragraph must be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative must be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notify the Contracting Officer at least 14 days prior to the final acceptance inspection and include the Contractor's assurance that all specific items previously identified to the Contractor as being

unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. 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 titled "Inspection of Construction".

3.9 DOCUMENTATION

3.9.1 Quality Control Activities

Maintain current records providing factual evidence that required quality control activities and/or 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. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. Identify the control phase (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.

3.9.2 Contractor's 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 daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. 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 must 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 must be signed and dated by the CQC System Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the CQC System Manager Report.

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, will be 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 claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

SECTION 01 50 00

TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
08/21

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 WATER WORKS ASSOCIATION (AWWA)

AWWA C511 (2017) Reduced-Pressure Principle Backflow
Prevention Assembly

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (2020; ERTA 20-1 2020; ERTA 20-2 2020; TIA
20-1; TIA 20-2; TIA 20-3; TIA 20-4) National
Electrical Code

NFPA 241 (2022) Standard for Safeguarding
Construction, Alteration, and Demolition
Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety -- Safety and Health
Requirements Manual

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD (2009; Rev 2012) Manual on Uniform Traffic
Control Devices]

1.2 SUBMITTALS

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

1.2.1 SD-01 Preconstruction Submittals

Construction Site Plan

Approval of the above submittals is required prior to the start of
construction.

1.3 CONSTRUCTION SITE PLAN

Prior to the start of work, submit for Government approval a site plan
showing the locations and dimensions of temporary facilities (including
layouts and details, equipment and material storage area (onsite and

offsite), and access and haul routes, avenues of ingress/egress to the fenced area and details of the fence installation. Identify any areas which may have to be graveled to prevent the tracking of mud. Indicate if the use of a supplemental or other staging area is desired. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

PART 2 PRODUCTS

2.1 TEMPORARY TRAFFIC CONTROL

2.1.2 Barricades

Erect and maintain temporary barricades to limit public access to work areas.

2.2 FENCING

Not used.

2.3 TEMPORARY WIRING

Provide temporary wiring in accordance with EM 385-1-1 Section 11, NFPA 241 and NFPA 70. Include monthly inspection and testing of all equipment and apparatus.

PART 3 EXECUTION

3.1 EMPLOYEE PARKING

Construction Contract employees must park privately owned vehicles in the Contractor's Staging Area. Employee parking must not interfere with existing and established parking requirements of the Government installation.

3.2 AVAILABILITY AND USE OF UTILITY SERVICES

3.2.1 Temporary Utilities

KTR will provide their own temporary utilities required for construction. Materials may be new or used, must be adequate for the required usage, not create unsafe conditions, and not violate applicable codes and standards.

3.2.2 Utilities at Special Locations

Reasonable amounts of utilities will be made available without charge. Make connections, provide transformers and meters, and make disconnections; and provide backflow preventer devices on connections to domestic water lines. Under no circumstances will taps to base fire hydrants be allowed for obtaining domestic water.

3.2.3 Temporary Sanitary Facilities

Provide temporary sewer and sanitation facilities that are self-contained units with both urinals and stool capabilities such as chemical toilets or comparably effective units. Ventilate the units to control odors and fumes and empty and clean them at least once a week or more often if required by

the Contracting Officer. The doors shall be self-closing. Locate the facility behind the construction fence or out of the public view.

3.2.4 Fire Protection

Provide temporary fire protection equipment for the protection of personnel and property during construction. Remove debris and flammable materials daily to minimize potential hazards.

3.3 STATION OPERATION AFFECT ON CONTRACTOR OPERATIONS

Not used.

3.4 TRAFFIC PROVISIONS

3.4.1 Interruption of Vehicular Traffic

If during the performance of work, it becomes necessary to modify vehicular traffic patterns at any locations, notify the Contracting Officer at least 15 calendar days prior to the proposed modification date, and provide a Traffic Control Plan detailing the proposed controls to traffic movement for approval. The plan shall be in accordance with State and local regulations and the FHWA MUTCD, Part VI. Make all notifications and obtain any permits required for modification to traffic movements outside Station's jurisdiction. Provide cones, signs, barricades, lights, or other traffic control devices and personnel required to control traffic.

3.4.2 Dust Control

Dust control methods and procedures must be approved by the Contracting Officer. Coordinate dust control methods with 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

3.5 TEMPORARY BUILDINGS

Temporary facilities (including trailers) shall be in like new condition. Locate these facilities where directed and within the Contractor's Staging Area. Storage of material/debris under such facilities is prohibited. Contractor shall be responsible for the security of the stored property.

3.5.1 Maintenance of Temporary Facilities

Suitably paint and maintain the temporary facilities. Failure to do so will be sufficient reason to require their removal.

3.5.2 Trailers or Storage Buildings

Trailers or storage buildings will be permitted, where space is available, subject to the approval of the Contracting Officer. The trailers or buildings shall be in good condition, free from visible damage rust and deterioration, and meet all applicable safety requirements. Trailers shall be roadworthy and comply with all appropriate state and local vehicle requirements. Failure to maintain storage trailers or buildings to these standards shall result in the removal of non-complying units at the Contractor's expense. A sign not smaller than 24 by 24 inches shall be conspicuously placed on the trailer depicting the company name, business phone number, and emergency phone number. Trailers shall be anchored to

resist high winds and must meet applicable state of local standards for anchoring mobile trailers.

3.6 STORAGE AREAS

Contractor shall be responsible for security of his property. The Contract Clause entitled "FAR 52.236-10, Operations and Storage Areas" and the following apply:

3.6.1 Storage Size and Location

The site available for storage shall be confined to the Contractor's Staging Area indicated on the drawings.

3.6.1.2 Storage in Existing Buildings

The Contractor will be working around existing buildings; the storage of material will not be allowed in the buildings.

3.6.2 Weather Protection of Temporary Facilities and Stored Materials

When a warning of gale force winds is issued, take precautions to minimize danger to persons, and protect the work and nearby Government property. Precautions must include, but are not limited to, closing openings; removing loose materials, tools and equipment from exposed locations; and removing or securing scaffolding and other temporary work. Close openings in the work when storms of lesser intensity pose a threat to the work or any nearby Government property.

3.6.3 Safety Systems

Protect the integrity of all installed safety systems or personnel safety devices. Obtain prior approval from the Contracting Officer if entrance into systems serving safety devices is required. If it is temporarily necessary to remove or disable personnel safety devices in order to accomplish Contract requirements, provide alternative means of protection prior to removing or disabling any permanently installed safety devices or equipment and obtain approval from the Contracting Officer.

3.7 DUMPSTERS

Equip dumpsters with a secure cover and paint the standard installation color. Keep dumpster closed, except when being loaded with trash and debris. Locate dumpsters within the Contractor's Staging Area. Empty site dumpsters at least once a week, or as needed to keep the site free of debris and trash. If necessary, provide 55 gallon trash containers painted the darker installation color to collect debris in the construction site area. For large demolitions, large dumpsters without lids are acceptable, but must not have debris higher than the sides before emptying.

3.8 CLEANUP

Remove construction debris, waste materials, packaging material and the like from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways must be cleaned away. Store all salvageable materials resulting from demolition activities within the fenced area described above

or at the supplemental storage area. Neatly stack stored materials not in trailers, whether new or salvaged.

3.9 RESTORATION OF STORAGE AREA

Upon completion of the project remove the bulletin board, signs, barricades, haul roads, and all other temporary products from the site. After removal of trailers, materials, and equipment from within the fenced area, remove the fence. Restore areas used during the performance of the Contract to the original or better condition. Remove gravel used to traverse grassed areas and restore the area to its original condition, including top soil and seeding as necessary.

3.10 TEMPORARY WIRING

Provide temporary wiring in accordance with NFPA 241 and NFPA 70, Article 305-6(b), Assured Equipment Grounding Conductor Program. Program shall include frequent inspection of all equipment and apparatus.

--- End of Section ---

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SECTION 01 57 19

TEMPORARY ENVIRONMENTAL CONTROLS
11/15, CHG 5: 08/21

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. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA SW-846 (Third Edition; Update IV) Test Methods for
Evaluating Solid Waste: Physical/Chemical
Methods

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

29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
29 CFR 1910.1053	Respirable Crystalline Silica
29 CFR 1926.1153	Respirable Crystalline Silica
40 CFR 50	National Primary and Secondary Ambient Air Quality Standards
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 63	National Emission Standards for Hazardous Air Pollutants for Source Categories
40 CFR 64	Compliance Assurance Monitoring
40 CFR 112	Oil Pollution Prevention
40 CFR 122.26	Storm Water Discharges (Applicable to State NPDES Programs, see section 123.25)
40 CFR 152	Pesticide Registration and Classification Procedures
40 CFR 152 - 186	Pesticide Programs
40 CFR 241	Guidelines for Disposal of Solid Waste

40 CFR 243	Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
40 CFR 258	Subtitle D Landfill Requirements
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 261.7	Residues of Hazardous Waste in Empty Containers
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 262.31	Standards Applicable to Generators of Hazardous Waste-Labeling
40 CFR 262.34	Standards Applicable to Generators of Hazardous Waste-Accumulation Time
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 273	Standards for Universal Waste Management
40 CFR 273.2	Standards for Universal Waste Management - Batteries
40 CFR 273.3	Standards for Universal Waste Management - Pesticides
40 CFR 273.4	Standards for Universal Waste Management - Mercury Containing Equipment
40 CFR 273.5	Standards for Universal Waste Management - Lamps
40 CFR 279	Standards for the Management of Used Oil
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan

40 CFR 300.125	National Oil and Hazardous Substances Pollution Contingency Plan - Notification and Communications
40 CFR 355	Emergency Planning and Notification
40 CFR 403	General Pretreatment Regulations for Existing and New Sources of Pollution
40 CFR 745	Lead-Based Paint Poisoning Prevention in Certain Residential Structures
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 172.101	Hazardous Material Regulation-Purpose and Use of Hazardous Material Table
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
49 CFR 178	Specifications for Packagings

1.2 DEFINITIONS

1.2.1 Class I and II Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act. A list of Class I ODS can be found on the EPA website at the following weblink.
<https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>.

Class II ODS is defined in Section 602(s) of The Clean Air Act. A list of Class II ODS can be found on the EPA website at the following weblink.
<https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>.

1.2.2 Contractor Generated Hazardous Waste

Contractor generated hazardous waste is 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), waste thinners, excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

1.2.3 Electronics Waste

Electronics waste is discarded electronic devices intended for salvage, recycling, or disposal.

1.2.4 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 or historically.

1.2.5 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.

1.2.6 Hazardous Debris

As defined in paragraph SOLID WASTE, debris that contains listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) in accordance with 40 CFR 261. Hazardous debris also includes debris that exhibits a characteristic of hazardous waste in accordance with 40 CFR 261.

1.2.7 Hazardous Materials

Hazardous materials as defined in 49 CFR 171 and listed in 49 CFR 172.

Hazardous material is any material that: Is regulated as a hazardous material in accordance with 49 CFR 173; or requires a Safety Data Sheet (SDS) in accordance with 29 CFR 1910.120; or during end use, treatment, handling, packaging, storage, transportation, or disposal meets or has components that meet or have potential to meet the definition of a hazardous waste as defined by 40 CFR 261 Subparts A, B, C, or D. Designation of a material by this definition, when separately regulated or controlled by other sections or directives, does not eliminate the need for adherence to that hazard-specific guidance which takes precedence over this section for "control" purposes. Such material includes ammunition, weapons, explosive actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical supplies, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos, mercury, and polychlorinated biphenyls (PCBs).

1.2.8 Hazardous Waste

Hazardous Waste is any material that meets the definition of a solid waste and exhibit a hazardous characteristic (ignitability, corrosivity, reactivity, or toxicity) as specified in 40 CFR 261, Subpart C, or contains a listed hazardous waste as identified in 40 CFR 261, Subpart D.

1.2.10 Land Application

Land Application means spreading or spraying discharge water at a rate that allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" must occur. Comply with federal, state, and local laws and regulations.

1.2.11 Municipal Separate Storm Sewer System (MS4) Permit

MS4 permits are those held by installations to obtain NPDES permit coverage for their stormwater discharges.

1.2.12 National Pollutant Discharge Elimination System (NPDES)

The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

1.2.13 Oily Waste

Oily waste are those materials that are, or were, mixed with Petroleum, Oils, and Lubricants (POLs) and have become separated from that POLs. Oily wastes also means materials, including wastewaters, centrifuge solids, filter residues or sludges, bottom sediments, tank bottoms, and sorbents which have come into contact with and have been contaminated by, POLs and may be appropriately tested and discarded in a manner which is in compliance with other state and local requirements.

This definition includes materials such as oily rags, "kitty litter" sorbent clay and organic sorbent material. These materials may be land filled provided that: It is not prohibited in other state regulations or local ordinances; the amount generated is "de minimus" (a small amount); it is the result of minor leaks or spills resulting from normal process operations; and free-flowing oil has been removed to the practicable extent possible. Large quantities of this material, generated as a result of a major spill or in lieu of proper maintenance of the processing equipment, are a solid waste. As a solid waste, perform a hazardous waste determination prior to disposal. As this can be an expensive process, it is recommended that this type of waste be minimized through good housekeeping practices and employee education.

1.2.18 Regulated Waste

Regulated waste are solid wastes that have specific additional federal, state, or local controls for handling, storage, or disposal.

1.2.19 Sediment

Sediment is soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.20 Solid Waste

Solid waste is a solid, liquid, semi-solid or contained gaseous waste. A solid waste can be a hazardous waste, non-hazardous waste, or non-Resource Conservation and Recovery Act (RCRA) regulated waste. Types of solid waste typically generated at construction sites may include:

1.2.20.1 Debris

Debris is non-hazardous solid material generated during the construction, demolition, or renovation of a structure that exceeds 60 mm (2.5-inch) particle size that is: a manufactured object; plant or animal matter; or natural geologic material (for example, cobbles and boulders), broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and shingles. Inert materials may be reinforced with or contain ferrous wire, rods, accessories and weldments. A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

1.2.20.2 Green Waste

Green waste is the vegetative matter from landscaping, land clearing and grubbing, including, but not limited to, grass, bushes, scrubs, small trees and saplings, tree stumps and plant roots. Marketable trees, grasses and plants that are indicated to remain, be re-located, or be re-used are not included.

1.2.20.3 Material Not Regulated As Solid Waste

Material not regulated as solid waste is nuclear source or byproduct materials regulated under the Federal Atomic Energy Act of 1954 as amended; suspended or dissolved materials in domestic sewage effluent or irrigation return flows, or other regulated point source discharges; regulated air emissions; and fluids or wastes associated with natural gas or crude oil exploration or production.

1.2.20.4 Non-Hazardous Waste

Non-hazardous waste is waste that is excluded from, or does not meet, hazardous waste criteria in accordance with 40 CFR 263.

1.2.20.5 Recyclables

Recyclables are materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors that are recovered and sold as recyclable, wiring, insulated/non-insulated copper wire cable, wire rope, and structural components. It also includes commercial-grade refrigeration equipment with Freon removed, household appliances where the basic material content is metal, clean polyethylene terephthalate bottles, cooking oil, used fuel oil, textiles, high-grade paper products and corrugated cardboard, stackable pallets in good condition, clean crating material, and clean rubber/vehicle tires. Metal meeting the definition of lead contaminated or lead based paint contaminated may not be included as recyclable if sold to a scrap metal company. Paint cans that meet the definition of empty containers in accordance with 40 CFR 261.7 may be included as recyclable if sold to a scrap metal company.

1.2.20.6 Surplus Soil

Surplus soil is existing soil that is in excess of what is required for this work, including aggregates intended, but not used, for on-site mixing of concrete, mortars, and paving. Contaminated soil meeting the definition of

hazardous material or hazardous waste is not included and must be managed in accordance with paragraph HAZARDOUS MATERIAL MANAGEMENT.

1.2.20.7 Scrap Metal

This includes scrap and excess ferrous and non-ferrous metals such as reinforcing steel, structural shapes, pipe, and wire that are recovered or collected and disposed of as scrap. Scrap metal meeting the definition of hazardous material or hazardous waste is not included.

1.2.20.8 Wood

Wood is dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included. Treated wood includes, but is not limited to, lumber, utility poles, crossties, and other wood products with chemical treatment.

1.2.21 Surface Discharge

Surface discharge means discharge of water into drainage ditches, storm sewers, creeks or "waters of the United States". Surface discharges are discrete, identifiable sources and require a permit from the governing agency. Comply with federal, state, and local laws and regulations.

1.2.22 Wastewater

Wastewater is the used water and solids from a community that flow to a treatment plant.

1.2.22.1 Stormwater

Stormwater is any precipitation in an urban or suburban area that does not evaporate or soak into the ground, but instead collects and flows into storm drains, rivers, and streams.

1.2.23 Waters of the United States

Waters of the United States means Federally jurisdictional waters, including wetlands, that are subject to regulation under Section 404 of the Clean Water Act or navigable waters, as defined under the Rivers and Harbors Act.

1.2.24 Wetlands

Wetlands are those areas that are inundated or saturated by surface or groundwater 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.

1.2.25 Universal Waste

The universal waste regulations streamline collection requirements for certain hazardous wastes in the following categories: batteries, pesticides, mercury-containing equipment (for example, thermostats), and lamps (for example, fluorescent bulbs). The rule is designed to reduce hazardous waste in the municipal solid waste (MSW) stream by making it easier for universal

waste handlers to collect these items and send them for recycling or proper disposal. These regulations can be found at 40 CFR 273.

1.3 SUBMITTALS

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

1.3.1 SD-01 Preconstruction Submittals

Preconstruction Survey

Preconstruction Regulatory Notifications

Environmental Protection Plan

Dirt and Dust Control Plan

Approval of the above submittals is required prior to the start of construction.

1.3.2 SD-06 Test Reports

Waste Determination Laboratory Analysis

Submit as required.

1.3.3 SD-11 Closeout Submittals

Records: Some of the records listed below are also required as part of other submittals. For the "Records" submittal, maintain on-site a separate three-ring Environmental Records binder and submit at the completion of the project. Make separate parts to the binder corresponding to each of the applicable subitems listed below.

Waste Determination Documentation

Disposal Documentation for Hazardous and Regulated Waste

Project Solid Waste Disposal Documentation Report

Contractor Hazardous Material Inventory Log

Post Construction Regulatory Notifications/Registrations

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this Contract. Comply with federal, state, and local regulations pertaining to

the environment, including water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

1.4.1 Contractor Liabilities for Environmental Protection

The Contractor is advised that this project and the Unit are subject to Federal, State, and local regulatory agency inspections to review compliance with environmental laws and regulations. The Contractor shall fully cooperate with any representative from any Federal, State, or local regulatory agency who may visit the job site and shall provide immediate notification to the Contracting Officer, who shall accompany them on any subsequent site inspections. The Contractor shall complete, maintain, and make available to the Contracting Officer, station, or regulatory agency personnel all documentation relating to environmental compliance under applicable Federal, State, and local laws and regulations. The Contractor shall immediately notify the Contracting Officer if a Notice of Violation (NOV) is issued to the Contractor.

The Contractor shall be responsible for all damages to persons or property resulting from Contractor fault or negligence as well as for the payment of any civil fines or penalties which may be assessed by any Federal, State, or local regulatory agency as a result of the Contractor's or any subcontractor's violation of any applicable Federal, State, or local environmental law or regulation. Should a Notice of Violation (NOV), Notice of Noncompliance (NON), Notice of Deficiency (NOD), or similar regulatory agency notice be issued to the Government as facility owner/operator on account of the actions or inactions of the Contractor or one of its subcontractors in the performance of work under this contract, the Contractor shall fully cooperate with the Government in defending against regulatory assessment of any civil fines or penalties arising out of such actions or inactions.

1.5 SPECIAL ENVIRONMENTAL REQUIREMENTS

Comply with the special environmental requirements listed here and in the Federal and State permits issued for this project.

1.6 QUALITY ASSURANCE

1.6.1 Preconstruction Survey and Protection of Features

Prior to start of any onsite construction activities, perform a Preconstruction Survey of the project site with the Contracting Officer, and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report, including photographs, for the record.

1.6.2 Regulatory Notifications

Provide regulatory notification requirements in accordance with federal, state and local regulations and in accordance with the federal and state permits issued for this project.

1.6.3 Environmental Brief

Attend an environmental brief to be included in the preconstruction meeting. Provide the following information: types, quantities, and use of hazardous materials that will be brought onto the installation; and types and

quantities of wastes/wastewater that may be generated during the Contract. Discuss the results of the Preconstruction Survey at this time.

Prior to initiating any work on site, meet with the Contracting Officer and installation Environmental Office to discuss the proposed Environmental Protection Plan (EPP). Develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural and cultural resources, required reports, required permits, permit requirements (such as mitigation measures), and other measures to be taken.

1.6.4 Non-Compliance Notifications

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 EPP. After receipt of such notice, 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. FAR 52.242-14 Suspension of Work provides that a suspension, delay, or interruption of work due to the fault or negligence of the Contractor allows for no adjustments to the contract for time extensions or equitable adjustments. In addition to a suspension of work, the Contracting Officer may use additional authorities under the contract or law.

1.7 ENVIRONMENTAL PROTECTION PLAN

The purpose of the EPP is to present an overview of known or potential environmental issues that must be considered and addressed during construction. Incorporate construction related objectives and targets from the installation's EMS into the EPP. Include in the EPP measures for protecting natural and cultural resources, required reports, and other measures to be taken. Meet with the Contracting Officer or Contracting Officer Representative to discuss the EPP and develop a mutual understanding relative to the details for environmental protection including measures for protecting natural resources, required reports, and other measures to be taken. Submit the EPP prior to mobilization and commencement of work. Revise the EPP throughout the project to include any reporting requirements, changes in site conditions, or contract modifications that change the project scope of work in a way that could have an environmental impact. No requirement in this section will relieve the Contractor of any applicable federal, state, and local environmental protection laws and regulations. During Construction, identify, implement, and submit for approval any additional requirements to be included in the EPP. Maintain the current version onsite.

The EPP includes, but is not limited to, the following elements:

1.7.1 General Site Information

1.7.1.1 Drawings

Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, jurisdictional wetlands, material storage areas, structures, sanitary facilities, storm drains and conveyances, and stockpiles of excess soil.

1.7.1.2 Work Area

Work area plan showing the proposed activity in each portion of the area and identify the areas of limited use or nonuse. Include measures for marking the limits of use areas, including methods for protection of features to be preserved within authorized work areas and methods to control runoff and to contain materials on site, and a traffic control plan.

1.7.2 Management of Natural Resources

- a. Land resources
- b. Replacement of damaged landscape features
- c. Temporary construction
- d. Fish and wildlife resources

1.7.3 Stormwater Management and Control

- a. Ground cover
- b. Erodible soils
- c. Temporary measures
 - (1) Structural Practices
 - (2) Temporary and permanent stabilization
- d. Effective selection, implementation and maintenance of Best Management Practices (BMPs).

1.7.4 Protection of the Environment from Waste Derived from Contractor Operations

1.7.4.1 Control and disposal of solid and sanitary waste.

1.7.4.2 Control and disposal of hazardous waste.

This item consists of the management procedures for hazardous waste to be generated. As a minimum, include the following:

- a. List of the types of hazardous wastes expected to be generated
- b. Procedures to ensure a written waste determination is made for appropriate wastes that are to be generated
- c. Sampling/analysis plan, including laboratory method(s) that will be used for waste determinations and copies of relevant laboratory certifications
- d. Methods and proposed locations for hazardous waste accumulation/storage (that is, in tanks or containers)

- e. Management procedures for storage, labeling, transportation, and disposal of waste (treatment of waste is not allowed unless specifically noted)
- f. Management procedures and regulatory documentation ensuring disposal of hazardous waste complies with Land Disposal Restrictions (40 CFR 268)
- g. Management procedures for recyclable hazardous materials such as lead-acid batteries, used oil, and similar
- h. Used oil management procedures in accordance with 40 CFR 279; Hazardous waste minimization procedures
- i. Plans for the disposal of hazardous waste by permitted facilities; and Procedures to be employed to ensure required employee training records are maintained.

1.7.5 Prevention of Releases to the Environment

- a. Procedures to prevent releases to the environment
- b. Notifications in the event of a release to the environment

1.7.6 Clean Air Act Compliance

1.7.6.1 Haul Route

Submit truck and material haul routes along with a Dirt and Dust Control Plan for controlling dirt, debris, and dust on Installation roadways. As a minimum, identify in the plan the subcontractor and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.

1.7.6.2 Compliant Materials

Provide the Government a list of SDSs for all hazardous materials proposed for use on site. Materials must be compliant with all Clean Air Act regulations for emissions including solvent and volatile organic compound contents, and applicable National Emission Standards for Hazardous Air Pollutants requirements. The Government may alter or limit use of specific materials as needed to meet installation permit requirements for emissions.

1.8 LICENSES AND PERMITS

Obtain licenses and permits required for the construction of the project and in accordance with FAR 52.236-7 Permits and Responsibilities. Notify the Government of all general use permitted equipment the Contractor plans to use on site. This paragraph supplements the Contractor's responsibility under FAR 52.236-7 Permits and Responsibilities.

- a. The following permits have been obtained by the Government (Appendix A):

USACE Authorization under General Permit Nos. 3 and 13
Permit Application No: NAN-2023-00190-EMI

NYSDEC Water Quality Certification (Section 401 Clean Water Act)

Permit ID 1-4724-00761/00012

NYSDOS Concurrence with Consistency Determination
Permit No. F-2023-0178(DA)

1.9 ENVIRONMENTAL RECORDS BINDER

Maintain on-site a separate three-ring Environmental Records Binder and submit at the completion of the project. Make separate parts within the binder that correspond to each submittal listed under paragraph CLOSEOUT SUBMITTALS in this section.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 PROTECTION OF NATURAL RESOURCES

Minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitats.

Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work that is consistent with the requirements of the Installation Environmental Office or as otherwise specified. Confine construction activities to within the limits of the work indicated or specified.

3.1.1 Flow Ways

Do not alter water flows or otherwise significantly disturb the native habitat adjacent to the project and critical to the survival of fish and wildlife, except as specified and permitted.

3.1.2 Vegetation

Except in areas to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without the Contracting Officer's permission. Do not fasten or attach ropes, cables, or guys to existing nearby trees for anchorages unless authorized by the Contracting Officer. Where such use of attached ropes, cables, or guys is authorized, the Contractor is responsible for any resultant damage.

Protect existing trees that are to remain to ensure they are not injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. Coordinate with the Contracting Officer to determine appropriate action for trees and other landscape features scarred or damaged by equipment operations.

3.1.3 Streams

Not used.

3.2 STORMWATER

Do not discharge stormwater from construction sites to the sanitary sewer. If the water is noted or suspected of being contaminated, it may only be released to the storm drain system if the discharge is specifically permitted. Obtain authorization in advance from the COR for any release of contaminated water.

3.2.1 Construction General Permit

Not used.

3.2.2 Erosion and Sediment Control Measures

Provide erosion and sediment control measures in accordance with state and local laws and regulations. Preserve vegetation to the maximum extent practicable.

3.2.2.1 Erosion Control

Prevent erosion of areas disturbed by construction by installing straw bales or silt fence along their downgradient edges. Following construction, stabilize disturbed areas and slopes by seeding and mulching for effective erosion control.

Provide seeding in accordance with Section 32 92 19 SEEDING.

3.2.2.2 Sediment Control Practices

Implement sediment control practices to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Implement sediment control practices prior to soil disturbance and prior to creating areas with concentrated flow, during the construction process to minimize erosion and sediment laden runoff. Include the following devices: silt fence or straw bales, temporary diversion dikes, and storm drain inlet protection.

3.2.3 Work Area Limits

Mark the areas that need not be disturbed under this Contract prior to commencing construction activities. Mark or fence isolated areas within the general work area that are not to be disturbed. Protect monuments and markers before construction operations commence. Where construction operations are to be conducted during darkness, any markers must be visible in the dark. Personnel must be knowledgeable of the purpose for marking and protecting particular objects.

3.2.4 Contractor Facilities and Work Areas

Place field offices, staging areas, stockpile storage, and temporary buildings in areas designated on the drawings or as directed by the Contracting Officer. Move or relocate the Contractor facilities only when approved by the Government. Provide erosion and sediment controls for onsite borrow and spoil areas to prevent sediment from entering nearby waters. Control temporary excavation and embankments for plant or work areas to protect adjacent areas.

3.2.5 Municipal Separate Storm Sewer System (MS4) Management

Not used.

3.3 SURFACE AND GROUNDWATER

3.3.1 Cofferdams, Diversions, and Dewatering

Not used.

3.3.2 Waters of the United States

Do not enter, disturb, destroy, or allow discharge of contaminants into waters of the United States, except as authorized herein. The protection of waters of the United States shown on the drawings in accordance with paragraph LICENSES AND PERMITS is the Contractor's responsibility. Authorization to enter specific waters of the United States identified does not relieve the Contractor from any obligation to protect other waters of the United States within, adjacent to, or in the vicinity of the construction site and associated boundaries.

3.4 PROTECTION OF CULTURAL RESOURCES

3.4.1 Historical and Archaeological Resources

Carefully protect in-place and report immediately to the Contracting Officer historical and archaeological items or human skeletal remains discovered in the course of work. Upon discovery, notify the Contracting Officer. Stop work in the immediate area of the discovery until directed by the Contracting Officer to resume work. The Government retains ownership and control over historical and archaeological resources.

3.5 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with 40 CFR 64 and state air emission and performance laws and standards.

3.5.1 Dust Control

Keep dust down at all times, including during nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning nonparticulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not unnecessarily shake bags of cement, concrete mortar, or plaster. Since these products contain Crystalline Silica, comply with the applicable OSHA standard, 29 CFR 1910.1053 or 29 CFR 1926.1153 for controlling exposure to Crystalline Silica Dust.

3.5.1.1 Particulates

Dust particles, aerosols and gaseous by-products from construction activities, and processing and preparation of materials (such as from asphaltic batch plants) must be controlled at all times, including weekends, holidays, and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the

project boundaries free from particulates that would exceed 40 CFR 50, state, and local air pollution standards or that would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators, or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with state and local visibility regulations.

3.5.1.2 Abrasive Blasting

Blasting operations cannot be performed without prior approval of the COR. The use of silica sand is prohibited in sandblasting.

Provide tarpaulin drop cloths and windscreens to enclose abrasive blasting operations to confine and collect dust, abrasive agent, paint chips, and other debris. Perform work involving removal of hazardous material in accordance with 29 CFR 1910.

3.6 WASTE MINIMIZATION

Minimize the use of hazardous materials and the generation of waste. Include procedures for pollution prevention/ hazardous waste minimization in the Hazardous Waste Management Section of the EPP. Obtain a copy of the installation's Pollution Prevention/Hazardous Waste Minimization Plan for reference material when preparing this part of the EPP. If no written plan exists, obtain information by contacting the Contracting Officer. Describe the anticipated types of the hazardous materials to be used in the construction when requesting information.

3.7 WASTE MANAGEMENT AND DISPOSAL

3.7.1 Waste Determination Documentation

Complete a Waste Determination form (provided at the pre-construction conference) for Contractor-derived wastes to be generated. All potentially hazardous solid waste streams that are not subject to a specific exclusion or exemption from the hazardous waste regulations (e.g. scrap metal, domestic sewage) or subject to special rules, (lead-acid batteries and precious metals) must be characterized in accordance with the requirements of 40 CFR 261 or corresponding applicable state or local regulations. Base waste determination on user knowledge of the processes and materials used, and analytical data when necessary. Consult with the Installation environmental staff for guidance on specific requirements. Attach support documentation to the Waste Determination form. As a minimum, provide a Waste Determination form for the following waste (this listing is not inclusive): oil- and latex -based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and containers of the original materials.

3.7.2 Solid Waste Management

3.7.2.1 Disposal Documentation for Hazardous and Regulated Waste

Submit a copy of the applicable EPA and State permit(s), manifest(s), or license(s) for transportation, treatment, storage, and disposal of hazardous and regulated waste by permitted facilities.

3.7.2.2 Project Solid Waste Disposal Documentation Report

Provide copies of the waste handling facilities' weight tickets, receipts, bills of sale, and other sales documentation. In lieu of sales documentation, a statement indicating the disposal location for the solid waste that is signed by an employee authorized to legally obligate or bind the firm may be submitted. The sales documentation Contractor certification must include the receiver's tax identification number and business, EPA or state registration number, along with the receiver's delivery and business addresses and telephone numbers. For each solid waste retained for the Contractor's own use, submit the information previously described in this paragraph on the solid waste disposal report. Prices paid or received do not have to be reported to the Contracting Officer unless required by other provisions or specifications of this Contract or public law.

3.7.2.3 Control and Management of Solid Wastes

Pick up solid wastes, and place in covered containers that are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with non-hazardous solid waste. Transport solid waste off Government property and dispose of it in compliance with 40 CFR 260, state, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill is the minimum acceptable offsite solid waste disposal option. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Comply with site procedures. Solid waste disposal offsite must comply with most stringent local, state, and federal requirements, including 40 CFR 241, 40 CFR 243, and 40 CFR 258.

Manage hazardous material used in construction, including but not limited to, aerosol cans, waste paint, cleaning solvents, contaminated brushes, and used rags, in accordance with 49 CFR 173.

3.7.3 Control and Management of Hazardous Waste

Do not dispose of hazardous waste on Government property. Do not discharge any waste to a sanitary sewer, storm drain, or to surface waters or conduct waste treatment or disposal on Government property without written approval of the Contracting Officer.

3.7.3.1 Hazardous Waste/Debris Management

Identify construction activities that will generate hazardous waste or debris. Provide a documented waste determination for resultant waste streams. Identify, label, handle, store, and dispose of hazardous waste or debris in accordance with federal, state, and local regulations, including 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, and 40 CFR 268.

Manage hazardous waste in accordance with the approved Hazardous Waste Management Section of the EPP. Store hazardous wastes in approved

containers in accordance with 49 CFR 173 and 49 CFR 178. Hazardous waste generated within the confines of Government facilities is identified as being generated by the Government. Prior to removal of any hazardous waste from Government property, hazardous waste manifests must be signed by designated personnel as dictated by the COR. Do not bring hazardous waste onto Government property. Provide the Contracting Officer with a copy of waste determination documentation for any solid waste streams that have any potential to be hazardous waste or contain any chemical constituents listed in 40 CFR 372-SUBPART D.

3.7.3.2 Waste Storage/Satellite Accumulation/90 Day Storage Areas

Not used.

3.7.3.3 Hazardous Waste Disposal

3.7.3.3.1 Responsibilities for Contractor's Disposal

Provide hazardous waste manifest to COR for review, approval, and signature prior to shipping waste off Government property.

3.7.3.3.1.1 Services

Provide service necessary for the final treatment or disposal of the hazardous material or waste in accordance with 40 CFR 260, local, and state, laws and regulations, and the terms and conditions of the Contract within 60 days after the materials have been generated. These services include necessary personnel, labor, transportation, packaging, detailed analysis (if required for disposal or transportation, include manifesting or complete waste profile sheets, equipment, and compile documentation).

3.7.3.3.1.2 Samples

Obtain a representative sample of the material generated for each job done to provide waste stream determination.

3.7.3.3.1.3 Analysis

Analyze each sample taken and provide analytical results to the Contracting Officer. See paragraph WASTE DETERMINATION DOCUMENTATION.

3.7.3.3.1.4 Labeling

Determine the Department of Transportation's (DOT's) proper shipping names for waste (each container requiring disposal) and demonstrate to the Contracting Officer how this determination is developed and supported by the sampling and analysis requirements contained herein. Label all containers of hazardous waste with the words "Hazardous Waste" or other words to describe the contents of the container in accordance with 40 CFR 262.31 and applicable state or local regulations.

3.7.3.3.2 Contractor Disposal Turn-In Requirements

Hazardous waste generated must be disposed of in accordance with the following conditions to meet installation requirements:

- a. Drums must be compatible with waste contents and drums must meet DOT requirements for 49 CFR 173 for transportation of materials.
- b. Band drums to wooden pallets.
- c. No more than three 208 liter (55 gallon) drums or two 321 liter (85 gallon) over packs are to be banded to a pallet.
- d. Band using 32 millimeters (1-1/4 inch) minimum band on upper third of drum.
- e. Provide label in accordance with 49 CFR 172.101.
- f. Leave 7 to 12 centimeters (3 to 5 inches) of empty space above volume of material.

3.7.3.4 Universal Waste Management

Manage the following categories of universal waste in accordance with federal, state, and local requirements and installation instructions:

- a. Batteries as described in 40 CFR 273.2
- b. Lamps as described in 40 CFR 273.5
- c. Mercury-containing equipment as described in 40 CFR 273.4

Mercury is prohibited in the construction of this facility, unless specified otherwise, and with the exception of mercury vapor lamps and fluorescent lamps. Dumping of mercury-containing materials and devices such as mercury vapor lamps, fluorescent lamps, and mercury switches, in rubbish containers is prohibited. Remove without breaking, pack to prevent breakage, and transport out of the activity in an unbroken condition for disposal as directed.

3.7.3.5 Electronics End-of-Life Management

Recycle or dispose of electronics waste, including, but not limited to, used electronic devices such computers, monitors, hard-copy devices, televisions, mobile devices, in accordance with 40 CFR 260-262, state, and local requirements, and installation instructions.

3.7.3.6 Disposal Documentation for Hazardous and Regulated Waste

Contact the Contracting Officer for the facility RCRA identification number that is to be used on each manifest.

3.7.4 Releases/Spills of Oil and Hazardous Substances

3.7.4.1 Response and Notifications

Exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, sewage, regulated gas, petroleum, lubrication oil, and other substances regulated in accordance with 40 CFR 300. Maintain spill cleanup equipment and materials at the work site. In the event of a spill, take prompt, effective action to

stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Installation Fire Department, the Installation Command Duty Officer, the Installation Environmental Office, and the Contracting Officer and the state or local authority.

Submit verbal and written notifications as required by the federal (40 CFR 300.125 and 40 CFR 355), state, local regulations and instructions. Provide copies of the written notification and documentation that a verbal notification was made within 20 days. Spill response must be in accordance with 40 CFR 300 and applicable state and local regulations. Contain and clean up these spills without cost to the Government.

3.7.4.2 Clean Up

Clean up hazardous and non-hazardous waste spills. Reimburse the Government for costs incurred including sample analysis materials, clothing, equipment, and labor if the Government will initiate its own spill cleanup procedures, for Contractor- responsible spills, when: Spill cleanup procedures have not begun within one hour of spill discovery/occurrence; or, in the Government's judgment, spill cleanup is inadequate and the spill remains a threat to human health or the environment.

3.7.5 Mercury Materials

Immediately report to the Environmental Office and the Contracting Officer instances of breakage or mercury spillage. Clean mercury spill area to the satisfaction of the Contracting Officer.

Do not recycle a mercury spill cleanup; manage it as a hazardous waste for disposal.

3.7.6 Wastewater

3.7.6.1 Disposal of Wastewater

Disposal of wastewater must be as specified below.

3.7.6.1.1 Treatment

Do not allow wastewater from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, and forms to enter water ways or to be discharged prior to being treated to remove pollutants. Dispose of the construction- related waste water off-Government property in accordance with 40 CFR 403, state, regional, and local laws and regulations.

3.7.6.1.2 Surface Discharge

Surface discharge in accordance with federal, state, and local laws and regulations.

3.7.6.1.3 Land Application

Not used.

3.8 HAZARDOUS MATERIAL MANAGEMENT

Include hazardous material control procedures in the Safety Plan, in accordance with Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. Address procedures and proper handling of hazardous materials, including the appropriate transportation requirements. Do not bring hazardous material onto Government property that does not directly relate to requirements for the performance of this contract. Submit an SDS and estimated quantities to be used for each hazardous material to the Contracting Officer prior to bringing the material on the installation. Typical materials requiring SDS and quantity reporting include, but are not limited to, oil and latex based painting and caulking products, solvents, adhesives, aerosol, and petroleum products. Use hazardous materials in a manner that minimizes the amount of hazardous waste generated. Containers of hazardous materials must have National Fire Protection Association labels or their equivalent. Certify that hazardous materials removed from the site are hazardous materials and do not meet the definition of hazardous waste, in accordance with 40 CFR 261.

3.8.1 Contractor Hazardous Material Inventory Log

Submit the "Contractor Hazardous Material Inventory Log" (found at: <http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/forms-graphics-tables>), which provides information required by (EPCRA Sections 312 and 313) along with corresponding SDS, to the Contracting Officer at the start and at the end of construction (30 days from final acceptance), and update no later than January 31 of each calendar year during the life of the contract. Keep copies of the SDSs for hazardous materials onsite. At the end of the project, provide the Contracting Officer with copies of the SDSs, and the maximum quantity of each material that was present at the site at any one time, the dates the material was present, the amount of each material that was used during the project, and how the material was used.

The Contracting Officer may request documentation for any spills or releases, environmental reports, or off-site transfers.

3.9 PREVIOUSLY USED EQUIPMENT

Clean previously used construction equipment prior to bringing it onto the project site. Equipment must be free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. Consult with the U.S. Department of Agriculture jurisdictional office for additional cleaning requirements.

3.10 CONTROL AND MANAGEMENT OF ASBESTOS-CONTAINING MATERIAL (ACM)

Not used.

3.11 CONTROL AND MANAGEMENT OF LEAD-BASED PAINT (LBP)

Not used.

3.12 CONTROL AND MANAGEMENT OF POLYCHLORINATED BIPHENYLS (PCBS)

Not used.

3.13 CONTROL AND MANAGEMENT OF LIGHTING BALLAST AND LAMPS CONTAINING PCBS

Not used.

3.14 PETROLEUM, OIL, LUBRICANT (POL) STORAGE AND FUELING

POL products include flammable or combustible liquids, such as gasoline, diesel, lubricating oil, used engine oil, hydraulic oil, mineral oil, and cooking oil. Store POL products and fuel equipment and motor vehicles in a manner that affords the maximum protection against spills into the environment. Manage and store POL products in accordance with EPA 40 CFR 112, and other federal, state, regional, and local laws and regulations. Use secondary containments, dikes, curbs, and other barriers, to prevent POL products from spilling and entering the ground, storm or sewer drains, stormwater ditches or canals, or navigable waters of the United States. Describe in the EPP (see paragraph ENVIRONMENTAL PROTECTION PLAN) how POL tanks and containers must be stored, managed, and inspected and what protections must be provided. Storage of oil, including fuel, on the project site is not allowed. Fuel must be brought to the project site each day that work is performed.

3.14.1 Used Oil Management

Manage used oil generated on site in accordance with 40 CFR 279. Determine if any used oil generated while onsite exhibits a characteristic of hazardous waste. Used oil containing 1,000 parts per million of solvents is considered a hazardous waste and disposed of at the Contractor's expense. Used oil mixed with a hazardous waste is also considered a hazardous waste. Dispose in accordance with paragraph HAZARDOUS WASTE DISPOSAL.

3.14.2 Oil Storage Including Fuel Tanks

Not used.

3.15 INADVERTENT DISCOVERY OF PETROLEUM-CONTAMINATED SOIL OR HAZARDOUS WASTES

If petroleum-contaminated soil, or suspected hazardous waste is found during construction that was not identified in the Contract documents, immediately notify the Contracting Officer. Do not disturb this material until authorized by the Contracting Officer.

3.16 SOUND INTRUSION

Make the maximum use of low-noise emission products, as certified by the EPA. Blasting or use of explosives are not permitted. Confine pile-driving operations to the period between 8 a.m. and 5 p.m., Monday through Friday, exclusive of holidays, unless otherwise specified.

Keep construction activities under surveillance and control to minimize environment damage by noise.

3.17 POST CONSTRUCTION CLEANUP

Clean up areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing by the Contracting Officer, remove traces of temporary construction facilities such as haul

roads, 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. Grade parking area and similar temporarily used areas to conform with surrounding contours.

-- End of Section -

REPAIR WATERFRONT
USCG STA MONTAUK, MONTAUK, NY

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SECTION 01 77 00
CLOSEOUT PROCEDURES
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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 1110-1-2909 (2012) Engineering and Design -- Geospatial Data and Systems

ERDC/ITL TR-12-1 (2015) A/E/C Graphics Standard, Release 2.0

ERDC/ITL TR-12-6 (2015) A/E/C CAD Standard - Release 6.0

1.2 DEFINITIONS

1.2.1 As-Built Drawings

As-built drawings are the marked-up (i.e., red-line) drawings, maintained by the KTR on-site, that depict actual conditions and deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to submitted Requests for Information (RFI's); direction from the KO; design that is the responsibility of the KTR, and differing site conditions. Maintain the as-builts throughout construction as red-lined hard copies on site and provide a copy to the COR monthly. These files serve as the basis for the creation of the record drawings.

1.2.2 Record Drawings

The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

1.3 SOURCE DRAWING FILES

Request the full set of electronic drawings, in the source format, for Record Drawing preparation, after award and at least 30 days prior to required use.

1.3.1 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 drawings and data for the referenced project. Any other use or reuse shall be at the sole risk of the KTR and without liability or legal exposure to the Government. The KTR 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 sub consultants that may arise out of or in connection with the use of these electronic files. The KTR 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 CAD drawing files are not construction documents. Differences may exist between the CAD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CAD files, nor does it make representation to the compatibility of these files with the KTR hardware or software. 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. The KTR is responsible for determining if any conflict exists. Use of these Source Drawing files does not relieve the KTR of 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 KTR uses, duplicates or modifies these electronic source drawing files for use in producing construction drawings and data related to this contract, remove all previous indicia of ownership (seals, logos, signatures, initials and dates).

1.4 SUBMITTALS

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

1.4.1 SD-11 Closeout Submittals

As-Built Drawings (Provide monthly with pay application)

Record Drawings

Final Approved Shop Drawings

Submit the above submittals within 14 calendar days following completion of work, unless noted otherwise.

1.5 WARRANTY TAGS

Not used.

PART 2 PRODUCTS

2.1 AS-BUILT DRAWINGS

Provide electronic PDF "plots" of all contract drawings sheets associated with the as-built drawing submittal. Compile and organize the PDF set to match the contract drawings. Provide PDFs of the current working redlines and/or markups complying with the as-builts drawing and markup requirements contained in this specification.

2.2 RECORD DRAWINGS

Provide record drawings in PDF and AutoCAD Release 2020 format.

2.2.1 LINEAR ASSET INVENTORY AND MAPPING REQUIREMENTS FOR GIS DELIVERABLES

Not used.

PART 3 EXECUTION

3.1 AS-BUILT DRAWINGS

Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings. Maintain the as-builts throughout construction as red-lined hard copies on site or red-lined PDF files. Submit As-Built Drawings monthly with pay applications.

3.1.1 Markup Guidelines

Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the As-Built drawing. Show what was changed, how it was changed, where item(s) were relocated and change related details. These working as-built markup prints must be neat, legible and accurate as follows:

- a. Use base colors of red, green, and blue. Color code for changes as follows:
 - (1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.
 - (2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.
 - (3) Additions (Green) - Added items, lettering in notes and leaders.
- b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.
- c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.
- d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.
- e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.
- f. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules, notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.
- g. For deletions, cross out all features, data and captions that relate to that revision.
- h. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with leaders to the applicable location.

