

DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD
SHORE MAINTENANCE COMMAND

SPECIFICATIONS
FOR
CONSTRUCT COVERED BOAT SHELTER
U.S. COAST GUARD STATION
MILFORD HAVEN
HUDGINS, VIRGINIA

DECEMBER 2011

COMMANDING OFFICER
UNITED STATES COAST GUARD
CIVIL ENGINEERING UNIT, RM 2179
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DIV 1 (Final)

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DIVISION 1
(March 2010 Version)

SECTION 01010
SCOPE OF WORK

1. WORK INCLUDED: Major items of work shall include the following:

1.1 Construct 31' x 46' metal frame boat shelter with concrete floor slab.

1.2 Perform site clearing, pavement demolition, earthwork, grading, drainage work, turf restoration, and pavement replacement, as required to construct new boat shelter.

1.3 Construct new underground electrical service conduit from nearby building, and provide lights and service outlets for new boat shelter.

1.4 Install (1) frost proof water service hose bib in exterior wall of nearby well house.

1.5 Work associated with these items are described in the following specification sections and/or are shown on the contract drawings. Incidental work items not listed above and necessary for completing the project shall be included.

2. DRAWINGS: Drawings and the accompanying specifications are the property of the Government and comprise legal documentation that pertains exclusively to this project. Drawings can only be obtained electronically by downloading the files identified with this solicitation at <https://www.fbo.gov>. CEU Cleveland will not provide hard copies of drawings.

2.1 Construction Drawings: U. S. Coast Guard Drawings # 7987-D, Sheets 1-7 of 7.

SECTION 01015
CONTRACTOR WORK HOURS

1. WORK HOURS: Accomplish work during normal unit operational hours of 7:30 a.m. to 4:30 p.m., Monday through Friday unless otherwise approved by the Coast Guard. Note any departures from these work hours on the Daily Reports.

2. SATURDAY, SUNDAY AND HOLIDAYS: The contractor shall provide the Contracting Officer's Technical Representative at least forty-eight hours advance notice prior to working on weekends or Federal holidays. The Government may reject any such request without impacting the completion time of the contract.

3. CONTRACT COMPLETION: The contractor shall complete work within the time frame indicated upon issuance of the Notice to Proceed. Limitations imposed by these work hours will not entitle the Contractor additional time to complete the project. Refer to FAR Clause 52.211-10 "Commencement, Prosecution and Completion of Work".

SECTION 01028
PRE-BID SITE VISITS

1. GENERAL: Bidders are responsible for visiting the site to field verify existing conditions and determine actual dimensions and the nature of the work required. Failure to visit the site does not relinquish the bidder from determining the extent and scope of the work required and estimating the difficulty and cost to complete the project. Requests for equitable adjustments, in either time or money, arising from failing to field verify site conditions may be denied. Provisions regarding the site visit requirements are outlined in FAR Clause 52.236-3 “Site Investigation and Conditions Affecting the Work”

2. SITE VISIT: Arrange pre-bid site visits to verify existing conditions with the Officer in Charge, U.S. Coast Guard Station Milford Haven, Virginia at telephone 804-725-2125. Address is U. S. Coast Guard Station, P. O. Box 17, Hudgins, Virginia 23076-0017. The building is located on Mill Point Road at state route 223 draw bridge (Gwinn). The Officer in Charge may limit hours of access or levy certain restrictions regarding visits to the site.

SECTION 01030
PRE-CONSTRUCTION SITE CONDITIONS

1. SITE CONDITION VERIFICATION: The Contractor shall verify the conditions of the existing site, equipment and facilities potentially affected by the work under this contract and photograph and/or videotape the conditions in order to document their pre-construction condition. Copies of the photos and videos shall be submitted to the Contracting Officer prior to starting work.

2. UTILITIES: The contractor shall use proactive measures such as digging, metering, testing, underground utility location devices, and utility company location services to locate all underground utilities identified in the area of work at no additional expense to the Government. Additional cost of unplanned outages and repair of damaged utilities, including emergency repairs by others, not properly identified by the Contractor shall be the Contractor’s responsibility.