- i. Indicate one of the following when attaching a print or sketch to a markup print:
 - 1) Add an entire drawing to contract drawings
 - 2) Change the contract drawing to show
 - 3) Provided for reference only to further detail the initial design.
- j. Incorporate all shop and fabrication drawings into the markup drawings.

3.1.2 As-Built Drawings Content

Revise As-Built Drawings in accordance with ERDC/ITL TR-12-1 and ERDC/ITL TR-12-6. Keep these working as-built markup drawings current on a weekly basis and at least one set available on the jobsite at all times. Changes from the contract drawings which are made during construction or additional information which might be uncovered in the course of construction (including mislocated utilities encountered) must be accurately and neatly recorded as they occur by means of details and notes. Submit the working as-built markup drawings for approval prior to submission of each monthly pay estimate. For failure to maintain the working and final record drawings as specified herein, the KO may withhold 10 percent of the monthly progress payment until approval of updated drawings.

3.2 RECORD DRAWINGS

3.2.1 Record Drawing Files

If additional drawings are required, prepare them using the specified electronic file format applying ERDC/ITL TR-12-6 and ERDC/ITL TR-12-1. The title block and drawing border to be used for any new final record drawings must be identical to that used on the contract drawings. Accomplish additions and corrections to the contract drawings using CAD files. Provide all program files and hardware necessary to prepare final PDF record drawings. The COR will review final PDF record drawings for accuracy and return them to the KTR for required corrections, changes, additions, and deletions.

3.2.2 Final Record Drawing Package

Submit the final record PDF and CAD drawings package for the entire project within 20 days of substantial completion of all phases of work. Submit one set of ANSI D size PDF and CAD files, two sets of ANSI D size prints and one set of the approved working record drawings. The package must be complete in all details and identical in form and function to the contract drawing files supplied by the Government.

3.3 FINAL APPROVED SHOP DRAWINGS

Compile and submit all final approved project shop drawings 20 days after the substantial completion date.

3.4 CLEANUP

Leave premises "broom clean." Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site.

-- End of Section -

REPAIR WATERFRONT
USCG STA MONTAUK, MONTAUK, NY

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APR 2024

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA
08/21

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.

ASTM INTERNATIONAL (ASTM)

ASTM E1971 (2005; R 2011) Standard Guide for Stewardship
for the Cleaning of Commercial and
Institutional Buildings

1.2 SUBMITTALS

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

1.2.1 SD-10 Operation and Maintenance Data

O&M Data and Files: Concrete Floating Dock - Small Boat

Submit the above submittal within 14 calendar days following completion of
work, unless noted otherwise.

1.2.2 SD-11 Closeout Submittals

Validation of Training Completion: Concrete Floating Dock - Small
Boat

Submit the above submittal within 14 calendar days following completion of
work, unless noted otherwise.

1.3 OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data for the provided equipment,
product, or system, defining the importance of system interactions,
troubleshooting, and long-term preventive operation and maintenance.
Compile, prepare, and aggregate O&M data to include clarifying and updating
the original sequences of operation to as-built conditions. Organize and
present information in sufficient detail to clearly explain O&M requirements
at the system, equipment, component, and subassembly level. Include an
index preceding each submittal. Submit in accordance with this section and
Section 01 33 00 SUBMITTAL PROCEDURES.

1.3.1 Quantity

Submit two sets of the supplier/manufacturers' O&M information specified
herein for the components, assemblies, subassemblies, attachments, and

accessories. The items for which O&M Data/Manuals are required are listed in the technical section which specifies those particular items.

1.3.2 Package Quality

Documents must be fully legible. Operation and Maintenance data must be consistent with the manufacturer's standard brochures, schematics, printed instructions, general operating procedures, and safety precautions.

1.3.3 Package Content

Provide data package content in accordance with paragraph SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES. Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission, except as follows. Use Data Package 1 for commissioned items without a specified data package requirement in the individual technical sections.

1.3.4 Delivery

Submit O&M Data Manuals to the KO for review and acceptance; submit data specified for a given item within 30 calendar days after the item is delivered to the contract site.

1.3.5 Changes to Submittals

Provide manufacturer-originated changes or revisions to submitted data if a component of an item is so affected subsequent to acceptance of the O&M Data. Submit changes, additions, or revisions required by the KO for final acceptance of submitted data within 30 calendar days of the notification of this change requirement.

1.4 OPERATION AND MAINTENANCE MANUAL FILE FORMAT

Assemble data packages into electronic Operation and Maintenance Manuals. Assemble each manual into a composite electronically indexed file using the most current version of Adobe Acrobat or similar software capable of producing PDF file format. Provide compact disks (CD) or data digital versatile disk (DVD) as appropriate, so that each one contains operation, maintenance and record files, project record documents, and training videos. Include a complete electronically linked operation and maintenance directory.

1.4.1 Organization

Bookmark Product and Drawing Information documents using the current version of CSI MasterFormat numbering system, and arrange submittals using the specification sections as a structure.

1.5 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

The following are a detailed description of the data package items listed in paragraph SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES.

1.5.1 Operating Instructions

Provide specific instructions, procedures, and illustrations for the following phases of operation for the installed model and features of each system:

1.5.1.1 Safety Precautions and Hazards

List personnel hazards and equipment or product safety precautions for operating conditions. List all residual hazards identified in the Activity Hazard Analysis provided under Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS. Provide recommended safeguards for each identified hazard.

1.5.2 Preventive Maintenance

Provide the following information for preventive and scheduled maintenance to minimize repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials.

1.5.2.1 Lubrication Data

Include the following preventive maintenance lubrication data, in addition to instructions for lubrication required under paragraph OPERATOR SERVICE REQUIREMENTS:

- a. A table showing recommended lubricants for specific temperature ranges and applications.
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.
- c. A Lubrication Schedule showing service interval frequency.

1.5.2.2 Preventive Maintenance Plan, Schedule, and Procedures

Provide manufacturer's schedule for routine preventive maintenance, inspections, condition monitoring (predictive tests) and adjustments required to ensure proper and economical operation and to minimize repairs. Provide instructions stating when the systems should be inspected. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

- a. Define the anticipated time required to perform each test (work-hours), test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements within the schedule. Delineate procedures for preventive maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize repairs.
- b. Repair requirements must inform operators how to check out, troubleshoot, repair, and replace components of the system.

1.5.3 Repair

Provide manufacturer's recommended procedures and instructions for correcting problems and making repairs for the installed model and features of each system.

1.5.3.1 Troubleshooting Guides and Diagnostic Techniques

Provide step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.5.3.2 Repair Procedures

Provide instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.

1.5.3.3 Removal and Replacement Instructions

Provide step-by-step procedures and a list of required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Use a combination of text and illustrations.

1.5.3.4 Spare Parts and Supply Lists

Provide lists of spare parts and supplies required for repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.5.3.5 Repair Work-Hours

Provide manufacturer's projection of repair work-hours including requirements by type of craft. Identify, and tabulate separately, repair that requires the equipment manufacturer to complete or to participate.

1.5.4 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.5.4.1 Product Submittal Data

Provide a copy of SD-03 Product Data submittals documented with the required approval.

1.5.4.2 Certificates

Provide a copy of SD-07 Certificates submittals documented with the required approval.

1.5.4.3 Manufacturer's Instructions

Provide a copy of SD-08 Manufacturer's Instructions submittals documented with the required approval.

1.5.4.4 O&M Submittal Data

Provide a copy of SD-10 Operation and Maintenance Data submittals documented with the required approval.

1.5.4.5 Parts Identification

Provide identification and coverage for the parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing must show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Group the parts shown in the listings by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog.

1.5.4.6 Warranty Information

List and explain the various warranties and clearly identify the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components of the system.

1.5.4.7 Extended Warranty Information

List all warranties for products, equipment, components, and sub-components whose duration exceeds one year. For each warranty listed, indicate the applicable specification section, duration, start date, end date, and the point of contact for warranty fulfillment. Also, list or reference the specific operation and maintenance procedures that must be performed to keep the warranty valid.

1.5.4.8 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.5.4.9 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components. Provide final set points when applicable.

1.5.4.10 Testing and Performance Data

Include completed pre-functional checklists, functional performance test forms, and monitoring reports. Include recommended schedule for retesting and blank test forms. Provide final set points when applicable.

1.5.4.11 Field Test Reports and Manufacturer's Field Reports

Provide a copy of Field Test Reports (SD-06) and Manufacturer's Field Reports (SD-09) submittals documented with the required approval.

1.5.4.12 Contractor Information

Provide a list that includes the name, address, and telephone number of the General KTR and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization that can provide replacements most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.6 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Provide the O&M data packages specified in individual technical sections. The information required in each type of data package follows:

1.6.1 Data Package 1

- a. Safety precautions and hazards
- b. Cleaning recommendations
- c. Maintenance and repair procedures
- d. Warranty information
- e. Extended warranty information
- f. KTR information
- g. Spare parts and supply list

1.6.2 Data Package 2

- a. Safety precautions and hazards
- b. Normal operations
- c. Environmental conditions
- d. Lubrication data
- e. Preventive maintenance plan, schedule, and procedures
- f. Cleaning recommendations
- g. Maintenance and repair procedures
- h. Removal and replacement instructions

- i. Spare parts and supply list
 - j. Parts identification
 - k. Warranty information
 - l. Extended warranty information
 - m. KTR information
- 1.6.3 Data Package 3
- a. Safety precautions and hazards
 - b. Operator prestart
 - c. Startup, shutdown, and post-shutdown procedures
 - d. Normal operations
 - e. Emergency operations
 - f. Environmental conditions
 - g. Operating log
 - h. Lubrication data
 - i. Preventive maintenance plan, schedule, and procedures
 - j. Cleaning recommendations
 - k. Troubleshooting guides and diagnostic techniques
 - l. Wiring diagrams and control diagrams
 - m. Maintenance and repair procedures
 - n. Removal and replacement instructions
 - o. Spare parts and supply list
 - p. Product submittal data
 - q. O&M submittal data
 - r. Parts identification
 - s. Warranty information
 - t. Extended warranty information
 - u. Testing equipment and special tool information
 - v. Testing and performance data

- w. KTR information
- x. Field test reports

1.6.4 Data Package 4

- a. Safety precautions and hazards
- b. Operator prestart
- c. Startup, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Emergency operations
- f. Operator service requirements
- g. Environmental conditions
- h. Operating log
- i. Lubrication data
- j. Preventive maintenance plan, schedule, and procedures
- k. Cleaning recommendations
- l. Troubleshooting guides and diagnostic techniques
- m. Wiring diagrams and control diagrams
- n. Repair procedures
- o. Removal and replacement instructions
- p. Spare parts and supply list
- q. Repair work-hours
- r. Product submittal data
- s. O&M submittal data
- t. Parts identification
- u. Warranty information
- v. Extended warranty information
- w. Personnel training requirements
- x. Testing equipment and special tool information
- y. Testing and performance data
- z. KTR information

aa. Field test reports

1.6.5 Data Package 5

- a. Safety precautions and hazards
- b. Operator prestart
- c. Start-up, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Environmental conditions
- f. Preventive maintenance plan, schedule, and procedures
- g. Troubleshooting guides and diagnostic techniques
- h. Wiring and control diagrams
- i. Maintenance and repair procedures
- j. Removal and replacement instructions
- k. Spare parts and supply list
- l. Product submittal data
- m. Manufacturer's instructions
- n. O&M submittal data
- o. Parts identification
- p. Testing equipment and special tool information
- q. Warranty information
- r. Extended warranty information
- s. Testing and performance data
- t. KTR information
- u. Field test reports
- v. Additional requirements for HVAC control systems

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 TRAINING

Prior to acceptance of the facility by the KO for Beneficial Occupancy, provide comprehensive training for the systems and equipment specified in the technical specifications. The training must be targeted for the building maintenance personnel, and applicable building occupants. Instructors must be well-versed in the particular systems that they are presenting. Address aspects of the Operation and Maintenance Manual submitted in accordance with Part 1 of this section.

3.2 VALIDATION OF TRAINING

Submit a validation of training signed by the instructor, building maintenance personnel, and applicable building occupants.

-- End of Section --

SECTION 01 80 00

FACILITIES PREVENTATIVE MAINTENANCE PROGRAM
08/22

PART 1 GENERAL

1.1 GENERAL

The intent of this section is for the KTR to complete the Equipment Enrollment Form (EEF) for systems that have been installed or demolished under this project and to update the USCG's Facilities Preventative Maintenance Program (FPMP).

At a minimum, the following items associated with this project are required to be included in the EEF:

1. Concrete Floating Dock - Small Boat
2. WPB Floating Pier

A blank EEF for each location/building impacted by this project will be provided to the KTR for completion. A sample EEF is provided as USCG Reference 1 of this specification section.

1.2 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.

ASTM INTERNATIONAL (ASTM)

ASTM E1557 (2013) Standard Classification for Building Elements and Related Sitework - UNIFORMAT II

RSMeans

RSMeans FMRC (2022) Facilities Maintenance & Repair Costs with RSMeans Data, 29th Annual Edition

United States Coast Guard (USCG)

USCG Reference 1 (2023) Sample EEF (Provided electronically upon award)

USCG Reference 2 (2023) Sample Job Plan (Provided electronically upon award)

USCG Reference 3 (2023) USCG Approved Equipment Enrollment Catalog - Existing SAM Maintained Equipment, Version 1.0 (provided electronically upon award)

1.3 SUBMITTALS

Government approval is required for submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

1.3.1 SD-12 Facilities Preventative Maintenance Program (FPMP)

Equipment Enrollment Form (EEF) for each location/building

Job Plan (as required for equipment not listed in Equipment Enrollment Catalog, USCG Reference 3)

Provide the above submittals a minimum of 1 month prior to construction completion date (CCD).

PART 2 PRODUCTS

2.1 FACILITIES PREVENTATIVE MAINTENANCE PROGRAM (FPMP)

The KTR shall be responsible for developing and submitting an FPMP for this project. It shall include the following:

1. EEF inclusive of all items requiring preventative maintenance and/or special operation as listed in Paragraph 1.1 of this section and equipment or items to be demolished or removed.
2. New Job Plan for the above items that do not have a standard Job Plan in the Equipment Enrollment Catalog (USCG Reference 3).

The Government will accept the above KTR supplied information and input it into the USCG Shore Asset Management (SAM) system.

2.1.1 USCG Approved Equipment Enrollment Catalog

The USCG Approved Equipment Enrollment Catalog (USCG Reference 3) will be electronically provided to the KTR after award to aid in completion of the EEF. The Equipment Enrollment Catalog (USCG Reference 3) is the most current list of equipment that is maintained by the USCG in SAM, and includes the following:

1. Each equipment item for which the USCG performs preventative maintenance per standard scheduling and job plans. The equipment is cataloged in accordance with ASTM E1557.
2. The corresponding preventative maintenance procedures for each equipment item per the "Maintenance & Repair" tab and "Preventive Maintenance Tab" of the RSMeans FMRC (not provided).
3. The corresponding SAM Job Plan for each equipment item.

2.1.2 EEF Requirements

2.1.2.1 Form Fields

The fields with headers in white blocks on the EEF shall be completed by the KTR, except where otherwise noted.

2.1.2.2 SAM Building Numbers

Only equipment from a single USCG SAM Location/Building number is allowed for each EEF. The COR will provide blank EEFs with the applicable USCG SAM Location and Building numbers completed in fields with headers in gray blocks.

2.1.2.3 Equipment Identified for Maintenance

Equipment identified for maintenance by O&M manuals, but not listed on the USCG Equipment Enrollment Catalog, shall be cataloged per ASTM E1557 and listed on the EEF. If the equipment is not listed in ASTM E1557, consult the COR for the proper naming convention.

2.1.2.3.1 RS Means Maintenance Procedures

For equipment listed by the KTR on the EEF that is not found in the USCG Equipment Enrollment Catalog (USCG Reference 3), the KTR shall create a new "Job Plan" in a separate document. The new "Job Plan" shall contain the maintenance procedures listed for the subject equipment as provided in the RSMeans FMRC. The USCG will accept this information from the KTR and enter it into the USCG SAM database. USCG Reference 2 provides a sample/template "Job Plan."

As part of providing a new "Job Plan", the KTR shall provide the labor-hours, equipment cost, material cost, total in-house field, and total with overhead and profit (O&P) fields for each PM activity, as provided in the RSMeans FMRC.

2.1.2.3.2 Job Plan

If the RSMeans FMRC does not have a preventative maintenance plan for a specific piece of equipment, the KTR shall create a detailed "Job Plan" using manufacturer's recommendations and sound engineering practice. Use USCG Reference 2 as a template. Provide detailed preventative maintenance procedures such as inspections, tests, and adjustments required to ensure proper and economical operation that minimizes the need for corrective maintenance. Detailed job plans shall include the following:

- a. Safety instruction and precautions.
- b. Lock out/tag out precautions.
- c. Required skill level.
- d. Number of personnel needed.
- e. Frequency of performing the job plan (i.e. monthly, annual, semi-annual, etc.)
- f. Special tools needed.
- g. Parts needed.
- h. Estimated time required to complete the task.
- i. Lubrication schedules indicating types, grades, and capacities.

2.1.3 Qualifications

The FPMP Submittal Preparer shall have the following qualifications:

- a. Possess multi-discipline technical knowledge of the operations and maintenance of building systems.
- b. Experience with the type of systems that are identified in the

project specification and qualified to interpret manufacturer's information to clarify operation instructions for the USCG.

- c. Experience preparing detailed operations and maintenance manuals for facilities of equal size and complexity as required by this contract.
- d. Ability to prepare spreadsheets to be manually loaded into the USCG's SAM database.
- e. Experience in presenting training classes and coordinating a team of manufacturer's representatives to provide training for facility users and maintenance personnel.

PART 3 EXECUTION

Not Used.

-- End of Section --

Page 1 of 1

REL0001940790

SECTION 01 80 00, USCG REF 2

SAMPLE JOB PLAN
09/15

Job Plan Details // 1702 - D2025-190-1950-A-Solar, closed loop hot water system, up to 6 panels

Organization: USCG

Site: SAM

Duration: 2:14

Priority:

Interruptable? N

Supervisor:

Crew:

Labor Group:

Owner:

Group Owner:

Job Plan Tasks

Task ID	Description	Duration	Meter Name
10	Check with operating or area personnel for deficiencies.	0:02	
20	Inspect interior piping and connections for leaks and damaged insulation; repair as required.	0:08	
30	Check zone and circulating pump motors for excessive overheating; lubricate motor bearings.	0:05	
40	Check pressure and air relief valves for proper operation.	0:02	
50	Check control panel and differential thermostat for proper operation.	0:06	
60	Clean sight glasses, controls, pumps and flow indicators on tanks.	0:08	
70	Check system pressure on closed loop for loss of fluid.	0:03	
80	Check fluid level on drain-back systems; add fluid as necessary.	0:02	
90	Test glycol strength in closed systems, as applicable; if required drain fluid and replace.	0:13	
100	Check heat exchanger for exterior leaks.	0:05	
110	Clean strainers and traps.	0:11	
120	Check storage and expansion tanks; for leaks and deteriorated insulation. Inspect anode protection	0:05	
130	Inspect all collector piping for leaks and damaged insulation; tighten connections and repair as necessary.	0:08	
140	Inspect collector glazing for cracks and seals for tightness; tighten or replace seals as necessary.	0:07	
150	Wash/clean glazing on collector panels.	0:35	
160	Inspect ferrule around pipe flashing where solar piping runs through roof, repair as necessary.	0:05	
170	Check collector mounting brackets and bolts; tighten as required.	0:06	
180	Clean area.	0:04	
190	Fill out maintenance checklist and report deficiencies.	0:01	

Labor

Task ID	Craft	Skill Level	Vendor	Contract	Labor	Qty	Hours	Rate	Line Cost
	1831	DFLT				1.00	2:14	50.00	111.67

Total Planned Labor: 111.67

-- End of Section --

SECTION 02 41 00

DEMOLITION AND DECONSTRUCTION
10/06

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 ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO M 145 (1991; R 2004) Classification of Soils and
Soil-Aggregate Mixtures for Highway
Construction Purposes

AASHTO T 180 (2001; R 2004) Moisture-Density Relations of
Soils Using a 4.54-kg (10-lb) Rammer and an
457-mm (18-in) Drop

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

ASSE/SAFE A10.6 (2006) Safety Requirements for Demolition
Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2003) Safety -- Safety and Health
Requirements

1.2 GENERAL REQUIREMENTS

Do not begin demolition or deconstruction until authorization is received from the Contracting Officer. The work includes demolition and removal of the following:

- A. Concrete Floating Dock - Small Boat: Floating dock; guide piles; gangway wear pads, transition ramp, and rollers; shore tie electric line; and other components as specified and shown on the drawings.
- B. Fixed Timber Pier: Abandoned potable water line and connection valve; abandoned compressed air line and connection valve; abandoned utility enclosure; and other components as specified and shown on the drawings.
- C. Stone Gabion Bulkhead: Compromised/damaged portions of gabion baskets to be repaired and other components as specified and shown on the drawings.
- D. WPB Floating Pier: Pile guide frames; select thru-rods; cleats; timber rub strips and D-fenders; supplemental buoyancy float remnants; utility gangway; personnel gangway hinge and wear pad; light pole anchors; dolphin wire wrap; guide pile coating; misc hardware; and other components as specified and shown on the drawings.

Remove demolition material, rubbish, and debris from Government property daily, unless otherwise directed. Store materials that cannot be removed daily in areas specified by the Contracting Officer. In the interest of occupational safety and health, perform the work in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections.

1.3 SUBMITTALS

Government approval is required for submittals in accordance with Section 01 33 00, SUBMITTAL PROCEDURES:

1.3.1 SD-01 Preconstruction Submittals

Existing Conditions Survey Drawings and Photographs

Demolition and Deconstruction Plan

Approval of the above submittals is required prior to the start of construction.

1.3.2 SD-07 Certificates

Notifications

Approval of the above submittals is required prior to the start of construction.

1.4 EXISTING CONDITIONS DOCUMENTATION

Before beginning any demolition or deconstruction work, record existing conditions in the presence of the Contracting Officer showing the condition of structures and other facilities adjacent to construction areas. Provide annotated drawings and electronic photographs as a record of existing conditions. Photographs shall be taken at low tide in order to show as much of the subject structures as possible. Include in the record the following:

A. Concrete Floating Dock - Small Boat:

- i. Float modules
- ii. Guide pile frames
- iii. Guide piles
- iv. Gangway
- v. Shore tie and electrical lines

B. Fixed Timber Pier:

- i. Deck
- ii. Piles
- iii. Utilities

C. Stone Gabion Bulkhead:

- i. Gabions (from upland and seaward vantage points)

D. WPB Floating Pier;

- i. Float modules
- ii. Timber wales, rub strips, and D-fenders
- iii. Guide pile frames
- iv. Utility lines
- v. Personnel and utility gangways

vi. Light poles

It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document.

1.5 DEMOLITION AND DECONSTRUCTION PLAN

Prepare a Demolition and Deconstruction Plan and submit proposed salvage, deconstruction, and removal procedures for approval before work is started. Include in the plan procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations. Identify components and materials to be salvaged for reuse or recycling with reference to paragraph "Existing Facilities to be Removed". Append tracking forms for all removed materials indicating type, quantities, condition, destination, and end use. Provide procedures for safe conduct of the work in accordance with EM 385-1-1. Plan shall be approved by Contracting Officer prior to work beginning.

The contractor shall not locate any construction equipment on the Fixed Timber Pier or within 10 feet of the back of the Stone Gabion Bulkhead.

1.6 REGULATORY AND SAFETY REQUIREMENTS

Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in ASSE/SAFE A10.6.

1.7 NOTIFICATIONS

Submit timely notification of deconstruction to the Contracting Officer in writing 10 working days prior to the commencement of work in accordance with 40 CFR 61, Subpart M. Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in ASSE/SAFE A10.6. Comply with the Environmental Protection Agency requirements specified. Use of explosives will not be permitted.

1.8 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris and avoid the creation of a nuisance in the area surrounding the construction site. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Sweep pavements as often as necessary to control the spread of dust on Station travel ways and surrounding areas.

1.9 PROTECTION

1.9.1 Traffic Control Signs

- a. Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Anchor barricades in a manner to prevent displacement by wind. Notify the Contracting Officer prior to beginning such work.

- b. Provide a minimum of two (2) FAA type L-810 steady burning red obstruction lights on temporary structures (including cranes) over 100 feet, but less than 200 feet, above ground level. The use of LED based obstruction lights is not permitted. For temporary structures (including cranes) over 200 feet above ground level, provide obstruction lighting in accordance with FAA AC 70/7460-1. Lights shall be operational during periods of reduced visibility, darkness, and as directed by the Contracting Officer. Maintain the temporary services during the periods of construction and remove only after permanent services have been installed and tested and are in operation.

1.9.2 Items to Remain in Place

Take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Government. Repair or replace damaged items as approved by the Contracting Officer. Coordinate the work of this section with all other work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract. Do not overload structural elements to remain. Provide new supports and reinforcement for existing construction weakened by demolition, deconstruction, or removal work. Repairs, reinforcement, or structural replacement require approval by the Contracting Officer prior to performing such work.

1.9.3 Existing Construction Limits and Protection

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide protective measures to control accumulation and migration of dust and dirt in all work areas. Remove snow, dust, dirt, and debris from work areas daily.

1.9.4 Utility Service

Maintain existing utilities indicated to stay in service and protect against damage during demolition and deconstruction operations. Prior to start of work, utilities serving each area of alteration or removal will be shut off by the Government at the request of the Contractor and disconnected and sealed by the Contractor.

1.9.5 Facilities

Protect electrical and mechanical services and utilities. Where removal of existing utilities is specified or indicated, provide approved temporary services or connections for electrical and mechanical utilities. Structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, must remain standing without additional bracing, shoring, or lateral support until demolished or deconstructed, unless directed otherwise by the Contracting Officer. Ensure that no elements determined to be unstable are left unsupported and place and secure bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract.

1.9.6 Protection of Personnel

Before, during, and after the demolition work, the Contractor shall continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the project site. No area, section, or component of floating dock or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.10 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

1.11 RELOCATIONS

Perform the removal and reinstallation of relocated items as indicated with workmen skilled in the trades involved. Repair or replace items to be relocated which are damaged by the Contractor with new undamaged items as approved by the Contracting Officer.

1.12 USE OF EXPLOSIVES

Use of explosives will not be permitted.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

Inspect and evaluate existing structures on site for reuse. Existing construction scheduled to be removed for reuse shall be disassembled. Dismantled and removed materials are to be separated, set aside, and prepared as specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified. Materials shall be designated for reuse on site whenever possible.

3.1.1 Structures

- a. Remove existing structures indicated to be removed as specified and shown in the Drawings.
- b. Demolish structures in a systematic manner. Remove structural members and lower to ground by means of derricks, platforms hoists, or other suitable methods as approved by the Contracting Officer.
- c. Locate demolition and deconstruction equipment throughout the structure and remove materials so as to not impose excessive loads to supporting walls, floors, or framing.

3.1.2 Utilities and Related Equipment

3.1.2.1 General Requirements

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Contracting Officer. Do not interrupt existing utilities serving facilities occupied and used by the Government except when approved in writing and then only after temporary utility services have been approved and provided. Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

3.1.2.2 Disconnecting Existing Utilities

Remove existing utilities as indicated and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Contracting Officer. When utility lines are encountered that are not indicated on the drawings, the Contracting Officer shall be notified prior to further work in that area. Remove meters and related equipment and deliver to a location on the station in accordance with instructions of the Contracting Officer.

3.1.3 Structural Steel

Dismantle structural steel at field connections and in a manner that will prevent bending or damage. Flame-cutting torches are permitted when other methods of dismantling are not practical. Transport structural steel shapes to a designated recycling facility as directed by the Contracting Officer.

3.1.4 Items with Unique/Regulated Disposal Requirements

Remove and dispose of items with unique or regulated disposal requirements in the manner dictated by law or in the most environmentally responsible manner.

3.1.5 Fixtures

Remove and salvage electrical fixtures including, but not limited to the Concrete Floating Dock - Small Boat shore-ties and save for re-use into the new work. Regarding any affected lighting fixtures, salvage unprotected glassware from the fixture and salvage separately. Salvage incandescent, mercury-vapor, and fluorescent lamps and fluorescent ballast manufactured prior to 1978, boxed and tagged for identification, and protected from breakage.

3.1.6 Electrical Devices

Remove switches, switchgear, transformers, conductors including wire and nonmetallic sheathed and flexible armored cable, regulators, meters, instruments, plates, circuit breakers, panel boards, outlet boxes, and similar items. Box and tag these items for identification according to type and size.

3.2 DISPOSITION OF MATERIAL

3.2.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and

not reused or salvaged, shall become the property of the Contractor and shall be removed from Government property. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer of the Contractor's demolition, deconstruction, and removal procedures, and authorization by the Contracting Officer to begin demolition and deconstruction. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Showing for sale or selling materials and equipment on site is prohibited.

3.2.2 Reuse of Materials and Equipment

Remove and store materials and equipment listed to be salvaged on the Civil Demolition Drawings to a secure area away from construction in order to prevent damage, and reinstall as the work progresses.

3.2.3 Salvaged Materials and Equipment

Remove materials and equipment that are indicated and specified to be removed by the Contractor and that are to remain the property of the Government, and deliver to a storage site.

- a. Salvage items and material to the maximum extent possible.
- b. Store all materials salvaged for the Contractor as approved by the Contracting Officer and remove from Government property before completion of the contract. Material salvaged for the Contractor shall not be sold on the site.
- c. Remove salvaged items to remain the property of the Government in a manner to prevent damage, and packed or crated to protect the items from damage while in storage or during shipment. Items damaged during removal or storage must be repaired or replaced to match existing items. Properly identify the contents of containers.

3.2.4 Unsalvageable and Non-Recyclable Material

Dispose of unsalvageable and non-recyclable noncombustible material off site.

3.3 CLEANUP

Remove debris and rubbish from the site. Remove and transport the rubbish in a manner that prevents spillage on streets or adjacent areas. Apply local regulations regarding hauling and disposal.

3.4 DISPOSAL OF REMOVED MATERIALS

3.4.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other nonsalvageable materials resulting from removal operations with all applicable federal, state, and local regulations as contractually specified.

3.4.2 Burning on Government Property

Burning of materials removed from demolished and deconstructed structures will not be permitted on Government property.

3.4.3 Removal from Government Property

Transport waste materials removed from demolished and deconstructed structures, except waste soil, from Government property for legal disposal. Dispose of waste soil as directed.

3.5 REUSE OF SALVAGED ITEMS

Recondition salvaged materials and equipment designated for reuse before installation. Replace items damaged during removal and salvage operations or restore them as necessary to usable condition.

-- End of Section -

SECTION 05 50 15
CIVIL WORKS FABRICATIONS
05/14

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.

ALUMINUM ASSOCIATION (AA)

AA DAF45 (2003; Reaffirmed 2009) Designation System
for Aluminum Finishes

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO HB-17 (2002; Errata 2003; Errata 2005, 17th
Edition) Standard Specifications for Highway
Bridges

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC 325 (2017) Steel Construction Manual, 15th Edition

AISC 360 (2010) Specification for Structural Steel
Buildings

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

ASSE/SAFE A10.3 (2013) Operations - Safety Requirements for
Powder Actuated Fastening Systems

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M (2015; Errata 2015) Structural Welding Code -
Steel

ASTM INTERNATIONAL (ASTM)

ASTM A108 (2018) Standard Specification for Steel Bar,
Carbon and Alloy, Cold-Finished

ASTM A109/A109M (2014) Standard Specification for Steel,
Strip, Carbon (0.25 Maximum Percent), Cold-
Rolled

ASTM A123/A123M (2013) Standard Specification for Zinc (Hot-
Dip Galvanized) Coatings on Iron and Steel
Products

ASTM A148/A148M	(2014) Standard Specification for Steel Castings, High Strength, for Structural Purposes
ASTM A153/A153M	(2016a) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A193/A193M	(2015a) Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service and Other Special Purpose Applications
ASTM A194/A194M	(2015a) Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High-Pressure or High-Temperature Service, or Both
ASTM A27/A27M	(2013) Standard Specification for Steel Castings, Carbon, for General Application
ASTM A276/A276M	(2016) Standard Specification for Stainless Steel Bars and Shapes
ASTM A307	(2014) Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
ASTM A320/A320M	(2015) Standard Specification for Alloy/Steel and Stainless Steel Bolting Materials for Low-Temperature Service
ASTM A325	(2014) Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A36/A36M	(2014) Standard Specification for Carbon Structural Steel
ASTM A449	(2014; R 202) Standard Specification for Hex Cap Screws, Bolts and Studs, Steel, Heat Treated, 120/105/90 ksi Minimum Tensile Strength, General Use
ASTM A475	(2003; R 2014) Standard Specification for Zinc-Coated Steel Wire Strand
ASTM A484/A484M	(2016) Standard Specification for General Requirements for Stainless Steel Bars, Billets, and Forgings
ASTM A490	(2014a) Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength
ASTM A563	(2015) Standard Specification for Carbon and Alloy Steel Nuts

ASTM A572	(2018) Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
ASTM A576	(2017) Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality
ASTM A588/A588M	(2015) Standard Specification for High-Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point, with Atmospheric Corrosion Resistance
ASTM A615/615M	(2020) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A653/A653M	(2015) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A668/A668M	(2015) Standard Specification for Steel Forgings, Carbon and Alloy, for General Industrial Use
ASTM A775/A775M	(2019) Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A780/A780M	(2009; R 2015) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM A786/A786M	(2015a) Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates
ASTM A924/A924M	(2014) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM A934/A934M	(2019) Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A992/A992M	(2011) Standard Specification for Structural Steel Shapes
ASTM D1187/D1187M	(1997; E 2011; R 2011) Asphalt-Base Emulsions for Use as Protective Coatings for Metal
ASTM F1554	(2015) Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
ASTM F436	(2011) Hardened Steel Washers
ASTM F436M	(2011) Hardened Steel Washers (Metric)

ASTM F844 (2007a; R 2013) Washers, Steel, Plain (Flat),
Unhardened for General Use

ASTM F1667 (2011a) Standard Specification for Driven
Fasteners: Nails, Spikes, and Staples

ASTM F2329/F2329M (2015) Standard Specification for Zinc
Coating, Hot-Dip, Requirements for
Application to Carbon and Alloy Steel Bolts,
Screws, Washers, Nuts, and Special Threaded
Fasteners

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Paint 20 (2002; E 2004) Zinc-Rich Primers (Type I,
Inorganic, and Type II, Organic)

SSPC Paint 29 (2002; E 2004) Zinc Dust Sacrificial Primer,
Performance-Based

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety and Health Requirements Manual

1.2 SUBMITTALS

Government approval is required for submittals in accordance with Section 01
33 00, Submittal Procedures:

1.2.1 SD-01 Preconstruction Submittals

Welder's Certification

Welding Procedures

Approval of the above submittals is required prior to the start of
construction.

1.2.2 SD-02 Shop Drawings

Fabrication Drawings

Approval of the above submittal is required prior to the start of
construction.

1.2.3 SD-03 Product Data

Welding Electrodes and Rods

Approval of the above submittals is required prior to the start of
construction.

1.2.4 SD-07 Certificates

Steel Material Certifications

Coating Certifications

Manufacturer's Certificate of Compliance

Approval of the above submittal is required prior to installation.

1.3 QUALITY ASSURANCE

1.3.1 Fabrication Drawings

Submit fabrication drawings for approval prior to fabrication. Prepare in accordance with AISC 326 and AISC 325. Fabrication drawings must not be reproductions of contract drawings. Include complete information for the fabrication and erection of the structure's components, including the location, type, and size of bolts, welds, member sizes and lengths, connection details, blocks, copes, and cuts. Use AWS A2.4 standard welding symbols. Any deviations from the details shown on the contract drawings must be clearly highlighted on the fabrication drawings. Explain the reasons for any deviations from the contract drawings. Fabrication drawings shall be submitted for the following items:

- A. Metal frame assemblies and connections to the floating docks including all steel shapes, steel plates, thru-rods, bolts, hex nuts, washers, screws, misc. hardware, hole sizes, and welds. Provide for the pile guide frames, supplemental buoyancy float frames, cleat assemblies, utility gangway, and personnel gangway replacement components.
- B. Thru-Rod assemblies and connections to the steel frames and/or timber wales including all threaded rod, hex nuts, and washers.
- C. Timber rubstrips including thru-rod access drill hole sizes and locations, pressure treatment details, and nail size and spacing.
- D. D-fender assemblies including catalog cuts, stainless steel continuous flat bar details with slotted hole dimensions and spacing, and lag bolts.

1.3.2 Steel Material Certifications

For each shipment, submit certificates identified with specific lots that all steel provided by the Contractor conforms to material specifications prior to installing piling. Include in the identification data steel shape type, dimensions, chemical composition ladle analyses, mechanical properties, section properties, heat number, and mill identification mark. Testing of sheet piling for mechanical properties shall be performed after the completion of all rolling and forming operations.

1.3.3 Coating Certifications

Certifications that all galvanized coatings conform to the specifications.

1.3.4 Manufacturer's Certification of Compliance

Manufacturer's Certification of Compliance: Manufactured products.

1.3.5 Welding's Certification

Prior to welding, submit certification for each welder stating the type of welding and positions qualified for, the code and procedure qualified under, date qualified, and the firm and individual certifying the qualification tests. If the qualification date of the welding operator is more than one-year old, accompany the welding operator's qualification certificate with a current certificate by the welder attesting to the fact that he has been engaged in welding since the date of certification, with no break in welding service greater than 6 months.

Conform to all requirements specified in AWS D1.1.

1.4 ENVIRONMENTAL REQUIREMENTS

Do not clean or paint surface when damp or exposed to foggy or rainy weather, when metallic surface temperature is less than 5 degrees F above the dew point of the surrounding air, or when surface temperature is below 45 degrees F or over 95 degrees F, unless approved by the Contracting Officer.

PART 2 PRODUCTS

2.1 MISCELLANEOUS STEEL ARTICLES

Conform to the respective specifications and other designated requirements for miscellaneous metal materials and standard metal articles. Size as specified or indicated. Where material requirements are not specified, furnish materials suitable for the intended use and subject to approval. All miscellaneous steel articles shall be new from the manufacturer.

Conform shop fabricated metal items to the requirements and details as specified.

2.1.1 OBI No. 1 - WPB Floating Pier

Note that the WPB Floating Pier was manufactured by Bellingham Marine, Inc.

- A. Steel shapes and plates for pile guide frames and the supplemental buoyancy float frames shall conform to the requirements of ASTM A36. Steel frames shall be hot-dipped galvanized after assembly/welding.
- B. All replacement cleats shall be 18 in. boat cleats constructed of hot-dipped galvanized cast steel.
- C. All connection hex bolts and carriage bolts shall be hot-dipped galvanized and conform to the requirements of ASTM A307, as applicable and as shown on the Drawings.
- D. All thru-rods shall be hot-dipped galvanized threaded rod and conform to the requirements of ASTM A36.
- E. All nuts shall be hot-dipped galvanized heavy hex nuts and conform to the requirements of ASTM A563.
- F. All flat washers shall be hot-dipped galvanized and conform to the requirements of ASTM F844. Provide flat washers at the hex bolt head end and nut end of all bolted connections. Flat washers bearing on

timber shall be round oversized plate washers. Flat washers bearing on steel shall be standard size washers.

- G. All lock washers shall be hot-dipped galvanized and conform to the requirements of ASTM F844. Provide lock washers at the nut ends of all bolted connections and both ends of thru-rods.
- H. All screws shall be stainless steel grade 316.
- I. All nails shall be hot-dipped galvanized and conform to the requirements of ASTM F1667.
- J. Wire rope for the timber pile cluster dolphin lower wrap shall be hot-dipped galvanized 3/4" diameter 6x19 class improved plow steel (IPS) with an independent wire rope center (IWRC). Nominal breaking load shall be 46,000 lbs minimum. All wire rope fittings and attachments (e.g., staples, etc.) shall be hot-dipped galvanized.
- K. Timber rub strips shall be Southern Yellow Pine, Grade No. 1, conforming to the National Design Specification for Wood Construction for stress graded timbers recommended by the NFPA. Match existing thru-rod access drill hole size and pattern. Pressure treat rub strips to 0.6 PCF retention (min) with Chromated Copper Arsenate (CCA) in accordance with AWPA C3. Fabricate lumber as completely as possible prior to preservative treatment. Field treat all cut and drilled timber surfaces with two coats preservative containing copper naphthanate solution (min 2% metallic solution) per AWPA standards. Allow sufficient time after first treatment for preservative to soak in (i.e., dry appearance) prior to applying the second treatment.
- L. D-fender system shall be a continuous hollow D-shaped cross section extruded rubber fendering attached along all exposed edges, corners and ends, which could be struck by a boat. Fendering shall be an EPDM rubber compound, resistant to ozone and ultraviolet deterioration that will not mark the hull of the vessel. The rubber compound shall conform to ASTM D 2000 (3BA 620 A14, B13, C12, EA14, F17, GA11). A-611 Acceptance requirement is 250 ppi, minimum. Submit proposed D-fender system to the Contracting Officer for approval. Match existing size. All mounting hardware and flat bar shall be stainless steel type 304 conforming to ASTM A 193 and ASTM A 240.
- M. Supplemental buoyancy floats shall be hollow one-piece rotationally molded floats manufactured from durable virgin linear low density polyethylene with ultraviolet inhibitors. Floats shall be constructed with molded-in integral slots for durable mounting. The minimum wall thickness shall be 0.375-inch. Color black. Provide suitable size to return the float list to level. Following installation, fill buoyancy float with air until floating dock deck returns to level. The dead load deck surface slope shall be no more than 1/8 inch per foot in the transverse direction and no more than 1 inch per 10 feet of length in the longitudinal direction. Supplemental buoyancy floats shall be Permafloat Marine Lift Tanks as manufactured by Cellofoam North America (Brand Name or Equal).
- N. Supplemental buoyancy float anchorage components as shown on the drawings shall be stainless steel type 304 conforming to ASTM A 193. Wire rope shall be stainless steel type 304 conforming to ASTM A 492.

2.1.2 OBI No. 1 - WPB Floating Pier Gangways

- A. The replacement utility gangway and replacement personnel gangway components shall be manufactured from 6061-T6 aluminum unless otherwise noted. Brush finish after assembly.
- B. Stainless steel components, where specified on the drawings, shall be stainless steel type 304 conforming to ASTM A 240 and ASTM A 276.

2.2 WELDING EQUIPMENT AND MATERIALS

Provide all welding equipment, welding electrodes and rods, welding wire, and fluxes capable of producing satisfactory welds when used by a qualified welder or welding operator performing qualified welding procedures. Use E70 welding electrodes. Provide welding equipment and materials that comply with the applicable requirements of AWS D1.1/D1.1M. Submit product data on welding electrodes and rods.

2.3 GALVANIZING

All hot-dipped galvanizing specified under this contract shall conform to the requirements of ASTM F2329 for threaded parts or ASTM A123/A123M for structural steel members, as applicable, unless specified otherwise galvanize after fabrication where practicable.

2.4 FABRICATION

Fabrication must be in accordance with the applicable provisions of AISC 325. Fabrication and assembly must be done in the shop to the greatest extent possible. Punch, subpunch and ream, or drill bolt holes perpendicular to the surface of the member.

Compression joints depending on contact bearing must have a surface roughness not in excess of 500 micro inch as determined by ASME B46.1, and ends must be square within the tolerances for milled ends specified in ASTM A6/A6M.

Shop splices of members between field splices will be permitted only where indicated on the Contract Drawings. Splices not indicated require the approval of the Contracting Officer.

2.4.1 Markings

Prior to erection, members must be identified by a painted erection mark. Connecting parts assembled in the shop for reaming holes in field connections must be match marked with scratch and notch marks. Do not locate erection markings on areas to be welded. Do not locate match markings in areas that will decrease member strength or cause stress concentrations.

PART 3 EXECUTION

3.1 FABRICATION

3.1.1 Structural Fabrication

Material must be straight before being laid off or worked. Perform straightening, if necessary, by methods that will not impair the metal. Sharp kinks or bends will be cause for rejection of the material. Material with welds will not be accepted except where welding is definitely specified, indicated or otherwise approved. Make bends using approved dies, press brakes or bending rolls. Where heating is required, take precautions to avoid overheating the metal and allow it to cool in a manner that will not impair the original properties of the metal. Proposed flame cutting of material, other than structural steel, is subject to approval and must be indicated on detail drawings. Shearing shall be accurate and all portions of the work neatly finished. Make corners square and true unless otherwise shown. Fillet re-entrant cuts to a minimum radius of 3/4 inch unless otherwise approved. Provide finished members free of twists, bends and open joints. Tighten bolts, nuts and screws.

3.1.1.1 Dimensional Tolerances for Structural Work

Measure dimensions using an approved calibrated steel tape of approximately the same temperature as the material being measured. The overall dimensions of an assembled structural unit must be within the tolerances indicated on the drawings or as specified in the particular section of these specifications for the item of work. Where tolerances are not specified in other sections of these specifications or shown, an allowable variation of 1/32 inch is permissible in the overall length of component members with both ends milled; component members without milled ends must not deviate from the dimensions shown by more than 1/16 inch for members 30 feet or less in length, and by more than 1/8 inch for members over 30 feet in length.

3.1.1.2 Structural Steel Fabrication

Structural steel may be cut by mechanically guided or hand-guided torches, provided an accurate profile with a surface that is smooth and free from cracks and notches is obtained. Prepare surfaces and edges in accordance with AWS D1.1, Subclause 3.2. Where structural steel is not to be welded, chipping or grinding will not be required except as necessary to remove slag and sharp edges of mechanically guided or hand-guided cuts not exposed to view. Chip, grind or machine to sound metal hand-guided cuts which are to be exposed or visible.

3.1.2 Welding

3.1.2.1 Welding of Structural Steel

3.1.2.1.1 Welding Procedures for Structural Steel

Prequalify welding procedures for structural steel as described in AWS D1.1, Subclause 3.1 or qualify by tests as prescribed in AWS D1.1, Clause 4. Properly documented evidence of compliance with all requirements of these specifications for previous qualification tests establish a welding procedure as prequalified. For welding procedures qualified by tests, the test welding and specimen testing will be witnessed and the test report document signed by the Contracting Officer. Approval of any welding procedure will not relieve the responsibility for producing a finished structure meeting all requirements of these specifications. The Contractor will be directed or authorized to make any changes in previously approved welding procedures that are deemed necessary or desirable by the Contractor Officer.

- a. Submit a complete schedule of welding procedures for each steel structure to be welded prior to commencing fabrication. Provide the schedule in conformance with the requirements specified in the provisions AWS D1.1, Clauses 2, 3, 4, 6, 7 and applicable portions of Clause 8.
- b. Provide within the schedule detailed procedure specifications and tables or diagrams showing the procedures to be used for each required joint. Include in the welding procedures filler metal, preheat, interpass temperature and stress-relief heat treatment requirements. Clearly identify each welding procedure as being prequalified or required to be qualified by tests.
- c. Show types and locations of welds designated or in the specifications to receive nondestructive testing in the welding procedures.

3.1.2.1.2 Welding Process

Perform welding of structural steel by an electric arc welding process using a method which excludes the atmosphere from the molten metal and conforms to the applicable provisions of AWS D1.1. Minimize residual stresses, distortion and shrinkage from welding.

3.1.2.1.3 Welding Technique

3.1.2.1.3.1 Filler Metal

Provide the electrode, electrode-flux combination and grade of weld metal conforming to the appropriate AWS specification for the base metal and welding process being used or be as shown where a specific choice of AWS specification allowables is required. Include the AWS designation of the electrodes to be used in the schedule of welding procedures. Use only low hydrogen electrodes for manual shielded metal-arc welding regardless of the thickness of the steel. Use a controlled temperature storage oven at the job site as prescribed by AWS D1.1, Subclause 3.5 to maintain low moisture of low hydrogen electrodes.

3.1.2.1.3.2 Preheat and Interpass Temperature

Perform preheating as required by AWS D1.1, Subclause 3.5 or as otherwise specified except that the temperature of the base metal must be at least 70 degrees F. Slowly and uniformly preheat the weldments by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly in still air.

3.1.2.1.3.3 Stress-Relief Heat Treatment

Where stress relief heat treatment is specified or shown, perform in accordance with the requirements of AWS D1.1, Subclause 5.8 unless otherwise authorized or directed.

3.1.2.1.4 Workmanship

Perform welding workmanship in accordance with AWS D1.1, Clause 3 and other applicable requirements of these specifications.

3.1.2.1.4.1 Preparation of Base Metal

Prior to welding inspect surfaces to be welded to ensure compliance with AWS D1.1, Subclause 3.2.

3.1.2.1.4.2 Temporary Welds

Make temporary welds, required for fabrication and erection, under the controlled conditions prescribed for permanent work. Make temporary welds using low-hydrogen welding electrodes and by welders qualified for permanent work as specified in these specifications. Conduct preheating for temporary welds as required by AWS D1.1 for permanent welds except that the minimum temperature must be 120 degrees F in any case. In making temporary welds, do not strike arcs in other than weld locations. Remove each temporary weld and grind flush with adjacent surfaces after serving its purpose.

3.1.2.1.4.3 Tack Welds

Subject tack welds that are to be incorporated into the permanent work to the same quality requirements as the permanent welds; clean and thoroughly fuse them with permanent welds. Perform preheating as specified above for temporary welds. Multiple-pass tack welds must have cascaded ends. Remove defective tack welds before permanent welding.

3.1.2.2 Welding of Steel Castings

Remove unsound material from the surfaces of steel castings, to be incorporated into welded connections, by chipping, machining, air-arc gouging or grinding. Do not weld major connections designed for transfer of stresses if the temperature of the casting is lower than 100 degrees F. Preheat castings containing over 0.35 percent carbon or over 0.75 percent manganese to a temperature not to exceed 450 degrees F and conduct welding while the castings are maintained at a temperature above 350 degrees F. Welding will not be permitted on castings containing carbon in excess of 0.45 percent except on written authorization. Castings requiring welding repairs after the first annealing and castings involving welding fabrication must be stress-relieved annealed prior to receiving final machining unless otherwise permitted.

3.1.2.3 Welding of Steel Studs

Conform to the requirements of AWS D1.1, Clause 7, except as otherwise specified for the procedures for welding steel studs to structural steel, including mechanical, workmanship, technique, stud application qualification, production quality control and fabrication and verification inspection procedures.

3.1.2.3.1 Application Qualification for Steel Studs

As a condition of approval of the stud application process, furnish certified test reports and certification that the studs conform to the requirements of AWS D1.1, Subclauses 7.2 and 7.3, certified results of the stud manufacturer's stud base qualification test, and certified results of the stud application qualification test as required by AWS D1.1, Subclause 7.6, prior to commencing fabrication, except as otherwise specified.

3.1.2.3.2 Production Quality Control

Conform to the requirements of AWS D1.1, Subclause 7.7, except as otherwise specified for quality control for production welding of studs. Weld studs on which pre-production testing is to be performed in the same general position as required on production studs (flat, vertical, overhead or sloping). If the reduction of the length of studs becomes less than normal as they are welded, stop welding immediately and do not resume until the cause has been corrected.

3.1.2.4 Welding of Aluminum

Conform to the requirements of AA ADM and AWS D1.2/D1.2M. Submit a certified report giving the results of the qualifying tests, and a complete schedule of the welding process for each aluminum fabrication to be welded prior to commencing fabrication.

3.1.3 Bolted Connections

3.1.3.1 Bolted Structural Steel Connections

Provide bolts, nuts and washers of the type specified or indicated. Equip all nuts with washers except for high strength bolts unless indicated otherwise. Use beveled washers where bearing faces have a slope of more than 1:20 with respect to a plane normal to the bolt axis. Where the use of high strength bolts is specified or indicated, the materials, conform workmanship and installation to the applicable provisions of ASTM A325.

- a. Accurately locate bolt holes, smooth, perpendicular to the member and cylindrical.
- b. Drill or subdrill holes for regular bolts and ream in the shop and not more than 1/16 inch larger than the diameter of the bolt.
- c. Match-ream or drill holes for fitted bolts in the shop. Remove burrs resulting from reaming. Keep bolt threads entirely outside of the holes. The body diameter of bolts must have tolerances as recommended by ASME B4.1 for the class of fit specified. Place fitted bolts in reamed holes by selective assembly to provide an LN-2 fit.
- d. Holes for high strength bolts must not have diameters more than 1/16 inch larger than bolt diameters. If the thickness of the material is not greater than the diameter of the bolts, the holes may be punched. If the thickness of the material is greater than the diameter of the bolts the holes may be drilled full size or subpunched or subdrilled at least 1/8 inch smaller than the diameter of the bolts and then reamed to full size. Poor matching of holes will be cause for rejection. Drifting occurring during assembly cannot distort the metal or enlarge the holes. Reaming to a larger diameter of the next standard size bolt will be allowed for slight mismatching.

3.1.4 Shop Assembly

Assemble structural units in the shop to determine the correctness of the fabrication and matching of the component parts unless otherwise specified. Do not exceed those tolerances shown. Closely check each unit assembled to ensure that all necessary clearances have been provided and that binding

does not occur in any moving part. Assembly in the shop must be in the same position as final installation in the field unless otherwise specified. Perform assembly and disassembly work in the presence of the Contracting Officer unless waived in writing. Immediately remedy errors or defects disclosed by the Contractor without cost to the Government. Before disassembly for shipment match-mark each piece of a machinery or structural unit to facilitate erection in the field. Indicate the location of match-marks by circling with a ring of white paint after the shop coat of paint has been applied or as otherwise directed.

3.2 TESTS, INSPECTIONS, AND VERIFICATIONS

Perform material tests and analyses certified by an approved laboratory to demonstrate that materials are in conformity with the specifications. These tests and analyses shall be performed and certified at the Contractor's expense. Perform tests, inspections, and verifications conforming to the requirements of the particular sections of these specifications for the respective items of work unless otherwise specified or authorized. Conduct tests in the presence of the Contracting Officer if so required. Furnish specimens and samples for additional independent tests and analyses upon request by the Contracting Officer. Properly label specimens and samples and prepare for shipment. Submit certified test reports for materials with all materials delivered to the site.

3.2.1 Nondestructive Testing

When doubt exists as to the soundness of any material part, such part may be subjected to any form of nondestructive testing determined by the Contracting Officer. This may include ultrasonic, magnaflux, dye penetrant, x-ray, gamma ray or any other test that will thoroughly investigate the part in question. The cost of such investigation will be borne by the Government. Any defects will be cause for rejection; replace and retest rejected parts at the Contractor's expense.

3.2.2 Tests of Structural Units

The details for tests of structural units must conform to the requirements of the particular sections of these specifications covering these items. Assemble each complete machinery and structural unit and test them in the shop, in the presence of the Contracting Officer, unless otherwise directed. Waiving of tests will not relieve the Contractor of responsibility for any fault in operation, workmanship or material that occurs before the completion of the contract or guarantee. After being installed at the site, operate each complete machinery or structural unit through a sufficient number of complete cycles to demonstrate to the satisfaction of the Contracting Officer that it meets the specified operational requirements in all respects.

3.2.3 Inspection of Structural Steel Welding

The Contractor shall be responsible for providing the specified welds conforming to the requirements of AWS D1.1/D1.1M. The Government reserves the right to complete nondestructive testing of designated welds at its discretion prior to backfilling or other activities that will make welds inaccessible. Government inspection may include any of the following test methods. Should defects or nonconformance to the specified standards be discovered through the testing process, they shall be repaired to the

specified requirements at the Contractor's expense. No contract time extension will be granted to the Contractor to address deficient welds.

3.2.3.1 Visual Examination

For all visual examination of completed welds clean and carefully examine for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement and other surface defects to ensure compliance with the requirements of AWS D1.1/D1.1M, Clause 6, Subclause 6.9, Part C.

3.2.3.2 Nondestructive Testing

Perform as designated or described in the sections of these specifications, the nondestructive testing of shop and field welds covering the particular items of work.

3.2.3.2.1 Testing Agency

The nondestructive testing of welds and the evaluation of tests as to the acceptability of the welds must be performed by a testing agency adequately equipped and competent to perform such services or by the Government using suitable equipment and qualified personnel.

3.2.3.2.2 Examination Procedures

Conform to the following requirements.

3.2.3.2.2.1 Ultrasonic Testing

Make, evaluate and report ultrasonic testing of welds in conformance to the requirements of AWS D1.1/D1.1M, Clause 6, Part C. Provide ultrasonic equipment capable of making a permanent record of the test indications. Make a record of each weld tested.

3.2.3.2.2.2 Magnetic Particle Inspection

Conform magnetic particle inspection of welds to the applicable provisions of ASTM E709.

3.2.3.2.2.3 Dye Penetrant Inspection

Perform dye penetrant inspection of welds conforming to the applicable provisions of ASTM E165/E165M.

3.2.3.2.3 Acceptability of Welds

Welds will be unacceptable if shown to have defects prohibited by AWS D1.1/D1.1M, or possess any degree of incomplete fusion, inadequate penetration or undercutting.

3.2.3.3 Test Coupons

The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive testing. Should tests of any two coupons cut from the work

of any welder show strengths less than that specified for the base metal it will be considered evidence of negligence or incompetence and such welder will be removed from the work. When coupons are removed from any part of a structure, repair the members cut in a neat manner with joints of the proper type to develop the full strength of the members. Peen repaired joints as approved or directed to relieve residual stress. The expense for removing and testing coupons, repairing cut members and the nondestructive testing of repairs is borne by the Government or the Contractor in accordance with the Contract Clauses INSPECTION AND ACCEPTANCE.

3.2.3.4 Supplemental Examination

When the soundness of any weld is suspected of being deficient due to faulty welding or stresses that might occur during shipment or erection, the Government reserves the right to perform nondestructive supplemental examinations before final acceptance. The cost of such inspection will be borne by the Government.

3.2.4 Structural Steel Welding Repairs

Repair defective welds in the structural steel welding repairs in accordance with AWS D1.1/D1.1M, Subclause 3.7. Remove defective weld metal to sound metal by use of air carbon-arc or oxygen gouging. Do not use oxygen gouging on ASTM A514/A514M steel. Thoroughly clean surfaces before welding. Retest welds that have been repaired by the same methods used in the original inspection. Except for the repair of members cut to remove test coupons and found to have acceptable welds costs of repairs and retesting will be borne by the Contractor. Submit welding repair plans for steel, prior to making repairs.

3.3 INSTALLATION

Installation of structural steel must be in accordance with the applicable provisions of AISC 325. Thoroughly clean all parts to be installed. Remove packing compounds, rust, dirt, grit and other foreign matter. Clean holes and grooves for lubrication. Examine enclosed chambers or passages to make sure that they are free from damaging materials. Where units or items are shipped as assemblies they will be inspected prior to installation. Disassembly, cleaning and lubrication will not be required except where necessary to place the assembly in a clean and properly lubricated condition. Do not use pipe wrenches, cold chisels or other tools likely to cause damage to the surfaces of rods, nuts or other parts used for assembling and tightening parts. Tighten bolts and screws firmly and uniformly but take care not to overstress the threads. When a half nut is used for locking a full nut place the half nut first followed by the full nut. Lubricate threads of all bolts except high strength bolts, nuts, and screws with an appropriate lubricant before assembly. Coat threads of corrosion-resisting steel bolts and nuts with an approved antigalling compound. Driving and drifting bolts or keys will not be permitted.

3.3.1 Alignment and Setting

Accurately align each structural unit by the use of steel shims or other approved methods so that no binding in any moving parts or distortion of any member occurs before it is fastened in place. The alignment of all parts with respect to each other must be true within the respective tolerances required. Set true machines to the elevations shown.

3.3.2 STORAGE

Material must be stored out of contact with the ground in such manner and location as will minimize deterioration.

3.4 WORKMANSHIP

Workmanship must be of the highest grade and in accordance with the best modern practices to conform with the specifications for the item of work being furnished.

3.5 CONNECTIONS

Except as modified in this section, connections not detailed must be designed in accordance with AISC 360. Build connections into existing work. Do not tighten anchor bolts set in concrete with impact torque wrenches. Holes must not be cut or enlarged by burning. Bolts, nuts, and washers must be clean of dirt and rust, and lubricated immediately prior to installation.

3.5.1 Common Grade Bolts

ASTM A307 bolts must be tightened to a "snug tight" fit. "Snug tight" is the tightness that exists when plies in a joint are in firm contact. If firm contact of joint plies cannot be obtained with a few impacts of an impact wrench, or the full effort of a man using a spud wrench, contact the Contracting Officer for further instructions.

3.5.2 High-Strength Bolts

Provide direct tension indicator washers in all ASTM A325 bolted connections. Bolts must be installed in connection holes and initially brought to a snug tight fit. After the initial tightening procedure, bolts must then be fully tensioned, progressing from the most rigid part of a connection to the free edges.

3.6 GAS CUTTING

Use of gas-cutting torch in the field for correcting fabrication errors will not be permitted on any major member in the structural framing. Use of a gas cutting torch will be permitted on minor members not under stress only after approval has been obtained from the Contracting Officer.

3.7 WELDING

Welding must be in accordance with AWS D1.1. Provide AWS D1.1 qualified welders, welding operators, and tackers.

Develop and submit the Welding Procedure Specifications (WPS) for all welding, including welding done using prequalified procedures. Prequalified procedures may be submitted for information only; however, procedures that are not prequalified must be submitted for approval.

3.8 SHOP PRIMER REPAIR

Repair shop primer in accordance with the paint manufacturer's recommendation for surfaces damaged by handling, transporting, cutting, welding, or bolting.

3.9 GALVANIZING REPAIR

Repair damage to galvanized coatings using ASTM A780 zinc rich paint for galvanizing damaged by handling, transporting, cutting, welding, or bolting. Do not heat surfaces to which repair paint has been applied.

-- End of Section --

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SECTION 09 97 13.26

COATING OF EXISTING STEEL WATERFRONT STRUCTURES
04/06

PART 1 GENERAL

Work under this section covers field coating of the existing WPD Floating Pier guide piles as shown on the Contract Drawings and specified herein.

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.

ASTM INTERNATIONAL (ASTM)

ASTM D3276 (2015; E 2016) Standard Guide for Painting Inspectors (Metal Substrates)

ASTM D4417 (2014) Field Measurement of Surface Profile of Blast Cleaned Steel

ASTM D7091 (2013) Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nondestructive Coatings Applied to Non-Ferrous Metals

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC AB 1 (2015; E 2017) Mineral and Slag Abrasives

SSPC PA 1 (2016) Shop, Field, and Maintenance Coating of Metals

SSPC PA 2 (2015; E 2017) Procedure for Determining Conformance to Dry Coating Thickness Requirements

SSPC QP 1 (2012; E 2012) Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Industrial Structures)

SSPC QP 5 (2012) Standard Procedure for Evaluating the Qualifications of Coating and Lining Inspection Companies

SSPC Guide 15 (2013) Field Methods for Extraction and Analysis of Soluble Salts on Steel and Other Nonporous Substrates

SSPC PS 11.01 (1982; E 2004) Black (or Dark Red) Coal Tar Epoxy Polyamide Painting System

SSPC PS 13.01 (1982; E 2004) Epoxy Polyamide Painting System

SSPC AB 3	(2003; E 2004) Ferrous Metallic Abrasive
SSPC Paint 16	(2006; R 2015; E 2015) Coal Tar Epoxy-Polyamide Black (or Dark Red) Paint
SSPC Paint 20	(2002; E 2004) Paint Specification No. 20 Zinc-Rich Coating, Type I - Inorganic and Type II - Organic
SSPC Paint 22	(1982; E 2004) Paint Specification No. 22 Epoxy-Polyamide Paints (Primer, Intermediate, and Topcoat)
SSPC SP 1	(2015) Solvent Cleaning
SSPC SP 10/NACE No. 2	(2007) Near-White Blast Cleaning
SSPC SP 12	(2002) Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating
SSPC SP WJ-1/NACE WJ-1	(2012) Waterjet Cleaning of Metals

1.2 SUBMITTALS

Government approval is required for all submittals. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

1.2.1 SD-01 Preconstruction Submittals

Coating Removal Containment and Waste Processing Plan
Coating Work Plan
Quality Control Plan
Corrective Action Plan
Qualifications
Inspection Plan

1.2.2 SD-03 Product Data

Coating Systems

1.2.3 SD-04 Samples

Coating Test Samples

1.2.4 SD-06 Test Reports

Final Coating System Thickness and Holliday Inspection Report

1.2.5 SD-07 Certificates

Coating System
Blast Material

1.3 DELIVERY, STORAGE AND HANDLING

Deliver and store coating materials in accordance with the manufacturer's written instructions and SSPC PA 1.

1.4 QUALITY ASSURANCE

1.4.1 Quality Control Plan

A minimum of 30 days prior to beginning work, submit a Quality Control Plan. The plan must include certifications, qualifications, inspection report forms, inspection procedures, Corrective Active Plan, equipment, and calibration records.

1.4.2 Qualifications

Submit qualification for approval. Qualifications must include name, titles, experience, training, and certifications.

1.4.2.1 Coating Contractor

Coating Contractor must be certified in accordance with requirements in SSPC QP 1. Submit qualifications of key personnel from the coating Contractor. Key personnel include, but are not limited to, those who perform the following duties; surface preparation, coating application, quality control, and inspection.

1.4.2.2 Coating Inspector

Coating Inspector must be NACE or SSPC certified and must be qualified to the requirements of SSPC QP 5 and ASTM D3276. Inspector must remain certified throughout the length of the project.

1.4.3 Laboratory Qualifications

Submit for approval the qualifications of the following testing laboratories including an equipment list, name and address. Submit documentation that the laboratory is regularly engaged in testing of paint samples and blasting material.

- a. Testing Lab for Coating
- b. Testing Lab for Blasting Material

1.4.4 Coating Work Plan

Submit for approval a Coating Work Plan that details the means and methods for surface preparation, coating application, and provisions for testing and repair of defects. The Coating Work Plan must list out the procedures and sequencing of steps required to produce a finished product in accordance with the specifications. The Coating Work Plan is part of the Quality Control Plan.

1.4.5 Nonconformance

Identify the location of nonconformances during inspections. Nonconformities include, but are not limited to, holidays, bond failures, and thickness requirements. Repair nonconformances according to the Corrective Action Plan and manufacturer's written instructions.

1.4.5.1 Corrective Action Plan

Submit a Corrective Action Plan as part of the Quality Control Plan that must be implemented if there is a nonconformity found in the coating. The plan must develop procedures for determining causes of defects and repairing defects.

1.4.6 Inspection Plan

Submit an Inspection Plan prior to the start of coating. The inspection plan must include inspection points, inspection report form, inspection procedures, inspection equipment, standards and procedures for calibration of equipment, and data requirements. At a minimum, inspections must be recorded after surface preparation, after each coat, after curing, and after testing. Coating must be 100 percent visually inspected and report submitted only if coating does not meet requirements.

1.4.6.1 Inspection Reports

Inspections must include surface profile measurements, chloride measurements, holiday testing and thickness measurements. Submit an Inspection Report following each inspection. At a minimum, include the following information in the Inspection Report.

- a. Environmental Conditions
- b. Inspector
- c. Date of Inspection
- d. Materials
- e. Areas Worked
- f. Equipment
- g. Data Collected
- h. Nonconformances

1.5 WARRANTY

Submit warranty that the coating system is of good quality, free from defects and conforms to specifications herein. Warranty shall be good for one year after final acceptance of work.

1.6 ENVIRONMENTAL CONDITIONS

Start work only when ambient and curing temperatures are within limits of coating manufacturer's written recommendations and at least 5 degrees F above dew point temperature. For application over water, the coating must be applied at the start of ebb tide to ensure sufficient drying and curing time and continuing down the steel member as the tide falls.

1.7 SAFETY AND HEALTH PRECAUTIONS

Materials listed in this section may contain coal tar pitch volatiles, which are toxic. Follow safety procedures as recommended by manufacturer. Work in a well ventilated area. Provide, and require workers to use, impervious clothing, gloves, face shields (8 inch minimum), and other appropriate protective clothing necessary to prevent eye and skin contact with coating materials. Keep coatings away from heat, sparks and flame.

1.8 COATING REMOVAL CONTAINMENT AND WASTE PROCESSING PLAN

A minimum of 30 days prior to beginning work, submit for approval a plan detailing the means and methods for containing, collecting, and processing all waste, including solid, liquid, and dissolved, generated from the cleaning and surface preparation operations. This must include all equipment, containers, and/or temporary staging necessary to meet the environmental and discharge requirements. Provide drawings and details of the containment system.

The plan must include provisions for sampling and testing the waste to determine its hazardous waste status as well as a plan for processing and disposal in accordance with the requirement of section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS. This plan must be separate and distinct from the Environmental Management Plan and Solid Waste Management Plan.

PART 2 PRODUCTS

2.1 COATING SYSTEMS

For Concrete Floating Dock - Small Boat new guide piles (BBI No. 1), surface preparation and coating application shall be accomplished in a SSPC QP 3 shop prior to delivery to the site. Perform surface preparation and coating application for the existing WPB Floating Pier (OBI No. 2) in the field with proper containment.

All coating materials must be supplied by one supplier. Follow all temperature, humidity, preparation, application of the coating system and testing requirements listed herein.

Upon completion of coated pile installation in the field, all damaged surfaces must be inspected and repaired. Remove all damaged surfaces by means of the specified surface preparation followed by re-application of the coating system. The final surface of any repairs must meet all requirements of the specifications and the manufacturer.

Submit coating product data, certificates, manufacturer's data, catalog cuts, and other descriptive data for approval of coating repairs. Include manufacturer's written recommendations and literature for field repair procedures of specified coating systems.

2.1.1 Coating

Provide catalyst components for coatings specific for resin components. Use thinners which are compatible with the coating. Coating must consist of one (1) 4.0 mil primer layer and two (2) 8.0 mil (min) layers to provide a total 20.0 mil (min) dry film thickness.

Submit Coating System product data, certificates, manufacturer's data, material safety data sheets, catalog cuts, and other relevant descriptive data for approval. Manufacturer's written recommendations and literature for field repair procedures of specified coating must be submitted.

Finished coating color must be black. The product must be an impermeable coating system specifically designed for use and submersion in the marine environment for corrosion protection of steel. The product must have excellent resistance to abrasion, chemical degradation, moisture and

surface tolerant, and ultraviolet exposure. The product must be in accordance with the latest Federal and State environmental standards. At a minimum, the products must meet the following criteria:

- a. 800 psi adhesion to steel substrate
- b. Suitable for damp application
- c. Below the state VOC limit

2.1.1.1 Zinc Primer

- a. System: SSPC PS 13.01
- b. Paints: SSPC Paint Specification No. 20 Zinc-Rich Coating, Type I - Inorganic

2.1.1.2 Coal Tar Epoxy-Polyamide

- a. System: SSPC PS 11.01
- b. Paints: SSPC Paint 16

2.1.2 Blast Material

If the contractor elects to utilize abrasive grit blasting as the means to remove existing coating and prepare the surface of the existing steel, the blast material must meet either of the following requirements. Silica sand, shot, or spherical shaped abrasives are not permitted. Submit certificates to the COR for approval.

SSPC AB 1. Type 1, natural mineral abrasive, grade to achieve required surface profile.

SSPC AB 3. Class 1, steel abrasive, grit size G25.

2.1.3 Hydro Blasting

SSPC SP WJ-1/NACE WJ-1. The Contractor may elect to utilize hydro or wet blasting operations in the preparation of the existing steel provided the required surface profile is obtained.

PART 3 EXECUTION

3.1 CLEANING AND PREPARATION OF SURFACES

3.1.1 Solvent Cleaning

SSPC SP 1. Remove visible oil, grease, and drawing and cutting compounds by solvent cleaning.

3.1.2 Blast Cleaning

SSPC SP 10/NACE No. 2. After solvent cleaning, complete surface preparation by near-white blast cleaning. Remove residual dust from blasted surface by blowing with dry, oil-free air, vacuuming, or sweeping. Provide surface profile in accordance with manufacturer's written recommendations.

3.1.3 Water Cleaning

The surfaces to be coated must be washed with high-pressure, clean water and detergent, then thoroughly rinsed.

3.1.4 Surface Profile

Blast surfaces to provide a surface profile in accordance with manufacturer's written instructions or at least 1 1/2 mil thickness with epoxy-polyamide system and 2 1/2 mil thickness with coal tar epoxy. Brush blast off the existing surface to create a roughened surface. No material, including solids and liquids, shall be permitted to fall into the water. Waste material must be captured by a suitable collection system. Waste materials must be transferred to the shore and disposed of properly.

Prior to coating, in the presence of the Contracting Officer, test 10 percent of each type of element cleaned to ensure the required surface profile has been achieved. Perform surface profile testing per accepted SSPC procedures and ASTM D4417.

3.1.5 Air Dry

Blow down the surfaces using clean oil-free compressed air and sweep with clean, natural bristle brushes.

3.1.6 Chloride Testing

SSPC Guide 15. Test surfaces for chloride contamination. If present, wash with a super surfactant and water, then dry with compressed air.

3.1.7 Coating Application

The coating must be sprayed, brushed or roller applied in accordance with the manufacturer's directions. For applications over water, apply the approved coating system during the ebb tide and ensure that the surfaces remain free of wind-blown contaminants.

3.2 PROPORTIONING AND MIXING OF COATING SYSTEM

3.2.1 Proportioning of Zinc Primer

Proportion Zinc Primer in accordance with the manufacturer's instructions.

3.2.2 Proportioning of Coal Tar Epoxy-Polyamide System

Proportion Coal Tar in accordance with the manufacturer's instructions.

3.2.3 Mixing of Zinc Primer

Mix components of coating in accordance with the manufacturer's instructions. Power stir until a smooth, uniform consistency results. Stir coating periodically during its induction period.

3.2.4 Mixing of Coal Tar Epoxy-Polyamide System

Mix components of coating in accordance with the manufacturer's instructions. Power stir components to a smooth, uniform consistency. Stir coating periodically during induction period. Follow coating manufacturer's requirements for induction time and pot life of mixed batches.

3.3 COATING APPLICATION

3.3.1 General

Coat in accordance with the manufacturer's instructions. Apply first coat to dry surfaces not more than 4 hours after near-white blast cleaning. Apply coats of each system so that finished surfaces are free from runs, sags, brush marks and variations in color. Application shall follow requirements of SSPC PA 1 and manufacturer's instructions.

3.3.1.1 Application Method for Zinc Primer

Apply coating in accordance with manufacturer's instructions. Allow previous coat to dry to tack-free condition but not more than 72 hours before applying next coat. If more than 72 hours elapses between coats, clean surface, apply a 2 mil wet film thickness of previous coat, allow to cure to a tacky film, and apply a full thickness of next coat.

3.3.1.2 Application Method for Coal Tar Epoxy-Polyamide System

Apply coating in accordance with the manufacturer's instructions. Unless otherwise specified by manufacturer's written recommendations, do not allow drying time between coats to exceed 72 hours. Under conditions of direct sunlight or elevated ambient temperatures of 90 degrees F or greater, limit intercoat drying period to a maximum of 24 hours.

3.3.2 Repair of Defects

Repair detected coating holidays, thin areas, and exposed areas damaged prior to or during installation by surface treatment and application of additional coating in accordance with manufacturer's written recommendations and Corrective Action Plan.

3.3.3 Zinc Primer

Apply one (1) coat at a dry film thickness of 4 mils.

3.3.4 Two-Coat Coal Tar Epoxy-Polyamide System

Apply two (2) coats with each coat at a dry film thickness of not less than 8 mils.

3.3.5 Dry Film Thickness

Zinc Primer and Coal Tar Epoxy-Polyamide: Provide total system minimum dry film thickness of 20 mils. Measure using a magnetic gage.

3.4 SURFACES TO BE COATED

3.4.1 Steel Waterfront Construction

Clean and recoat the existing steel elements as indicated in the contract drawings. Work must include all exposed surfaces of these elements.

3.5 FIELD TESTS

Conduct testing in presence of Contracting Officer. Advise the Contracting Officer five days prior to performing each field test.

3.5.1 Coating Test Samples

Prior to beginning work, perform a test sample over a minimum of 10 square feet. The sample must involve cleaning and preparation of the steel surface as well as application of the approved coating material. Establish adequate environmental controls, containment/collection procedures, and application methods as part of this testing procedure to demonstrate adherence with these specifications. The test samples must be performed in accordance with these specifications and the manufacturer's written recommendations. All waste material generated must be properly disposed of in accordance with the specifications. Samples must be inspected and approved by the Contracting Officer prior to continuation of work.

3.5.2 Holiday Testing

Test for holidays in total coating system. Use a low-voltage holiday detector of less than 90 volts in accordance with manufacturer's instructions. After repair of holidays by surface treatment and application of additional coating or by manufacturer's written recommendation, retest with a low-voltage holiday detector. Submit test results in accordance with Paragraph entitled "Inspection Reports".

3.5.3 Dry Film Thickness

After repair of holidays, measure dry film thickness using a magnetic dry film thickness gage in accordance with ASTM D7091 and SSPC PA 2. Re-measure after an additional coat is applied, and add it to meet minimum thickness requirements. Submit test results in accordance with Paragraph entitled "Inspection Reports".

3.6 FINAL INSPECTION

A final inspection of the coating work shall be completed at the end of the project. The final inspection shall ensure coating conforms to specifications, and is free from defects.

3.7 CLEAN UP

Following completion of work, remove all garbage, equipment, and materials from the project site. Dispose of debris in accordance with applicable local, state, and federal laws.

-- End of Section --

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SECTION 26 00 00.00 20

BASIC ELECTRICAL MATERIALS AND METHODS
07/06

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)

ASTM D 709 (2001; R 2007) Laminated Thermosetting
Materials

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C2 (2007; Errata 2007) National Electrical
Safety Code

IEEE C57.12.28 (2005) Standard for Pad-Mounted Equipment -
Enclosure Integrity

IEEE C57.12.29 (2005) Pad-Mounted Equipment - Enclosure
Integrity for Coastal Environments

IEEE Std 100 (2000) The Authoritative Dictionary of IEEE
Standards Terms

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250 (2003) Enclosures for Electrical Equipment
(1000 Volts Maximum)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (2007) National Electrical Code

1.2 DEFINITIONS

a. Unless otherwise specified or indicated, electrical and electronics terms used in these specifications, and on the drawings, shall be as defined in IEEE Std 100.

b. The technical sections referred to herein are those specification sections that describe products, installation procedures, and equipment operations and that refer to this section for detailed description of submittal types.

c. The technical paragraphs referred to herein are those paragraphs in PART 2 - PRODUCTS and PART 3 - EXECUTION of the technical sections that describe products, systems, installation procedures, equipment, and test methods.

1.3 ELECTRICAL CHARACTERISTICS

Electrical characteristics for this project shall be as defined in drawing.

1.4 ADDITIONAL SUBMITTALS INFORMATION

Submittals required in other sections that refer to this section must conform to the following additional requirements as applicable.

1.4.1 Shop Drawings (SD-02)

Include wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure a coordinated installation. Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices.

1.4.2 Product Data (SD-03)

Submittal shall include performance and characteristic curves.

1.5 QUALITY ASSURANCE

1.5.1 Regulatory Requirements

In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officer. Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

1.5.2 Standard Products

Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in the technical section.

1.5.2.1 Alternative Qualifications

Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.

1.5.2.2 Material and Equipment Manufacturing Date

Products manufactured more than 3 years prior to date of delivery to site shall not be used, unless specified otherwise.

1.6 WARRANTY

The equipment items shall be supported by service organizations which are reasonably convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

1.7 POSTED OPERATING INSTRUCTIONS

Provide for each system and principal item of equipment as specified in the technical sections for use by operation and maintenance personnel. The operating instructions shall include the following:

- a. Wiring diagrams, control diagrams, and control sequence for each principal system and item of equipment.
- b. Start up, proper adjustment, operating, lubrication, and shutdown procedures.
- c. Safety precautions.
- d. The procedure in the event of equipment failure.
- e. Other items of instruction as recommended by the manufacturer of each system or item of equipment.

Print or engrave operating instructions and frame under glass or in approved laminated plastic. Post instructions where directed. For operating instructions exposed to the weather, provide weather-resistant materials or weatherproof enclosures. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

1.8 MANUFACTURER'S NAMEPLATE

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

1.9 FIELD FABRICATED NAMEPLATES

ASTM D 709. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified in the technical sections or as indicated on the drawings. Each nameplate inscription shall identify the function and, when applicable, the position. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be one by 2.5 inches. Lettering shall be a minimum of 0.25 inch high normal block style.

1.10 WARNING SIGNS

Provide warning signs for the enclosures of electrical equipment including substations, pad-mounted transformers, pad-mounted switches, generators, and switchgear having a nominal rating exceeding 600 volts.

a. When the enclosure integrity of such equipment is specified to be in accordance with IEEE C57.12.28 or IEEE C57.12.29, such as for pad-mounted transformers and pad-mounted SF6 switches, provide self-adhesive warning signs on the outside of the high voltage compartment door(s). Sign shall be a decal and shall have nominal dimensions of 7 by 10 inches with the legend "DANGER HIGH VOLTAGE" printed in two lines of nominal 2 inch high letters. The word "DANGER" shall be in white letters on a red background and the words "HIGH VOLTAGE" shall be in black letters on a white background. Decal shall be Panduit No. PPS0710D72 or approved equal.

1.11 ELECTRICAL REQUIREMENTS

Electrical installations shall conform to IEEE C2, NFPA 70, and requirements specified herein.

1.12 INSTRUCTION TO GOVERNMENT PERSONNEL

Where specified in the technical sections, furnish the services of competent instructors to give full instruction to designated Government personnel in the adjustment, operation, and maintenance of the specified systems and equipment, including pertinent safety requirements as required. Instructors shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work. Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the Government for regular operation. The number of man-days (8 hours per day) of instruction furnished shall be as specified in the individual section. When more than 4 man-days of instruction are specified, use approximately half of the time for classroom instruction. Use other time for instruction with equipment or system. When significant changes or modifications in the equipment or system are made under the terms of the contract, provide additional instructions to acquaint the operating personnel with the changes or modifications.

PART 2 PRODUCTS

2.1 FACTORY APPLIED FINISH

Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA 250 corrosion-resistance test and the additional requirements specified in the technical sections.

PART 3 EXECUTION

3.1 FIELD APPLIED PAINTING

Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria. Painting shall be as specified in.

3.2 FIELD FABRICATED NAMEPLATE MOUNTING

Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets.

3.3 WARNING SIGN MOUNTING

Provide the number of signs required to be readable from each accessible side, but space the signs a maximum of 30 feet apart.

-- End of Section --

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SECTION 26 05 19.00 10

INSULATED WIRE AND CABLE
04/06

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.

ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)

AEIC C8 (2000) Extruded Dielectric Shielded Power
Cables Rated 5 Through 46 kV

AEIC CS8 (2000) Extruded Dielectric Shielded Power
Cables Rated 5 Through 46 kV

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE Std 383 (2003) Standard for Qualifying Class 1E
Electric Cables and, Field Splices for
Nuclear Power Generating Stations 2004

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA WC 70 (1999; Errata 2001) Standard for Non-Shielded
Power Cable 2000 V or Less for the
Distribution of Electrical Energy

1.2 SUBMITTALS

1.2.1 SD-03 Product Data

Installation Instructions

The Contractor shall submit cable manufacturing data.

1.2.2 SD-06 Test Reports

Tests, Inspections, and Verifications

Certified copies of test reports shall be submitted by the
Contractor.

1.3 DELIVERY, STORAGE, AND HANDLING

Furnish cables on reels or coils. Each cable and the outside of each reel or coil, shall be plainly marked or tagged to indicate the cable length, voltage rating, conductor size, and manufacturer's lot number and reel number. Each coil or reel of cable shall contain only one continuous cable without splices. Cables for exclusively dc applications, as specified in

paragraph HIGH VOLTAGE TEST SOURCE, shall be identified as such. Shielded cables rated 2,001 volts and above and shall be reeled and marked in accordance with Section I of AEIC C8 or AEIC CS8, as applicable. Reels shall remain the property of the Contractor.

1.4 PROJECT/SITE CONDITIONS

1.5 TESTS, INSPECTIONS, AND VERIFICATIONS

1.5.1 Cable Data

Manufacture of the wire and cable shall not be started until all materials to be used in the fabrication of the finished wire or cable have been approved by the Contracting Officer. Cable data shall be submitted for approval including dimensioned sketches showing cable construction, and sufficient additional data to show that these specifications will be satisfied.

1.5.2 Inspection and Tests

Inspection and tests of wire and cable furnished under these specifications shall be made by and at the plant of the manufacturer, and shall be witnessed by the Contracting Officer or his authorized representative, unless waived in writing. The Government may perform further tests before or after installation. Testing in general shall comply with NEMA WC 70. Specific tests required for particular materials, components, and completed cables shall be as specified in the sections of the above standards applicable to those materials, components, and cable types. Tests shall also be performed in accordance with the additional requirements specified below.

1.5.2.1 High-Voltage Test Source

Where the applicable standards allow a choice, high-voltage tests for cables to be used exclusively on dc circuits shall be made with dc test voltages. Cables to be used exclusively on ac circuits shall be tested with ac test voltages. If both ac and dc will be present, on either the same or separate conductors of the cable, ac test voltages shall be used.

1.5.2.2 Shielded Cables Rated 2,001 Volts or Greater

The following tests shall be performed in addition to those specified above. Section or paragraph references are to AEIC C8 or AEIC CS8 as applicable, unless otherwise stated.

- a. High potential test voltages shall be as required by Table B1 of AEIC C8 or AEIC CS8 as applicable, rather than by NEMA WC 70.
- b. If high potential testing is done with an ac test voltage as specified in paragraph HIGH-VOLTAGE TEST SOURCE, an additional test shall be made using a dc test voltage rated at 75 percent of the specified full dc test voltage, for 5 consecutive minutes.
- c. Production sampling tests shall be performed in accordance with Section D. Sampling frequency and failure contingencies shall be in accordance with paragraph G.3. Unless otherwise approved, samples

shall not be taken from the middle of extruder runs of insulation or shielding made only for one continuous shipping length of cable, if such sampling will result in the need to repair the sampled area.

d. Partial discharge tests shall be performed in accordance with Section E, paragraph E.2, and Section F.

1.5.2.3 Flame Tests

All cable assemblies shall pass IEEE Std 383 flame tests, paragraph 2.5, using the ribbon gas burner. Single-conductor cables and individual conductors of multiple-conductor cables shall pass the flame test of NEMA WC 70. If such tests, however, have previously been made on identical cables, these tests need not be repeated. Instead, certified reports of the original qualifying tests shall be submitted. In this case the reports furnished under paragraph REPORTS, shall verify that all of each cable's materials, construction, and dimensions are the same as those in the qualifying tests.

1.5.2.4 Independent Tests

The Government may at any time make visual inspections, continuity or resistance checks, insulation resistance readings, power factor tests, or dc high-potential tests at field test values. A cable's failure to pass these tests and inspections, or failure to produce readings consistent with acceptable values for the application, will be grounds for rejection of the cable.

1.5.2.5 Reports

Results of tests made shall be furnished. No wire or cable shall be shipped until authorized. Lot number and reel or coil number of wire and cable tested shall be indicated on the test reports.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Wire Table

Wire and cable shall be furnished in accordance with the requirements of the wire table below, and shall conform to the detailed requirements specified herein.

2.1.2 Rated Circuit Voltages

All wire and cable shall have minimum rated circuit voltages in accordance with NEMA WC 70.

2.1.3 Conductors

2.1.3.1 Material for Conductors

Conductors shall conform to all the applicable requirements of NEMA WC 70, as applicable, and shall be annealed copper. Copper conductors may be bare, or tin- or lead-alloy-coated, if required by the type of insulation used.

2.1.3.2 Size

Minimum wire size shall be No. 12 AWG for power and lighting circuits; No. 10 AWG for current transformer secondary circuits; No. 14 AWG for potential transformer, relaying, and control circuits; No. 16 AWG for annunciator circuits; and No. 19 AWG for alarm circuits. Minimum wire sizes for rated circuit voltages of 2,001 volts and above shall not be less than those listed for the applicable voltage in NEMA WC 70, as applicable.

2.1.3.3 Stranding

Conductor stranding classes cited herein shall be as defined in NEMA WC 70, as applicable. Lighting conductors No. 10 AWG and smaller shall be solid or have Class B stranding. Any conductors used between stationary and moving devices, such as hinged doors or panels, shall have Class H or K stranding. All other conductors shall have Class B or C stranding, except that conductors shown on the drawings, or in the schedule, as No. 12 AWG may be 19 strands of No. 25 AWG, and conductors shown as No. 10 AWG may be 19 strands of No. 22 AWG.

2.1.3.4 Conductor Shielding

Conductor shielding conforming to NEMA WC 70, as applicable, shall be used on power cables having a rated circuit voltage above 2,000 volts. In addition, conductor shielding for shielded cables shall also comply with Section C of AEIC C8 or AEIC CS8. Strict precautions shall be taken after application of the conductor shielding to prevent the inclusion of voids or contamination between the conductor shielding and the subsequently applied insulation.

2.1.3.5 Separator Tape

Where conductor shielding, strand filling, or other special conductor treatment is not required, a separator tape between conductor and insulation is permitted.

2.1.4 Insulation

2.1.4.1 Insulation Material

Insulation shall be cross-linked thermosetting polyethylene (XLPE) type, meeting the requirements of NEMA WC 70, as applicable, or an ethylene-propylene rubber (EPR) type meeting the requirements of NEMA WC 70. For shielded cables of rated circuit voltages above 2,000 volts, the following provisions shall also apply:

- a. XLPE, if used, shall be tree-retardant.
- b. Insulation shall be chemically bonded to conductor shielding.
- c. The insulation material and its manufacturing, handling, extrusion and vulcanizing processes, shall all be subject to strict procedures to prevent the inclusion of voids, contamination, or other irregularities on or in the insulation. Insulation material shall be inspected for voids and contaminants. Inspection methods, and maximum allowable void and contaminant content shall be in accordance with Section B of AEIC C8 or AEIC CS8, as applicable.

d. Cables with repaired insulation defects discovered during factory testing, or with splices or insulation joints, are not acceptable.

2.1.4.2 Insulation Thickness

The insulation thickness for each conductor shall be based on its rated circuit voltage.

a. Power Cables/Single-Conductor Control Cables, 2,000 Volts and Below - The insulation thickness for single-conductor cables rated 2,000 volts and below shall be as required by NEMA WC 70, as applicable. Some thicknesses of NEMA WC 70 will be permitted only for single-conductor cross-linked thermosetting polyethylene insulated cables without a jacket. NEMA WC 70 ethylene-propylene rubber-insulated conductors shall have a jacket.

b. Power Cables, Rated 2,001 Volts and Above - Thickness of insulation for power cables rated 2,001 volts and above shall be in accordance with the following:

(1) Non-shielded cables, 2,001 to 5,000 volts, shall comply with NEMA WC 70, as applicable.

(2) Shielded cables rated 2,001 volts and above shall comply with Column B of Table B1, of AEIC C8 or AEIC CS8, as applicable.

c. Multiple-Conductor Control Cables - The insulation thickness of multiple-conductor cables used for control and related purposes shall be as required by NEMA WC 70, as applicable.

2.1.4.3 Insulation Shielding

Unless otherwise specified, insulation shielding shall be provided for conductors having rated circuit voltages of 2,001 volts and above. The voltage limits above which insulation shielding is required, and the material requirements, are given in NEMA WC 70, as applicable. The material, if thermosetting, shall meet the wafer boil test requirements as described in Section D of AEIC C8 or AEIC CS8, as applicable. The method of shielding shall be in accordance with the current practice of the industry; however, the application process shall include strict precautions to prevent voids or contamination between the insulation and the nonmetallic component. Voids, protrusions, and indentations of the shield shall not exceed the maximum allowances specified in Section C of AEIC C8 or AEIC CS8, as applicable. The cable shall be capable of operating without damage or excessive temperature when the shield is grounded at both ends of each conductor. All components of the shielding system shall remain tightly applied to the components they enclose after handling and installation in accordance with the manufacturer's recommendations. Shielding systems which require heat to remove will not be permitted unless specifically approved.

2.1.5 Jackets

All cables shall have jackets meeting the requirements of NEMA WC 70, as applicable, and as specified herein. Individual conductors of multiple-conductor cables shall be required to have jackets only if they are necessary for the conductor to meet other specifications herein. Jackets of

single-conductor cables and of individual conductors of multiple-conductor cables, except for shielded cables, shall be in direct contact and adhere or be vulcanized to the conductor insulation. Multiple-conductor cables and shielded single-conductor cables shall be provided with a common overall jacket, which shall be tightly and concentrically formed around the core. Repaired jacket defects found and corrected during manufacturing are permitted if the cable, including jacket, afterward fully meets these specifications and the requirements of the applicable standards.

2.1.5.1 Jacket Material

The jacket shall be one of the materials listed below. Variations from the materials required below will be permitted only if approved for each specific use, upon submittal of sufficient data to prove that they exceed all specified requirements for the particular application.

a. General Use

- (1) Heavy-duty black neoprene (NEMA WC 70).
- (2) Heavy-duty chlorosulfonated polyethylene (NEMA WC 70).
- (3) Heavy-duty cross-linked (thermoset) chlorinated polyethylene (NEMA WC 70).

b. Accessible Use Only, 2,000 Volts or Less - Cables installed where they are entirely accessible, such as cable trays and raceways with removable covers, or where they pass through less than 10 feet of exposed conduit only, shall have jackets of one of the materials specified in above paragraph GENERAL USE, or the jackets may be of one of the following:

- (1) General-purpose neoprene (NEMA WC 70).
- (2) Black polyethylene (NEMA WC 70).
- (3) Thermoplastic chlorinated polyethylene (NEMA WC 70).