SECTION 01040
COORDINATION

1. INTERFERENCE WITH COAST GUARD OPERATIONS: Accomplish work in a manner that causes minimal impact on normal operations. The Contractor shall notify the Contracting Officer’s Technical Representative at least five working days in advance of any planned outages of water, electrical, telephone, or sanitary facilities. Notify the Contracting Officer’s Technical Representative at least one week prior to beginning construction.

2. MILITARY STATION REGULATIONS:

2.1 The Contractor, his employees, and subcontractors shall become familiar with and obey all station regulations. All personnel employed on the project shall keep within the limits of the work and avenues of ingress and egress, and shall not enter any other areas outside of the site of the work unless required to do so in the performance of their duties. The Contractor's equipment shall be conspicuously marked for identification.

2.2 There shall be NO SMOKING in any Coast Guard building.

2.3 Storage Areas: The Contracting Officer's Technical Representative will determine exact location and boundaries of staging areas. Under no circumstances shall materials be stored in areas that will interfere with aircraft operations.

2.4 Storm Protection: If a gale force wind warning or higher is issued, take precautions to minimize any danger to persons and protect the work and nearby Government property. Precautions shall include, but not be limited to, closings, removing loose materials, tools and equipment, from exposed locations. Remove and secure scaffolding and temporary work. Close openings in the work area if storms of lessor intensity are imminent.

SECTION 01041 FIELD ADJUSTMENTS

1. The Contracting Officer's Technical Representative may authorize field adjustments. Field adjustments are those alterations that do not affect time, price, or intent of the contract documents. All field adjustments shall be documented in the Daily Reports and on the As-Built Drawings.

SECTION 01063 BUILDING PERMITS

1. NO BUILDING PERMITS from state or local governments are required for work performed on federal property. Courtesy permits may be obtained at the Contractor's option. No payment will be made to the Contractor for any permit cost. Design changes to obtain courtesy permits, even at no cost, will not be allowed without written approval of the Contracting Officer.

SECTION 01067 ENVIRONMENTAL PERMITS

1. Unless directed by other sections of this specification, the Contractor will not be responsible for obtaining environmental permits.

SECTION 01200 PROJECT MEETINGS

1. LOCATION: Project meetings will be conducted either on-site or with a conference call. The following meetings may be held:

1.1 Pre-Construction Conference: After award of a contract, the Coast Guard will arrange a conference with the contractor, and necessary Coast Guard personnel. The purpose of this conference is to orient the Contractor to Government procedures for wage rates, contractual and administrative matters, and to discuss specific issues regarding actual construction.

1.2 Progress and Technical Review Meetings: These meetings generally take place at the project site. Either party may request a meeting to review the progress of the project and/or review or clarify the technical requirements of the specifications.

SECTION 01300 SUBMITTALS

1. GENERAL: The Contractor shall submit to the Contracting Officer (4) copies of submittals required by this specification and/or itemized on the "**List of Submittals**" found at the end of this division.

2. REQUEST: A "**CONTRACT ITEM ACCEPTANCE REQUEST**" shall accompany all submittals. All items shall be individually listed and clearly identified, referencing the applicable Section and Paragraph. A copy of this form is located at the end of this division and may be reproduced as needed.

2.1 Up to eight (8) items may be listed on an individual acceptance request. Number each Contract Item Acceptance Request consecutively (*Submittals # 1, 2, etc.*) and re-submittals with letters (*Submittal #1A is the first re-submittal of Submittal #1*).

2.2 Submittals shall be forwarded to the Contracting Officer. The contractor **shall allow 14 calendar days**, excluding mailing time, for the review process in the Construction Schedule and all project planning. In instances where submittal review must be expedited, the Contractor may annotate the Contract Item Acceptance Request as "Urgent" and provide a FAX number for prompt return. The Coast Guard will make every effort to accelerate the review of each urgent submittal; however, the Contractor should not anticipate a reduced time schedule and shall plan project progress accordingly.

3. ACCEPTANCE: Submittals will be stamped "Accepted," "Accepted with Comments," or "Resubmit". Acceptance, Acceptance with comments or Resubmit for each item will be indicated on the Contract Item Acceptance Request form and one copy returned to the Contractor.

3.1 **Prompt re-submittal of items is required.** The Contractor shall furnish a new Contract Item Acceptance Request numbered in accordance with the requirements of paragraph 2.1.

4. **DEFECTIVE WORK:** Acceptance of Submittals **does not** restrict the Government's right to reject departures from contract requirements, use of damaged or improperly installed items/materials, or latent defects, nor does it prejudice the Government's rights of rejecting any work found defective at Final Inspection and Acceptance.

4.1 Work started or completed prior to submittal acceptance is **solely** at Contractor's risk and may jeopardize contract performance.

SECTION 01310
CONSTRUCTION SCHEDULE, SCHEDULE OF VALUES,
AND PROGRESS SCHEDULE

1. In accordance with the Notice to Proceed letter, the Contractor shall submit the following:

a. Construction Schedule-This schedule shall be prepared using a horizontal bar graph with time scale. It shall be in an industry accepted Project Management format and shall accurately display:

1. All major categories of work to be performed within the required contract completion date broken out in sufficient detail to track progress throughout the life of the contract. Major work categories should include but are not limited to mobilization, carpentry, plumbing, mechanical, electrical, roofing, concrete, site work, and demobilization. In addition to construction activities, procurement times for critical items, submittal turnaround time, mobilization, final inspection, punchlist work, and demobilization shall be shown on the schedule.
2. The duration of each work category.
3. Any concurrent work categories.

b. Schedule of Values-This schedule shall be prepared as a **detailed** cost breakdown of the contract price and be submitted with the Construction Schedule. This schedule shall include but not be limited to costs of materials, equipment, and labor for all major work categories shown on the Construction Schedule. The Contractor shall adhere to the following guidelines when developing the Schedule of Values.

1. Format - The line items in the Schedule of Values **shall** be the same as that of the Construction Schedule.
2. Bonds - Bonding costs will only be paid in a lump sum if they are broken out separately and included with the schedule of values. The Contractor shall provide evidence that he has furnished full payment to the surety.
3. Materials - To request progress payments for materials delivered to the construction or fabrication site, the particular category of work associated with the materials must be broken down into separate material and labor costs.

2. UPDATES: Each month and /or with each progress payment request, the Contractor shall submit the following:

a. **Progress Schedule**-This schedule shall be an update of the Construction Schedule. It shall show the current schedule of all work.

1. Modifications - If modifications are made to the contract, the work added shall be tracked separately from the original Construction Schedule and shall maintain

its individuality on the Progress Schedule throughout the life of the contract. Progress Payment requests shall not lump modification costs into the original contract price.

SECTION 01370
CONSTRUCTION DAILY REPORTS

1. **GENERAL:** **The Contractor shall complete a Daily Report for each and every day after mobilization.** The importance of an accurate, fully detailed Daily Report, promptly delivered to the designated On-Site Representative can not be overemphasized. The report shall provide an accurate cumulative summary of the history and performance of the work. The Daily Report shall document weather; work hours; work in-place; inspections and tests conducted, and their results; dimensional checks; equipment and material checks; data on workers by classification; the mobilization and demobilization of construction equipment; materials delivered to the site; and any other pertinent noteworthy event; e.g., personnel injury, site visit by Coast Guard personnel, etc.

2. **RESPONSIBILITY:** The Daily Reports play an important role in settling disputes and claims for both parties. For this reason the On-Site Representative and the Contractor's Superintendent, together, should review the report to ensure its completeness and accuracy. Each day's report shall be submitted to the On-Site Representative no later than 10:00 a.m. the following morning. The maximum allowable retainage will be enforced for late, sporadic or non-submission of Daily Reports. In the absence of an On-Site Representative the Contractor shall mail the Daily Reports directly to the Contracting Officer every Friday. Should the Daily Report indicate an accident, environmental issue, OSHA violation or any crisis the On-Site Representative deems important, the Report should be faxed to the Contracting Officer at (216) 902-6278 immediately.