2.1.5.2 Jacket Thickness

The minimum thickness of the jackets at any point shall be not less than 80 percent of the respective nominal thicknesses specified below.

a. Multiple-Conductor Cables - Thickness of the jackets of the individual conductors of multiple-conductor cables shall be as required by NEMA WC 70, and shall be in addition to the conductor insulation thickness required by Column B of Table 3-1 of the applicable NEMA publication for the insulation used. Thickness of the outer jackets or sheaths of the assembled multiple-conductor cables shall be as required by NEMA WC 70.

b. Single-Conductor Cables - Single-conductor cables, if nonshielded, shall have a jacket thickness as specified in NEMA WC 70. If shielded, the jacket thickness shall be in accordance with the requirements of NEMA WC 70.

2.1.6 n/a

2.2 CABLE IDENTIFICATION

2.2.1 Color-Coding

Insulation of individual conductors of multiple-conductor cables shall be color-coded in accordance with NEMA WC 70, except that colored braids will not be permitted. Only one color-code method shall be used for each cable construction type. Control cable color-coding shall be in accordance with NFPA

2.2.2 Shielded Cables Rated 2,001 Volts and Above

Marking shall be in accordance with Section H of AEIC C8 or AEIC CS8, as applicable.

2.2.3 Cabling

Individual conductors of multiple-conductor cables shall be assembled with flame-and moisture-resistant fillers, binders, and a lay conforming to NEMA WC 70, except that flat twin cables will not be permitted. Fillers shall be used in the interstices of multiple-conductor round cables with a common covering where necessary to give the completed cable a substantially circular cross section. Fillers shall be non-hygroscopic material, compatible with the cable insulation, jacket, and other components of the cable. The rubber-filled or other approved type of binding tape shall consist of a material that is compatible with the other components of the cable and shall be lapped at least 10 percent of its width.

2.2.4 Dimensional Tolerance

The outside diameters of single-conductor cables and of multiple-conductor cables shall not vary more than 5 percent and 10 percent, respectively, from the manufacturer's published catalog data.

PART 3 EXECUTION

3.1 INSTALLATION INSTRUCTIONS

The following information shall be provided by the cable manufacturer for each size, conductor quantity, and type of cable furnished:

- a. Minimum bending radius, in inches - For multiple-conductor cables, this information shall be provided for both the individual conductors and the multiple-conductor cable.
- b. Pulling tension and sidewall pressure limits, in pounds.
- c. Instructions for stripping semiconducting insulation shields, if furnished, with minimum effort without damaging the insulation.
- d. Upon request, compatibility of cable materials and construction with specific materials and hardware manufactured by others shall be stated. Also, if requested, recommendations shall be provided for various cable operations, including installing, splicing, terminating, etc.

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-- End of Section --

SECTION 26 27 29

MARINA ELECTRICAL WORK
04/06

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.

ASTM INTERNATIONAL (ASTM)

- | | |
|----------|---|
| ASTM B 1 | (2001; R 2007) Standard Specification for Hard-Drawn Copper Wire |
| ASTM B 8 | (2004) Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft |

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

- | | |
|------------|--|
| NEMA ICS 6 | (1993; R 2006) Standard for Industrial Controls and Systems Enclosures |
| NEMA KS 1 | (2001; R 2006) Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum) |
| NEMA RN 1 | (2005) Standard for Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit |
| NEMA ST 20 | (1992; R 1997) Standard for Dry-Type Transformers for General Applications |
| NEMA TC 14 | (2002) Standard for Reinforced Thermosetting Resin Conduit (RTRC) and Fittings |
| NEMA TC 2 | (2003) Standard for Electrical Polyvinyl Chloride (PVC) Tubing and Conduit |
| NEMA WD 1 | (1999; R 2005) Standard for General Requirements for Wiring Devices |

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- | | |
|----------|--|
| NFPA 303 | (2006) Fire Protection Standards for Marinas and Boatyards |
| NFPA 70 | (2007) National Electrical Code |

UNDERWRITERS LABORATORIES (UL)

UL 1569	(1999; Rev thru Nov 2006) Metal-Clad Cables
UL 467	(2007) Standard for Grounding and Bonding Equipment
UL 486A-486B	(2003; Rev thru Aug 2006) Standard for Wire Connectors
UL 489	(2002; Rev thru Jun 2006) Standard for Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
UL 498	(2001; Rev thru May 2007) Attachment Plugs and Receptacles
UL 50	(2007) Standard for Enclosures for Electrical Equipment
UL 510	(2005; Rev thru Aug 2005) Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape
UL 514B	(2004; Rev thru Aug 2007) Standard for Conduit, Tubing and Cable Fittings
UL 514C	(1996; Rev thru Mar 2007) Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
UL 651	(2005; Rev thru May 2007) Standard for Schedule 40 and 80 Rigid PVC Conduit and Fittings
UL 67	(1993; Rev thru Apr 2006) Standard for Panelboards
UL 83	(2003; Rev thru Apr 2006) Standard for Thermoplastic-Insulated Wires and Cables
UL 869A	(2006) Reference Standard for Service Equipment
UL 870	(1995; Rev thru Jul 2003) Standard for Wireways, Auxiliary Gutters, and Associated Fittings
UL 886	(1994; Rev thru Nov 2005) Outlet Boxes and Fittings for Use in Hazardous (Classified) Locations
UL 943	(2006) Ground-Fault Circuit-Interrupters

1.2 RELATED REQUIREMENTS

Section 26 00 00.00 20 BASIC ELECTRICAL MATERIALS AND METHODS, applies to this section with additions and modifications specified herein as applicable.

1.3 SUBMITTALS

1.3.1 SD-02 Shop Drawings

Panelboards

Transformers

Wireways

1.3.2 SD-03 Product Data

Receptacles

Enclosed circuit breakers

Conduit and fittings (each type)

Wires and cables

Transformers

Splice and termination components

Wireways

Cabinets, junction boxes, and pull boxes

Mounting straps

Conduit support

1.3.3 SD-06 Test Reports

Transformer tests

600-volt wiring test

Submit test results for approval in report format.

1.4 QUALITY ASSURANCE

1.4.1 Transformer Tests

Submittal shall include routine NEMA ST 20 transformer test results on each transformer and also include results of NEMA design and prototype tests that were made on transformers electrically and mechanically equal to those specified.

1.4.2 Grounding System Tests

Submittal shall include written results of each test and indicate location of rods as well as resistance and soil conditions at the time measurements were made.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

Materials, equipment, and devices shall, as a minimum, meet requirements of UL where UL standards are established for those items, and requirements of NFPA 70 and NFPA 303.

2.2 CONDUIT AND FITTINGS

Plastic-coated rigid steel conforming to the following:

2.2.1 Rigid Nonmetallic Conduit

PVC Type EPC-80 in accordance with NEMA TC 2, or fiberglass conduit in accordance with NEMA TC 14.

2.2.2 Plastic-Coated Rigid Steel and IMC Conduit

NEMA RN 1, Type 40 40 mils thick.

2.2.3 Fittings for Metal Conduit and Flexible Metal Conduit

UL 514B. Ferrous fittings shall be cadmium or zinc coated in accordance with UL 514B.

2.2.3.1 Fittings for Rigid Metal Conduit and IMC

Threaded type. Split couplings unacceptable.

2.2.3.2 Fittings for Use in Hazardous Locations

UL 886.

2.2.4 Fittings for Rigid Nonmetallic Conduit

UL 514B and UL 651.

2.2.5 Expansion Joints

Provide conduit expansion joints having 6 inch expansion at each expansion joint in the pier and in each conduit run exceeding 250 feet. Provide expansion joints having 2 inch expansion in each conduit run of less than 250 feet.

2.3 POWER CENTER

A complete factory-assembled and prewired unit specifically constructed for marina applications. Power center shall be pedestal mounted type having a separate circuit breaker for each outlet. Circuit breaker size shall be the same size as outlet to which it is connected. Power outlets shall be single, locking and grounding type, size and voltage as indicated. Power center enclosure shall be fiberglass or foamed thermoplastic with

polyurethane coating. Each individual outlet and circuit breaker enclosure shall have a separate gasketed weatherproof cover. Entire exterior surface of power center shall be nonmetallic design for exposure to saltwater environment.

2.3.1 Warning Sign

Provide permanently mounted waterproof warning sign at each power center. Sign shall have red letters on a white background with letters no less than .25 inch in height. Sign shall be worded as follows:

"WARNING

To minimize shock and fire hazards:

Turn off the boat's shore connection switch before connecting or disconnecting shore cable.

Connect shore power cable at the boat first.

Disconnect shore power cable at shore outlet first.

Close shore power inlet cover tightly.

DO NOT ALTER SHORE POWER CABLE CONNECTORS"

2.4 OUTLET BOXES AND COVERS

UL 514C.

2.4.1 Outlet Boxes in Hazardous Locations

UL 886. Suitable for wet locations.

2.5 CABINETS, JUNCTION BOXES, AND PULL BOXES

Volume greater than 200 cubic inches, UL 50, NEMA 4X nonmetallic or stainless steel.

2.6 WIRES AND CABLES

Shall meet applicable requirements of NFPA 70 and UL for type of insulation, jacket, and conductor specified or indicated. Do not provide wires and cables manufactured more than 12 months prior to date of delivery to site.

2.6.1 Conductors

No. 8 AWG and larger diameter shall be stranded; No. 10 AWG and smaller shall be solid, except that conductors for remote control, alarm, and signal circuits, Classes 1, 2, and 3, shall be stranded. Conductors shall be copper. Conductor sizes and ampacities shown are based on copper.

2.6.1.1 Minimum Conductor Sizes

Minimum size for branch circuits shall be No. 12 AWG; for Class 1 remote-control and signal circuits, No. 14 AWG; for Class 2 low-energy, remote-

control and signal circuits, No. 18 AWG; and for Class 3 low-energy, remote-control, alarm, and signal circuits, No. 22 AWG.

2.6.2 Color Coding

Provide for service, feeder, branch, control, and signaling circuit conductors. Color shall be green for grounding conductors and white for neutrals; except where neutrals of more than one system are installed in same raceway or box, other neutral shall be white with colored, except green, stripe. Color of ungrounded conductors in different voltage systems shall be as follows:

- a. 120/208 volt, three phase:
 - (1) Phase A - black
 - (2) Phase B - red
 - (3) Phase C - blue
- b. 277/480 volt, three phase:
 - (1) Phase A - brown
 - (2) Phase B - orange
 - (3) Phase C - yellow
- c. 120/240 volt, single phase: red and black

2.6.3 Insulation

Unless otherwise required by NFPA 70, power and lighting wires shall be 600-volt, Type THWN, XHHW, or RHW, except that grounding wire may be Type TW; remote-control and signal circuits shall be Type TW, THW, or TF. Conductors shall conform to UL 83. Where lighting fixtures require 90-degree C conductors, provide only conductors with 90-degree C insulation or better.

2.6.4 Bonding Conductors

ASTM B 1, solid bare copper wire for sizes No. 8 AWG and smaller diameter; ASTM B 8, Class B, stranded bare copper wire for sizes No. 6 AWG and larger diameter.

2.6.5 Metal-Clad Cable

UL 1569; NFPA 70, Type MC cable. Cable shall have a continuous impervious corrugated aluminum sheath and overall jacket of PVC or neoprene. Cable shall be rated 600 volts and 90 degrees C continuous operating temperature.

2.6.6 Splice and Termination Components

UL 486A-486B, for wire connectors, and UL 510 for insulating tapes. Connectors for No. 10 AWG and smaller diameter wires shall be insulated,

pressure type in accordance with UL 486A-486B, twist-on splicing connector. Provide solderless terminal lugs on stranded conductors.

2.6.6.1 Watertight Splice Box Connectors

Malleable iron with protective grounding sleeve for jacketed metal-clad cable, and designed for mounting on fiberglass splice boxes.

2.6.6.2 Watertight Pin Connectors

Connectors shall be rated 600 volts, and individual pins shall have ampere rating equal to or greater than the cable to which they are joined. Connectors shall be molded-to-cable, quick-disconnect, polarized type having full male shroud so that when male and female assemblies are joined the shroud shall provide a completely sealed connection. Connector material shall be neoprene resistant to oil, dust, acids, and sunlight and shall be watertight.

2.7 DEVICE PLATES

Provide UL listed, one-piece device plates for outlets to suit the devices installed. Plates shall be nylon or lexan, minimum 0.10 inch wall thickness. Plates shall be same color as receptacle with which they are mounted. Screws shall be stainless steel machine type with countersunk heads in color to match finish of plate. Use of sectional-type device plates will not be permitted. Plates shall be gasketed and UL listed for wet locations.

2.8 DISCONNECT SWITCHES

NEMA KS 1. Switches serving as motor-disconnect means shall be horsepower rated. Provide heavy duty-type switches where indicated, where switches are rated greater than 240 volts, and for double-throw switches. Provide switches in NEMA 4X nonmetallic or stainless steel enclosure in accordance with NEMA ICS 6.

2.9.1 Duplex Receptacles

Receptacles shall be 15 amperes, 125 volts, No. 5242.

2.9.2 Weatherproof Receptacles

Provide in nonmetallic box with gasketed, weatherproof, nonmetallic cover plate and gasketed cap over each receptacle opening. Provide caps with a spring-hinged flap. Provide UL listed receptacle for use in wet locations.

2.9.3 Ground-Fault Circuit Interrupter (GFCI) Receptacles

UL 943. Duplex type for mounting in standard outlet box. Device shall be capable of detecting current leak of 6 milliamperes or greater and tripping in accordance with UL 943 for Class A GFCI devices.

2.10 PANELBOARDS

UL 67 and UL 50 having a short-circuit current rating of 100,000 amperes symmetrical minimum. Panelboards for use as service disconnecting means shall additionally conform to UL 869A. Panelboards shall be circuit breaker

equipped. Design shall be such that individual breakers can be removed without disturbing adjacent units or without loosening or removing supplemental insulation supplied as means of obtaining clearances as required by UL. Where "space only" is indicated, make provisions for future installation of breakers. Key panelboard locks the same. Directories shall indicate load served by each circuit in panelboard and main source of service to panelboard, such as Panel PA served from Panel MDP. Type directories and mount in holder behind transparent protective covering.

2.10.1 Panelboard Buses

Copper. Support bus bars on bases independent of circuit breakers. Design main buses and back pans so that breakers may be changed without machining, drilling, or tapping. Provide isolated neutral bus in each panel for connection of circuit neutral conductors. Provide separate ground bus identified as equipment grounding bus in accordance with UL 67 for connecting grounding conductors; bond to steel cabinet.

2.10.2 Circuit Breakers

UL 489 thermal magnetic type having a minimum short-circuit current rating equal to the short-circuit rating of the panelboard in which the circuit breaker will be mounted. Breaker terminals shall be UL listed as suitable for type of conductor provided. Plug-in circuit breakers and series rated circuit breakers are unacceptable.

2.10.2.1 Multipole Breakers

Provide common trip type with single operating handle. Breaker design shall be such that overload in one pole automatically causes all poles to open. Maintain phase sequence throughout each panel so that any three adjacent breaker poles are connected to Phases A, B, and C respectively.

2.10.2.2 Circuit Breaker With GFCI

UL 943 and NFPA 70. Provide with push-to-test button, visible indication of tripped condition, and ability to detect and trip on current imbalance of 6 milliamperes or greater in accordance with UL 943 for Class A GFCI devices.

2.10.3 Panelboard Enclosure

NEMA 4X nonmetallic or stainless steel. Hardware shall be stainless steel.

2.11 ENCLOSED CIRCUIT BREAKERS

UL 489. Individual molded case circuit breakers with short-circuit current rating of 25,000 amperes symmetrical minimum. Plug-in circuit breakers and series rated circuit breakers are not acceptable. Enclosure shall be NEMA 4X nonmetallic or stainless steel type.

2.12 TRANSFORMERS

NEMA ST 20, general purpose, dry-type, self-cooled, sealed. Provide transformers in NEMA 3R enclosure. Transformer shall have 220 degrees C insulation system for transformers 15 kVA and greater and shall have 180 degrees C insulation for transformers rated 10 kVA and less, with temperature rise not exceeding 80 degrees C under full-rated load in maximum

ambient of 40 degrees C. Transformer of 150 degrees C temperature rise shall be capable of carrying continuously 100 percent of nameplate kVA without exceeding insulation rating. Transformer of 115 degrees C temperature rise shall be capable of carrying continuously 115 percent of nameplate kVA without exceeding insulation rating. Transformer of 80 degrees C temperature rise shall be capable of carrying continuously 130 percent of nameplate kVA without exceeding insulation rating. Transformers shall be quiet type with maximum sound level of 3 decibels less than NEMA standard level for transformer ratings indicated.

2.12.1 Cover Plates

Blank cover with same finish specified for receptacle and switch cover plates.

2.12.2 Conduit Sizing

Conduit for single outlets shall be minimum of 3/4 inch and for multiple outlets minimum of one inch.

2.12.3 Terminal Cabinets

NEMA 4X nonmetallic or stainless steel with backboard. Hardware shall be stainless steel.

2.13 GROUNDING AND BONDING EQUIPMENT

UL 467. Ground rods shall be copper-clad steel, with minimum diameter of 3/4 inch and minimum length of 10 feet.

2.14 NAMEPLATES

Provide nameplates in accordance with Section 26 00 00.00 20 BASIC ELECTRICAL MATERIALS AND METHODS.

PART 3 EXECUTION

3.1 INSTALLATION

Electrical installations shall conform to requirements of NFPA 70 and to requirements specified herein.

3.1.2 Overhead Service

Overhead service conductors shall terminate at service equipment weatherhead. Overhead service conductors and support bracket for overhead conductors are included in Section 33 71 01 OVERHEAD TRANSMISSION AND DISTRIBUTION.

3.1.3 Hazardous Locations

Perform work in hazardous locations, as defined by NFPA 70, in strict accordance with NFPA 70 for particular class, division, and group of hazardous locations involved. Provide conduit and cable seals where required by NFPA 70. Conduit shall have tapered threads.

3.1.4 Service Entrance Identification

Label or identify service entrance disconnect devices, switches, and enclosures.

3.1.4.1 Labels

Where work results in service disconnect devices in more than one enclosure, as permitted by NFPA 70, label each enclosure, new and existing, as one of several enclosures containing service entrance disconnect devices. Label, at minimum, shall indicate number of service disconnect devices housed by enclosure and shall indicate total number of enclosures that contain service disconnect devices. Provide laminated plastic labels with letters no less than 0.25 inch in height; and engrave on black-on-white matte finish.

3.1.5 Wiring Methods

Provide insulated conductors installed in rigid conduit, except where specifically indicated or specified otherwise or required by NFPA 70 to be installed otherwise. Grounding conductor shall be separate from electrical system neutral conductor. Provide insulated, green equipment grounding conductors for circuits installed in conduit and raceways. Minimum conduit size shall be 1/2 inch in diameter for low-voltage lighting and power circuits.

3.1.5.1 Plastic-Coated Galvanized Rigid Steel and IMC Conduit

- a. Use only for service entrance conduit and as required by NFPA for hazardous locations.

3.1.5.2 PVC Schedule 40 and PVC Schedule 80

- a. Do not install PVC Schedule 40 in areas subject to physical damage.
- b. Do not install PVC Schedule 80 in areas subject to severe physical damage.
- c. Do not install in hazardous areas.

3.1.5.3 Service Entrance Conduit, Overhead

PVC, Type EPC-40, plastic-coated galvanized rigid steel or IMC from service entrance to service weatherhead.

3.1.5.4 Service Entrance Conduit, Underground

PVC, Type EPC-40, plastic-coated galvanized rigid steel or steel IMC. Encase underground portion in a minimum of 3 inches of concrete. Install a minimum of 18 inches below slab or grade.

3.1.5.5 Metal-Clad Cable

Install in accordance with NFPA 70, Type MC cable.

3.1.5.6 Underground Conduit Other Than Service Entrance

PVC, Type EPC-40, plastic-coated rigid steel, plastic-coated steel IMC, or fiberglass. Convert nonmetallic conduit, other than PVC Schedule 40 or 80, to plastic-coated rigid or IMC steel conduit before rising through pier deck. Plastic coating shall extend minimum 6 inches above pier deck.

3.1.6 Conduit Installation

Run conduit exposed on side of wood and existing concrete pier structures, supported by hangers under pier structure concealed in new concrete pier structure. Install conduit parallel with or at right angles to structural members.

3.1.6.1 Conduit Support

Support conduit by nonmetallic pipe straps, wall brackets, hangers, or trapeze. Fasten by stainless steel wood screws to wood and by concrete inserts or expansion bolts on concrete. Threaded C-clamps may be provided on rigid steel conduit only. Load applied to fasteners shall not exceed one-fourth proof test load. Fasteners attached to concrete ceiling shall be vibration resistant and shock resistant. Holes cut to depth of more than 1 1/2 inches in reinforced concrete beams or to depth of more than 3/4 inch in concrete joints shall not cut main reinforcing bars. Fill unused holes. Where conduit crosses expansion joints, provide suitable watertight expansion fitting that maintains conduit electrical continuity by bonding jumpers or other means.

3.1.6.2 Directional Changes in Conduit Runs

Make changes in direction of runs with symmetrical bends or molded fittings. Make field-made bends and offsets with conduit-bending machine suitable for type of conduit used. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent dirt or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of obstructions.

3.1.6.3 Expansion Joints

Install as recommended by the manufacturer for the temperature conditions at time of installation.

3.1.6.4 Pull Wire

Install in empty conduits in which wire is to be installed by others. Pull wire shall be plastic having minimum 200 pound tensile strength. Leave minimum 12 inches of slack at each end of pull wire.

3.1.6.5 Locknuts and Bushings

Fasten conduits to sheet metal boxes and cabinets with two locknuts where required by NFPA 70, where insulated bushings are provided, and where bushings cannot be brought into firm contact with the box; otherwise, provide minimum single locknut and bushing. Locknuts shall have sharp edges for digging into wall of metal enclosures. Install bushings on ends of conduits, and provide insulating type where required by NFPA 70.

3.1.6.6 Conduit and Cable Connections

Provide watertight connectors for conduit and cable connections to boxes and cabinets.

3.1.7 Boxes, Outlets, and Supports

Provide boxes in wiring or raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways shall be cast-metal, hub type, and when specifically indicated. Boxes in other locations shall be nonmetallic boxes provided with nonmetallic conduit system. Each box shall have volume required by NFPA 70 for number of conductors enclosed in a box. Provide gaskets for boxes. Provide separate boxes for flush or recessed fixtures when required by fixture terminal operating temperature. Fasten boxes and supports with wood screws on wood and with bolts and expansion shields on concrete. Threaded studs driven in by powder charge and provided with lockwashers and nuts.

3.1.7.1 Boxes

Boxes for use with raceway systems shall be minimum 1 1/2 inches deep, except where shallower boxes required by structural conditions are approved. Boxes shall be minimum 4 inches square, except that 4 by 2 inch boxes may be provided where only one raceway enters outlet. Telephone outlets shall be minimum of 4 inches square by 1 1/2 inches deep.

3.1.7.2 Pull Boxes

Construct of at least minimum size required by NFPA 70 compatible with nonmetallic raceway systems, except where cast-metal boxes are required in locations specified herein. Furnish boxes with screw-fastened covers. Where several feeders pass through common pull box, tag feeders to indicate clearly electrical characteristics, circuit number, and panel designation.

3.1.8 Mounting Heights

Mount panelboards, circuit breakers, and disconnecting switches so maximum height of operating handle is 78 inches above finished structure. Mount receptacles a minimum of 18 inches above finished structure. In no case shall entire or part of panelboards, boxes, cabinets, receptacles, and other electrical devices be mounted below the electrical datum plane as defined in NFPA 303. Measure mounting heights of wiring devices and outlets to center of device or outlet.

3.1.9 Conductor Identification

Provide within each enclosure where tap, splice, or termination is made. For conductor sizes No. 6 AWG and smaller diameter, color coding shall be by factory-applied, color-impregnated insulation. For conductor sizes No. 4 AWG and larger diameter, color coding shall be by plastic-coated, self-sticking markers; colored nylon cable ties and plates; or heat shrink-type sleeves. Identify control circuit terminations.

3.1.10 Splices

Make splices in accessible locations. Make splices in conductor sizes No. 10 AWG and smaller diameter with insulated, pressure-type connector. Make splices in conductor sizes No. 8 AWG and larger diameter with solderless

connector, and cover with insulation material equivalent to conductor insulation.

3.1.11 Covers and Device Plates

Install gasketed plates with alignment tolerance of 1/16 inch.

3.1.12 Grounding and Bonding

NFPA 70. Ground-exposed, noncurrent-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor in metallic and nonmetallic raceways, and neutral conductor of wiring systems. Make ground connection at main service equipment, and extend grounding conductor to point of entrance of metallic water service. Make connection to water pipe by suitable ground clamp or lug connection to plugged tee. When flanged pipes are encountered, make connection with lug bolted to street side of flanged connection. Supplement metallic water service grounding system with additional made electrode in compliance with NFPA 70.

3.2.1 Workmanship

Lay out work in advance. Exercise care where cutting, channeling, chasing, or drilling of existing surfaces is necessary for proper installation, support, or anchorage of conduit, raceways, or other electrical work. Repair damage to structure, piping, and equipment using skilled craftsmen of trades involved.

3.2.2 Existing Concealed Wiring to be Removed

Disconnect from its source. Remove conductors, cut exposed conduit flush with structure, and seal openings with material to match adjacent surfaces.

3.2.3 Existing Electrical Distribution System Removal

Include removal of equipment's associated wiring, including conductors, cables, exposed conduit, boxes, fittings, anchors, supports, and other such items, back to equipment's source as indicated. Fill holes in structure where electrical equipment is removed with material to match adjacent surface. Provide unused openings in remaining boxes, fittings, and equipment with watertight nonmetallic knockout seals.

3.2.4 Continuation of Service

Maintain continuity of service to existing circuits of equipment to remain. Existing circuits of equipment shall remain energized. Circuits which are to remain but were disturbed during demolition shall have circuits wiring and power restored back to original condition.

3.3.1 Devices Subject to Manual Operation

Operate each device subject to manual operation at least five times, demonstrating satisfactory operation each time.

3.3.2 Transformer Tests

Perform tests classified as routine in accordance with NEMA ST 20 on each transformer.

3.3.3 600-Volt Wiring Test

Test wiring rated 600 volts and less to verify that no short circuits or accidental grounds exist. Perform insulation resistance tests on wiring No. 6 AWG and larger diameter using instrument which applies voltage of approximately 500 volts to provide direct reading of resistance. Minimum resistance shall be 250,000 ohms.

3.3.4 Grounding System Test

Test grounding system to ensure continuity and resistance to ground is not excessive. Test each ground rod for resistance to ground before making connections to rod; tie grounding system together and test for resistance to ground. Make resistance measurements in dry weather, not earlier than 48 hours after rainfall.

-- End of Section --

SECTION 26 42 13.00 20

CATHODIC PROTECTION BY GALVANIC ANODES
04/06

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.

ASTM INTERNATIONAL (ASTM)

ASTM A36/A36M (2014) Standard Specification for Carbon Structural Steel

1.2 SUBMITTALS

Government approval is required for submittals in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

1.2.1 SD-01 Preconstruction Submittals

Anode Installation Plan

Approval of the above submittal is required prior to the start of construction.

1.2.2 SD-03 Product Data

Catalog Cuts for Anodes

Technical Data for Anodes

Approval of the above submittal is required prior to the start of construction.

1.2.3 SD-11, Closeout Submittals

Record documents and as-built drawings

Submit the above submittal within 14 days following installation.

1.3 SYSTEM DESCRIPTION

The purpose of this corrosion protection system is to reduce or stop corrosion of the existing carbon steel guide piles by passing a small DC current from the anode to the steel. The galvanic anode cathodic protection system consists of a cast aluminum anode welded directly to the steel guide pile as identified on the drawings.

1.4 ANODE INSTALLATION PLAN

The contractor shall provide a detailed work plan to the COR for review and approval. The plan shall describe the proposed means and methods of the anode installation, including, but not be limited to:

- A. Method of performing the surface preparation,
- B. Method of supporting anodes during installation,
- C. Welding qualifications of the underwater welder(s) who will be making the anode to pile weld connections, and
- D. Coating repair plan for disturbed pile surfaces.

1.5 CATALOG CUTS AND TECHNICAL DATA FOR ANODES

The contractor shall provide catalog cuts and technical data sheets for the Aluminum Anodes including chemical composition, weight, dimensions, amphour rating per pound, galvanic potential, manufacturer, and quality control data from a third party.

1.6 RECORD DOCUMENTS AND AS-BUILT DRAWINGS

Following anode installation, the contractor shall provide record documents and as-built drawings including documentation of the anode installation elevation, pile conditions, pile recoating product used, and underwater installation photographs of each anode labeled for each pile location.

PART 2 PRODUCTS

2.1 ANODES

2.1.1 Aluminum

Aluminum Anode Alloy shall conform to MIL-SPEC-A-24779. Minimum amphour rating per pound for aluminum alloy anodes shall be 1150.

- A. Aluminum shall be MIL-A-24779 Alloy: Chemical Composition shall be as follows:

- Fe 0.090% max.
- Hg 0.001% max.
- Cu 0.004% max.
- Si 0.08% - 0.20%
- Zn 4.0 - 6.5%
- In 0.014 - 0.20%

Anode open circuit potential versus a Ag/AgCl reference electrode immersed in seawater shall be between -1.10 to -1.20 volts.

2.1.1.1 Anode Core

Steel strap with the following dimensions; 3/8 inches thick by 2 inches wide. All steel material for anode cores shall be in accordance with ASTM A36/A36M. Steel core material shall be free of surface oxides such as rust, or other coatings including galvanizing, cadmium, or tin. The steel core shall be abrasive blasted to a near white finish in accordance with SSPC SP 10/NACE No. 2 and cast within the aluminum anode within 4 hours after blasting to insure minimal buildup of surface oxides.

2.2 ANODE TO PILE CONNECTION ASSEMBLIES

- A. Threaded rod shall be hot dipped galvanized and conform to the requirements of ASTM A36.
- B. All nuts shall be hot-dipped galvanized heavy hex nuts and conform to the requirements of ASTM A563.
- C. Channels shall be hot dipped galvanized and conform to the requirements of ASTM A36.

2.3 WELDING EQUIPMENT AND MATERIALS

Provide all welding equipment, welding electrodes and rods, welding wire, and fluxes capable of producing satisfactory welds when used by a qualified welder or welding operator performing qualified welding procedures. Use E70 welding electrodes. Provide welding equipment and materials that comply with the applicable requirements of AWS D1.1/D1.1M. Submit product data on welding electrodes and rods.

2.4 GALVANIZING

All hot-dipped galvanizing specified under this contract shall conform to the requirements of ASTM F2329 for threaded parts or ASTM A123/A123M for structural steel members, as applicable, unless specified otherwise galvanize after fabrication where practicable.

2.5 MASTIC EPOXY-POLYAMIDE

Recoat the guide piles in areas where pile coating is removed to install the anode, including the weld surfaces, with the following:

- a. System: For permanently immersed and splash zone steel applications <50°C.
- b. Paint: 2-Part Mastic Epoxy-Polyamide as approved by COR.
- c. Color Black
- d. Shall be applied in the field in accordance with manufacturer's instructions.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Anodes

Provide each anode and install at the elevations shown in the drawings:

- A. Anodes shall be carefully lowered and installed on the specified guide piles at the elevation identified in the drawings.
- B. Any existing marine growth, coating, or corrosion on the piles at the anode installation location shall be removed to white metal prior to welding anode support onto pile as shown on the plans.

C. Recoat the piles in any areas where the coating was removed to install the anode, including the weld surface, with an approved underwater, 2-part epoxy coating upon completion of the anode installation.

-- End of Section --

SECTION 31 00 00

EARTHWORK
08/08

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 ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

- | | |
|--------------|--|
| AASHTO T 180 | (2015) Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop |
| AASHTO T 224 | (2010) Standard Method of Test for Correction for Coarse Particles in the Soil Compaction Test |

ASTM INTERNATIONAL (ASTM)

- | | |
|-------------------|---|
| ASTM A139/A139M | (2004; R 2010) Standard Specification for Electric-Fusion (ARC)-Welded Steel Pipe (NPS 4 and over) |
| ASTM A252 | (2010) Standard Specification for Welded and Seamless Steel Pipe Piles |
| ASTM C136/C136M | (2014) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates |
| ASTM C33/C33M | (2013) Standard Specification for Concrete Aggregates |
| ASTM D1140 | (2014) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve |
| ASTM D1556/D1556M | (2015; E 2016) Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method |
| ASTM D1557 | (2012; E 2015) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³) (2700 kN-m/m ³) |
| ASTM D1883 | (2014) CBR (California Bearing Ratio) of Laboratory-Compacted Soils |

ASTM D2167	(2015) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D2434	(1968; R 2006) Permeability of Granular Soils (Constant Head)
ASTM D2487	(2011) Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2937	(2010) Density of Soil in Place by the Drive-Cylinder Method
ASTM D4318	(2010; E 2014) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D6938	(2015) Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
ASTM D698	(2012; E 2014; E 2015) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))

NEW YORK STATE

NYS DOT	(2021) Standard Specifications (US Customary Units) of the New York State Department of Transportation
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U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2014) Safety and Health Requirements Manual
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U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 600/4-79/020	(1983) Methods for Chemical Analysis of Water and Wastes
EPA SW-846.3-3	(1999, Third Edition, Update III-A) Test Methods for Evaluating Solid Waste: Physical/Chemical Methods

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-203	(Rev C; Notice 3) Paper, Kraft, Untreated
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1.2 DEFINITIONS

1.2.1 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in ASTM D2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic. Perform testing, required for classifying materials, in accordance with ASTM D4318, ASTM C136/C136M and ASTM D1140.

1.2.2 Degree of Compaction

Degree of compaction required, except as noted in the second sentence, is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D1557 abbreviated as a percent of laboratory maximum density. Since ASTM D1557 applies only to soils that have 30 percent or less by weight of their particles retained on the 3/4 inch sieve, express the degree of compaction for material having more than 30 percent by weight of their particles retained on the 3/4 inch sieve as a percentage of the maximum density in accordance with AASHTO T 180 and corrected with AASHTO T 224. To maintain the same percentage of coarse material, use the "remove and replace" procedure as described in NOTE 8 of Paragraph 7.2 in AASHTO T 180.

1.2.3 Hard/Unyielding Materials

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 6 inch in any dimension or as defined by the pipe manufacturer, whichever is smaller. These materials usually require the use of heavy excavation equipment, ripper teeth, or jack hammers for removal.

1.2.4 Rock

Solid homogeneous interlocking crystalline material with firmly cemented, laminated, or foliated masses or conglomerate deposits, neither of which can be removed without systematic drilling and blasting, drilling and the use of expansion jacks or feather wedges, or the use of backhoe-mounted pneumatic hole punchers or rock breakers; also large boulders, buried masonry, or concrete other than pavement exceeding 1/2 cubic yard in volume. Removal of hard material will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.

1.2.5 Unstable Material

Unstable materials are too wet to properly support the utility pipe, conduit, or appurtenant structure.

1.2.6 Nonfrost Susceptible (NFS) Material

Nonfrost susceptible material are a uniformly graded washed sand with a maximum particle size of 1 inch and less than 5 percent passing the No. 200 size sieve, and with not more than 3 percent by weight finer than 0.02 mm grain size.

1.2.7 Pile Supported Structure

As used herein, a structure where both the foundation and floor slab are pile supported.

1.3 SYSTEM DESCRIPTION

Subsurface soil boring logs are provided on the Drawings. These data represent the best subsurface information available; however, variations may exist in the subsurface between boring locations.

1.3.1 Classification of Excavation

No consideration will be given to the nature of the materials, and all excavation will be designated as unclassified excavation.

1.3.1.1 Common Excavation

Include common excavation with the satisfactory removal and disposal of all materials not classified as rock excavation.

1.3.1.2 Rock Excavation

Not used.

1.3.2 Blasting

Blasting will not be permitted.

1.3.3 Dewatering Work Plan

Submit procedures for accomplishing dewatering work, if proposed.

1.4 SUBMITTALS

Government approval is required for submittals. Submit the following in accordance with Section 01 33 00, SUBMITTAL PROCEDURES:

1.4.1 SD-01 Preconstruction Submittals

Earthwork Permits (Dig Safe)

Notification Prior to Excavation

Approval of the above submittals is required prior to the start of construction.

1.4.2 SD-03 Product Data

Construction Equipment

Approval of the above submittals is required prior to the start of construction.

1.4.3 SD-05 Design Data

Shoring Plan (if shoring is proposed by KTR)

The above submittals shall be approved prior to the commencement of the Shoring Installation.

1.4.4 SD-06 Test Reports

Source Investigation Soils Testing Reports in accordance with Section 01 45 00.00 10, QUALITY CONTROL and Section 01 45 00.00 10, Table 1.

During Placement Soils Testing Reports in accordance with Section 01 45 00.00 10, QUALITY CONTROL and Section 01 45 00.00 10, Table 1.

As-Placed Soils Testing Reports in accordance with Section 01 45 00.00 10, QUALITY CONTROL and Section 01 45 00.00 10, Table 1.

Source investigation submittals shall be approved prior to delivery to the site. During placement and as-placed submittals shall be provided within 24 hours of completion of the test.

1.5 CONSTRUCTION EQUIPMENT DESCRIPTION

All plant, equipment, and tools used in the performance of the work will be subject to approval before the work is started and shall be maintained in satisfactory working condition at all times. Submit a list of proposed equipment, including descriptive data. Provide equipment which is adequate and has the capability of producing the required compaction, meeting grade controls, thickness control, and smoothness requirements as set forth herein.

1.6 ENVIRONMENTAL REQUIREMENTS

Perform construction when the atmospheric temperature is above 35 degrees F. When the temperature falls below 35 degrees F, protect all completed areas by approved methods against detrimental effects of freezing. Correct completed areas damaged by freezing, rainfall, or other weather conditions to meet specified requirements.

1.7 LOCATION OF UNDERGROUND FACILITIES

Obtain digging permits prior to start of any excavation, pile driving, or any underground work, and comply with installation requirements for locating and marking underground utilities. Contact Dig Safely New York a minimum of 72 hours prior to excavating, to mark utilities, and within sufficient time required if work occurs on a Monday or after a Holiday. Verify the elevations of existing piping, utilities, and any type of submerged or underground obstruction not indicated or specified to be removed but indicated in locations to be dredged or altered for site access.

1.7.1 Notification Prior to Excavation

Notify the KO at least 3 working days (72 hours) prior to starting excavation work. The KTR is responsible for locating and marking all utilities not shown on the Contract Drawings.

PART 2 PRODUCTS

2.1 REQUIREMENTS FOR OFFSITE SOILS

Test offsite soils brought in for use as backfill for Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethyl Benzene, and Xylene (BTEX) and full Toxicity Characteristic Leaching Procedure (TCLP) including ignitability, corrosivity, and reactivity. Backfill shall contain a maximum of 100 parts per million (ppm) of total petroleum hydrocarbons (TPH) and a maximum of 10 ppm of the sum of Benzene, Toluene, Ethyl Benzene, and Xylene (BTEX) and shall pass the TCPL test. Determine TPH concentrations by using

EPA 600/4-79/020 Method 418.1. Determine BTEX concentrations by using EPA SW-846.3-3 Method 5030/8020. Perform TCLP in accordance with EPA SW-846.3-3 Method 1311. Provide Borrow Site Testing for TPH, BTEX and TCLP from a composite sample of material from the borrow site, with at least one test from each borrow site. Do not bring material onsite until tests have been approved by the Contracting Officer.

2.2 MATERIALS

2.2.1 Bedding Material

Provide imported material meeting the requirements of NYSDOT Standard Specifications Section 733-2302 BEDDING MATERIAL, Type 2 Gradation.

2.2.2 Select Backfill

Select Backfill material shall be excavated onsite granular material, free from stones, roots, and organic material and meeting the requirements of NYSDOT Standard Specifications Section 733-09 SELECT BORROW, except that the maximum particle size shall not exceed 6 inches. If excavated material at a particular location is not satisfactory, as determined by the government, use imported Select Granular Subgrade material.

2.2.3 Select Granular Subgrade

Select Granular Subgrade material shall be imported granular material conforming to the requirements of NYSDOT Standard Specifications Section 733-1302 SELECT GRANULAR SUBGRADE (TYPICAL) except that it shall not contain recycled material, the maximum particle size shall not exceed 6 inches, and it shall have 80 to 100 percent passing the 3 inch sieve by weight.

2.2.4 Gabion Stone Fill

Refer to Section 31 36 00, WIRE MESH GABIONS.

2.2.5 Geotextile

Provide geotextile in accordance with Section 31 05 19, GEOTEXTILE.

PART 3 EXECUTION

3.1 STRIPPING OF TOPSOIL

Where indicated or directed, strip topsoil to a depth of up to 4 inches. Transport and deposit topsoil in stockpiles convenient to areas that are to receive application of the topsoil later, or at locations indicated or specified. Keep topsoil separate from other excavated materials, brush, litter, objectionable weeds, roots, stones larger than 2 inches in diameter, and other materials that would interfere with planting and maintenance operations. Remove from the site any surplus of topsoil from excavations and gradings.

3.2 GENERAL EXCAVATION

Perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as

specified. Perform the grading in accordance with the typical sections shown and the tolerances specified in paragraph FINISHING. Transport satisfactory excavated materials and place in fill or embankment within the limits of the work. Excavate unsatisfactory materials encountered within the limits of the work below grade and replace with satisfactory materials as directed. Include such excavated material and the satisfactory material ordered as replacement in excavation. Dispose surplus satisfactory excavated material not required for fill or embankment in areas approved for surplus material storage or designated waste areas. Dispose unsatisfactory excavated material in designated waste or spoil areas for removal and disposal off site. During construction, perform excavation and fill in a manner and sequence that will provide proper drainage at all times. Excavate material required for fill or embankment in excess of that produced by excavation within the grading limits from the borrow areas indicated or from other approved areas selected by the Contractor as specified.

3.2.1 Drainage

Provide for the collection and disposal of surface and subsurface water encountered during construction. Completely drain construction site during periods of construction to keep soil materials sufficiently dry. Construct storm drainage features (ponds/basins) at the earliest stages of site development, and throughout construction grade the construction area to provide positive surface water runoff away from the construction activity or provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein. It is the responsibility of the Contractor to assess the soil and ground water conditions presented by the plans and specifications and to employ necessary measures to permit construction to proceed.

3.2.2 Dewatering

Control groundwater flowing toward or into excavations to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction. Do not permit French drains, sumps, ditches or trenches within 3 feet of the foundation of any structure, except with specific written approval, and after specific contractual provisions for restoration of the foundation area have been made.

The Stone Gabion Bulkhead repair and return extension work is anticipated to be performed by the Contractor during low-tide windows in order to avoid active dewatering efforts. Take control measures by the time the excavation reaches the water level in order to maintain the integrity of the in situ material.

3.2.3 Underground Utilities

The Contractor is responsible for movement of construction machinery and equipment over pipes and utilities during construction. Perform work adjacent to non-Government utilities as indicated in accordance with procedures outlined by utility company. Excavation made with power-driven equipment is not permitted within 2 feet of known Government-owned utility or subsurface construction. For work immediately adjacent to or for

excavations exposing a utility or other buried obstruction, excavate by hand. Start hand excavation on each side of the indicated obstruction and continue until the obstruction is uncovered or until clearance for the new grade is assured. Support uncovered lines or other existing work affected by the contract excavation until approval for backfill is granted by the Contracting Officer. Report damage to utility lines or subsurface construction immediately to the Contracting Officer.

3.3 SHORING

3.3.1 General Requirements

If required, submit a Shoring and Sheet piling plan for approval 15 days prior to starting work. Submit drawings and calculations, certified by a Professional Engineer registered in the United States, describing the methods for shoring and sheet piling of excavations. Finish shoring, including sheet piling, and install as necessary to protect workmen, banks, adjacent paving, structures, and utilities. Remove shoring, bracing, and sheet piling as excavations are backfilled, in a manner to prevent caving.

3.3.2 Geotechnical Engineer

If shoring is required, hire a Professional Geotechnical Engineer registered in the United States to provide inspection of excavations and soil/groundwater conditions throughout construction. The Geotechnical Engineer is responsible for performing pre-construction and periodic site visits throughout construction to assess site conditions. The Geotechnical Engineer is responsible for updating the excavation, sheet piling and dewatering plans as construction progresses to reflect changing conditions and submit an updated plan if necessary. Submit a monthly written report, informing the Contractor and Contracting Officer of the status of the plan and an accounting of the Contractor's adherence to the plan addressing any present or potential problems. The Contracting Officer is responsible for arranging meetings with the Geotechnical Engineer at any time throughout the contract duration.

3.4 GRADING AREAS

Where indicated, divide work into grading areas within which satisfactory excavated material will be placed in embankments, fills, and required backfills. Do not haul satisfactory material excavated in one grading area to another grading area except when so directed in writing. Place and grade stockpiles of satisfactory and unsatisfactory materials as specified. Keep stockpiles in a neat and well drained condition, giving due consideration to drainage at all times. Clear, grub, and seal by rubber-tired equipment, the ground surface at stockpile locations; separately stockpile excavated satisfactory and unsatisfactory materials. Protect stockpiles of satisfactory materials from contamination which may destroy the quality and fitness of the stockpiled material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, remove and replace such material with satisfactory material from approved sources.

3.5 GROUND SURFACE PREPARATION

3.5.1 General Requirements

Remove and replace unsatisfactory material with satisfactory materials, as directed by the Contracting Officer, in surfaces to receive fill or in excavated areas. Scarify the surface to a depth of 6 inches before the fill is started. Plow, step, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that the fill material will bond with the existing material. When subgrades are less than the specified density, break up the ground surface to a minimum depth of 6 inches and compact to the specified density. When the subgrade is part fill and part excavation or natural ground, scarify the excavated or natural ground portion to a depth of 12 inches and compact it as specified for the adjacent fill.

3.5.2 Frozen Material

Do not place material on surfaces that are muddy, frozen, or contain frost. Finish compaction by hand-operated vibratory plate compactor approved by the government, or other approved equipment well suited to the soil being compacted. Moisten material as necessary to plus or minus 2 percent of optimum moisture to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used.

3.6 UTILIZATION OF EXCAVATED MATERIALS

Dispose unsatisfactory materials removed from excavations into designated temporary waste disposal or spoil areas for offsite disposal. Use satisfactory material removed from excavations, insofar as practicable, in the construction of fills, embankments, subgrades, shoulders, bedding (as backfill), and for similar purposes. Submit procedure and location for disposal of unused satisfactory material. Submit proposed source of borrow material. Do not waste any satisfactory excavated material without specific written authorization. Dispose of satisfactory material, authorized to be wasted, in designated areas approved for surplus material storage or designated waste areas as directed. Clear and grub newly designated waste areas on Government-controlled land before disposal of waste material thereon. Stockpile and use coarse rock from excavations for constructing slopes or embankments adjacent to streams, or sides and bottoms of channels and for protecting against erosion. Do not dispose excavated material to obstruct the flow of any stream, endanger a partly finished structure, impair the efficiency or appearance of any structure, or be detrimental to the completed work in any way.

3.7 SUBGRADE PREPARATION

3.7.1 Replacement of Unyielding Material

Replace unyielding material removed from the bottom of the excavation with compacted Select Backfill material as specified herein.

3.7.2 Replacement of Unstable Material

Replace unstable material removed from the bottom of the excavation with compacted Select Backfill material as specified herein placed in layers not exceeding 8 inch loose thickness.

3.7.3 Construction

Shape subgrade to line, grade, and cross section, and compact as specified. Include plowing, disking, and any moistening or aerating required to obtain

specified compaction for this operation. Remove soft or otherwise unsatisfactory material and replace with satisfactory excavated material or other approved material as directed. Excavate rock encountered in the cut section to a depth of 6 inches below finished grade for the subgrade. Bring up low areas resulting from removal of unsatisfactory material or excavation of rock to required grade with Select Backfill, and shape the entire subgrade to line, grade, and cross section and compact as specified. Do not vary the elevation of the finish subgrade more than 0.05 foot from the established grade and cross section.

3.7.4 Subgrade Compaction

Finish subgrade compaction on an exposed subgrade free of surface water (wet conditions resulting from rainfall) which would promote degradation of an otherwise acceptable subgrade. After excavating, compact the existing subgrade of excavations with a hand-operated vibratory plate compactor as approved by the government in a systematic manner to ensure adequate passes over all areas. Notify the Contracting Officer a minimum of 3 days prior to subgrade compaction.

Compact the subgrade and each layer of replacement Select Backfill material to at least 95 percent of laboratory maximum density. Perform subgrade compaction in the presence of the Contracting Officer.

3.8 BACKFILLING AND COMPACTION

Place specified backfill adjacent to any and all types of structures, in successive horizontal layers of loose material not more than 8 inches in depth. Compact to at least 90 percent laboratory maximum density for cohesive materials or 95 percent laboratory maximum density for cohesionless materials, to prevent wedging action or eccentric loading upon or against the structure. Backfill material must be within the range of -2 to +2 percent of optimum moisture content at the time of compaction.

Prepare ground surface on which backfill is to be placed and provide compaction requirements for backfill materials in conformance with the applicable portions of paragraphs GROUND SURFACE PREPARATION. Finish compaction by hand-operated vibratory plate compactor as approved by the government. Heavy rollers and or graders shall not operate within 10 feet of the existing or new portions of the Stone Gabion Bulkhead during backfilling and compaction operations.

3.8.1 Excavation Backfill

Backfill excavations required for the demolition of existing structures and the installation of new structures to the grade shown.

3.8.2 Bedding Material Placement

Place bedding material for gabion baskets uniformly as shown on the Drawings. The bed shall be properly compacted, trimmed, and shaped. Bedding material shall be placed by mechanical means that will produce a completed job within reasonable tolerances of the typical section shown on the Drawings.

3.8.3 Stone Gabion Bulkhead Backfill

After the Stone Gabion Bulkhead and other appurtenant structures have been constructed, place backfill in such a manner that the structures will not be damaged by the shock of falling earth. Deposit the backfill material, compact it as specified for final backfill, and bring up the backfill evenly on all sides of the structure to prevent eccentric loading and excessive stress.

3.8.3 Geotextile Placement

Place geotextile fabric in accordance with Section 31 05 19, GEOTEXTILE.

3.9 FINISHING

Finish the surface of excavations, embankments, and subgrades to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. Provide the degree of finish for graded areas within 0.1 foot of the grades and elevations indicated except that the degree of finish for subgrades specified in paragraph SUBGRADE PREPARATION. Finish gutters and ditches in a manner that will result in effective drainage. Finish the surface of areas to be turfed from settlement or washing to a smoothness suitable for the application of turfing materials. Repair graded, topsoiled, or backfilled areas prior to acceptance of the work, and re-established grades to the required elevations and slopes.

3.9.1 Subgrade and Embankments

During construction, keep embankments and excavations shaped and drained. Maintain ditches and drains along subgrade to drain effectively at all times. Do not disturb the finished subgrade by traffic or other operation. Protect and maintain the finished subgrade in a satisfactory condition until ballast, subbase, base, or pavement is placed. Do not permit the storage or stockpiling of materials on the finished subgrade. Do not lay subbase, base course, ballast, or pavement until the subgrade has been checked and approved, and in no case place subbase, base, surfacing, pavement, or ballast on a muddy, spongy, or frozen subgrade.

3.9.3 Grading Around Structures

Construct areas within 5 feet outside of each building and structure line true-to-grade, shape to drain, and maintain free of trash and debris until final inspection has been completed and the work has been accepted.

3.10 MOISTURE CONTROL

During the compacting operations, the moisture content of the material shall be within the range necessary to obtain the specified compaction, as determined by the laboratory testing. Maintain moisture content throughout the lift. Insofar as practicable, add water to the material at the site of placement. Supplement, if required, by sprinkling the material. Do not compact material that contains excessive moisture. Aerate material by blading, discing, harrowing, or as approved, to hasten the drying process.

3.11 COMPACTION TESTING

The Contractor shall make all necessary excavations and preparations for testing in accordance with the Contract Documents. Excavations for density tests shall be backfilled with material similar to that excavated and

compacted to the specified density by the Contractor. Failure of the backfill material to achieve the specified density will be just cause for rejection of any or all portions of the excavation section tested. The Contractor shall not be granted a time extension or additional compensation for testing or repair of backfill ordered by the Contracting Officer.

3.12 DISPOSITION OF SURPLUS MATERIAL

Remove surplus material or other soil material not required or suitable for filling or backfilling, and brush, refuse, stumps, roots, and timber from Government property and delivered to a licensed/permitted disposal facility or to a location approved by the Contracting Officer.

-- End of Section --

SECTION 31 05 19

GEOTEXTILE
08/08

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.

ASTM INTERNATIONAL (ASTM)

ASTM D4354	(2012) Sampling of Geosynthetics for Testing
ASTM D4355/D4355M	(2014) Deterioration of Geotextiles from Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus
ASTM D4491/D4491M	(2015) Standard Test Methods for Water Permeability of Geotextiles by Permittivity
ASTM D4533/D4533M	(2015) Standard Test Method for Trapezoid Tearing Strength of Geotextiles
ASTM D4632/D4632M	(2015a) Grab Breaking Load and Elongation of Geotextiles
ASTM D4751	(2012) Determining Apparent Opening Size of a Geotextile
ASTM D4759	(2011) Determining the Specification Conformance of Geosynthetics
ASTM D4873/D4873M	(2016) Identification, Storage, and Handling of Geosynthetic Rolls and Samples
ASTM D6241	(2014) Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe

1.2 SUBMITTALS

Government approval is required for submittals in accordance with Section 01 33 00, SUBMITTAL PROCEDURES:

1.2.1 SD-03 Product Data

Geotextile

Approval of the above submittals is required prior to the start of construction.

1.2.2 SD-07 Certificates

Geotextile Certificate of Compliance
Geotextile Roll Mill Certificates

Approval of the above submittal is required prior to installation.

1.3 QUALITY ASSURANCE

1.3.1 Geotextile

Provide the product data and manufacturer's certificate of compliance attesting that geotextile meets the requirements of these specifications. Provide mill certificates stating the length and width of geotextile contained on each roll.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver, store, and handle geotextile in accordance with ASTM D4873/D4873M.

1.4.1 Delivery

Notify the Contracting Officer a minimum of 24 hours prior to delivery and unloading of geotextile rolls packaged in an opaque, waterproof, protective plastic wrapping. The plastic wrapping shall not be removed until deployment. If quality assurance samples are collected, immediately rewrap rolls with the plastic wrapping. Geotextile or plastic wrapping damaged during storage or handling shall be repaired or replaced, as directed. Label each roll with the manufacturer's name, geotextile type, roll number, roll dimensions (length, width, gross weight), and date manufactured.

1.4.2 Storage

Protect rolls of geotextile from construction equipment, chemicals, sparks and flames, temperatures in excess of 160 degrees F, or any other environmental condition that may damage the physical properties of the geotextile. To protect geotextile from becoming saturated, either elevate rolls off the ground or place them on a sacrificial sheet of plastic in an area where water will not accumulate.

1.4.3 Handling

Handle and unload geotextile rolls with load carrying straps, a fork lift with a stinger bar, or an axial bar assembly. Rolls shall not be dragged along the ground, lifted by one end, or dropped to the ground.

PART 2 PRODUCTS

2.1 RAW MATERIALS

A minimum of 7 days prior to scheduled use, submit manufacturer's certificate of compliance stating that the geotextile meets the requirements of this section. For needle punched geotextiles, the manufacturer shall also certify that the geotextile has been continuously inspected using permanent on-line full-width metal detectors and does not contain any needles which could damage other geosynthetic layers. The certificate of

compliance shall be attested to by a person having legal authority to bind the geotextile manufacturer.

2.1.1 Geotextile

Provide geotextile that is a nonwoven and needle punched pervious sheet of polyester, polyethylene, nylon, or polypropylene filaments formed into a uniform pattern. Geotextiles shall meet the requirements specified in Table 1.

TABLE 1 MINIMUM REQUIREMENTS FOR GEOTEXTILE SEPARATION LAYER			
PROPERTY	UNITS	ACCEPTABLE VALUES	TEST METHOD
MASS PER UNIT AREA	OZ/YD ²	12	ASTM D5261
GRAB TENSILE STRENGTH	LBS	305	ASTM D4632
PUNCTURE STRENGTH	LBS	800	ASTM D6241
TRAPEZOIDAL TEAR	PSI	115	ASTM D4533
ELONGATION AT REQUIRED STRENGTH	%	50	ASTM D4632
UV RESISTANCE	%	70 AT 500 HOURS	ASTM D4355
EQUIVALENT OPENING (US STANDARD SIEVE)	US STANDARD SIEVE	100	ASTM D4751
PERMITTIVITY	SEC ⁻¹	0.8	ASTM D4491
WATER FLOW RATE	GAL/MIN/FT ²	65	ASTM D4491

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Subgrade Preparation

The surface underlying the geotextile shall be graded smooth and free of ruts, protrusions, stones, roots, sticks, or other foreign material which could damage the geotextile and would interfere with the geotextile being completely in contact with the soil. Subgrade materials, backfill materials, and compaction requirements shall be in accordance with Section 31 00 00, EARTHWORK.

3.1.2 Placement

Notify the Contracting Officer a minimum of 24 hours prior to installation of geotextile. Geotextile rolls which are damaged or contain imperfections shall be repaired or replaced as directed. The geotextile shall be laid flat and smooth so that it is in direct contact with the subgrade. The geotextile shall also be free of tensile stresses, folds, and wrinkles. Pinning or stapling may be required to hold the geotextile in place.

3.1.3 Seams

3.1.3.1 Overlap Seams

Continuously overlap geotextile panels in accordance with the Manufacturer's recommendations, but provide a minimum of 24 inches at all longitudinal and transverse joints. Where seams must be oriented across the slope, lap the upper panel over the lower panel (i.e., shingled) in order to shed water. If approved, sewn seams may be used instead of overlapped seams.

3.1.3.2 Sewn Seams

If approved, the Contractor may sew geotextile seams. The stitch type used shall be a 401 locking chain stitch or as recommended by the manufacturer. The thread at the end of each seam run shall be tied off to prevent unraveling. Skipped stitches or discontinuities shall be sewn with an extra line of stitching with a minimum of 18 inches of overlap.

3.2 PROTECTION

Protect the geotextile during installation from clogging, tears, and other damage. Damaged geotextile shall be repaired or replaced as directed. Use adequate ballast (e.g. sand bags) to prevent uplift by wind. The geotextile shall not be left uncovered for more than 48 hours after installation.

3.3 REPAIRS

Repair torn or damaged geotextile. Clogged areas of geotextile shall be removed. Perform repairs by placing a patch of the same type of geotextile over the damaged area. The patch shall extend a minimum of 36 inches beyond the edge of the damaged area. The machine direction of the patch shall be aligned with the machine direction of the geotextile being repaired. Remove and replace geotextile rolls which cannot be repaired. Repairs shall be performed at no additional cost to the Government

3.4 PENETRATIONS

Construct engineered penetrations of the geotextile by methods recommended by the geotextile manufacturer.

3.5 COVERING

Do not cover geotextile or place gabion baskets prior to inspection and approval by the Contracting Officer. Place cover soil and/or backfill in a manner that prevents soil from entering the geotextile overlap zone, prevents tensile stress from being mobilized in the geotextile, and prevents wrinkles from folding over onto themselves. On side slopes, soil backfill shall be placed from the bottom of the slope upward. Cover soil and/or gabion fill shall not be dropped onto the geotextile from a height greater than 2 feet. No equipment shall be operated directly on top of the

geotextile without approval of the Contracting Officer. Cover soil material type, compaction, and testing requirements are described in Section 31 00 00, EARTHWORK. Equipment placing cover soil shall not stop abruptly, make sharp turns, spin their wheels, or travel at speeds exceeding 5 mph.

-- End of Section -

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SECTION 31 36 00

WIRE MESH GABIONS
08/08

PART 1 GENERAL

1.1 SUMMARY

The work under this specification includes furnishing, assembling, filling, and tying open wire mesh rectangular compartmented gabions placed on a prepared surface of geotextile and bedding materials, as specified, and in accordance with the lines, grades, and dimensions shown or otherwise established in the field.

- a. Gabions are wire mesh containers of variable sizes, uniformly partitioned into internal cells, interconnected with other similar units, and filled with stone at the project site to form flexible, permeable, monolithic structures. Gabions shall be manufactured with all components mechanically connected at the production facility, with the exception of the lid, which is produced separately from the base. The supply to the jobsite of unassembled individual wire mesh components (panels) forming gabions will not be permitted.
- b. Definitions of terms specific to this specification and to all materials furnished on the jobsite, with the exception of the rock to fill the baskets and the filter material, shall refer and be in compliance with ASTM A975 for double twisted wire mesh Gabions.

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.

ASTM INTERNATIONAL (ASTM)

ASTM A313/A313M	(2013) Standard Specification for Stainless Steel Spring Wire
ASTM A370	(2014) Standard Test Methods and Definitions for Mechanical Testing of Steel Products
ASTM A428/A428M	(2010; R 2014) Standard Test Method for Weight (Mass) of Coating on Aluminum-Coated Iron or Steel Articles
ASTM A641/A641M	(2009a; R 2014) Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
ASTM A764	(2007; R 2012) Standard Specification for Metallic Coated Carbon Steel Wire, Coated at Size and Drawn to Size for Mechanical Springs

ASTM A809	(2008; R 2013) Standard Specification for Aluminum-Coated (Aluminized) Carbon Steel Wire
ASTM A853	(2004; R 2010) Standard Specification for Steel Wire, Carbon, for General Use
ASTM A856/A856M	(2003; R 2014) Standard Specification for Zinc-5% Aluminum-Mischmetal Alloy-Coated Carbon Steel Wire
ASTM A90/A90M	(2013) Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
ASTM A974	(1997; R 2011) Standard Specification for Welded Wire Fabric Gabion and Gabion Mattresses (Metallic Coated or Polyvinyl Chloride (PVC) Coated)
ASTM A975	(2011) Standard Specification for Double-Twisted Hexagonal Mesh Gabions and Revet Mattresses (Metallic-Coated Steel Wire or Metallic-Coated Steel Wire With Poly(Vinyl Chloride) (PVC) Coating)
ASTM B117	(2011) Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM C136/C136M	(2014) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C33/C33M	(2013) Standard Specification for Concrete Aggregates
ASTM D1499	(2013) Filtered Open-Flame Carbon-Arc Type Exposures of Plastics
ASTM D2240	(2015) Standard Test Method for Rubber Property - Durometer Hardness
ASTM D412	(2015a) Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension
ASTM D5312/D5312M	(2012; R 2013) Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions
ASTM D638	(2014) Standard Test Method for Tensile Properties of Plastics
ASTM D746	(2014) Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
ASTM D792	(2013) Density and Specific Gravity (Relative Density) of Plastics by Displacement

ASTM G152 (2013) Operating Open Flame Carbon Arc Light
Apparatus for Exposure of Nonmetallic
Materials

NEW YORK STATE

NYSDOT (2021) Standard Specifications (US Customary
Units) of the New York State Department of
Transportation

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 144 (1992) Standard Test Method for Resistance of
Rock to Freezing and Thawing

1.4 DEFINITIONS

1.4.1 Rate of Aggressiveness

The determination of the rate of aggressiveness (non-aggressive, moderately, or highly aggressive) shall be made on a project-to-project basis, due to the many variables involved and the lack of criteria of general validity. It is normally recommended for the choice to be based on all the available data and on the experience of existing gabion structures in similar environments.

1.4.2 Double Twisted Wire Mesh Gabions

Classified according to the wire coating, which is applied prior to manufacturing the mesh. Coating styles are as follows:

1.4.2.1 Style 1

Wire mesh made from wire which is zinc coated before being double twisted into mesh. Fasteners, lacing wire, and stiffeners are produced from zinc-coated wire. Style 1 for the wire coating is normally recommended for:

1.4.2.1.1 Permanent

Gabion structures, for works installed in non-aggressive or non-polluted environments, and this condition remains unaltered over time.

1.4.2.1.2 Temporary

Gabion structures, for works in moderately aggressive environments, depending on the minimum design life of the structure.

1.4.2.2 Style 2

Wire mesh made from wire which is coated with Zn-5Al-MM before being double twisted into mesh. Fasteners, lacing wire, and stiffeners are also produced from Zn-5Al-MM coated wire. Style 2 for the wire coating is normally recommended for:

1.4.2.2.1 Permanent

Gabion structures, for works installed in moderately aggressive environments.

1.4.2.2.2 Temporary

Gabion structures, for works in aggressive environments, depending on the minimum design life of the structure.

1.4.2.3 Style 3

Wire mesh, lacing wire, and stiffeners as Style 1 and overcoated with PVC. Fasteners shall be of stainless steel wire. Style 3 for the wire coating is normally recommended for both permanent and temporary gabion structures, for works installed in aggressive or polluted environments, or when the aggressiveness of the site is moderately unpredictable or variable from low to high.

1.4.2.4 Style 4

Wire mesh made from wire which is aluminum-coated before being double twisted into mesh. Fasteners, lacing wire, and stiffeners are also produced from aluminum-coated wire. Style 4 for the wire coating is very seldom used in the gabion industry. Its life expectancy shall be adequately documented to guarantee its consistency and reliability.

1.5 SUBMITTALS

Government approval is required for submittals in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

1.5.1 SD-03 Product Data

Gabions Baskets and Gabion Repair Patches
Ring Fasteners and Lacing Wire

Approval of the above submittals is required prior to the start of construction.

1.5.2 SD-04 Samples

Gabions Baskets and Gabion Repair Patches
Ring Fasteners and Lacing Wire
Stone Fill

Approval of the above submittals is required prior to installation.

1.5.3 SD-06 Test Reports

Gabions Baskets and Gabion Repair Patches
Ring Fasteners
Source Investigation Soils Testing Reports in accordance with Section 01 45 00.00 10, QUALITY CONTROL and Section 01 45 00.00 10, Table 1.
During Placement Soils Testing Reports in accordance with Section 01 45 00.00 10, QUALITY CONTROL and Section 01 45 00.00 10, Table 1.

Approval of the above submittals is required prior to installation.

1.5.4 SD-07 Certificates

Gabion Baskets and Gabion Repair Patches
Ring Fasteners and Lacing Wire
Stone Fill

Approval of the above submittal is required prior to installation.

1.6 QUALITY ASSURANCE

1.6.1 Gabion and Fasteners

Provide the product data and manufacturer's certificate of compliance attesting that the gabion baskets, gabion repair patches, ring fasteners, lacing wire, and stone fill proposed for use meet the requirements of these specifications.

1.6.2 Samples

Furnish samples of materials used to fabricate the gabion baskets, gabion repair patches, ring fasteners, and lacing wire to the Contracting Officer 30 days prior to start of installation. The Government reserves the right to test additional samples to verify the submitted test records at the Government's expense.

1.6.3 Test Report or Documents

Copies of all test results shall be furnished to the COR.

1.7 DELIVERY, STORAGE, AND HANDLING

Gabions shall be delivered with all components mechanically connected at the production facility, with the exception of the mattress lid, which may be produced separately from the base. All gabions to be supplied in the collapsed form, either folded or bundled or rolled, for shipping. Bundles are to be banded together at the factory for ease of shipping and handling.

- a. Mattress lids may be supplied either as individual units (bundled) or in roll form. Lacing wire shall be shipped in coils with a diameter of the coil approximately 2 feet. Fasteners shall be shipped in boxes. Preformed stiffeners shall be shipped in bundles.
- b. Deliver gabions to the jobsite labeled in bundles. Labels shall show the dimensions of the gabions included, the number of pieces and the color code.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Gabion Baskets and Gabion Repair Patches

Provide double twisted wire mesh gabion baskets and patches, Style 3 manufactured with a non-raveling mesh made by twisting continuous pairs of wires through three half turns (commonly called double twisted) to form a

hexagonal-shaped opening. Gabion sizes, wire diameters, mesh opening sizes, and tolerances shall comply with the requirements of ASTM A975.

For each shipment of wire gabion baskets and repair patches delivered to the site, provide certificates of compliance signed from the manufacturer attesting that the material conforms to the ASTM A975 requirements along with supporting test reports performed within the last year.

2.1.2 Welded Wire Fabric Gabions

Not used.

2.1.3 Ring Fasteners for Gabions

Fasteners for woven wire gabion baskets and gabion repair patches shall be stainless steel rings. Ring fasteners for woven wire gabions shall comply with the minimum requirements indicated in paragraph "Ring Fasteners" below, and they shall develop a minimum panel to panel joint strength as indicated in TABLE 2 of ASTM A975. Lacing wire may be utilized for new gabion baskets in lieu of ring fasteners provided it meets the requirements of ASTM A975.

2.1.3.1 Ring Fasteners

The tensile strength of stainless steel wire used for fasteners shall be in accordance with the requirements of ASTM A313/A313M, Type 302, Table 2. Ring fastener systems for new gabion basket connections shall provide the quantity of fasteners required to comply with TABLE 2 and Section 13.1.2 of ASTM A975 for woven wire gabions. Ring fastener systems for gabion repair patches shall be installed as shown in the drawings.

Ring fasteners shall not be installed more than 3.25 inches apart. Each fastener type shall be closed and the free ends of the fastener shall overlap a minimum of 1 inch. The manufacturer or supplier shall state the number of fasteners required for all vertical and horizontal connections for single and multiple basket joining.

2.1.4 Stone Fill

Stone fill shall be imported material conforming to the requirements of NYSDOT Standard Specifications Section 712-15. Stone fill shall be durable and of suitable quality to ensure permanence in the structure and climate in which it is to be used. The rock has also to withstand natural weathering processes during the life of the project that would cause it to breakdown to sizes smaller than the wire mesh opening dimensions. The inclusion of more than 5 percent by weight of dirt, sand, clay, and rock fines will not be permitted. Rock may be of a natural deposit of the required sizes, or may be crushed rock produced by any suitable method and by the use of any device that yields the required size limits. Submit a certificate of compliance signed by a legally authorized official of the stone fill supplier stating that it meets the quality required and gradation limits specified.

2.1.4.1 Delivery

Deliver rock to the work site in a manner to minimize its reduction in sizes during the handling of the rock, and place and secure within the assembled and interconnected gabion.

2.1.5 Geotextile

Provide geotextile in accordance with Section 31 05 19, GEOTEXTILE.

PART 3 EXECUTION

3.1 FOUNDATION PREPARATION

Refer to Section 31 00 00, EARTHWORK for foundation preparation requirements. Immediately prior to placing the geotextile wrapped bedding material, the Contracting Officer shall inspect the prepared foundation surface, and no material shall be placed thereon until that area has been approved.

3.2 BEDDING MATERIAL PLACEMENT

Refer to Section 31 00 00, EARTHWORK and Section 31 05 19, GEOTEXTILE for geotextile wrapped bedding material placement requirements.

3.3 ASSEMBLY

3.3.1 Double twisted wire mesh Gabions

The gabions shall be opened and unfolded one by one on a flat, hard surface. Gabion units over 6 feet in length usually have an extra shipping fold, which must be removed. The sides, ends, and diaphragms shall be lifted up into a vertical position to form an open box shape. The back and the front panels of the gabion shall be connected to the end panels and center diaphragms. The top corner of the end panels and center diaphragms have a selvedge wire extending approximately 4 inches out from the corner edge. The end panels and the diaphragms shall be raised to a vertical position and the selvedge wire shall be wrapped around the edge wire of the top and back panels.

3.3.3 Welded Wire Fabric Gabions

Not used.

3.4 LACING OPERATIONS

3.4.1 Double Twisted Wire Mesh Gabions

Either ring fasteners or lacing wire are permitted to lace new double twisted wire mesh gabion baskets. Use ring fasters for gabion repair patches.

3.4.1.1 Lacing Wire

When using lacing wire, a piece of wire 1.2 to 1.5 times the length of the edge to be laced shall be cut off. If the edge of the basket is 3 feet long, no more than 4 to 5 feet of wire should be used at a time to lace. For vertical joints, starting at the bottom end of the panel, the lacing wire shall be twisted and wrapped two times around the bottom selvedge and double and single loops shall be alternated through at intervals not bigger than 4 to 6 inches. The operation shall be finished by looping around the top selvedge wire. The use of pliers to assemble the units with lacing wire is normally recommended.

3.4.1.2 Steel Wire Ring Fasteners

When steel wire ring fasteners are used, the rings shall be installed at the top and bottom connections of the end and center diaphragms. The ring spacing shall be based on the minimum pull apart strength as specified in TABLE 2 of ASTM A975. In any case, the maximum ring spacing along the edges shall not exceed 3 inches. The use of either a mechanical or a pneumatic fastening tool for steel wire ring fasteners is required.

3.4.2 Welded Wire Mesh Gabions

Not used.

3.5 INSTALLATION AND FILLING

Empty gabion units shall be assembled individually and placed on the approved surface to the lines and grades as shown or as directed, with the sides, ends, and diaphragms erected in such a manner to ensure the correct position of all creases and that the tops of all sides are level. All gabion units shall be properly staggered horizontally and vertically as shown in the drawings. Finished gabion structures shall have no gaps along the perimeter of the contact surfaces between adjoining units. All adjoining empty gabion units shall be connected along the perimeter of their contact surfaces in order to obtain a monolithic structure. All lacing wire terminals shall be securely fastened. All joining shall be made through selvedge-to-selvedge or selvedge-to-edge wire connection; mesh-to-mesh or selvedge-to-mesh wire connection is prohibited except in the case where baskets are offset or stacked and selvedge-to-mesh or mesh-to-mesh wire connection would be necessary. As a minimum, a fastener shall be installed at each mesh opening at the location where mesh wire meets selvedge or edge wire.

- a. The initial basket units shall be placed on the prepared geotextile wrapped bedding material layer and adjoining empty baskets set to line and grade. Adjacent units shall be thoroughly tied or laced. They shall be placed in a manner to remove any kinks from the mesh and to a uniform alignment. The basket units then shall be partially filled to provide anchorage against deformation and displacement during the filling operation.
- b. Undue deformation and bulging of the mesh shall be corrected prior to further stone filling. Care shall be taken, when placing the stone by hand or machine, to assure that the PVC coating on gabions will not be damaged. All visible faces shall be filled with some hand placement to ensure a neat and compact appearance and that the void ratio is kept to a minimum.
- c. Uniformly overfill gabions by about 1 to 2 inches to compensate for future rock settlements. Gabion baskets can be filled by any kind of earth-filling equipment, such as a backhoe, gradall, crane, etc. The maximum height from which the stones may be dropped into the baskets shall be 2 feet. If PVC coated materials are used, no work shall take place unless the ambient temperature is above 20 degrees F.

3.5.1 Double Twisted Wire Mesh Gabions

After the foundation has been prepared, the gabion baskets shall be placed in their proper location to form the structure. Gabions shall be connected together and aligned before filling the baskets with rock. All connections (panel-to-panel) and basket-to-basket shall be already carried out as described in paragraph ASSEMBLY. Stone fill shall be placed in 1 foot lifts across the length of the gabion bulkhead return installation. The fill layer should never be more than 1 foot higher than any adjoining cell. For 3-foot-tall gabion baskets, stiffeners or internal cross ties shall be installed in all front and side of the gabions at 1/3 and 2/3 of the height, as the cell is being filled. Stiffeners shall be installed in the center of the cells. For 1.5 foot high units, stiffeners or internal crossties are not required. Internal cross ties, or alternatively the preformed stiffeners, shall be looped around three twisted wire mesh openings at each basket face and the wire terminals shall be securely twisted to prevent their loosening. The number of voids shall be minimized by using a well-graded stone in order to achieve a dense, compact stone fill. All corners shall be securely connected to the neighboring baskets of the same layer before filling the units. When more than one layer of gabions is required, in order for the individual units to become incorporated into one continuous structure, the next layer of gabions shall be connected to the layer underneath after this layer has been securely closed. Gabions shall be uniformly overfilled by about 1 to 2 inches to compensate for future rock settlements.

3.5.3 Welded Wire Fabric Gabions

Not used.

3.5.5 Non-Rectangular Shapes

Not used.

3.6 CLOSING

Lids shall be tightly secured along all edges, ends and diaphragms in the same manner as described for assembling. Adjacent lids may be securely attached simultaneously. The panel edges shall be pulled to be connected using the appropriate closing tools where necessary. Single point leverage tools, such as crowbars, may damage the wire mesh and shall not be used. All end wires shall then be turned in.

-- End of Section --

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SECTION 31 62 16.16

STEEL PIPE PILES
11/11

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 WELDING SOCIETY (AWS)

AWS D1.1/D1.1M (2015; Errata 2015) Structural Welding Code - Steel

ASTM INTERNATIONAL (ASTM)

ASTM A27/A27M (2013) Standard Specification for Steel Castings, Carbon, for General Application

ASTM A36/A36M (2014) Standard Specification for Carbon Structural Steel

ASTM A252/A252M (2019) Standard Specification for Welded and Seamless Steel Pipe Piles

ASTM A572/A572M (2015) Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

ASTM A588/A588M (2015) Standard Specification for High-Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point, with Atmospheric Corrosion Resistance

ASTM A690/A690M (2013a) Standard Specification for High-Strength Low-Alloy Nickel, Copper, Phosphorus Steel H-Piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments

ASTM D1143/D1143M (2007; R 2013) Piles Under Static Axial Compressive Load

ASTM D3689 (2007; E 2013; R 2013) Standard Test Methods for Deep Foundations Under Static Axial Tensile Load

ASTM D3966/D3966M (2007) Standard Test Methods for Deep Foundations Under Lateral Load

ASTM D4945 (2012) High-Strain Dynamic Testing of Piles

1.2 SUBMITTALS

Government approval is required for submittals in accordance with Section 01 33 00, SUBMITTAL PROCEDURES:

1.2.1 SD-02 Shop Drawings

Guide Pile Layout Drawings and Installation Procedures

Pile splices (if authorized)

Approval of the above Guide Pile Layout Drawings and Installation Procedure submittal is required prior to the start of construction. Approval of the Pile splices submittal is required prior to installation.

1.2.2 SD-03 Product Data

Pile cap

Pile driving equipment

Pile driving record form

Delivery, storage, and handling

Approval of the above submittals is required prior to the start of construction.

1.2.3 SD-07 Certificates

Steel Material Certifications

Approval of the above submittal is required prior to installation.

1.2.4 SD-11 Closeout Submittals

Pile driving records

Pile as-built location survey

Submit the pile driving record submittal within 48 hours of pile driving completion. Submit the pile as-built location survey within 14 days following installation.

1.3 QUALITY ASSURANCE

1.3.1 Guide Pile Layout Drawings and Installation Procedures

Submit detail drawings for guide piling, including the following:

- A. Show the exact type, length, quantity of piles, and installed piling dimensions and details;
- B. Detail fabrication and erection procedures;

- C. Detail setting and driving procedures including details of the method for handling piling to prevent permanent deflection, distortion, or damage to piling;
- D. Provide pile driving template dimensions and details or details of other temporary guide structures for installing piling;
- E. Provide a detailed sequence of operation and installation;
- F. Provide the proposed cut-off method;
- G. Provide the complete piling dimensions and details, driving sequence and location of installed piling.

1.3.2 Steel Material Certifications

For each shipment, submit certificates identified with specific lots that all steel provided by the Contractor conforms to material specifications prior to installing piling. Include in the identification data piling type, dimensions, chemical composition ladle analyses, mechanical properties, section properties, heat number, and mill identification mark. Testing of piling for mechanical properties shall be performed after the completion of all rolling and forming operations. Testing of piling shall meet the requirements of ASTM A6/A6M.

1.4 DELIVERY, STORAGE, AND HANDLING

Conform all delivery, storage, and handling of materials to the requirements specified herein. Develop and submit plans for the delivery, storage, and handling of piles.

1.4.1 Delivery and Storage

Stack piles during delivery and storage so that each pile is maintained in a straight position and is supported every 10 feet or less along its length (ends inclusive) to prevent exceeding the maximum camber or sweep. Do not stack piles more than 5 feet high.

1.4.2 Handling

Lift piles using a cradle or multiple points pick-up to ensure that the maximum permissible camber or sweep is not exceeded due to insufficient support, except that a one-point pick-up may be used for lifting piles that are not extremely long into the driving leads. Point pick-up devices must be of the type that clamp to both pile flanges at each pick-up point. Holes may be burned in the flanges or webs of piles above the cutoff length for lifting piles into the leads. Do not drag piles across the ground.

Inspect piles for excessive camber and sweep and for damage before transporting them from the storage area to the driving area and immediately prior to placement in the driving leads. Camber, curvature in the pile in the direction normal to the pile flanges, must be measured with the pile flange base laying on a flat surface and is the distance between the flange base at the mid-length of the pile and the flat surface. Sweep, curvature in the pile in the direction parallel to the pile flanges, must be measured with the pile flange tips laying on a flat surface and is the distance between the flange tips at the mid-length of the pile and the flat surface.

The maximum permissible camber and sweep is 2 inches over the length of the pile. Piles having excessive camber or sweep will be rejected.

1.5 CONTRACTOR QUALIFICATIONS

The work shall be performed by a general Contractor or a specialty subcontractor specializing in the specified foundation system and having a minimum of five (5) years' experience installing the specified foundation system under similar subsurface conditions.

PART 2 PRODUCTS

2.1 MATERIALS

All materials shall be new from the manufacturer and meet the requirements described below.

2.1.1 Guide Piles

Guide Piles shall be Electric Resistance Welded (ERW) pipe piles conforming to ASTM A252/A252M, Grade 3 (Modified) 50 ksi. Coat piles in accordance with Section 09 97 13.26, COATING OF STEEL WATERFRONT STRUCTURES. The quantity, size, length, and tip elevation shall be designed and specified by the Floating Dock Manufacturer in accordance with Section 35 51 13.00 20, CONCRETE FLOATING PIER FOR SMALL CRAFT. The top of pile elevation shall be as shown on the Drawings.

2.1.2 Pile Splices

Guide Pile splices shall be avoided. Piles shall be ordered of sufficient length to meet the required toe and top of pile elevations without splices. If splicing is authorized by the Contracting Officer as a result of subsurface conditions encountered during construction, the design of splices shall be the responsibility of the Contractor. All splices shall be in conformance with AWS D1.1, and provide equal stress-strain behavior in bending, tension, compression, and torsion of unspliced segments of piles. Submittals shall include shop drawings of the proposed splice, the appropriate information contained in AWS D1.1, Part E, and documentation establishing that each welder is currently qualified in the proposed welding procedure. Proprietary prefabricated splicer sleeves may be used upon prior approval by the Contracting Officer.

2.1.3 Pile Caps

Provide heavy UV-resistant, low density polyethylene piling caps with an estimated life in excess of 10 years. Caps shall be color white, cone or pyramid shaped, and attached to the piling top with stainless fasteners. The Contractor shall provide a product data sheet for review and approval from the Contracting Officer prior to ordering.

PART 3 EXECUTION

3.1 PILE DRIVING EQUIPMENT

Select the proposed pile driving equipment, including hammers and other required items, and submit complete descriptions of the proposed equipment in accordance with paragraph "Submittals." Changes in the selected pile

driving equipment will not be allowed after the equipment has been approved except as directed. No additional contract time will be allowed for Contractor proposed changes in the equipment.

3.1.1 Pile Driving Hammers

Provide impact or vibratory type pile driving hammers.

3.1.1.1 Impact Hammers

Provide steam, air, or diesel-powered impact pile hammers of the single-acting, double-acting, or differential-acting type. The size or capacity of hammers must be as recommended by the hammer manufacturer for the total pile weight, the character of the soil formation to be penetrated, and the pile capacity to be developed. The driving energy of the hammer shall not be less than 19,000 foot-pounds.

Provide boiler, compressor, or engine capacity sufficient to operate hammers continuously at the full rated speed. Hammers must have a gage to monitor hammer bounce chamber pressure for diesel hammers or pressure at the hammer for air and steam hammers. This gage must be operational during the driving of piles and be mounted in an accessible location for monitoring by the Contractor and the Contracting Officer. Obtain driving energy by use of a heavy ram and a short stroke with low impact velocity, rather than a light ram and a long stroke with high impact velocity. Position a pile cap or drive cap between the pile and hammer. Place hammer cushion or cap block between ram and the pile cap or drive cap. Hammer cushion or cap block must have consistent elastic properties, minimize energy absorption, and transmit hammer energy uniformly and consistently during the entire driving period. In accordance with paragraph "Submittals," submit the following information for each impact hammer proposed:

- a. Make and model.
- b. Ram weight (pounds).
- c. Anvil weight (pounds).
- d. Rated stroke (inches).
- e. Rated energy range (foot-pounds).
- f. Rated speed (blows per minute).
- g. Steam or air pressure, hammer, and boiler and compressor (psi).
- h. Rated bounce chamber pressure curves or charts, including pressure correction chart for type and length of hose used with pressure gage (pounds per square inch).
- i. Pile driving cap, make, and weight (pounds).
- j. Cushion block dimensions and material type.
- k. Power pack description.

3.1.1.1.1 Driving Helmets and Pile Cushions

The driving helmet or cap, including a pile cushion, shall be used between the top of the pile and the ram to prevent impact damage to the pile. The driving helmet, or cap and pile cushion combination, shall be capable of protecting the head of the pile, minimizing energy absorption and dissipation, and transmitting hammer energy uniformly over the top of the pile. The driving helmet or cap shall fit loosely around the top of pile so that the pile is not restrained by the driving cap if the pile tends to rotate during driving. The pile cushion may be made of solid wood, laminated construction using plywood, softwood, or hardwood boards, or other cushion materials as approved by the Contracting Officer. The pile cushion shall completely cover the top surface of the pile and shall be retained by the driving helmet. The minimum thickness of the pile cushion shall be 3 inches and the thickness shall be increased so as to be suitable for the size and length of pile, character of subsurface material encountered, hammer characteristics, and required driving resistance.

3.1.1.2 Vibratory Hammers

The use of vibratory hammers is dependent upon satisfactory driving and load testing of piles. The size or capacity of hammers must be as recommended by the hammer manufacturer for the total pile weight and the character of the soil formation to be penetrated. The hammer must provide for maintaining a rigid connection between the hammer and the pile. In accordance with paragraph "Submittals," submit the following information for each vibratory hammer proposed:

- a. Make and model.
- b. Eccentric moment (inch-pounds).
- c. Dynamic force (tons).
- d. Steady state frequency or frequency range (cycles per minute).
- e. Vibrating weight (pounds).
- f. Amplitude (inches).
- g. Maximum pull capacity (tons).
- h. Non-vibrating weight (pounds).
- i. Power pack description.

3.1.2 Pile Driving Leads

Support and guide hammers with swinging leads, fixed extended leads, or fixed underhung leads. Operate vibratory hammers free hanging without leads.

3.1.3 Pile Extractors

Pile extractors may be vibratory or impact pile driving hammers. Impact hammers are required for pulling piles not extractable with vibratory hammers.

3.2 INSTALLATION

Inspect piles when delivered and when in the leads immediately before driving. Handle piles so as to protect pile coatings. Repair damage or defects in pile coatings as specified. Cut piles at cutoff grade by an approved method. Where cutoff is below existing ground or mudline elevation, complete excavation, sheeting, and dewatering before driving pile to cutoff elevation.

3.2.1 Lengths of Job Piles

The estimated quantities of piles shown on the Drawings are given for bidding purposes only. The Floating Dock Manufacturer will determine the actual lengths of piles required to be driven below cutoff elevation for the various locations in accordance with Section 35 51 13.00 20, CONCRETE FLOATING PIER FOR SMALL CRAFT.

3.2.2 File Driving Records

Develop a form for compiling pile driving records, which must be approved for recording pile driving data.

Compile and submit accurate records of the pile driving operations on the approved form in accordance with paragraph "Submittals." Include in driving records for each pile date driven, pile identification number, cross section shape and pile dimensions, location, deviations from design location, original length, ground elevation, top elevation, tip elevation, description of hammer used, number of blows required for each foot of penetration throughout the entire length of the pile and for each inch of penetration in the last foot of penetration, total driving time in minutes and seconds, and any other pertinent information as required or requested such as unusual driving conditions, interruptions or delays during driving, damage to pile resulting from driving, heave in adjacent piles, redriving, weaving, obstructions, and depth and description of voids formed adjacent to the pile.

Additional data required to be recorded for impact hammers includes the rate of hammer operation, make, size, and the length of the bounce hose. Additional data required to be recorded for vibratory hammers includes hammer power pack description, make, size, horsepower applied to pile, hammer operating frequency, and pile advancement in seconds/foot.

3.2.3 Pile Placement and Tolerances in Driving

Develop and submit the Guide File Layout Drawings and Installation Procedures as specified herein. Complete all foundation preparation in the area prior to the placement of piles for driving. Accurately place piles in the correct location and alignments, both laterally and longitudinally, and to the vertical lines indicated. Establish a permanent base line to provide for inspection of pile placement by the Contracting Officer during pile driving operations prior to driving job piles and maintain during the installation of the job piles.

The final lateral deviation from the correct location at the cutoff elevation shall be in accordance with the Floating Dock Manufacturer's design, but shall not be more than 3 inches for vertical guide piles.

Manipulation of piles will not be permitted. Pile slope variation shall be in accordance with the Floating Dock Manufacturer's design, but shall not be more than 0.25 inch per foot of pile length from the vertical for vertical piles nor more than 0.50 inch per foot of pile length from the required angle for batter piles. The vertical deviation shall be in accordance with the Floating Dock Manufacturer's design, but shall not be more than 1 inch from the correct cutoff elevations shown. Inspect piles for heave. Redrive heaved piles to the required tip elevation. Maintain the correct relative position of all piles by the use of templates or by other approved means. Piles damaged or not located properly or exceeding the maximum limits for rotation, lateral and vertical deviation, or variation in alignment must be pulled and new piles redriven, or provide additional piles, at a location directed at no additional cost to the Government.

3.2.3.1 Survey Data

After the driving of each pile group is complete, provide the Contracting Officer with an as-driven survey showing actual location and top elevation of each pile. Present a survey in such form that it gives deviation from plan location in two perpendicular directions and elevations of each pile to nearest half inch. Survey must be prepared and certified by a Professional Land Surveyor registered in the United States.

3.2.4 Pile Penetration Criteria

The controlling tip elevation for job piles will be determined by the Floating Dock Manufacturer in accordance with Section 35 51 13.00 20, CONCRETE FLOATING PIER FOR SMALL CRAFT.

3.2.5 Pile Driving

Notify the Contracting Officer 30 days prior to the date pile driving is to begin. Perform all driving in the presence of the Contracting Officer or his/her designee. Utilize a "soft start" for pile driving in accordance with the permit requirements (refer to Appendix A for further details).

Mark the piles at 1-foot intervals for purposes of recording the driving resistance and depth of penetration. Do not drive piles within 100 feet of concrete less than 7 days old. If two or more pile driving rigs are being used simultaneously, they shall be located a minimum of 150 feet apart. Followers shall not be used to drive piles.

Drive job piles with hammers of the same model and manufacturer, same energy and efficiency, and using the same driving system. Operate hammers at all times at the speed and under the conditions recommended by the manufacturer. Where heave is anticipated, the sequence of installation must be such that pile heave is minimized by starting pile driving at the center of the group and proceeding outward.

Prior to driving and with the pile head seated in the hammer, check each pile to ensure that it has been aligned correctly. Once pile driving has begun, keep conditions such as alignment constant. The hammer shall not be used to limit deviation of the pile during driving by exerting lateral forces or striking at an angle. The hammer and leads may be used to move and align the pile for the first 15 feet of driving before the pile is attained an initial set, unless the Contracting Officer decides such movement may damage the pile. If damage to the pile head occurs during driving and the

hammer can no longer strike the pile uniformly and axially, stop driving, provide a new square cut at the head, and check the pile for proper fit.

Drive each pile continuously and without interruption until the required tip elevation and driving resistance (refusal blow count) has been attained. Deviation from this procedure will be permitted only when driving is stopped by causes that reasonably could not have been anticipated.

A pile that cannot be driven to the required depth because of an obstruction, as indicated by a sudden unexplained change in blow count and drifting, must be pulled and redriven or cut off and abandoned, whichever is directed.

3.2.5.1 Observations During Pile Driving

Pile behavior during driving will be monitored by the Contracting Officer or his/her designee. Provide the Contracting Officer with suitable means or a device that will indicate the penetration of the pile from a reasonable and safe distance from the pile and driving leads. Allow the Contracting Officer access to any pile driving information recorded by the Contractor.

3.2.5.2 Obstructions During Driving

Where obstructions are encountered that result in a sudden, unexpected increase in penetration resistance and deviation from the specific tolerances, the Contractor may be required to perform one of the following options:

1. Remove or drill through the obstruction.
2. Extraction, repositioning, and reinstallation.
3. Addition of extra piling.

Pursue the course of action selected by the Contracting Officer. If, in the Contracting Officer's opinion, the obstruction could not have been reasonably anticipated by the Contractor, work done under this Section, including necessary anchor system modifications, will be considered for payment as a modification.

3.2.5.3 Splicing Piles

A pile that has not reached the required refusal blow count when the top has been driven to the cutoff elevation must be spliced and driven to a sufficient depth to develop the required refusal blow count. A pile shall also be spliced when its head is damaged requiring cutoff to permit further driving. Cutoff shall become the property of the Contractor and shall be removed from the site at completion.

When approved, provide splices of the full penetration weld type or proprietary prefabricated splicer sleeves. Use only one splice per length of pile. Avoid field splices for lengths under 80 feet. Construct splices to maintain the true alignment and position of the pile sections. Splices must develop the full strength of the pile in both bearing and bending. Prior to installing the splice, square the end of the two sections of the pile to produce a straight splice with uniform bearing. In no case shall the ends of the pile sections be out of square by more than 1/16 inch.

3.2.5.4 Jetting

Jetting of piles shall not be permitted.

3.2.5.5 Predrilling

Predrilling shall not be permitted.

3.2.5.6 Heaved Piles

When driving piles in clusters or under conditions of relatively close spacing, perform observations to detect heave of adjacent piles. Backdrive heaved piles to original tip elevation and driving resistance (refusal blow count) without additional cost to the Government.