3. **DESIGNATED ON-SITE REPRESENTATIVE RESPONSIBILITY:** After a Notice to Proceed for site work has been issued the On-Site Representative shall complete a Daily Report for each day until the Contractor mobilizes. After the Contractor is at the site, the On-Site Representative shall ensure that the Contractor completes the Daily Report in accordance with Paragraphs 1 and 2 above. Any items of dispute or other notes the On-Site Representative feels appropriate shall be added to the Daily Report. The On-Site Representative is also responsible for informing the COTR when the contractor fails to submit daily reports.

SECTION 01510
TEMPORARY UTILITIES

1. GENERAL: There are no utilities available on site. The contractor shall provide portable generation, water, portable toilets and other services necessary to complete the project.
2. TELEPHONE: Telephone services will not be available for use by the Contractor.
3. SANITARY FACILITIES: It shall be the Contractor's responsibility to furnish and maintain approved portable toilet facilities for all Contractor personnel. The On-Site Representative will designate the physical location for the facility and the Contractor shall maintain the toilet facility to the satisfaction of the Government. Contractor personnel are forbidden to use toilet facilities within existing buildings.

SECTION 01540
SAFETY PROGRAM

1. GENERAL: The Contractor is wholly responsible for work site safety. The Contractor shall implement a safety program that protects the lives and health of personnel in the construction area, prevents damage to property, and avoids work interruptions. The Contractor shall provide appropriate safety barricades, signs, signal lights, etc. (see SECTION 01570) as well as complying with the requirements of all applicable Federal, State and Local safety laws, rules and regulations.
2. COMPLIANCE: The Contractor is specifically required to comply with the requirements of the U. S. Army Corps of Engineers "Safety and Health Requirements Manual" (EM 385-1-1, *latest version available*) and the "Accident Prevention" clause (FAR 52.236-13). Once accepted, this safety plan shall become part of the contract requirements. *Note: This review/acceptance does not in any way relinquish the Contractor from responsibility for work site safety nor the obligation to comply with the OSHA regulations found in 29 CFR 1910 & 1926 or any other State or Local safety law, rule or regulation applicable to the contract work. The Coast Guard will cooperate fully with the Department of Labor (Occupational Safety and Health Administration) in their enforcement of OSHA regulations.*
3. SAFETY PLAN: The Contractor **shall submit a written safety plan**. At a minimum, this plan shall describe the Contractor's general safety program and identify specific safety provisions for hazards incidental to the contract work; e.g., elevated working surfaces, working over water, working from floating work platforms, overhead crane operations, etc.

SECTION 01542
MATERIAL SAFETY DATA SHEETS AND MATERIAL HANDLING PROCEDURES

1. DATA SHEETS: Submit a Material Safety Data Sheet (MSDS) for all materials containing hazardous substances required for contract execution. Information provided in MSDS's shall meet the requirements of 29 CFR 1910.1200. MSDS's require Contracting Officer review and

acceptance prior to bringing these materials on site.

2. MATERIAL STORAGE: Limit the quantity of these materials stored on site to the amount needed for execution of work. Storage of excess materials will not be permitted. Assure that the storage of these materials comply with all applicable federal, state, and local laws and regulations and provide additional storage facilities (paint lockers, etc.) as required for the storage of such materials. Coordinate the physical location of storage areas with the On-site Representative prior to bringing these materials on site.

3. PROTECTIVE MEASURES: The contractor shall take all protective measures outlined on the MSDS's and as required by federal, state, and local regulations to protect all personnel in the vicinity of the work area from exposure to these materials. The Contractor shall submit a separate plan outlining the measures required. The Contracting Officer's Technical Representative shall review protective measures prior to allowing use of these materials.