3.2.5.7 Pulled Piles

Pull and replace piles damaged or impaired for use during driving with new piles, or cut off and abandon and drive new piles as directed without additional cost to the Government. The Contracting Officer may require that any pile be pulled for inspection. Redrive piles pulled as directed and found to be in suitable condition at another location as directed. Replace piles pulled as directed and found to be damaged with new piles at the Contractor's expense.

3.2.5.8 Long Piles

Handle and drive piles of a high slenderness ratio carefully to prevent overstress. Provide pile driving rig with rigid supports so that leads remain accurately aligned. Where a high degree of accuracy is required, erect templates or guide frames at or close to the ground or water surface.

3.2.5.9 Damaged Piles

Any pile that is bent, ruptured, or damaged because of material defects, workmanship defects, improper handling, improper installation, or which are otherwise damaged so as to impair it for its intended use, shall be removed and replaced or, where directed, a replacement pile shall be driven adjacent thereto.

3.2.5.10 Inspection of Driven Piles

The Contracting Officer may require the Contractor to pull selected piles after driving for testing and inspection to determine the conditions of the piles. Any pile so pulled and determined by the Contracting Officer to be damaged so as to impair the pile from its intended use shall be removed from the work and a replacement pile driven at the Contractor's expense. Piles pulled and found to be sound and in satisfactory condition shall be re-driven. The cost for additional work associated with pulling and re-driving satisfactory piles shall be considered for payment as a modification.

3.2.5.11 Elevation of Cutoff

After installation, the upper end of the piles shall be cut square at the elevations shown on the Drawings.

3.2.5.12 Welding

Perform all welding in accordance with AWS D1.1/D1.1M.

3.2.5.13 Vibration Monitoring

Vibration criteria established by the Government are presented below. The Contractor shall be responsible for determining the means and methods for preventing the criteria presented below from being exceeded.

Structure	Sensor Location	Max. Vibration Level (Peak Particle Velocity, in/sec)
Fixed Timber Pier	Top of Adjacent Deck	2.5

All costs borne by the Government that result from the Contractor exceeding the maximum vibration levels as defined above, including but not limited to structure damage, shall be borne by the Contractor.

3.2.5.14 Cleanup

The Contractor shall clean up all waste materials upon completion of the work specified herein.

--- End of Section ---

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SECTION 32 92 19

SEEDING
10/06

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.

ASTM INTERNATIONAL (ASTM)

ASTM D4972 (2013) pH of Soils

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

NYSDOT Standard Specifications (2021) New York State Department of
Transportation Standard Specifications

U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act (1940; R 1988; R 1998) Federal Seed Act

DOA SSIR 42 (1996) Soil Survey Investigation Report No.
42, Soil Survey Laboratory Methods Manual,
Version 3.0

1.2 DEFINITIONS

1.2.1 Stand of Turf

95 percent ground cover of the established species.

1.3 SUBMITTALS

Government approval is required for submittals in accordance with Section 01
33 00, SUBMITTAL PROCEDURES:

1.3.1 SD-02 Shop Drawings

Site Restoration and Seeding Plan.

Approval of the above submittal is required prior to the start of
construction.

1.3.2 SD-03 Product Data

Fertilizer

Include physical characteristics and recommendations in accordance with the
topsoil composition tests. Approval of the above submittal is required
prior to installation.

1.3.3 SD-06 Test Reports

Topsoil Composition Tests (reports and recommendations).

Approval of the above submittal is required prior to topsoil placement.

1.3.4 SD-07 Certificates

State certification and approval for seed

Approval of the above submittal is required prior to seeding.

1.3.5 SD-08 Manufacturer's Instructions

Erosion Control Materials

Approval of the above submittal is required prior to installation.

1.4 DELIVERY, STORAGE, AND HANDLING

1.4.1 Delivery

1.4.1.1 Seed Protection

Protect from drying out and from contamination during delivery, on-site storage, and handling.

1.4.1.2 Fertilizer Delivery

Deliver to the site in original, unopened containers bearing manufacturer's chemical analysis, name, trade name, trademark, and indication of conformance to state and federal laws. Instead of containers, fertilizer may be furnished in bulk with certificate indicating the above information.

1.4.2 Storage

1.4.2.1 Seed and Fertilizer Storage

Store in cool, dry locations away from contaminants.

1.4.2.2 Topsoil

Prior to stockpiling topsoil, treat growing vegetation with application of appropriate specified non-selective herbicide. Clear and grub existing vegetation three to four weeks prior to stockpiling topsoil.

1.4.2.3 Handling

Do not drop or dump materials from vehicles.

1.5 TIME RESTRICTIONS AND PLANTING CONDITIONS

1.5.1 Restrictions

Conduct seeding under favorable weather conditions during seasons which are normal for such work as specified in the NYSDOT Standard Specifications. Do

not plant when the ground is frozen, snow covered, muddy, or when air temperature exceeds 90 degrees Fahrenheit.

1.6 TIME LIMITATIONS

1.6.1 Seed

Apply seed within twenty four hours after seed bed preparation.

1.7 SITE RESTORATION AND SEEDING PLAN.

Submit a written plan that explains all the means, methods, equipment, and materials, for how Contractor shall restore the site to its pre-construction condition, and establish new vegetation in any areas that were disturbed.

PART 2 PRODUCTS

2.1 SEED

2.1.1 Classification

Provide State-certified seed of the latest season's crop delivered in original sealed packages, bearing producer's guaranteed analysis for percentages of mixtures, purity, germination, weedseed content, and inert material. Label in conformance with AMS Seed Act and applicable state seed laws. Wet, moldy, or otherwise damaged seed will be rejected. Field mixes will be acceptable when field mix is performed on site in the presence of the Contracting Officer.

2.1.2 Seed Purity

Seed purity shall conform to the requirements of NYSDOT Standard Specifications, Section 713-04, Seeds.

2.1.3 Seed Mixture by Weight

Seed mixture by weight shall conform to the requirements of NYSDOT Standard Specifications, Section 713-04, Subsection D, Salt-Tolerant Seed Mix.

2.1.4 Temporary Protective Seed

Annual rye grass.

2.2 TOPSOIL

2.2.1 On-Site Topsoil

Surface topsoil stripped and stockpiled on site and modified as necessary to conform to the requirements specified in the paragraph entitled "Composition".

2.2.2 Off-Site Topsoil

Additional topsoil shall be furnished by the Contractor and shall conform to the requirements specified in the paragraph entitled "Composition".

2.2.3 Composition

The composition of on-site topsoil to be reused shall conform to the requirements of NYSDOT Standard Specifications, Section 713-01, Subsection A, Topsoil-Reuse of On-Site Materials. The composition of off-site topsoil to be imported to the site shall conform to the requirements of NYSDOT Standard Specifications, Section 713-01, Subsection B2, Topsoil-Lawn.

2.3 SOIL AMENDMENT

Add soil amendment to topsoil including water, limestone, fertilizer, mycorrhizal fungi, moisture retention additive, and/or sulfur as required to bring topsoil into compliance with the "composition" standard for topsoil as specified herein. Soil amendment shall conform to the requirements of NYSDOT Standard Specifications, Section 610-2.06, Soil Amendment.

2.4 MULCH

Mulch shall be free from noxious weeds, mold, and other deleterious materials and shall conform to the requirements of NYSDOT Standard Specifications, Section 713.11, Mulch for Turf Establishment and Erosion Control.

2.4.1 Straw

Stalks from oats, wheat, rye, barley, or rice. Furnish in air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Straw shall contain no fertile seed. Straw shall conform to the requirements of NYSDOT Standard Specifications, Section 713.19, Straw.

2.5 WATER

Source of water shall be approved by Contracting Officer and of suitable quality for irrigation, containing no elements toxic to plant life.

2.6 EROSION CONTROL MATERIALS

Erosion control material shall conform to the following:

2.6.1 Erosion Control Blanket

70 percent agricultural straw/30 percent coconut fiber matrix stitched with a degradable nettings, designed to degrade within 12 to 18 months.

2.6.2 Erosion Control Fabric

Fabric shall be knitted construction of polypropylene yarn with uniform mesh openings 3/4 to 1 inch square with strips of biodegradable paper. Filler paper strips shall have a minimum life of 6 months.

2.6.3 Erosion Control Net

Net shall be heavy, twisted jute mesh, weighing approximately 1.22 pounds per linear yard and 4 feet wide with mesh openings of approximately 1 inch square.

2.6.4 Hydrophilic Colloids

Hydrophilic colloids shall be physiologically harmless to plant and animal life without phytotoxic agents. Colloids shall be naturally occurring, silicate powder based, and shall form a water insoluble membrane after curing. Colloids shall resist mold growth.

2.6.5 Erosion Control Material Anchors

Erosion control anchors shall be as recommended by the manufacturer.

PART 3 EXECUTION

3.1 EXTENT OF WORK

Prepare topsoil subgrade, spread on-site topsoil and imported off-site topsoil, grade, modify topsoil using soil amendments as required, seed, fertilize, install erosion control measures, and provide maintenance (e.g., watering, maintaining erosion controls, etc.) as required to establish a satisfactory stand of grass and restore previous site conditions at the Contractor's Staging Area, the disturbed area behind the South Bulkhead, and all other areas disturbed by the Contractor's operations during construction. The Contractor is responsible for watering the seed at the recommended duration and frequency using Contractor supplied temporary hoses, sprinklers, timers, and other required miscellaneous irrigation supplies. The Contractor may use water from STA Eatons Neck for watering operations. Should the Contractor fail to establish a satisfactory stand of grass within the specified time window, the Contractor is responsible for providing and installing supplemental topsoil, fertilizer, and seed as required until a healthy stand of grass is achieved. Once a healthy stand of grass is achieved, the Contractor shall be responsible for removing all remaining temporary erosion control devices and irrigation systems from the site. The Contractor shall also be responsible for all dust control measures.

3.2 PREPARATION

3.2.1 Subgrade

Prepare the topsoil subgrade in accordance with the NYSDOT Standard Specifications, Sections 610-3.01, Topsoil and 610-3.02, Preparation of Subsoil for Turf Establishment.

3.2.2 Topsoil

Provide topsoil in accordance with the NYSDOT Standard Specifications, Section 610-3.01, Topsoil. Provide 6 inches of off-site and on-site topsoil to meet indicated finish grade. After areas have been brought to the indicated finish grade, incorporate fertilizer, pH adjusters, and other soil amendments into the topsoil to a minimum depth of 6 inches by disking, harrowing, tilling or other method approved by the Contracting Officer. Remove debris and stones larger than 3/4 inch in any dimension remaining on the surface after finish grading. Correct irregularities in finish surfaces to eliminate depressions. Protect finished topsoil areas from damage by vehicular or pedestrian traffic.

3.2.3 Soil Amendment Application Rates

Apply soil amendments at rates as determined by laboratory soil analysis of the soils at the job site in order to conform to the requirements of the NYSDOT Standard Specifications.

3.2.4 Fertilizer Application Rates

Apply fertilizer at rates as determined by laboratory soil analysis of the soils at the job site in order to conform to the requirements of the NYSDOT Standard Specifications.

3.3 SEEDING

3.3.1 Seed Application Seasons and Conditions

Immediately before seeding, restore soil to proper grade. Do not seed when ground is muddy, frozen, snow covered, or in an unsatisfactory condition for seeding. If special conditions exist that may warrant a variance in the above seeding dates or conditions, submit a written request to the Contracting Officer stating the special conditions and proposed variance. Apply seed within twenty four hours after seedbed preparation. Sow seed by approved sowing equipment. Sow one-half the seed in one direction, and sow remainder at right angles to the first sowing.

3.3.2 Winter Protective Seeding

If seeding is not performed by October 15, apply winter protective seeding at a rate of 120 lbs/acre to all areas that are bare or incomplete. Remobilize to complete seeding when appropriate conditions return in the spring.

3.3.3 Seed Application Method

Seeding method shall be broadcast seeded, drop seeded, or hydroseeded.

3.3.3.1 Broadcast and Drop Seeding

Seed shall be uniformly spread in accordance with the NYSDOT Standard Specifications, Section 610-3.03, Turf Establishment, including the specified application rate. Use broadcast or drop seeders. Sow one-half the seed in one direction, and sow remainder at right angles to the first sowing.

3.3.3.2 Hydroseeding

First, mix water and fiber. Wood cellulose fiber, paper fiber, or recycled paper shall be applied as part of the hydroseeding operation. Fiber shall be added at 1,000 pounds, dry weight, per acre. Then add and mix seed and fertilizer to produce a homogeneous slurry. Seed shall be mixed to ensure broadcasting at the rate in accordance with the NYSDOT Standard Specifications, Section 610-3.03, Turf Establishment. When hydraulically sprayed on the ground, material shall form a blotter like cover impregnated uniformly with grass seed. Spread with one application with no second application of mulch.

3.3.4 Mulching

3.3.4.1 Straw Mulch

Spread mulch in accordance with the NYSDOT Standard Specifications, Section 610-3.03, Turf Establishment. Straw mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the ground surface. All areas installed with seed shall be mulched on the same day as the seeding. Mulch shall be anchored immediately following spreading.

3.3.4.2 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

3.3.5 Rolling

Immediately after seeding, firm entire area except for slopes in excess of 3 to 1 with a roller not exceeding 90 pounds for each foot of roller width. If seeding is performed by hydroseeding, rolling may be eliminated.

3.3.6 Erosion Control Material

Install in accordance with manufacturer's instructions, where indicated or as directed by the Contracting Officer.

3.3.7 Watering

Water seeded areas in accordance with the NYSDOT Standard Specifications, Section 610-3.03, Turf Establishment. Start watering areas seeded as required by temperature and wind conditions. Apply water at a rate sufficient to insure thorough wetting of soil to a depth of 2 inches without run off. During the germination process, seed is to be kept actively growing and not allowed to dry out.

3.4 PROTECTION OF TURF AREAS

Immediately after turfing, protect area against traffic and other use.

3.5 MAINTENANCE

3.5.1 Maintenance Period

Begin maintenance immediately after each portion of the grass is planted and continue for 8 weeks after all grass planting is completed.

3.5.2 Maintenance Operations

Water to keep surface soil moist. Repair washed out areas by filling with topsoil, amending as required, and reseeding. Replace mulch on banks when

washed or blown away. Mow frequently enough to keep grass from exceeding 6 inches. Weed by hand only after first planting season.

3.6 GUARANTEE

If, at the end of the 8-week lawn maintenance period, a satisfactory stand of grass has not been produced, the Contractor shall renovate and reseed the grass or unsatisfactory portions thereof immediately, or, if after October 15, during the next planting season. If a satisfactory stand of grass develops by July 1 of the following year, it will be accepted. If it is not accepted, a complete replanting will be required during the planting season.

A satisfactory stand of grass is defined as grass or section of grass of 1,000 square feet or larger that has:

- a. No bare spots larger than 3 square feet on not more than 10- percent of total area with bare spots larger than 1 square foot.
- b. Not more than 15 percent of total area with bare spots larger than 6 inches square.

3.7 INSPECTION FOR ACCEPTANCE

Eight weeks after the start of maintenance on the last section of completed grass, and on written notice from the Contractor, the Contracting Officer will, within 15 days of such written notice, make an inspection to determine if a satisfactory stand has been produced. If a satisfactory stand has not been established, another inspection will be made after written notice from the Contractor that the grass is ready for inspection following the next growing season.

3.8 RESTORATION

Restore to original condition existing turf areas which have been damaged during turf installation operations at the Contractor's expense. Keep clean at all times at least one paved pedestrian access route and one paved vehicular access route to each building. Clean other paving when work in adjacent areas is complete.

-- End of Section --

SECTION 35 51 13.00 20

CONCRETE FLOATING PIER FOR SMALL CRAFT
04/06

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.

ACI INTERNATIONAL (ACI)

ACI 211.2	(1998; R 2004) Standard Practice for Selecting Proportions for Structural Lightweight Concrete
ACI 304R	(2000) Guide for Measuring, Mixing, Transporting, and Placing Concrete
ACI 305R	(1999; Errata 2006) Hot Weather Concreting
ACI 306.1	(1990; R 2002) Standard Specification for Cold Weather Concreting
ACI 309R	(2005) Guide for Consolidation of Concrete
ACI 318/318R	(2005; Errata 2005) Building Code Requirements for Structural Concrete and Commentary

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 7-10	(2010; Errata 2011; Supp 1 2013) Minimum Design Loads for Buildings and Other Structures
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AMERICAN WELDING SOCIETY (AWS)

AWS D1.4/D1.4M	(2005; Errata 2005) Structural Welding Code -- Reinforcing Steel
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ASTM INTERNATIONAL (ASTM)

ASTM A 123/A 123M	(2002) Standard Specification for Zinc (Hot- Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 153/A 153M	(2005) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 27/A 27M	(2005) Standard Specification for Steel Castings, Carbon, for General Application

ASTM A 307	(2007a) Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
ASTM A 36/A 36M	(2005) Standard Specification for Carbon Structural Steel
ASTM A 47/A 47M	(1999; R 2004) Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process
ASTM A 563	(2007) Standard Specification for Carbon and Alloy Steel Nuts
ASTM A 615/A 615M	(2007) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A 706/A 706M	(2006a) Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement
ASTM A 780	(2001; R 2006) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM A 1064	(2018) Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C 1107/C 1107M	(2007a) Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
ASTM C 150	(2007) Standard Specification for Portland Cement
ASTM C 260	(2006) Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C 272	(2001; R 2007) Water Absorption of Core Materials for Structural Sandwich Constructions
ASTM C 330	(2005) Standard Specification for Lightweight Aggregates for Structural Concrete
ASTM C 494/C 494M	(2005a) Standard Specification for Chemical Admixtures for Concrete
ASTM C 578	(2007) Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
ASTM C 618	(2005) Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete

ASTM C 94/C 94M	(2007) Standard Specification for Ready-Mixed Concrete
ASTM D 1894	(2006) Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting
ASTM D 2240	(2005) Standard Test Method for Rubber Property - Durometer Hardness
ASTM D 256	(2006a) Determining the Izod Pendulum Impact Resistance of Plastics
ASTM D 4020	(2005) Ultra-High-Molecular-Weight Polyethylene Molding and Extrusion Materials
ASTM D 5456	(2007) Evaluation of Structural Composite Lumber Products
ASTM D 570	(1998; R 2005) Standard Test Method for Water Absorption of Plastics
ASTM D 638	(2003) Standard Test Method for Tensile Properties of Plastics
ASTM D 792	(2000) Density and Specific Gravity (Relative Density) of Plastics by Displacement
ASTM F 844	(2007) Washers, Steel, Plain (Flat), Unhardened for General Use
ASTM G 109	(1999a; R 2005) Determining the Effects of Chemical Admixtures on the Corrosion of Embedded Steel Reinforcement in Concrete Exposed to Chloride Environments E(2000)

PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)

PCI MNL-116	(1999) manual for Quality Control for Plants and Production of Structural Precast Concrete Products
PCI MNL-120	(2010) Design Handbook - Precast and Prestressed Concrete

1.2 MODIFICATIONS TO REFERENCES

In the ACI publications, the advisory provisions shall be considered to be mandatory, as though the word "shall" has been substituted for "should" wherever it appears; reference to the "Building Official," the "Structural Engineer" and the "Architect/Engineer" shall be interpreted to mean the Contracting Officer.

1.3 SUBMITTALS

Government approval is required for submittals in accordance with Section 01 33 00, SUBMITTAL PROCEDURES:

1.3.1 SD-01 Preconstruction Submittals

Concrete Floating Dock System Manufacturer's Qualifications

Concrete Floating Dock System Manufacturer's Warranty

Approval of the above submittals is required prior to the start of construction.

1.3.2 SD-02 Shop Drawings

Drawings of Precast Float System

Approval of the above submittals is required prior to commencing fabrication.

1.3.3 SD-03 Product Data

Floating Dock System Catalogs, Illustrations, and Brochures

Anchorage and Lifting Insert Devices

Fender Elements

Mooring Hardware

Pile Guide Rub Blocks and Rollers

Approval of the above submittals is required prior to commencing fabrication.

1.3.4 SD-05 Design Data

Precast Concrete Float and Guide Pile Design Calculations

Concrete Mix Design

Approval of the above submittals is required prior to commencing fabrication.

1.3.5 SD-06 Test Reports

Contractor-Furnished Mix Design

Submit copies of test reports showing that the mix has been successfully tested to produce concrete with the properties specified and will be suitable for the job conditions. Approval of the above submittal is required prior to commencing fabrication.

Contractor-Furnished Performance Reports

Submit copies of performance reports indicating that the as-built system conforms to the design and performance criteria under dead load conditions at initial installation and one year later. Approval of the above submittal is required prior to installation.

Concrete Field and Lab Test Reports

Approval of the above submittal is required prior to installation.

Chloride Ion Penetration Test Results (if required)

Approval of the above submittal is required prior to installation.

1.3.6 SD-07 Certificates

Fabrication

Submit quality control procedures established in accordance with PCI MNL-116 by the precast manufacturer. Approval of the above submittal is required prior to fabrication.

1.3.7 SD-08 Manufacturer's Instructions

Handling and Dock System Installation Instructions

1.3.8 SD-11 Closeout Submittals

As-Built Drawings

Operation and Maintenance Data

Submit the above submittals within 14 days following installation. Submit Operations and Maintenance Data in accordance with Section 01 78 23, OPERATION AND MAINTENANCE DATA.

1.4 FLOATING DOCK MANUFACTURER'S EXPERIENCE AND WARRANTY

The work includes the provision of precast, not-prestressed concrete floating dock herein referred to as precast floats, and all other items relating to the precast floating dock system. Precast floats shall be the product of a manufacturer specializing in the production of precast concrete floats with a minimum of ten years' experience in the manufacture of precast concrete floating docks. Submit manufacturer's qualifications to the Contracting Officer for approval.

Submit manufacturer's warranty that the concrete floating dock system will be free of defects in materials, workmanship, design, and fabrication, and will meet the criteria specified for a period of three years. Such warranty shall start upon final acceptance of the work or the date the Owner takes possession, whichever is earlier.

1.5 DESIGN CRITERIA

The precast floats shall be structural concrete floats with top deck, side walls, end walls, and intermediate walls reinforced with galvanized rebar and galvanized deformed wire. Additionally, corners and connection areas shall have added galvanized wire mesh reinforcement. Minimum concrete thickness is 2.5 inches, with thicker wall thickness as necessary in high-stress areas as determined by design. The center of the precast floats shall be constructed of closed-cell polystyrene foam. Exposed foam at the bottom of the precast float shall be sealed and coated with polyurea. Concrete shall be high-density (145 lbs/cf) and high-strength (6,500 psi min), providing minimal water absorption. The dock sections shall be

connected at each corner with a rubber block and thru-bolt or wire rope assembly.

1.5.1 Design Criteria for Floating Docks

- a. Information presented herein is based upon the Designer's best estimate of those factors that reasonably can be expected to affect the design, performance, and durability of the floating dock system. The proposed floating dock system shall be subject to thorough engineering analysis using all relevant criteria that could affect the stability, structural integrity, and durability of the dock system based on the performance criteria as indicated on project drawings and specified herein.
- b. Submitted calculations shall demonstrate that the floating dock systems are designed to withstand the required loading without damage, including floating structures, anchor systems, and all ancillary components and connections, using the criteria specified in this Section as a minimum requirement. The design loads, load combinations, and allowable stresses are described herein.
- c. The layout and principal dimensions of the floating dock systems are indicated on the project drawings. The Contractor shall provide a system that conforms to the layout and dimensions indicated in the project drawings, and the provisions of these specifications. Minor variances in dock dimensions to accommodate manufacturer's standard products are acceptable with approval.
- d. The dock systems shall be made of modular floats designed in such a manner that modules may be replaced with similar modules in case of repairs. Modules shall be connected to the floating dock restraint system to form continuous sections of floating dock.
- e. Freeboard under dead load only at the time of dock system acceptance shall not be less than 18 inches nor exceed 20 inches.
- f. Freeboard under combined dead load plus uniform live load or concentrated live load shall not be less than 8 inches.
- g. The floating dock systems shall be designed to float level under deadload. The deck of the float modules shall be level and flush upon completion within the following tolerances:
 1. Dead Load Deck Surface Slope
 - a. Transverse Direction: Not more than 1/8 inch per foot.
 - b. Longitudinal Direction: Not more than 1 inch per 10 feet of length.
 - c. Always within specified freeboard.
 2. Assembly Gap between Adjoining Concrete Floats: Minimum 1/4 inch, maximum 1/2 inch on ADA accessible routes or 3/4 inch all others.
 3. Vertical Height Difference between Adjoining Concrete Floats, Wales and Deck Panels: Maximum 1/4 inch on ADA accessible routes or 3/8 inch all others.

- h. Cross slope with the concentrated live load placed anywhere on the float shall not exceed 4 percent or 3 inches differential freeboard across the float, whichever is less.
- i. Special floats shall be designed to support the superimposed dead loads imposed by gangways, ramps, utility equipment, or other dock accessories. Float modules with superimposed loads shall have the same freeboard as floats with no such loading, so that there will be no residual stresses when the floats are interconnected and to ensure that the dock system deck is level within the specified tolerance. Individual float module depth shall be designed to provide support for concentrated loads to ensure that the floating dock system maintains the specified freeboard within the required tolerance. Design foam "knock outs" as necessary within the precast floats in order to counterbalance superimposed dead loads and still provide a level deck surface within tolerance. The use of external supplemental buoy floats to counter dead loads is prohibited.
- j. Dock Restraint System. The floating dock system shall be designed to be restrained by new guide piles as indicated on the project drawings. The guide pile sizes and locations shown in the project drawings are the assumed minimum and shall be designed and verified by the floating dock Manufacturer.
- k. The range of water elevations shown on the Vertical Datum Conversion Diagram on Sheet G-002 of the project drawings shall be considered when designing the dock system.

1.5.2 Concrete Float Design

ACI 318/318R, ACI 318M and the PCI MNL-120. Design precast floats (including connections) for a 25-year design life for the design load conditions specified herein. Design precast floats for handling without cracking in accordance with the PCI MNL-120.

1.5.2.1 Dock Loading

Float, anchorage systems, and guide piles shall be designed for the following load conditions as a minimum. Load cases shall be combined based upon their probability of simultaneous occurrence, and in accordance with applicable codes and standards. Wind and current exposure areas shall be based on average vessel profile and draft, respectively. To account for sheltering effects, 15 percent of the full load shall be applied to all vessels sheltered by the vessels exposed to full load. Calculations shall be performed for wind and current loads both parallel and perpendicular to the floating dock system.

- a. Dead load (DL) shall consist of the weight of float modules, framing, wale system, attachment steel, miscellaneous connection devices, and all other permanently attached accessories (e.g., cleats, gangways, etc.) including all work of other trades (e.g., shore ties, utilities, etc.). Contractor shall exercise care to be sure that all dead loads are accurately determined and accounted for, including superimposed dead loads, consideration of weight gain due to water absorption and marine growth, and manufacturing tolerances that affect the final freeboard.

- b. Live load shall consist of the following:
1. Uniform Live Load (ULL) shall be 50 psf, including the area of landings and ramps supported by the dock.
 2. Concentrated Live Load (CLL) of 500 pounds, applied at any location on the floating dock, except for hinged floats.
- c. Design Vessels for the floating dock systems are summarized in Table 1 below:

Table 1 Design Vessel Specifications				
Vessel	Length (ft)	Beam (ft)	Draft (ft)	Displacement (lb)
45' Response Boat - Medium (RBM)	44.8	14.6	3.3	36,500
47' Motor Lifeboat (MLB)	47.9	14.0	4.5	40,000

- d. Wind Load (WL) on the projected area of a vessel/dock combination shall be applied as follows:
1. 150 mph nominal design 3-second wind gust speed in accordance with ASCE 7-10.
 2. Design Vessel Effective Windage Height = 15% x Length of Vessel for recreational vessels.
 3. Assume 100 percent berth occupancy (i.e., both sides of floating dock occupied by controlling design vessels).
 4. 100 percent applied to vessels in the unshielded berths or row.
 5. 20 percent applied to all vessels in the remaining (shielded) berths, provided 100 percent loading is applied for design of each floating dock module and floating dock module connection. To be considered "shielded", a vessel must be downwind of an equal (or larger) vessel, and berthed on the same main walkway.
 6. Transverse Load on Vessel applied at the 1/3 and 2/3 points to the floating dock module.
 7. Longitudinal load on vessel applied at vessel centerline to the main walkway.
 8. On docks where the berth length is not defined ('side-ties'), wind loads shall be based on the maximum vessel length (L) to be accommodated, spaced at 1.25 x L over the length of the dock.
 9. Mooring load from line pull acting in any direction from any cleat location, applied at a 45-degree angle from the horizontal.

- e. Vertical Wave Load (VWL) shall be applied as follows:
 - 1. Wave height of 4.1 feet and wave period of 3.7 seconds with or without vessels in place.
 - 2. Wave length equal to 48 feet or length of dock, whichever is less.
 - 3. Wave direction (propagation) parallel to longitudinal axis of floating dock module.
- f. Current load (CL) shall be based on a current speed of 0.5 knots with or without vessels and shall be combined with other loads as specified.
- g. Impact Load (IL) due to impact of a vessel shall be applied as follows:
 - 1. Vessel approach at a speed of 1 foot per second and an angle of 20 degrees from the axis of the dock.
 - 2. Impact loads applied to floating dock modules at outboard end and to side tie berths at the midpoint between anchorage/pile supports.
 - 3. On side tie docks, impact loads shall be based on the maximum vessel length to be accommodated.
- h. Ice Loads (ICE) shall be based on the following:
 - 1. 12-inches of solid ice formation on all floating docks and surrounding foundation (guide) piles.
 - 2. Lateral ice forces on piles shall be computed in accordance with the requirements of AASHTO HB-17.
 - 3. Lateral ice loads shall be based on a 12 inch thick ice sheet, with ice strength (pressure) of 200 psi.
 - 4. Flow ice loads shall be applied at the tidal current load of 0.8 feet per second.
- i. Snow loads (SL) shall be 20 pounds per square foot uniform load.
- j. Design loads for lifting, handling, transport, and installation.
- k. The minimum gangway load shall consist of:
 - 1. Superimposed dead load of the gangway structure tributary to any possible location on the dock.
 - 2. Transferred uniform live load of 100 psf on the gangway area tributary to the dock.
- l. Combined loading cases for design; load factors shall be in accordance with the current ASCE 7 (load cases shall be labeled in

calculations submitted in accordance with this specification)
(Consider wind load cases parallel and perpendicular to axis of
floating dock modules):

1. Case 1 - DL only, including any superimposed gangway dead load
 2. Case 2 - DL + ULL, including any transferred gangway loads
 3. Case 3 - DL + CLL
 4. Case 4a - DL + Parallel WL + VWL + CL
 5. Case 4b - DL + Perpendicular WL + CL
 6. Case 5 - DL + IL + CL
 7. Case 6 - DL + ULL + CL
 8. Case 7 - DL + ICE
 9. Case 8 - DL + $\frac{1}{2}$ ICE + VWL + CL
 10. Case 9 - DL + VWL + SL + CL
- m. The design calculations shall include, but not be limited to the following:
1. Determination of extreme fiber stresses in structural members for all load cases.
 2. Stresses in the dock system connections for all load cases.
 3. Transfer of moored vessel forces and to the dock system.
 4. Transfer of dock system loads to anchor system that consider the difference in the structural stiffness of the dock system and the anchor system of various lengths and section.
 5. Transfer of forces at guide pile frames and connections.
 6. Transfer of forces at dock modules and dock module connections.
 7. Freeboard calculations for all float modules.
 8. Differential movement between dock modules, including main walkways and docks.
 9. Lifting, handling, transport and storage.

1.5.2.2 Performance

- a. Precast float modules shall be sized so that a single module (excluding walers) is used to attain the indicated pier width. The use of more than one module connected side by side to attain pier width is unacceptable.

- b. Precast floats shall have PVC sleeves and pull boxes embedded as required for electrical and communications systems. Pull boxes shall have a nominal 1 in. concrete bottom with a light brushed, slip resistant finish. All bolts and inserts for pull box lids shall be 316 stainless steel. Pull box lids shall be flush with the deck surface and rated for the pier deck loading. Sleeves shall remain above water surface under dead load conditions and shall be designed to facilitate installation, removal, and servicing of utilities. Pull boxes and access openings shall be sized and located as indicated on the drawings.

1.5.3 PCI Quality Certifications

PCI MNL-116. At the precast manufacturer's option, in lieu of core samples, ACI 318/318R and ACI 318M, full scale load tests may be performed. Perform on randomly selected precast floats, as directed by the Contracting Officer.

1.5.3.1 Product Quality Control

PCI MNL-116 for PCI enrolled plants. Where precast floats are manufactured by specialists in plants not currently enrolled in the PCI "Quality Control Program," provide a product quality control system in accordance with PCI MNL-116 and perform concrete and aggregate quality control testing using an approved, independent commercial testing laboratory. Submit test results to the Contracting Officer.

1.6 DELIVERY, HANDLING, AND STORAGE

- a. Use all means necessary to protect materials before, during, and after delivery to the work site, and to protect the installed work and materials of all other trades. Use extreme care in the off-loading of materials to prevent damage. Lift and support precast floats at the lifting and supporting points indicated on the shop drawings and protect from overloading.
- b. Deliver the materials to the work site and store in a safe area that is out of the way of traffic and shored off the ground surface.
- c. Place identification numbers on all float modules such that they are not covered after assembly. Identification numbers shall conform to the shop drawing numbering system. Also identify hardware and framing lumber and store separately from each other. Protect all metal products with adequate weatherproof outer wrappings.
- d. In the event of damage caused by the Contractor, immediately make repairs and/or replacements as necessary.

1.7 FACTORY INSPECTION

At the option of the Contracting Officer, precast floats shall be inspected by the QC Representative prior to being transported to the job site. The Contractor shall give notice 14 days prior to the time the units will be available for plant inspection. Neither the exercise nor waiver of inspection at the plant will affect the Government's right to enforce contractual provisions after units are transported or erected.

1.8 QUALITY ASSURANCE

1.8.1 Drawing Information

Submit drawings indicating complete information for the fabrication, handling, and erection of the precast floats and the installation of ancillary components (e.g., gangway, shore ties, etc.). Drawings shall not be reproductions of contract drawings. Design drawings of precast floats (including connections) shall be prepared and sealed by a Professional Engineer registered in the United States, and submitted for approval prior to fabrication. The drawings shall indicate, as a minimum, the following information:

- a. Floating dock system layout
- b. Marking of floats for assembly
- c. Connections between floats, and connections between floats and other construction
- d. Location and anchorage of mooring fittings
- e. Guide pile size, length, location
- r. Pile guide frame, rub blocks, and rollers and connection to the float
- g. Reinforcing details
- h. Material properties of all materials used
- i. Lifting and assembly inserts and embedded items
- j. Dimensions and surface finishes of each float
- k. Erection sequence and handling requirements
- l. All loads used in design (such as live, dead, wind, current, berthing, handling, and erection)
- m. Bracing/shoring required
- n. Gangway landing
- o. Utility routing and connections for work of other trades

1.8.2 Design Calculations

Submit calculations reflecting design conforming to requirements of Section 1.5, Design Criteria. Design calculations of precast floats (including connections) and guide piles shall be prepared and sealed by a Professional Engineer registered in the United States, and submitted for approval prior to fabrication. In addition to member sizing calculations, submit calculations for the floating dock system which include:

- a. Anchorage attachment points to ensure reactions shall be appropriately and rationally distributed throughout the system

- b. Overall system loads under full occupancy, with consideration for shielding factors, and deflection of the system and its effects on anchor loading
- c. Anchorage system capacity for individual and overall load considerations
- d. Guide pile quantity, size, length, cross section, and minimum embedment

1.8.3 Concrete Mix Design

Thirty days minimum prior to concrete placement, submit a mix design for each strength and type of concrete. Include a complete list of materials including type; brand; source and amount of cement, pozzolan, and admixtures; and applicable reference specifications.

1.8.4 Chloride Ion Penetration Test Results

Submit chloride ion penetration test results in accordance with ASTM C 1202. Chloride ion penetration test results for specimens of similar concrete mix shall be below 1500 Coulombs tested at 56 days. Test results may be waived if corrosion inhibitor admixture is provided as stated in Subparagraph, "Corrosion Inhibitor."

1.8.5 Operation and Maintenance Manual

Prior to completion of the floating dock system, submit operation and maintenance procedures manual for all floating dock system components in accordance with Section 01 78 23, OPERATION AND MAINTENANCE DATA. The manual shall include instructions, recommended frequencies of maintenance and maintenance procedures and materials by brand name and specification. All data shall be on 8 1/2 by 11 inches (and 11 by 17 inches, folded to fit) sheets of paper bound together in a book with a protective cover. The binder external cover shall be identified as "Floating Dock System Operation and Maintenance Procedures".

1.9 WARRANTY

The individual floating dock modules shall carry a warranty against defects in materials and workmanship for a period of five (5) years with maintenance from the date of project acceptance. All other dock system components, including structural members and accessory items, shall carry a warranty against defects in materials and workmanship for one (1) year from the date of project acceptance or the Manufacturer's warranty whichever is greater. If within the respective warranty periods any materials or their installation are found to be defective, the Contractor shall repair or replace the defective item. This warranty excludes coverage for damage caused by abuse, misuse or neglect, and improper maintenance unless the Contractor is obligated to provide warranty maintenance under the terms of the contract.

PART 2 PRODUCTS

2.1 CONTRACTOR-FURNISHED MIX DESIGN

ACI 211.2, using weight method. The minimum compressive strength of concrete at 28 days shall be 5,000 psi. The maximum water cement ratio shall be 0.40. Lightweight concrete shall not be used. Concrete exposure class C1. Mix shall contain a corrosion inhibitor and air-entraining admixtures at the mixer to produce between 5 to 7 percent air by volume. The use of foaming agents is prohibited.

2.2 PRECAST FLOAT MATERIALS

2.2.1 Cement

ASTM C150/C150M, Type I/II or Type II low alkali.

2.2.1.1 Fly Ash and Pozzolan

ASTM C 618, Type F or C.

2.2.2 Water

Water shall be fresh, clean, and potable.

2.2.3 Aggregates

2.2.3.1 Aggregates Selection

ASTM C 330, Size 8 (3/8 inch), except as modified herein. Obtain aggregates for exposed concrete surfaces from one source. Aggregates shall not contain any substance which may be deleteriously reactive with the alkalies in the cement.

2.2.4 Grout

2.2.4.1 Nonshrink Grout

ASTM C 1107/C 1107M.

2.2.4.2 Cementitious Grout

Shall be a mixture of portland cement, sand, and water. Proportion one part cement to approximately 2.5 parts sand, with the amount of water based on placement method. Provide air entrainment for grout exposed to the weather.

2.2.5 Admixtures

2.2.5.1 Air-Entraining

ASTM C 260. Air-Entraining shall be as recommended by ACI for a sever freeze thaw environment.

2.2.5.2 Accelerating

ASTM C 494/C 494M, Type C or E.

2.2.5.3 Water Reducing

ASTM C 494/C 494M, Type A, E, or F.

2.2.5.4 Corrosion Inhibitor

Provide a minimum dosage of chloride protection admixture (calcium nitrate based), ASTM C 494/C 494M, at a dosage rate recommended by the manufacturer's printed literature. The calcium nitrite shall be furnished in solution containing not less than 29 percent calcium nitrite solids.

2.2.6 Reinforcement

All reinforcement shall be hot-dipped galvanized, ASTM A 123/A 123M or ASTM A 153/A 153M.

2.2.6.1 Reinforcing Bars

ASTM A 615/A 615M, Grade 60.

2.2.6.2 Welded Wire Fabric

ASTM A 1064/A1064M. Provide flat sheets of welded wire fabric, rolled fabric is not acceptable. Maximum fabric grid is 2 in. x 2 in.

2.2.7 Metal Accessories

Provide ASTM A 123/A 123M or ASTM A 153/A 153M, hot-dipped galvanized.

2.2.7.1 Inserts

ASTM A 47/A 47M, Grade 32510 or 35018, or ASTM A 27/A 27M Grade U-60-30.

2.2.7.2 Structural Steel

ASTM A 36/A 36M.

2.2.7.3 Bolts and Rods

ASTM A 307, ASTM 325, or ASTM F 593 Type 316. Minimum ASTM A 449 rod diameter of $\frac{3}{4}$ inch. All rods shall be placed within PVC sleeves.

2.2.7.4 Nuts

ASTM A 563 or F 594.

2.2.7.5 Washers

ASTM F 436 washers.

2.2.7.6 Cleats

Provide 18 in. boat cleats spaced at approximately 6 feet on center. Cleats shall be galvanized cast steel. Cleat anchorage shall be designed by the Floating Dock Manufacturer based on the design vessels and environmental conditions specified herein. Submit the proposed cleats to the Contracting Officer for approval.

2.2.8 Foam Core

Closed cell, expanded polystyrene (EPS), ASTM C 578. Foam core laminations shall be glued with a low solvent glue. Core shall not be made from more than four laminated sections. Horizontal laminations in the upper 10 inches are not permitted. Core shall be strapped to prevent de-lamination during transportation and handling. Core shall not contain more than 10 percent reground EPS foam material. Reground foam pieces shall not exceed 3/8 inch diameter.

Unit Weight:	0.9 - 2.0 PCF
Water absorption (ASTM C 272):	3 percent (by volume)
Dimensional tolerance:	+/- 1/8 in.

2.3 FABRICATION

PCI MNL-116 unless specified otherwise.

2.3.1 Precast Floats

Precast floats shall be cast monolithically, cold joints of any type are not acceptable. Modules shall have a minimum deck and wall thickness of 2.5 inches. Precast float decks shall be constructed to drain freely and there shall be no floodable enclosed spaces.

2.3.2 Forms

Brace forms to prevent deformation. Forms shall produce a smooth, dense surface. Chamfer exposed edges of floats 1/2 inch, unless otherwise indicated. Form tolerance shall not exceed 1/8 inch dimensions indicated on shop drawings. When measured diagonally, floats more than 1/2 inch out of square shall be rejected.

2.3.3 Reinforcement Placement

ACI 318/318R and ACI 318M for placement and splicing. Reinforcement may be preassembled before placement in forms. Use plastic chairs.

2.3.4 Concrete

2.3.4.1 Concrete Mixing

ASTM C 94/C 94M. Mixing operations shall produce batch-to-batch uniformity of strength, consistency, and appearance.

2.3.4.2 Concrete Placing

ACI 304R, ACI 305R for hot weather concreting, ACI 306.1 for cold weather concreting, and ACI 309R, unless otherwise specified. Concrete shall be vibrated internally and/or externally to assure a smooth, dense finish.

2.3.4.3 Concrete Curing

Commence curing immediately following the initial set and completion of surface finishing. Provide curing procedures to keep the temperature of the concrete between 50 and 190 degrees F. When accelerated curing is used, apply heat at controlled rate and uniformly along the casting beds. Monitor

temperatures at various points in a product line in different casts. Cover and wet cure for a minimum of seven days prior to transporting, launching, and assembly.

2.3.5 Surface Finish

Precast floats containing hairline cracks which are visible and are less than 0.02 inches in width, may be accepted, except that cracks larger than 0.005 inches in width for surfaces exposed to the weather shall be repaired. Precast floats which contain cracks greater than 0.02 inches in width shall be approved by the Contracting Officer, prior to being repaired. Any precast float that is structurally impaired or contains honeycombed sections deep enough to expose reinforcing shall be rejected.

2.3.5.1 Unformed Surfaces

Provide a steel troweled and broomed finish for pier deck surface. Slip resistant broomed deck finish shall be transverse to pier orientation. All deck edges shall have a 3/8 inch tooled radius with a minimum 1 1/2 inch wide, smooth, hard steel finished face.

2.3.5.2 Formed Surfaces

PCI MNL-116 (Appendix A - Commentary), Chapter 3, for grades of surface finishes. Provide a standard grade surface finish for both exposed and unexposed areas.

2.3.6 Float Identification

All precast floats are to be clearly identified on one side and one end, between the bottom of the waler and the waterline. Identification shall include name of manufacturer, date of manufacture, specific float type, and job number.

2.3.7 Handling and Storage

Contractor shall avoid damage to floats during form removal, storage, assemble, and installation. Storage of floatation units shall be on level surfaces. Any damaged units shall be rejected and removed from the assigned job.

2.4 TIMBER AND WOOD PRODUCTS

All timber (if utilized) shall be fabricated from parallel strand lumber (PSL) engineered structural beams. PSL structural beams shall be in accordance with ASTM D 5456. All other structural lumber shall be No. 1 Southern Yellow Pine.

2.4.1 Preservative Treatment

Treat wood to be used in contact with salt water or salt water splash in accordance with AWWA C2 (Material Subject to Marine Borer Exposure) with waterborne preservative AWWA P5, (ACA - Ammoniacal Copper Arsenate, ACZA - Ammoniacal Copper Zinc Arsenate, CCA - Chromated Copper Arsenate) to 0.6 pcf retention. For wood continuously immersed, treat in accordance with AWWA C1 and AWWA C18 as applicable, to 2.5 pcf retention. For glue laminated

engineered structural beams treat in accordance with AWPA C28 and AWPA C33 as applicable.

2.5 FENDER ELEMENTS

System shall include D-fenders. D-fender system shall be a continuous 6 in. hollow D-shaped cross section extruded rubber fendering attached along all exposed edges, corners and ends, which could be struck by a boat. Fendering shall be an EPDM rubber compound, resistant to ozone and ultraviolet deterioration that will not mark the hull of the vessel. The rubber compound shall conform to ASTM D 2000 (3BA 620 A14, B13, C12, EA14, F17, GA11). A-611 Acceptance requirement is 250 ppi, minimum. Submit proposed D-fender system to the Contracting Officer for approval.

2.6 GUIDE PILES

Guide piles shall be steel pipe piles fabricated and installed in accordance with Section 31 62 16.16, STEEL PIPE PILES. Guide pile coating shall be in accordance with Section 09 97 13.26, COATING OF STEEL WATERFRONT STRUCTURES. Pile quantity, size, length, cross section, and embedment shall be determined by Floating Dock Manufacturer's design. The design shall include a corrosion allowance of 1/8 inch at the outer perimeter of the pile which assumes a corrosion rate of 5 mils/year over a 25 year design life.

The minimum top of pile elevation is shown on the drawings. Pile quantity and location shall be as indicated on the drawings. Relocation of pile layout and additional or fewer piles required by the Floating Dock Manufacturer's design to resist the indicated design loads, shall be subject to approval by the Government.

2.6.1 Guide Pile Caps

In accordance with Section 31 62 16.16, STEEL PIPE PILES.

2.7 PILE GUIDE FRAME

The floating dock manufacturer shall be responsible for the design of the pile guide frame, rub blocks, and rollers for assemblies both internal and external to the floats. Pile guides shall be adjustable longitudinally and transversely and be constructed of structural steel conforming to ASTM A 36/A 36M, ASTM A 572/A 572M, or ASTM A 500 and galvanized in accordance with ASTM A 123/A 123M. Pile guide wear pads shall be low friction, ultra high molecular weight polyethylene (ASTM D 4020) fastened with stainless steel fasteners in accordance with manufacturers recommendations. Contractor shall ensure that dimensions of pile guide assembly is adequate for the installed guide piles so as to provide proper clearance between guides and existing structures during tidal fluctuation. Pile guides shall be designed to transfer all berthing and mooring loads as called for in the Paragraph entitled "Dock Loading" between floats and guide piles. Pile guides shall include rubber elements to limit impact loads. Submit the proposed system to the Contracting Officer for approval.

PART 3 EXECUTION

3.1 SURFACE REPAIR

Prior to erection, and again after installation, precast floats shall be checked for damage, such as cracking, spalling, and honeycombing. As directed by the Contracting Officer, precast floats that do not meet the surface finish requirements specified in Part 2 in paragraph entitled "Surface Finish" shall be repaired or removed and replaced with new precast floats.

3.2 LAUNCH AND ASSEMBLY

Precast floats shall be launched after the concrete has attained the specified compressive strength, unless otherwise approved by the precast manufacturer. Assemble in accordance with the approved shop drawings. PCI MNL-116 and PCI MNL-120 (Chapter 8), for tolerances. Brace precast floats, unless design calculations submitted with the shop drawings indicate bracing is not required. Follow the manufacturer's recommendations for maximum construction loads.

3.3 ANCHORAGE

Provide anchorage for fastening work in place. Conceal fasteners where practicable. Make threaded connections up tight and nick threads to prevent loosening.

3.4 WELDING

AWS D1.4/D1.4M for welding connections and reinforcing splices. Protect the concrete and other reinforcing from heat during welding. Weld continuously along the entire area of contact. Grind smooth visible welds in the finished installation. Welding of epoxy-coated reinforcing is not allowed.

3.5 OPENINGS

Holes or cuts requiring reinforcing to be cut, which are not indicated on the approved shop drawing, shall only be made with the approval of the Contracting Officer and the precast manufacturer. Drill holes less than 12 inches in diameter with a diamond tipped core drill.

3.6 GALVANIZING REPAIR

Repair damage to galvanized coatings using ASTM A 780 zinc rich paint for galvanized surfaces damaged by handling, transporting, cutting, welding, bolting, or acid washing. Do not heat surfaces to which repair paint has been applied.

3.7 GROUTING

Clean and fill indicated areas, solidly with nonshrink grout or cementitious grout. Provide reinforcing where indicated. Remove excess grout before hardening.

3.8 FREEBOARD PERFORMANCE

Submit freeboard measurements reflecting that the as-built system conforms to the specifications under dead load conditions. Performance reports must be submitted upon completion of the initial installation. Floating docks determined to be outside of the specified freeboard range shall be replaced or modified to provide the specified freeboard to the satisfaction of the

REPAIR WATERFRONT
USCG STA MONTAUK, MONTAUK, NY

13174398
APR 2024

Contracting Officer. The use of supplemental float modules to provide the specified freeboard shall not be permitted.

-- End of Section --

APPENDIX A

Federal & State Permits

REPAIR WATERFRONT
USCG STA MONTAUK, MONTAUK, NY

13174398
APR 2024

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STATE OF NEW YORK
DEPARTMENT OF STATE

ONE COMMERCE PLAZA
99 WASHINGTON AVENUE
ALBANY, NY 12231-0001
HTTPS://DOS.NY.GOV

KATHY HOCHUL
GOVERNOR

ROBERT J. RODRIGUEZ
SECRETARY OF STATE

May 3, 2023

[REDACTED]
USCG
475 Kilvert Street
Warwick, RI 02886
david.j.arpin@uscg.mil

Re: **F-2023-0178(DA)**

US Coast Guard Repairs at Station Montauk: Replace existing 580sf dock and associated 14" piles with a new 630sf floating dock and four 18" concrete filled piles; replace hardware, repair gangways, and recoat or replace eight 14" diameter piles on existing 1,080sf dock; repair damaged utility lines at various locations along existing pier; and repair holes and displaced fill along 570lf seawall and extend seawall 24lf at eroded return.

69 Start Island Road (Lake Montauk)

Town of East Hampton, Suffolk County

Concurrence with Consistency Determination

Dear [REDACTED]

The Department of State received the US Coast Guard's Consistency Determination and supporting information for this proposed Federal Agency Activity (15 CFR 930 Subpart C) on March 7, 2023 and received clarifying project information on March 14, 2023.

The Department of State has completed its review of the US Coast Guard's consistency determination regarding the consistency of the above proposed federal agency activity, with the New York State Coastal Management Program.

Based upon the information submitted, the Department of State concurs with the US Coast Guard's consistency determination regarding this matter.

Please feel free to contact [REDACTED]
and reference file no. F-2023-0178(DA).

Sincerely,

[REDACTED]

Director, Development Division
Office of Planning, Development and
Community Infrastructure



**Department
of State**

REL0001940790

MM/dn

cc: COE/New York District --
DEC Region 1 -- Matthew Penski
Town of East Hampton LWRP -- Brain Frank

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 1
SUNY @ Stony Brook, 50 Circle Road, Stony Brook, NY 11790
P: (631) 444-0365 | F: (631) 444-0360
www.dec.ny.gov

June 22, 2023

USCG Civil Engineering Unit Providence
475 Kilvert Street
Warwick, RI 02886

Re: Permit ID 1-4724-00751/00012
USCG Station Montauk
69 Star Island Road
Montauk
Expiration Date: 6/21/2028

Dear Permittee:

In conformance with the requirements of the State Uniform Procedures Act (Article 70, ECL) and its implementing regulations (6 NYCRR, Part 621) we are enclosing your permit. Please carefully read all permit conditions contained in the permit to ensure compliance during the term of the permit. If you are unable to comply with any conditions, please contact us at the above address.

Also enclosed is a permit sign which is to be conspicuously posted at the project site and protected from the weather, and a Notice of Commencement / Completion of Construction form.

Sincerely,

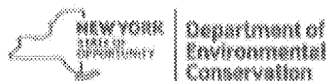


Environmental Analyst II

Distribution List:



BMHP
File



REL0001940790



PERMIT
Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
US COAST GUARD
2100 2ND ST SW
WASHINGTON, DC 20593

Facility:
MONTAUK COAST GUARD STATION
69 STAR ISLAND RD|400-2000
MONTAUK, NY 11954

Facility Application Contact:

[REDACTED]
475 KILVERT ST
WARWICK, RI 02886

Facility Location: in EAST HAMPTON in SUFFOLK COUNTY

Facility Principal Reference Point: NYTM-E: 757.526 NYTM-N: 4551.419
Latitude: 41°04'23.8" Longitude: 71°56'05.0"

Project Location: USCG Station Montauk

Authorized Activity: This Section 401 Water Quality Certification (WQC) authorizes the following activities, in accordance with the information and plans referenced in Condition Nos. 1 and 2 of this permit:

Replace / repair the existing SM boat floating dock and associated piles, fixed timber pier and utilities, WPB floating dock and associated piles, and gabion seawall. Install a 24-foot extension to the gabion seawall. All work must be done according to the plans prepared by the U.S. Coast Guard dated MAR 2023, and stamped NYSDEC Approved on 6/22/2023.

Note: Wherever used in this permit, ECL refers to New York State Environmental Conservation Law and 6 NYCRR refers to Title 6 of the New York Code, Rules, and Regulations.

Permit Authorizations

Water Quality Certification - Under Section 401 - Clean Water Act

Permit ID 1-4724-00751/00012

New Permit

Effective Date: 6/22/2023

Expiration Date: 6/21/2028



NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: SHERRI L AICHER, Regional Permit Administrator
Address: NYSDEC Region 1 Headquarters
SUNY @ Stony Brook|50 Circle Rd
Stony Brook, NY 11790 -3409

Authorized Signature:

Date 6/22/2023

Distribution List

Marine Habitat Protection
Environmental Permits

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

WATER QUALITY CERTIFICATION SPECIFIC CONDITION

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

**NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following
Permits: WATER QUALITY CERTIFICATION**

1. Conformance With Plans All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by the permittee or their representative(s) and are identified in condition no. 2, which includes the relevant water quality standards and explanation for the condition.



2. Conformance with Plans List All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans include the following:

	Document	Description and Date
a.	USCG Station Montauk Plans	Sheets 1-8, dated MAR 2023 and stamped NYSDEC Approved on 6/22/2023

Water Quality Requirements: 6 NYCRR 608.9 Discharges prohibited without certification.

Explanation: This condition is necessary to identify what discharges are authorized by the certification. Any discharge not identified in the referenced plans is prohibited.

3. Notice of Commencement At least 48 hours prior to commencement of the project, the permittee and contractor shall sign and return the top portion of the enclosed notification form certifying that they are fully aware of and understand all terms and conditions of this permit. Within 30 days of completion of project, the bottom portion of the form must also be signed and returned, along with photographs of the completed work.

Water Quality Requirements: 6 NYCRR 608.9 Discharges prohibited without certification.

Explanation: This condition is necessary to identify what discharges are authorized by the certification. Any discharge not identified in the referenced plans is prohibited.

4. Post Permit Sign The permit sign enclosed with this permit shall be posted in a conspicuous location on the worksite and adequately protected from the weather.

Water Quality Requirements: 6 NYCRR 608.9 Discharges prohibited without certification.

Explanation: This condition is necessary to identify what discharges are authorized by the certification. Any discharge not identified in the referenced plans is prohibited.

5. Precautions Against Contamination of Waters All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

6. Precaution Against Contamination of Waters - Custom All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

Regarding Wood Preservatives:

- a. Pressure treated wood used for construction of in-water structures must have undergone a treatment process approved (stamped or otherwise marked as certified) by the American Wood Preservative Association.



- b. Wood treated with Pentachlorophenol (PCP) must not be used in marine or brackish waters. Wood treated with PCP must be aged in the open air for at least three months prior to in-water use.
- c. The use of creosote treated wood is prohibited both in the water and upland areas.
- d. Chromated Copper Arsenate (CCA) pressure treated wood must be clean and free of CCA surface deposits. Wood with surface deposits must be washed for at least 5 minutes under running water prior to use. The washing must occur greater than 100 feet landward of any regulated wetland and/or water body. (Note "E." below for handling wash water.)
- e. Any wood debris such as sawdust or wash water must not enter any water body, including wetlands or protected buffer areas.

Water Quality Standards: 6 NYCRR 703.2. Narrative water quality standards related to turbidity, suspended solids, toxic substances, color, and other deleterious substances.

Explanation: This condition is necessary to ensure that the permittee undertakes whatever additional measures are necessary, and not otherwise specified in the conditions of this permit, to prevent the contravention of water quality standards during the implementation of the project.

7. Gabion Repair, Extension The existing gabion seawall shall be repaired in-place. No structures shall be installed on the gabion seawall. The 24-foot extension to the gabion seawall shall be constructed as per the approved plans.

Water Quality Standards: 6 NYCRR 703.2: Narrative water quality standards for turbidity, suspended solids, and other deleterious substances.

Explanation: This condition is necessary to ensure that erosion and disturbance to bottom sediments are minimized during project construction and that potential for the contravention of water quality standards is minimized.

8. No Dredging or Excavation No dredging, excavation or other alteration of the shoreline or underwater areas is authorized by this permit, nor shall the issuance of this permit be construed to suggest that the Department will issue a permit for such activities in the future.

Water Quality Standards: 6 NYCRR 703.2: Narrative water quality standards related to turbidity, suspended solids, and other deleterious substances.

Explanation: This condition is necessary to ensure that the project does not violate water quality standards related to turbidity.



9. Install and Maintain Erosion Controls Appropriate soil erosion and sediment controls (such as silt fences, turbidity curtains, straw bales, and other appropriate measures) shall be installed, used, and maintained in effective operating condition during all work. Controls shall be installed prior to disturbance, inspected periodically to ensure that they are not damaged, repaired promptly when needed, and remain in place until the site is stabilized by the regrowth of suitable vegetation and/or turbidity within the project area no longer exceeds ambient levels. Erosion controls shall be removed after the site is stabilized by the regrowth of suitable vegetation.

Water Quality Standards: 6 NYCRR 703.2: Narrative water quality standards for turbidity, suspended solids, and other deleterious substances.

Explanation: This condition is necessary to ensure that upland erosion is minimized and contained during project construction, preventing contravention of the water quality standards.

10. No Beach Excavation for Fill No excavation of the beach is authorized for the purpose of obtaining fill or stone materials.

Water Quality Standards: 6 NYCRR 608.9: Discharges prohibited without certification. 6 NYCRR 703.2: Narrative water quality standards related to turbidity, suspended solids, toxic substances, and other deleterious substances.

Explanation: This condition is necessary to ensure that the construction of temporary work pads and staging areas do not result in long-term or permanent alteration of waters, creating a discharge beyond the scope of the authorized discharge, or result in a contravention of water quality standards.

11. Clean Fill Only All fill shall consist of clean soil, sand and/or gravel that is free of the following substances: asphalt, slag, flyash, broken concrete, demolition debris, garbage, household refuse, tires, woody materials including tree or landscape debris, and metal objects. The introduction of materials toxic to marine life is expressly prohibited.

Water Quality Standards: 6 NYCRR 703.2: Narrative water quality standards related to turbidity, suspended solids, garbage, cinders, ashes, oils, sludge, other refuse, toxic substances, and other deleterious substances.

Explanation: This condition is necessary to ensure that there are no unauthorized materials are discharged, and that those authorized materials do not contain any other materials that are toxic to aquatic life and, thereby, contravene water quality standards.



12. Work from Land, No Disturbance to Vegetated Wetlands Any debris or excess material from construction of this project shall be completely removed from the adjacent area (upland) and removed to an approved upland area for disposal. No debris is permitted in wetlands and/or protected buffer areas. There shall be no disturbance to vegetated tidal wetlands or protected buffer areas as a result of the permitted activities. Floats and ramps may not be stored on or rest on any vegetated tidal wetland.

Water Quality Standards: 6 NYCRR 608.9: Discharges prohibited without certification. 6 NYCRR 703.2: Narrative water quality standards related to turbidity, suspended solids, and other deleterious substances.

Explanation: This condition is necessary to ensure that the operation of construction equipment does not result in unauthorized discharges. It is also necessary to ensure that construction of the project within the waterway is minimized to the extent practicable, avoiding a contravention of water quality standards.

13. Storage of Equipment, Materials The storage of construction equipment and materials shall be confined to the upland area landward of the bulkhead or on a barge.

Water Quality Standards: 6 NYCRR 608.9 Discharges prohibited without certification.

Explanation: This condition is necessary to ensure that the operation of heavy equipment does not result in long-term or permanent alteration of waters, creating a discharge beyond the scope of the authorized discharge.

14. Backfilling and Stockpiles Fill or other excavated materials shall not be stockpiled in a manner conducive to erosion, or in areas with the potential to cause turbid runoff during storm events. Mats or geotextile fabric shall be placed under any temporary fill or stockpile and shall be removed following construction. All bulkheads or other approved shoreline stabilization structures shall be completed prior to placement of any fill material behind such structures.

Water Quality Standards: 6 NYCRR 703.2: Narrative water quality standards for turbidity, suspended solids, and other deleterious substances.

Explanation: This condition is necessary to ensure that erosion from stockpiled materials is minimized and contained during project construction, preventing contravention of the water quality standards.



15. Concrete Leachate During construction no fresh or wet concrete or leachate shall be allowed to escape into any wetland or water of New York State, nor shall washings from ready-mix concrete trucks, mixers, or other devices be allowed to enter any waters or wetlands. Wet concrete shall not be poured to displace water within the forms. Leakage from forms must be prevented from entering any wetland or water of New York State.

Water Quality Standards: 6 NYCRR 703.2: Narrative water quality standards for turbidity, suspended solids, toxic substances and other deleterious substances.

Explanation: This condition is necessary to ensure that concrete, concrete leachate and other materials contaminated by concrete, which are toxic to marine life, are contained during project construction, preventing contravention of the water quality standards.

16. Temporary Mulch, Final Seeding Within one week of final grading, all areas of soil disturbance from this project shall be seeded with an appropriate perennial grass seed and mulched with hay or straw, unless hydroseeded. Mulch shall be maintained until a suitable vegetative cover is established. If seeding is impracticable due to the time of year, a temporary mulch shall be applied and final seeding shall be performed at the earliest opportunity when weather conditions favor germination and growth, but not more than six months after project completion.

Water Quality Standards: 6 NYCRR 703.2: Narrative water quality standards for turbidity, suspended solids, and other deleterious substances.

Explanation: This condition is necessary to ensure that upland erosion is minimized after construction is completed, preventing contravention of the water quality standards.

WATER QUALITY CERTIFICATION SPECIFIC CONDITIONS

1. Water Quality Certification The authorized project, as conditioned pursuant to the Certificate, complies with Section 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act, as amended and as implemented by the limitations, standards, and criteria of state statutory and regulatory requirements set forth in 6 NYCRR Section 608.9(a). The authorized project, as conditioned, will also comply with applicable New York State water quality standards, including but not limited to effluent limitations, best usages and thermal discharge criteria, as applicable, as set forth in 6 NYCRR Parts 701, 702, 703, and 704.

2. Water Quality Certification The authorized project, as conditioned pursuant to the Certificate, complies with Section 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act, as amended and as implemented by the limitations, standards, and criteria of state statutory and regulatory requirements set forth in 6 NYCRR Section 608.9(a). The authorized project, as conditioned, will also comply with applicable New York State water quality standards, including but not limited to effluent limitations, best usages and thermal discharge criteria, as applicable, as set forth in 6 NYCRR Parts 701, 702, 703, and 704.



GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. Facility Inspection by The Department The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. Relationship of this Permit to Other Department Orders and Determinations Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications For Permit Renewals, Modifications or Transfers The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 1 Headquarters
SUNY @ Stony Brook|50 Circle Rd
Stony Brook, NY11790 -3409

4. Submission of Renewal Application The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Water Quality Certification.

5. Permit Modifications, Suspensions and Revocations by the Department The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

- a. materially false or inaccurate statements in the permit application or supporting papers;
- b. failure by the permittee to comply with any terms or conditions of the permit;
- c. exceeding the scope of the project as described in the permit application;
- d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;



- e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. Permit Transfer Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.



Department of
Environmental
Conservation

NOTICE

The Department of Environmental Conservation (DEC) has issued permit(s) pursuant to the Environmental Conservation Law for work being conducted at this site. For further information regarding the nature and extent of work approved and any Departmental conditions on it, contact the Regional Permit Administrator listed below. Please refer to the permit number shown when contacting the DEC.

Regional Permit Administrator
SHERRI AICHER

Permit Number: 1-4724-00751/00012

Expiration Date: 6/21/2028

NYSDEC Region 1 Environmental Permits
50 Circle Road
Stony Brook, NY 11790-3409
Email: dep.r1@dec.ny.gov

Note: This notice is **NOT** a permit

NOTICE OF COMMENCEMENT OF CONSTRUCTION

RETURN THIS FORM TO: COMPLIANCE

Marine Habitat Protection - NYSDEC
SUNY at Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

Or Fax to: 631-444-0272

E-Mail: dec.sm.R1MHP-BEH@dec.ny.gov

PERMIT NUMBER: _____ EXPIRATION DATE: _____

PERMITTEE NAME & PROJECT ADDRESS: _____

CONTRACTOR NAME & ADDRESS: _____

TELEPHONE: _____

Dear DEC:

Pursuant to the special conditions of the referenced permit, you are hereby notified that the authorized activity shall commence on _____. We certify that we have read the referenced permit and approved plans and fully understand the authorized project and all permit conditions. We have inspected the project site and can complete the project as described in the permit and as depicted on the approved plans. We can do so in full compliance with all plan notes and permit conditions. The permit, permit sign, and approved plans will be available at the site for inspection in accordance with General Condition No. 1. (Both signatures required)

PERMITTEE: _____ DATE _____

CONTRACTOR: _____ DATE _____

THIS NOTICE MUST BE SENT TO THE ABOVE ADDRESS AT LEAST TWO DAYS PRIOR TO COMMENCEMENT OF THE PROJECT AND /OR ANY ASSOCIATED ACTIVITIES. FAILURE TO RETURN THIS NOTICE, POST THE PERMIT SIGN, OR HAVE THE PERMIT AND APPROVED PLANS AVAILABLE AT THE WORK SITE FOR THE DURATION OF THE PROJECT MAY SUBJECT THE PERMITTEE AND/OR CONTRACTOR TO APPLICABLE SANCTIONS AND PENALTIES FOR NON-COMPLIANCE WITH PERMIT CONDITIONS.

Cut along this line X X X X X X X

NOTICE OF COMPLETION OF CONSTRUCTION

RETURN THIS FORM TO: COMPLIANCE

Marine Habitat Protection - NYSDEC
50 Circle Road
Stony Brook, NY 11790-3409

Or Fax to: 631-444-0272

E-Mail: dec.sm.R1MHP-BEH@dec.ny.gov

PERMIT NUMBER: _____ EXPIRATION DATE: _____

PERMITTEE NAME & PROJECT ADDRESS: _____

CONTRACTOR NAME & ADDRESS: _____

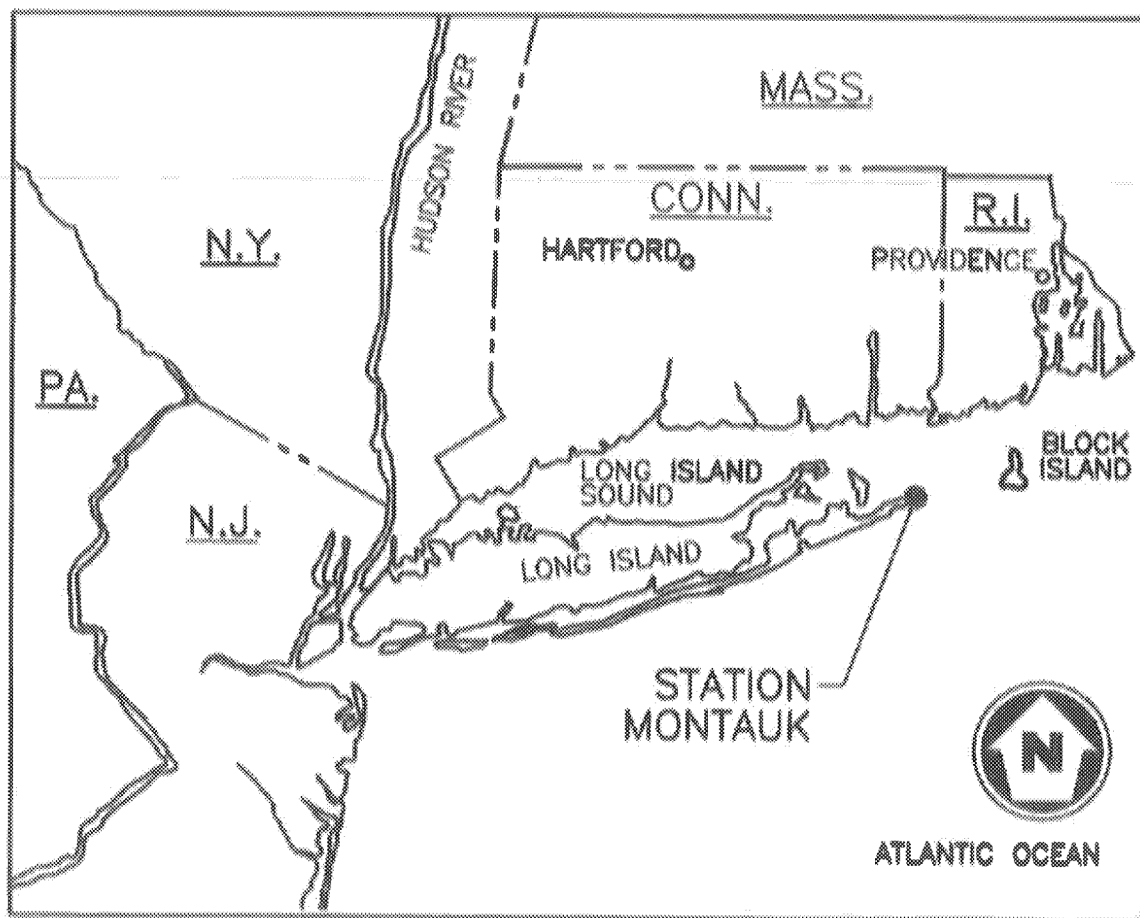
TELEPHONE: _____

Pursuant to special conditions of the referenced permit, you are hereby notified that the authorized activity was completed on _____. We have fully complied with the terms and conditions of the permit and approved plans. (Both signatures required)

PERMITTEE: _____ DATE _____

CONTRACTOR: _____ DATE _____

THIS NOTICE, WITH PHOTOGRAPHS OF THE COMPLETED WORK AND/OR A COMPLETED SURVEY, AS APPROPRIATE, MUST BE SENT TO THE ABOVE ADDRESS WITHIN 30 DAYS OF COMPLETION OF THE PROJECT.



1 OF 8
 NYSDEC
 APPROVED AS PER TERMS
 AND CONDITIONS OF

PERMIT NO. 1-4724-00751/00002
 DATE 6/22/2023 NRP

CONCEPTUAL
 NOT FOR CONSTRUCTION

APPLICATION BY
 U.S. COAST GUARD
 CIVIL ENGINEERING
 CEU PROVIDENCE
 475 KILVERT ST, RTE 100
 WARWICK, RI 02886

ISSUED FOR PERMITTING
 NOT FOR CONSTRUCTION

REPAIR WATERFRONT
 USCG STA MONTAUK
 MONTAUK

NY

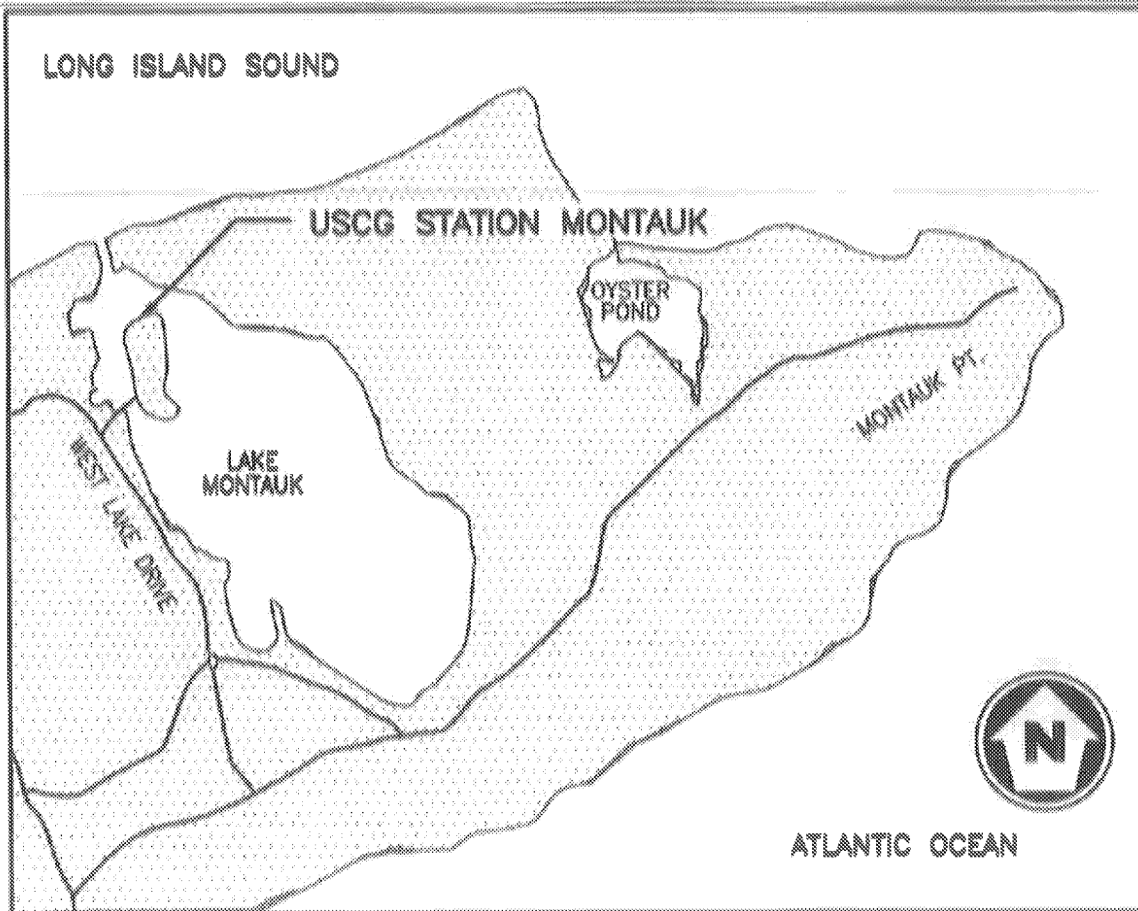
FIGURE 1
 VICINITY MAP

USCG PROJECT NO.
 13174398

SCALE NTS

DATE MAR 2023

SHEET 1 OF 8



2 of 8

NYSDEC

APPROVED AS PER TERMS

AND CONDITIONS OF

PERMIT NO. 1-4724-00751/00012

DATE 6/22/2023 NR

**CONCEPTUAL
NOT FOR CONSTRUCTION**

APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

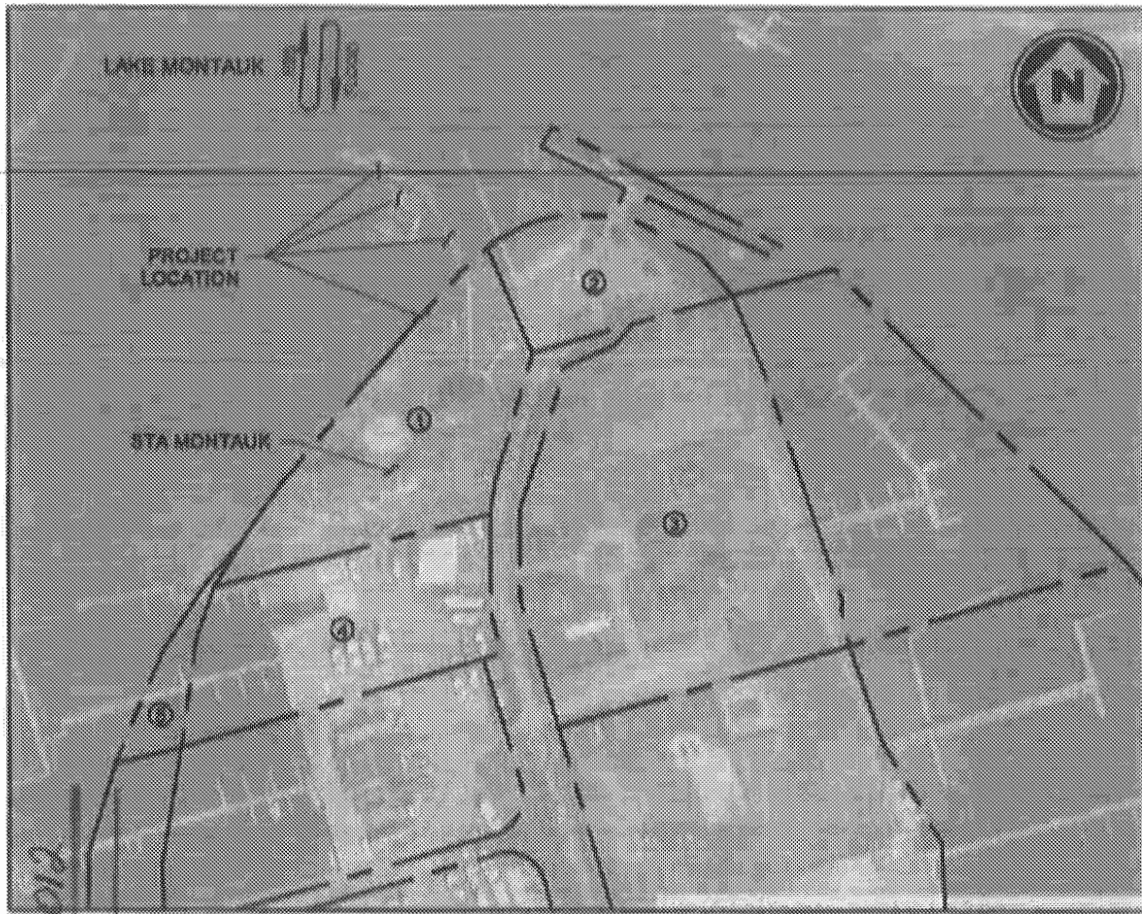
FIGURE 2
LOCATION MAP

USCG PROJECT NO.
13174398

SCALE NTS

DATE MAR 2023

SHEET 2 OF 8



NYSDDEC 3068
 APPROVED AS PER TERMS
 AND CONDITIONS OF
 PERMIT NO. 1-4924-00751/00012
 DATE 6/22/2023 MPO

ABUTTING PROPERTY DATA					
	BLOCK	LOT	PARCEL ADDRESS	OWNER	OWNER ADDRESS
①	400	2000	69 STAR ISLAND RD MONTAUK, NY 11954	UNITED STATES GOVERNMENT	69 STAR ISLAND RD MONTAUK, NY 11954
②	400	1000	73 STAR ISLAND RD MONTAUK, NY 11954	TOWN OF EAST HAMPTON	169 PANTIGO RD EAST HAMPTON, NY 11937
③	400	17000	68 STAR ISLAND RD MONTAUK, NY 11954	32 STAR ISLAND ASSOCIATES LLC	417 FIFTH AVE, FLOOR 4TH NEW YORK, NY 10016
④	400	3000	59 STAR ISLAND RD MONTAUK, NY 11954	MARLENA GERSHOWITZ	162 THE HELM EAST ISLIP, NY 11750
⑤	400	4000	69 STAR ISLAND RD MONTAUK, NY 11954	MARLENA GERSHOWITZ	162 THE HELM EAST ISLIP, NY 11750

NOTES:

1. THE PROPERTY BOUNDARY DATA SHOWN WAS OBTAINED FROM THE SUFFOLK COUNTY, NEW YORK GIS MAPPING (<https://coordinates.com/publisher/suffolk-county-ny/data/>) AND IS CONSIDERED APPROXIMATE.

**CONCEPTUAL
NOT FOR CONSTRUCTION**

APPLICATION BY
 U.S. COAST GUARD
 CIVIL ENGINEERING
 CEU PROVIDENCE
 475 KILVERT ST, STE 100
 WARWICK, RI 02886

ISSUED FOR PERMITTING
 NOT FOR CONSTRUCTION

REPAIR WATERFRONT
 USCG STA MONTAUK
 MONTAUK

NY

FIGURE 3

ABUTTING PROPERTIES MAP

USCG PROJECT NO.
 13174398

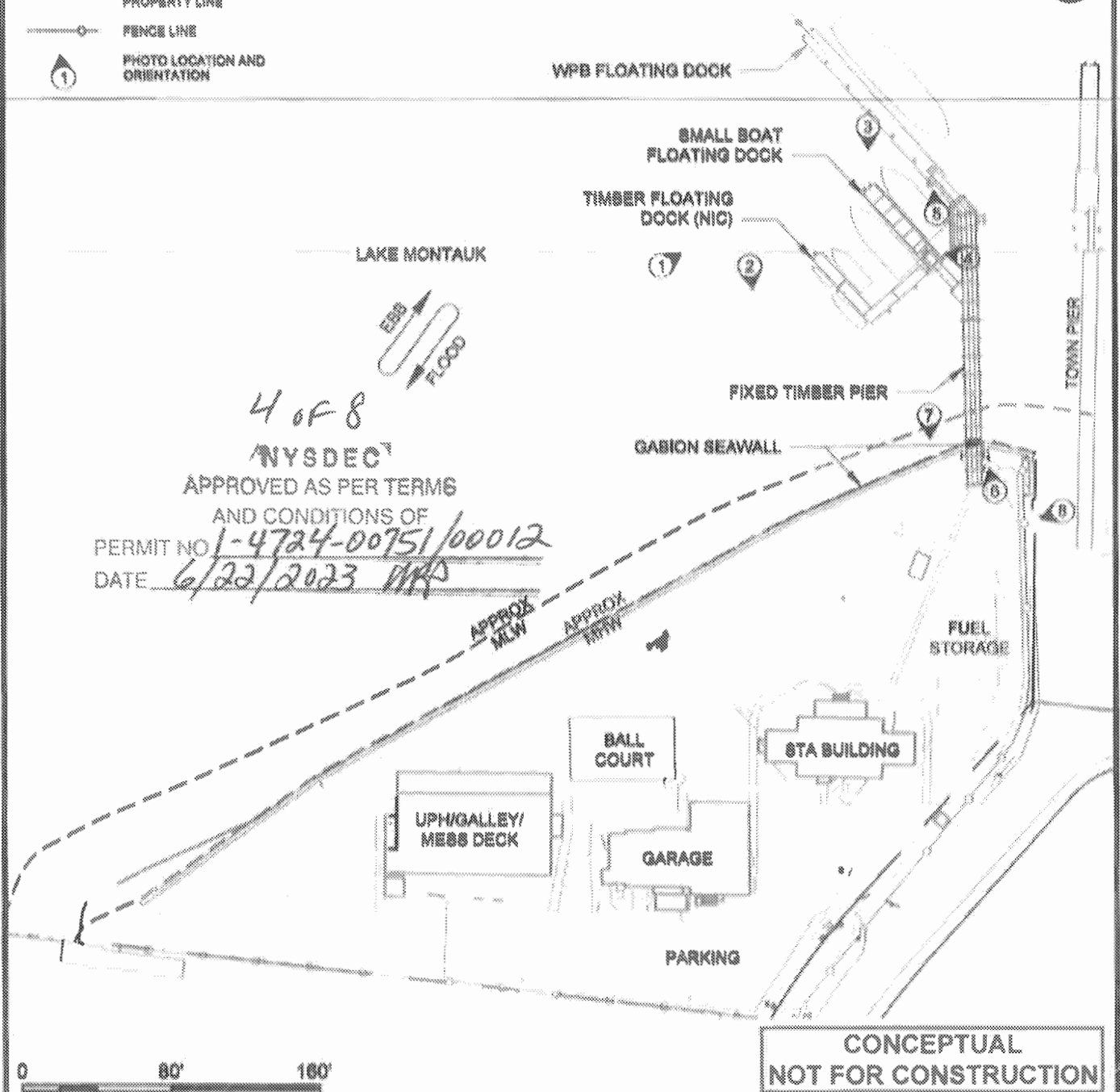
SCALE NTS

DATE MAR 2023

SHEET 3 OF 8

LEGEND:

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- ① PHOTO LOCATION AND ORIENTATION



4 of 8

NYSDEC

APPROVED AS PER TERMS
AND CONDITIONS OF

PERMIT NO. 1-4724-00751/00012
DATE 6/22/2023 HR

APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, BTE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

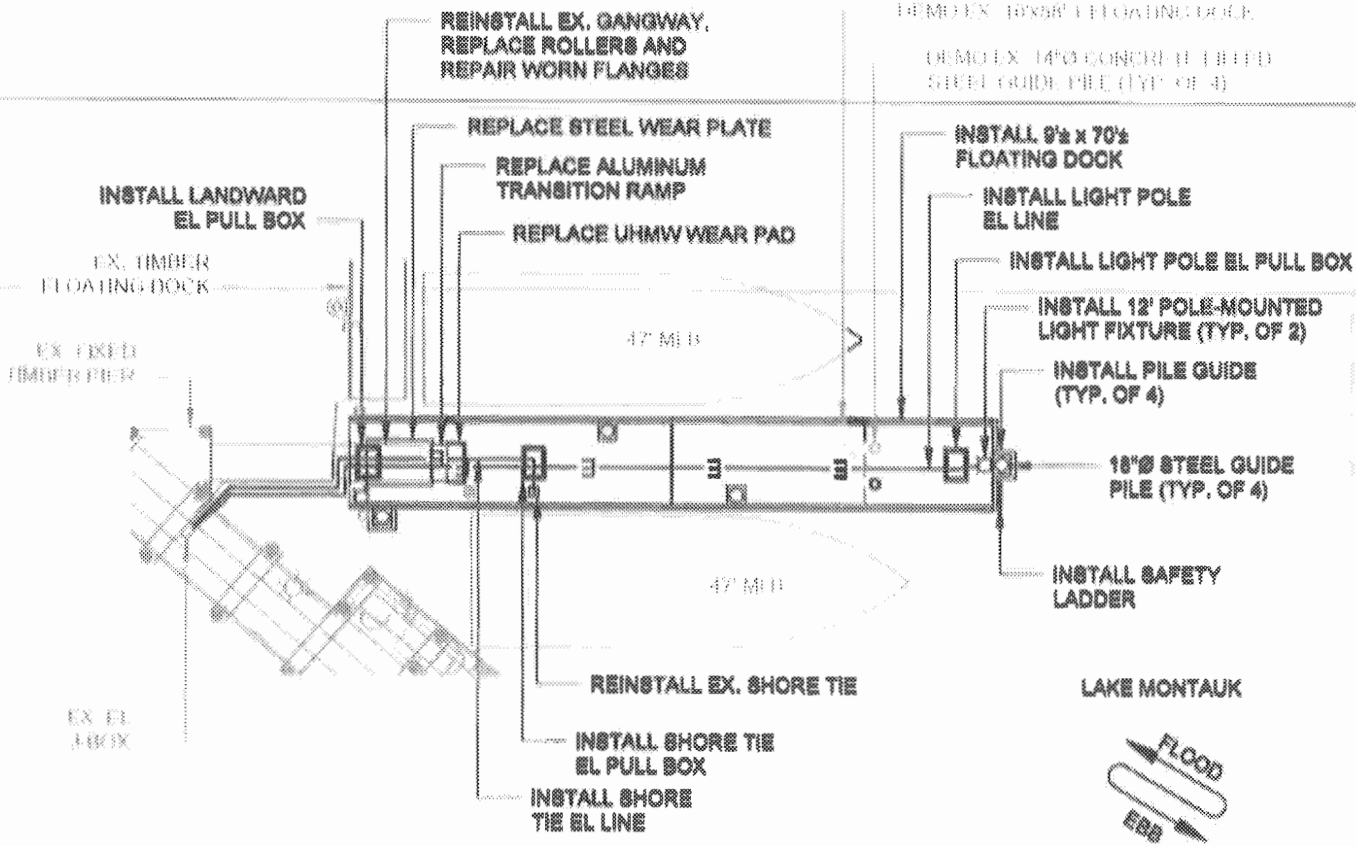
FIGURE 4
OVERALL SITE PLAN

USCG PROJECT NO.
13174398

SCALE 1" = 80'

DATE MAR 2023

SHEET 4 OF 8



LAKE MONTAUK



5 of 8

'NYSDEC'

APPROVED AS PER TERMS
AND CONDITIONS OF

PERMIT NO. 1-4724-00751/00012
DATE 6/22/2023 MRP



CONCEPTUAL
NOT FOR CONSTRUCTION

APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

FIGURE 5

SM BOAT FLOATING DOCK REPLACEMENT PLAN

USCG PROJECT NO.
13174368

SCALE 1" = 20'

DATE MAR 2023

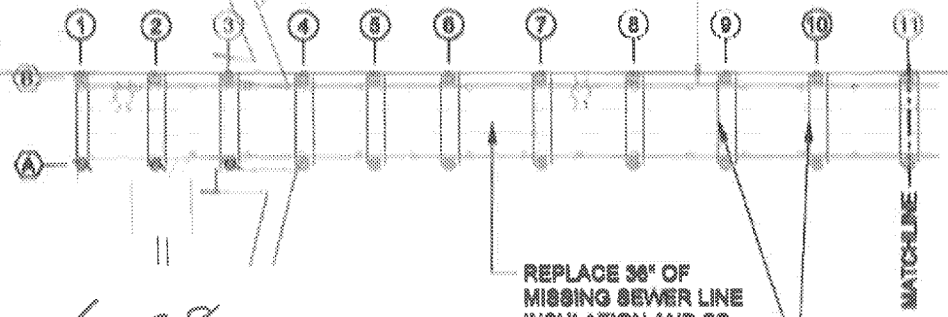
SHEET 5 OF 8



EX. CONC.
WALKWAY

EX. SECOND GARDEN
BULKHEAD

EX. 4" X 12"
TIMBER PIER



REPLACE 36' OF
MISSING SEWER LINE
INSULATION AND 88
JACKET

REPLACE BROKEN 88
SEWER LINE HANGER
ROD AND BRACKET
BELOW DECK

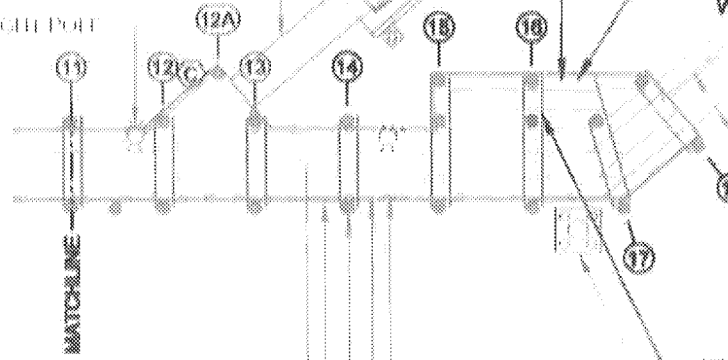
DEMO ABANDONED
POTABLE WATER LINE,
CONNECTION VALVE,
AND ENCLOSURE;
REPLACE DECK BOARDS
WITH NEW PT 2X8

DEMO ABANDONED
COMPRESSED AIR LINE
AND CONNECTION VALVE;
REPLACE DECK BOARDS
WITH NEW PT 2X8

6 of 8
'NYSDEC'
APPROVED AS PER TERMS
AND CONDITIONS OF
PERMIT NO. 1-4724-00751/00012
DATE 6/22/2023 MRB

EX. 4" X 12"
TIMBER PIER
FLOORING DOCK
GANGWAY

EX. HIGH PILE



EX. 4" X 12"
TIMBER PIER
FLOORING DOCK
GANGWAY

INSTALL NEW COVER
PLATE AT EX. JUNCTION
BOX MOUNTED TO SPLIT
CAP BELOW DECK

EX. TIMBER DECK DOG
(BOWWELL OR CLARK)

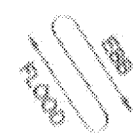
EX. TIMBER STRINGER (C/P)

EX. TIMBER PILE (C/P)

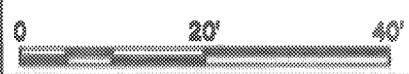
EX. PIER (C/P)

EX. GILDED (C/P)

LAKE MONTAUK



EX. TIMBER
PLATFORM



CONCEPTUAL
NOT FOR CONSTRUCTION

APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST., STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

FIGURE 6
FIXED TIMBER PIER REPAIR PLAN

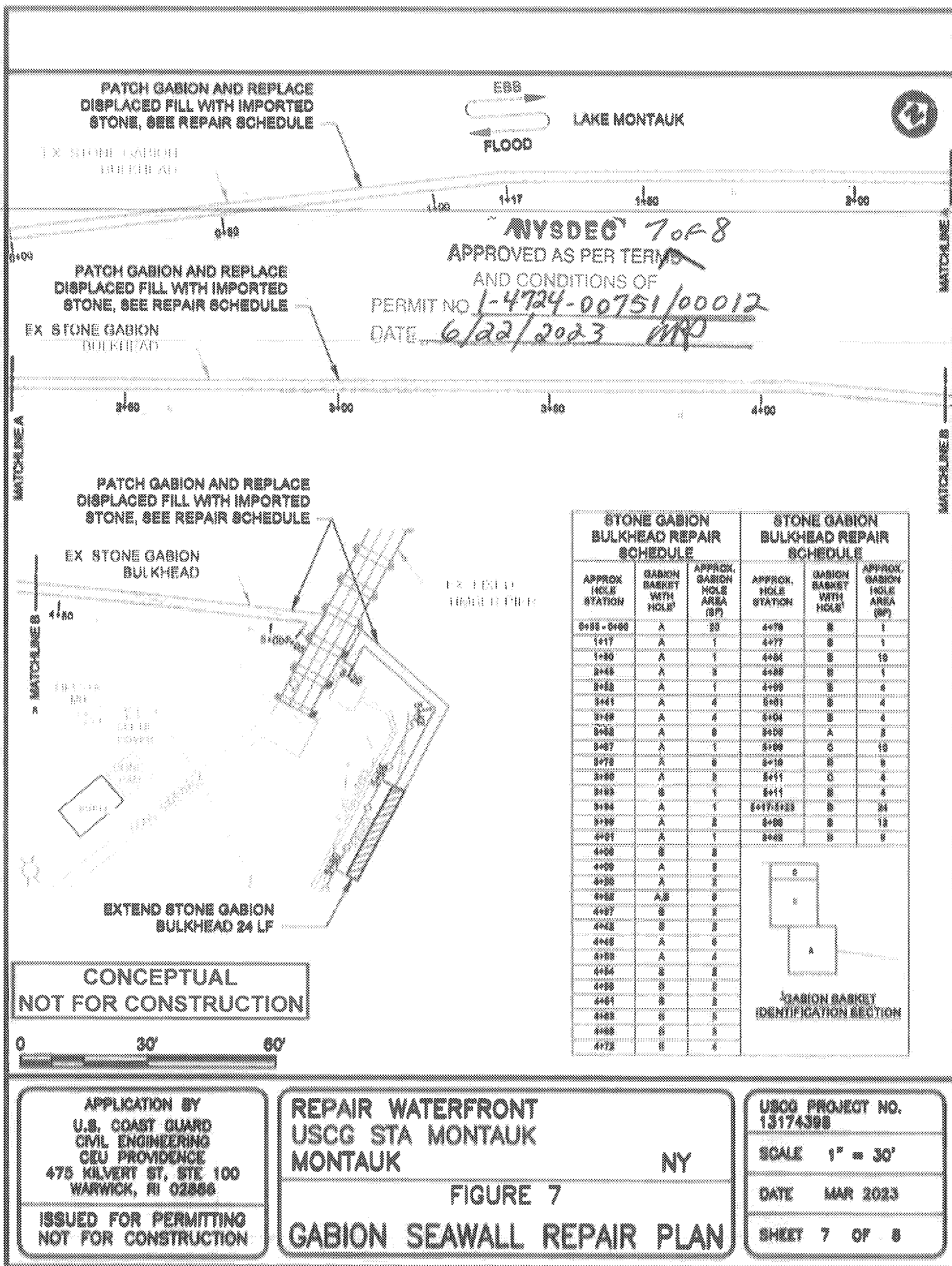
NY

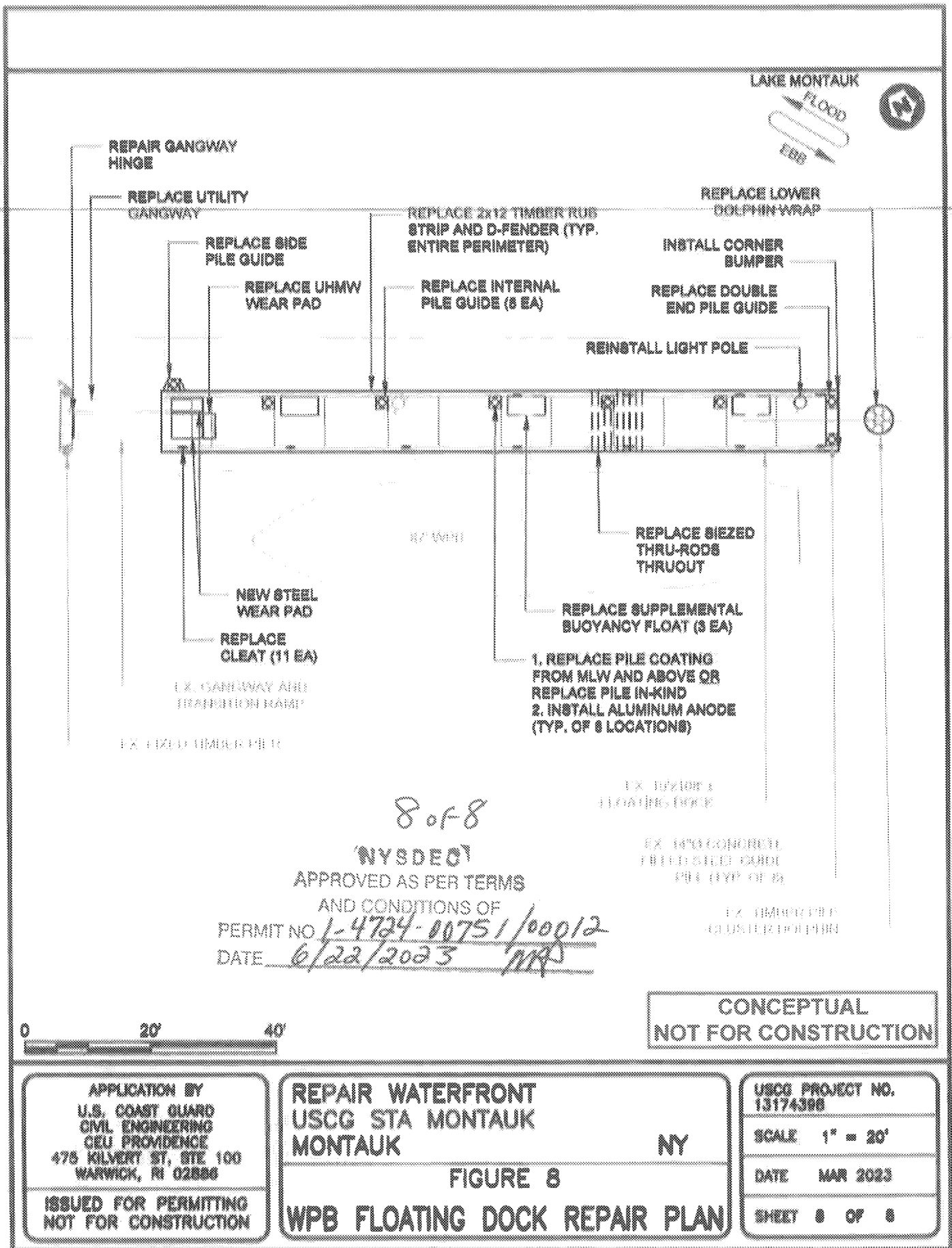
USCG PROJECT NO.
13174398

SCALE 1" = 20'

DATE MAR 2023

SHEET 6 OF 8







DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

Regulatory Branch

March 27, 2023

SUBJECT: Permit Application Number NAN-2023-00190-EMI
by U.S. Coast Guard

U.S. Coast Guard
Civil Engineering Unit Providence
Attn: Michael P. Carosotto
475 Kilvert Street
Warwick, Rhode Island 02886

Dear [REDACTED]

On March 3, 2023, the New York District of the U.S. Army Corps of Engineers received a request for Department of the Army authorization for the discharge of fill material into and/or the placement of structures in and over navigable waters of the United States. The proposed activities include the replacement of an approximately 580 square foot Small Boat Float and four (4) 14-inch diameter guide piles with a new nine-foot-wide by 70-foot-long float with four (4) 18-inch diameter hollow steel guide piles filled with concrete, replace, in-place eight (8) 14-inch diameter hollow steep pipe guide piles at the WPB float, and repair damaged utility lines along the existing fixed timber pier. Additional activities include repairing holes and replacing lost fill over approximately 200 square feet along an existing 570 linear foot section of gabion seawall and installing approximately 24 linear feet of new seawall of which approximately 16 cubic yards of fill would be placed below the plane of Spring High Water. The site is located in Lake Montauk, at 69 Star Island Road, in Montauk, Town of East Hampton, Suffolk County, New York.

The specific applicant-provided details are as shown on the attached permit drawings titled "Repair Waterfront USCG STA Montauk" dated March 2023, prepared by USCG Civil Engineering Unit Providence.

Based on the information submitted to this office, [and accomplishment of notification in accordance with the applicable federal requirements,] our review of the project indicates that an individual permit is not required. It appears that the activities within the jurisdiction of this office could be accomplished under Department of the Army Nationwide General Permit Numbers 3 and 13. The nationwide permits are prescribed as a Reissuance and Modification of Nationwide Permits in the Federal Register dated December 27, 2021 (86 FR 73522). The work may be performed without further authorization from this office provided the activity complies with the permit conditions listed in Section B, Nos. 3 and 13 Section C, any applicable New York District regional conditions, the following special condition(s), and any applicable regional conditions added by the State of New York, copies enclosed.

REL0001940790

March 27, 2023

- 2 -

Special Conditions

(A) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

(B) The permittee shall utilize a 20-minute soft start at the start of work each day and anytime hammering ceases for more than 30-minutes, to allow for animals to leave the project vicinity before sound pressure increases when installing piles. For impact pile driving, pile driving shall commence with an initial set of three strikes by the hammer at 40% energy, followed by a one-minute wait period, then two subsequent 3-strike sets at 40% energy, with one-minute waiting periods, before initiating continuous impact driving. For vibratory pile driving, pile driving will be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds at reduced energy followed by a one-minute waiting period shall be repeated two additional times, followed by immediate pile driving at full rate and energy.

This determination covers only the work described in the submitted material. Any major changes in the project may require additional authorizations from the New York District.

Care should be taken so that construction materials, including debris, do not enter any waterway to become drift or pollution hazards. You are to contact the appropriate state and local government officials to ensure that the subject work is performed in compliance with their requirements.

This verification is valid until March 14, 2026, unless the nationwide permit is modified, reissued, or revoked. This verification will remain valid until March 14, 2026, if the activity complies with the terms of any subsequent modifications of the nationwide permit authorization. If the nationwide permits are suspended, revoked, or modified in such a way that the activity would no longer comply with the terms and conditions of a nationwide permit, and the proposed activity has commenced, or is under contract to commence, the permittee shall have 12 months from the date of such action to complete the activity.

This authorization is conditional on the applicant's receipt of the required coastal zone management concurrence or waiver from the New York State

Regulatory Branch
SUBJECT: Permit Application Number NAN-2023-00190-EMI
by U.S. Coast Guard

March 27, 2023

- 3 -

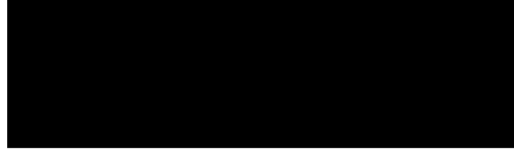
Department of State (NYSDOS). No work may be accomplished until the required approval from **NYSDOS** has been obtained.

Within 30 days of the completion of the activity authorized by this permit and any mitigation required by this permit, you are to sign and submit the attached compliance certification form to this office.

In order for us to better serve you, please complete our Customer Service Survey located at <https://www.nan.usace.army.mil/Missions/Regulatory/Customer-Survey/>.

If any questions should arise concerning this matter, please contact our Regulator-of-the-Day at 917-790-8411. Please be sure to have the above eighteen-character file number readily available when you call.

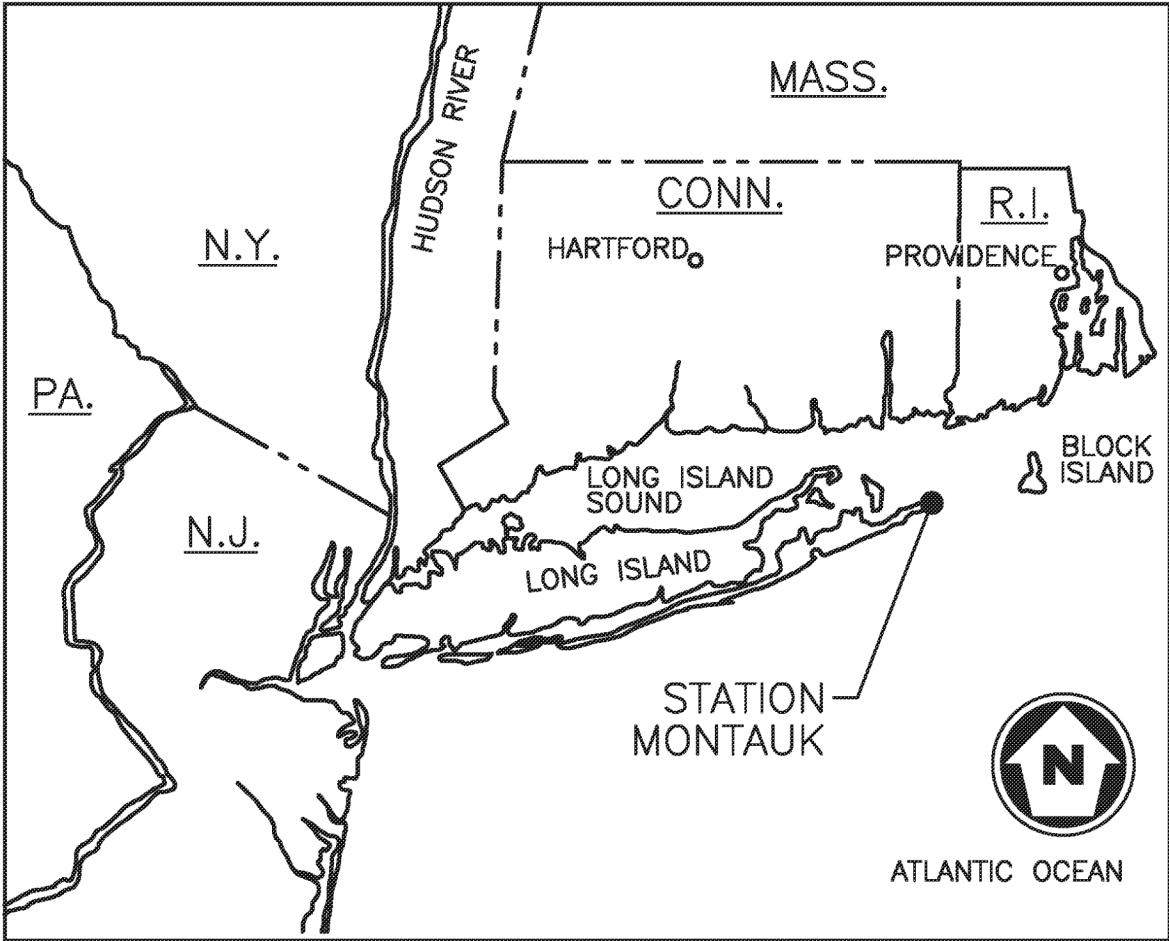
Sincerely,

A large black rectangular redaction box covering the signature of the Project Manager.

Project Manager, Eastern Section

Enclosures

REL0001940790



CONCEPTUAL
NOT FOR CONSTRUCTION

APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

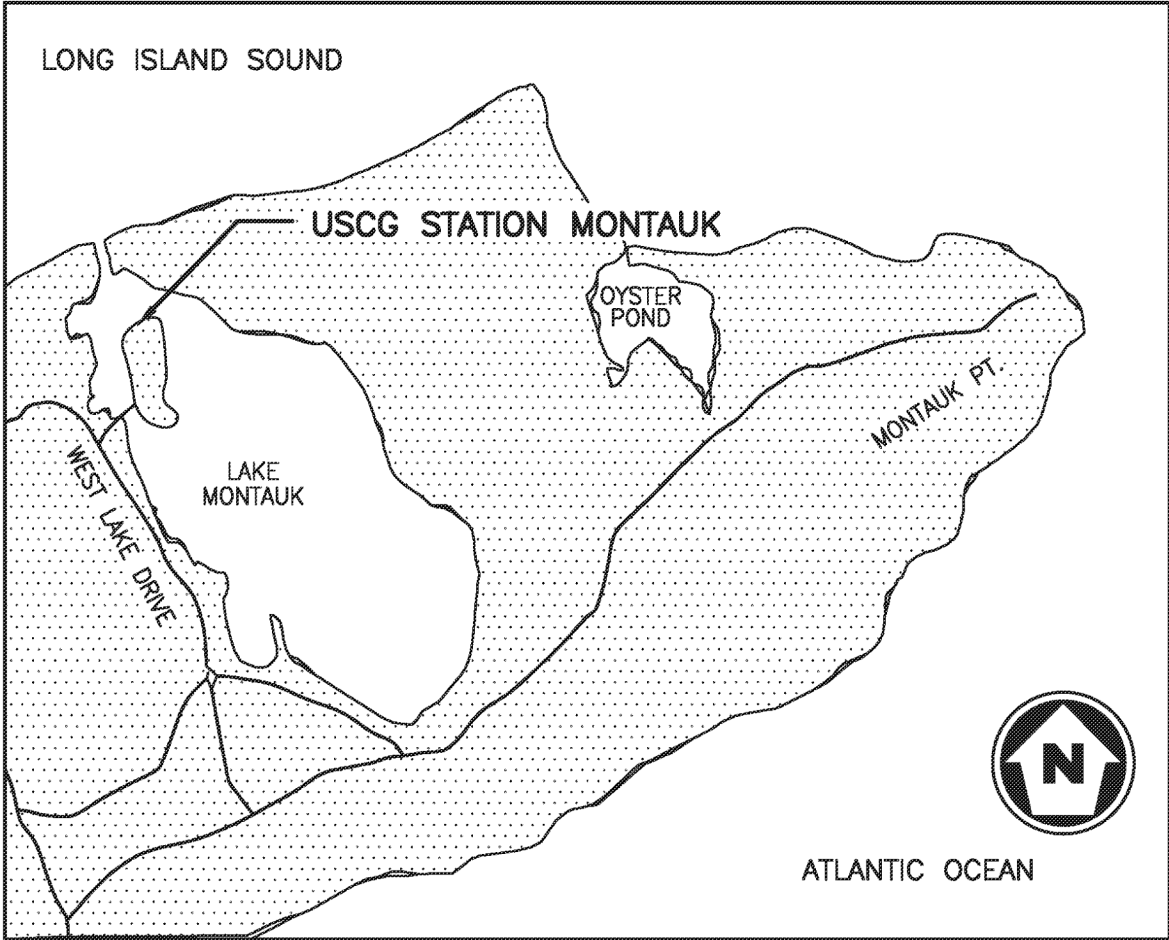
FIGURE 1
VICINITY MAP

USCG PROJECT NO.
13174398

SCALE NTS

DATE MAR 2023

SHEET 1 OF 8



CONCEPTUAL
NOT FOR CONSTRUCTION

APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK NY

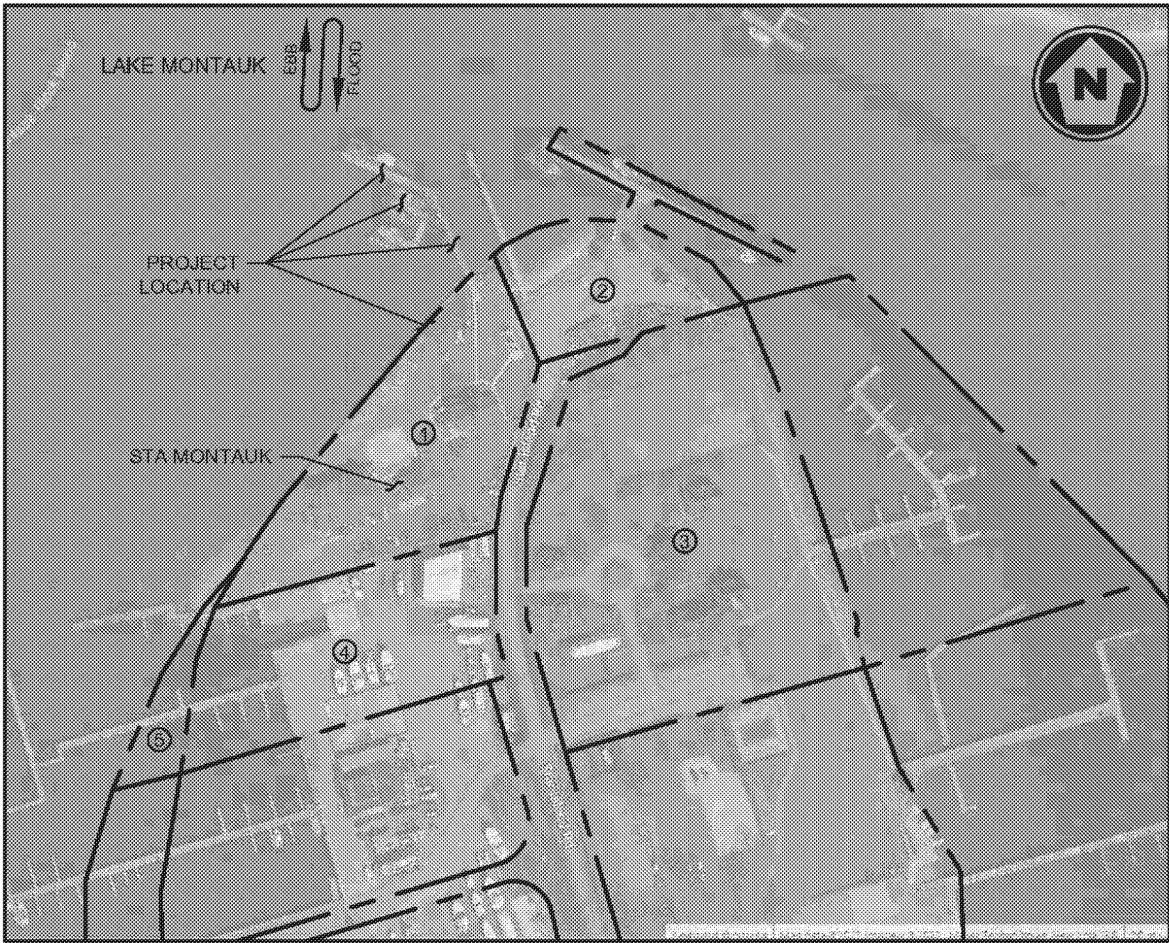
FIGURE 2
LOCATION MAP

USCG PROJECT NO.
13174398

SCALE NTS

DATE MAR 2023

SHEET 2 OF 8



ABUTTING PROPERTY DATA					
	BLOCK	LOT	PARCEL ADDRESS	OWNER	OWNER ADDRESS
①	400	2000	69 STAR ISLAND RD MONTAUK, NY 11954	UNITED STATES GOVERNMENT	69 STAR ISLAND RD MONTAUK, NY 11954
②	400	1000	73 STAR ISLAND RD MONTAUK, NY 11954	TOWN OF EAST HAMPTON	159 PANTIGO RD EAST HAMPTON, NY 11937
③	400	17000	58 STAR ISLAND RD MONTAUK, NY 11954	32 STAR ISLAND ASSOCIATES LLC	417 FIFTH AVE, FLOOR 4TH NEW YORK, NY 10016
④	400	3000	59 STAR ISLAND RD MONTAUK, NY 11954	MARLENA GERSHOWITZ	152 THE HELM EAST ISLIP, NY 11730
⑤	400	4000	59 STAR ISLAND RD MONTAUK, NY 11954	MARLENA GERSHOWITZ	152 THE HELM EAST ISLIP, NY 11730

NOTES:

1. THE PROPERTY BOUNDARY DATA SHOWN WAS OBTAINED FROM THE SUFFOLK COUNTY, NEW YORK GIS MAPPING (<https://koodinates.com/publisher/suffolk-county-ny/data/>) AND IS CONSIDERED APPROXIMATE.

CONCEPTUAL
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APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK
NY

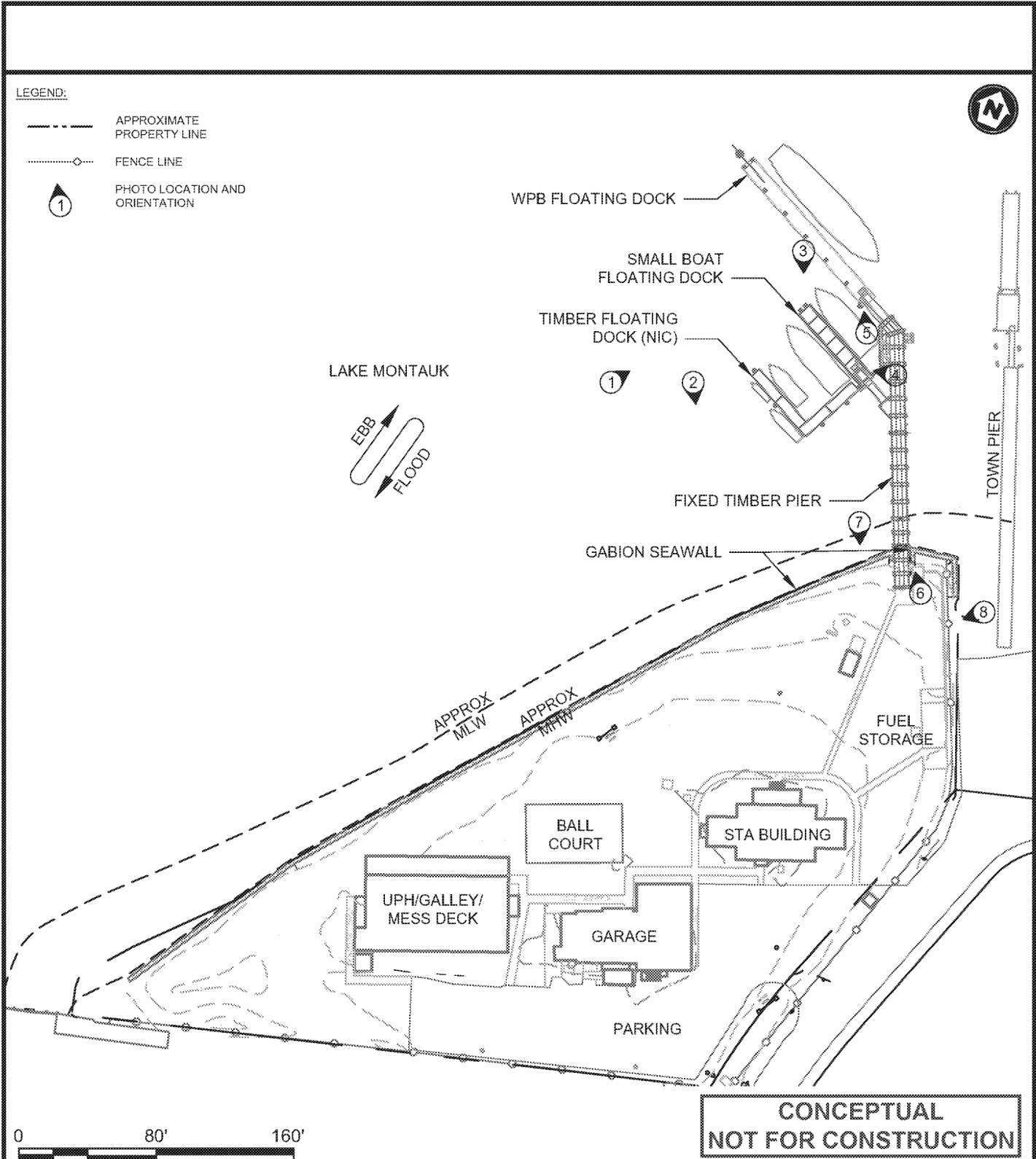
FIGURE 3
ABUTTING PROPERTIES MAP

USCG PROJECT NO.
13174398

SCALE NTS

DATE MAR 2023

SHEET 3 OF 8



APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
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REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

FIGURE 4

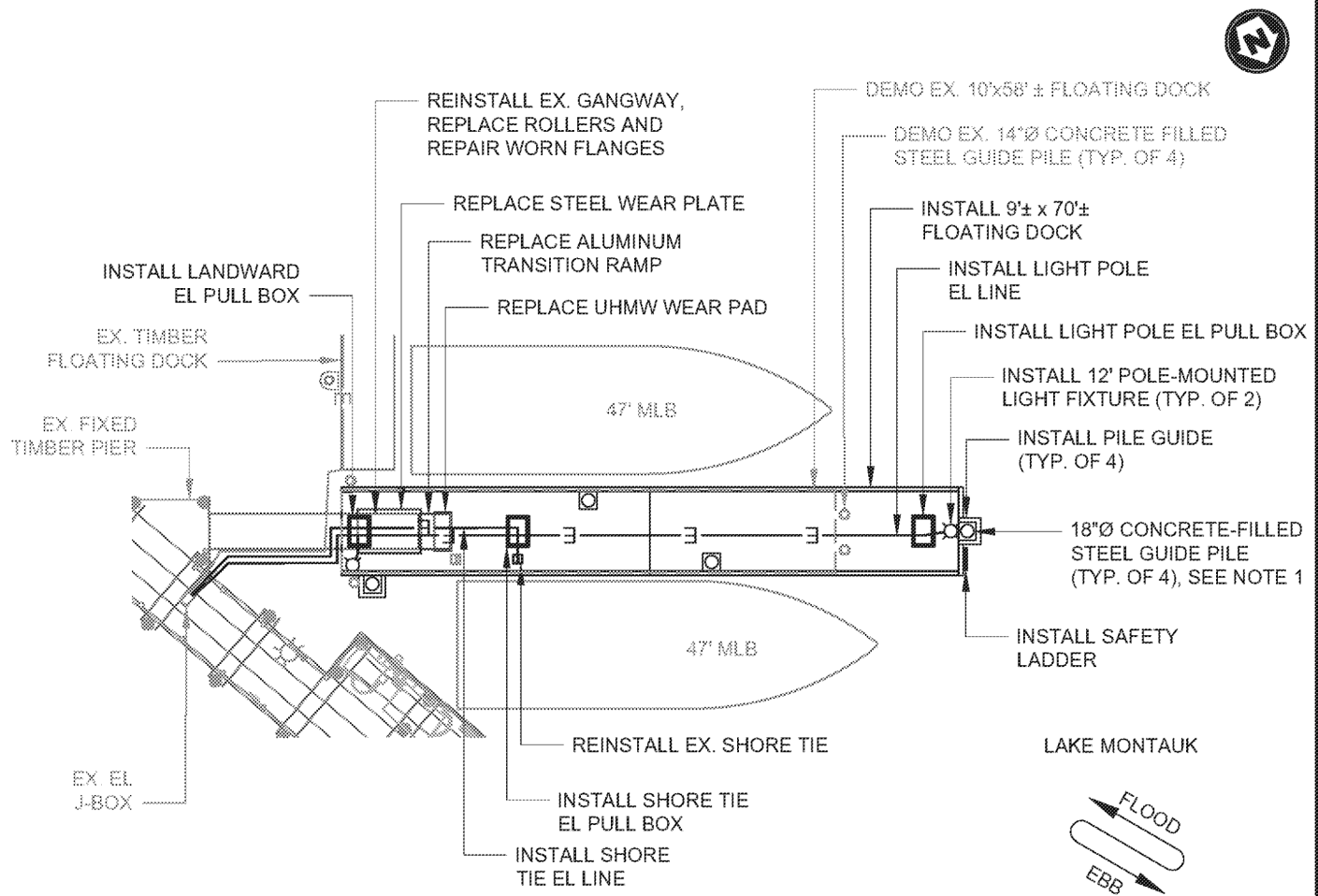
OVERALL SITE PLAN

USCG PROJECT NO.
13174398

SCALE 1" = 80'

DATE MAR 2023

SHEET 4 OF 8



NOTE:

1. THE CONCRETE FILL VOLUME FOR THE PROPOSED FLOATING DOCK GUIDE PILES IS ESTIMATED AT APPROXIMATELY 1.5 CY PER PILE FOR A TOTAL OF 6 CY.

0 20' 40'

CONCEPTUAL
NOT FOR CONSTRUCTION

APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
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REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

FIGURE 5 — REV01

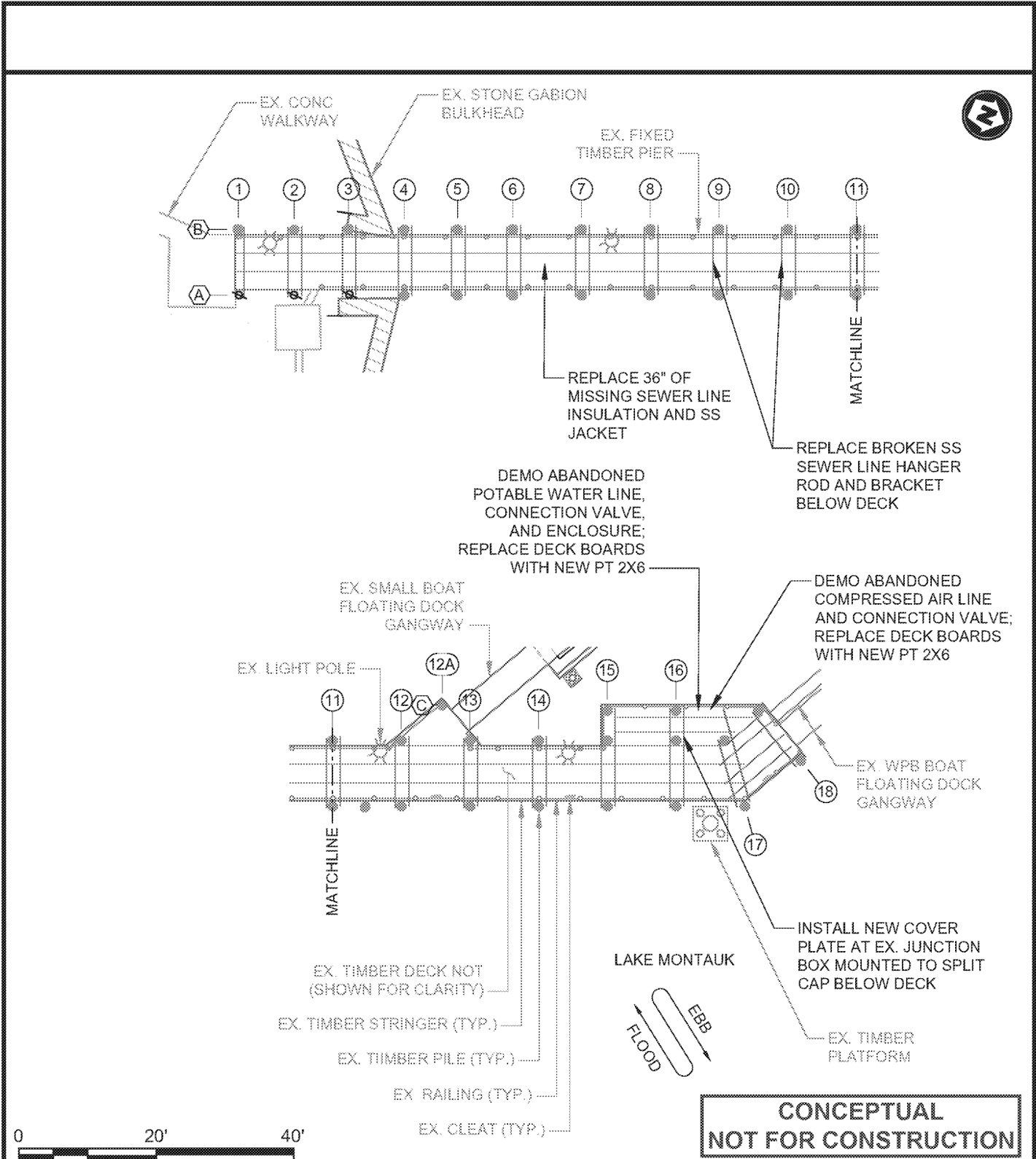
SM BOAT FLOATING DOCK REPLACEMENT PLAN

USCG PROJECT NO.
13174398

SCALE 1" = 20'

DATE MAR 2023

SHEET 5 OF 8



APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

FIGURE 6

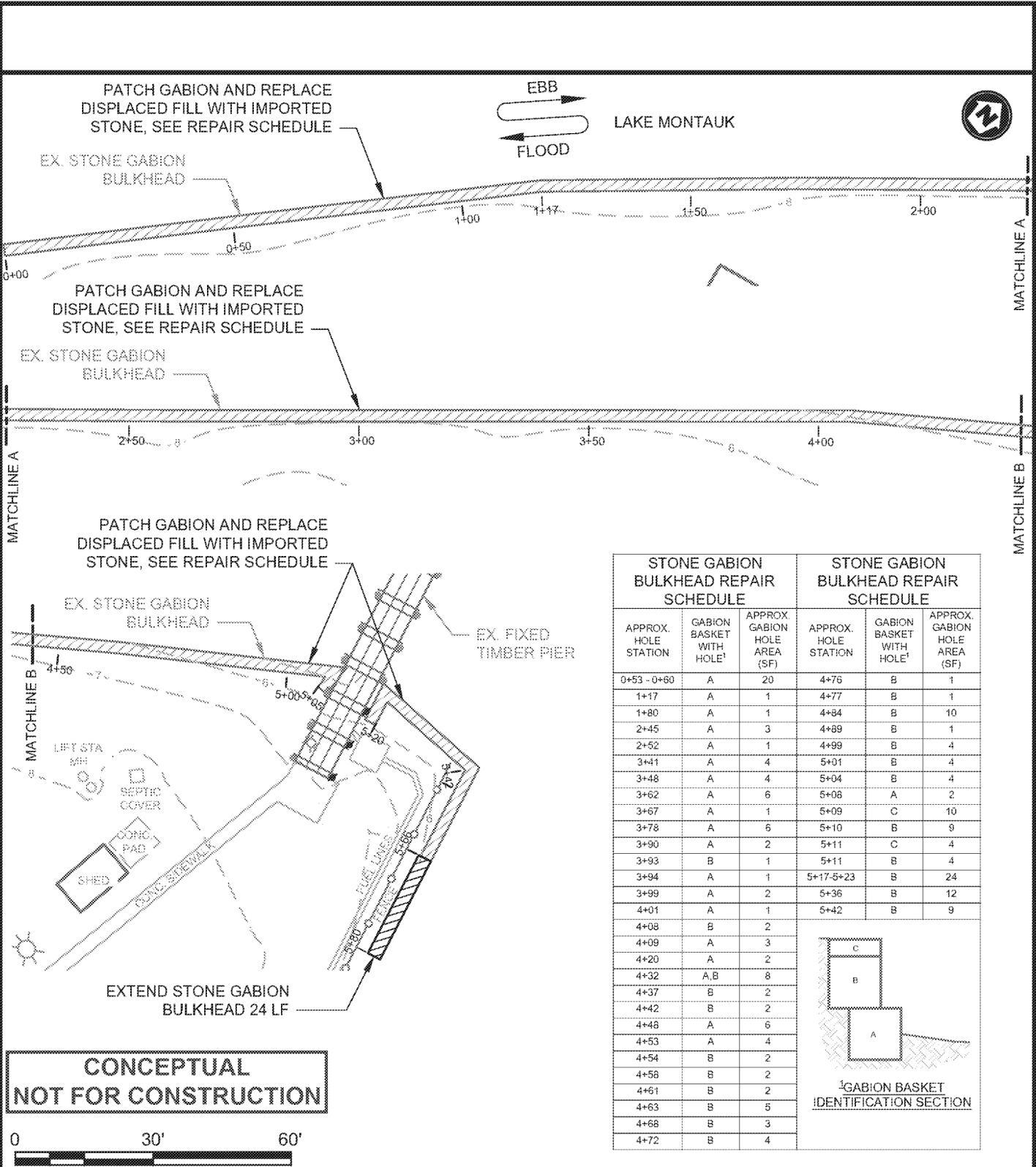
FIXED TIMBER PIER REPAIR PLAN

USCG PROJECT NO.
13174398

SCALE 1" = 20'

DATE MAR 2023

SHEET 6 OF 8



STONE GABION BULKHEAD REPAIR SCHEDULE			STONE GABION BULKHEAD REPAIR SCHEDULE		
APPROX. HOLE STATION	GABION BASKET WITH HOLE ¹	APPROX. GABION HOLE AREA (SF)	APPROX. HOLE STATION	GABION BASKET WITH HOLE ¹	APPROX. GABION HOLE AREA (SF)
0+53 - 0+60	A	20	4+76	B	1
1+17	A	1	4+77	B	1
1+80	A	1	4+84	B	10
2+45	A	3	4+89	B	1
2+52	A	1	4+99	B	4
3+41	A	4	5+01	B	4
3+48	A	4	5+04	B	4
3+62	A	6	5+08	A	2
3+67	A	1	5+09	C	10
3+78	A	6	5+10	B	9
3+90	A	2	5+11	C	4
3+93	B	1	5+11	B	4
3+94	A	1	5+17-5+23	B	24
3+99	A	2	5+36	B	12
4+01	A	1	5+42	B	9
4+08	B	2			
4+09	A	3			
4+20	A	2			
4+32	A,B	8			
4+37	B	2			
4+42	B	2			
4+48	A	6			
4+53	A	4			
4+54	B	2			
4+56	B	2			
4+61	B	2			
4+63	B	5			
4+68	B	3			
4+72	B	4			

¹GABION BASKET IDENTIFICATION SECTION

APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

FIGURE 7

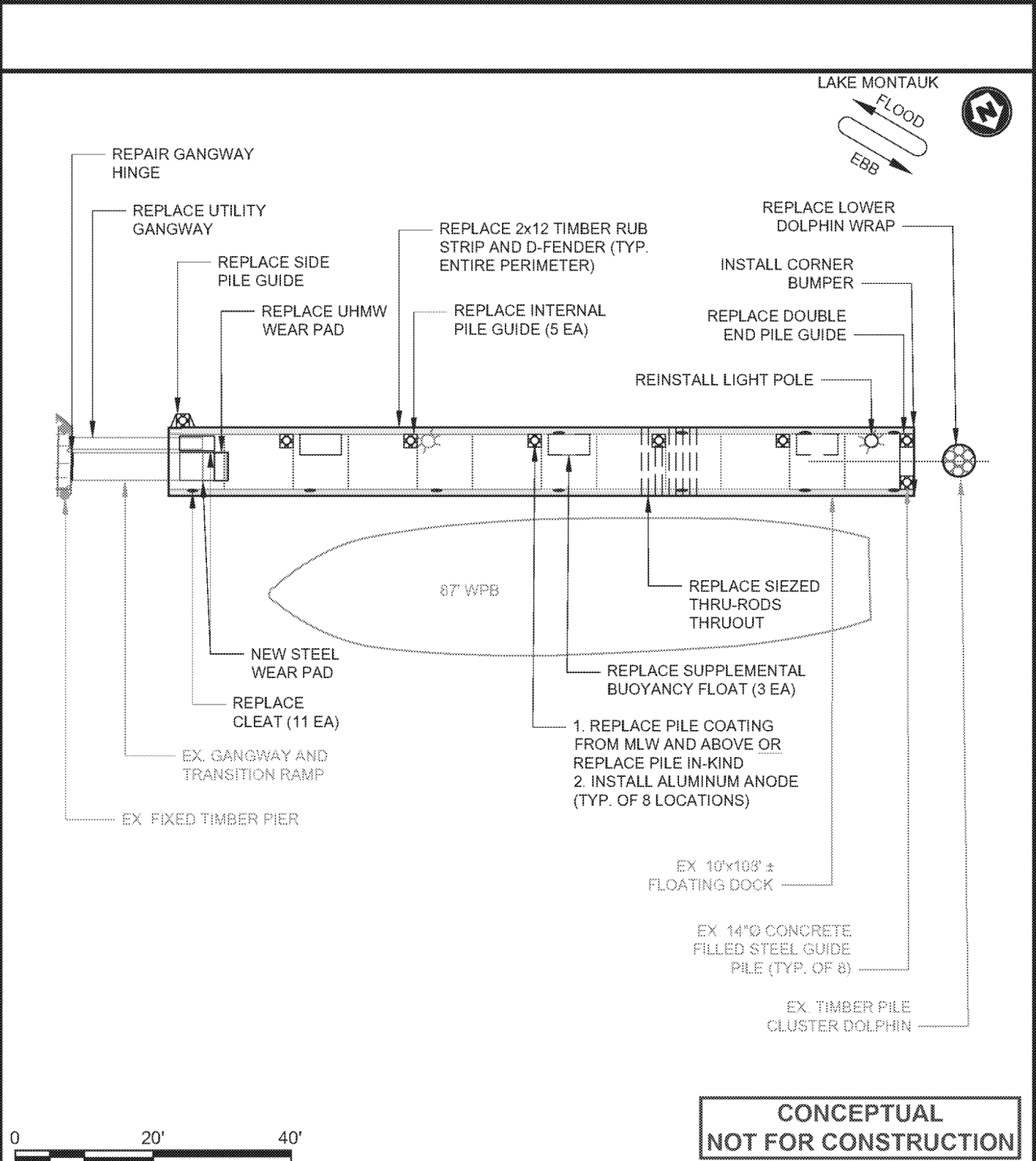
GABION SEAWALL REPAIR PLAN

USCG PROJECT NO.
13174398

SCALE 1" = 30'

DATE MAR 2023

SHEET 7 OF 8



APPLICATION BY
U.S. COAST GUARD
CIVIL ENGINEERING
CEU PROVIDENCE
475 KILVERT ST, STE 100
WARWICK, RI 02886

ISSUED FOR PERMITTING
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REPAIR WATERFRONT
USCG STA MONTAUK
MONTAUK

NY

FIGURE 8

WPB FLOATING DOCK REPAIR PLAN

USCG PROJECT NO.
13174398

SCALE 1" = 20'

DATE MAR 2023

SHEET 8 OF 8

NATIONWIDE GENERAL PERMIT COMPLIANCE CERTIFICATION AND REPORT FORM

Permit File Number: NAN-2023-00190

Permittee: U.S. Coast Guard

Location: 69 Star Island Road, Montauk, Town of East Hampton, Suffolk County, New York

Date Permit Letter Issued: March 27, 2023

Within 30 days of the completion of the activity authorized by this nationwide general permit and any mitigation required in the verification letter, please sign this certification and return it to the address at the bottom of this form.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the permit's terms and conditions you are subject to permit suspension, modification or revocation.

I hereby certify that the work authorized by the above referenced nationwide general permit has been completed in accordance with the terms and conditions of said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

FOLD THIS FORM INTO THIRDS, WITH THE BOTTOM THIRD FACING OUTWARD.
TAPE IT TOGETHER AND MAIL TO THE ADDRESS BELOW, FAX TO (212) 264-4260,
OR EMAIL TO CENAN-R-PERMIT-APP@USACE.ARMY.MIL.

PLACE
STAMP
HERE

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT CORPS OF ENGINEERS
USACE OPERATIONS/REGULATORY 16-406
C/O PSC MAIL CENTER
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278