4. DISPOSAL OF EXCESS MATERIAL: The Contractor shall dispose of all excess hazardous materials as required by the MSDS and all applicable federal, state, and local laws and regulations.

SECTION 01550 ACCESS ROADS AND PARKING

1. ACCESS: Access to the site is available from public roads. Any damage to these roads by the Contractor's vehicles shall be repaired without cost to the Government.

2. PARKING: Vehicular operations and parking shall comply with all applicable government orders and regulations. All driveways and entrances serving the Government shall be kept clear and available to emergency vehicles at all times.

3. VEHICLE AND VEHICLE OPERATION: All vehicles, owned by the Contractor or employees of the Contractor, and operators of these vehicles, shall meet all state regulations for safety, noise, loading and minimum liability insurance. All vehicle operators demonstrating reckless or careless operation in the opinion of the Government shall not be allowed to operate vehicles on government property for the duration of the contract.

4. VISITORS: No visiting vehicles will be permitted on government property unless the operator is employed by a subcontractor or supplier.

SECTION 01566 GENERAL CLEANUP & SITE RESTORATION OF WORK AREAS

1. GENERAL: The Contractor shall remove and properly dispose of all trash and debris incidental to the contract work from the limits of government property, as well as all adjacent affected areas. The Contracting Officer shall determine the extent and interval of these cleanups.

2. WORK AREA CLEANUP: At the end of each day the entire work area and all adjacent affected areas shall be thoroughly cleaned by removing all trash, debris, dust, etc. caused by the contract work. Any floor, wall or ceiling surfaces that may have been stained or soiled by the contract work shall be restored to pre-construction condition.

3. SITE RESTORATION: If at any time while performing the contract the Contractor causes damage or destruction to any portion of any Government facility or grounds; e.g., bulkheads, pavement, lawns, shrubbery, etc., it shall be the Contractor's responsibility to replace and/or restore the damage as approved by the Contracting Officer's Technical Representative at no additional cost to the Government.

4. POST CONSTRUCTION CLEANUP: Upon completion of the job, the Contractor shall clean up the job site, returning it to a state of cleanliness equal to or exceeding that in which it was found. The Contractor shall properly dispose of any trash, extra materials, dirt, debris, or other litter that remains. If the job site appearance is not to the satisfaction of the Contracting Officer's Technical Representative, final acceptance will not be approved.

SECTION 01568 EROSION AND SEDIMENT CONTROL

1. GENERAL: The Contractor shall plan and execute all earthwork to minimize the duration of exposure of unprotected soils. Temporary protection shall be provided on side and back slopes as soon as rough grading is completed or when sufficient soil is exposed to require protection to prevent erosion. All earthwork brought to final grade shall be finished immediately.

2. METHODS: The Contractor shall prevent erosion, control sedimentation, and prevent waterborne soil from entering surface waters, ditches, and storm drain inlets by use of any or all of the following methods.

2.1 Mechanical Control: Divert runoff by constructing ditches or berms. Filter runoff using straw bale dikes, filter fabric dams or other methods.

2.2 Vegetation and Mulch: Protect slopes by accelerated growth of vegetation, mulching, or netting. Stabilize slopes by hydroseeding, sodding, anchoring mulch or netting in place.

2.3 Geotextiles: Protect and stabilize slopes by anchoring geotextile fabric or matting. The Contractor shall use a geotextile designed and sized for the particular application.

3. OTHER METHODS: Other erosion and sediment control methods may be used, as authorized by the Contracting Officer.

SECTION 01569 HAZARDOUS WASTE

1. GENERAL: The Contractor shall comply with all federal, state, and local environmental regulations dealing with the generation, management, storage, and disposal of solid, toxic, and hazardous wastes. The Contractor shall ensure that all wastes are properly containerized, labeled and placarded, managed, tested, stored, transported and disposed of in accordance with all applicable regulations.

SECTION 01620
STAGING AREAS AND ACCESS

1. LOCATION: The Contractor shall store materials and operate equipment within the confines of the staging area identified by the Government. Storage of materials outside of the staging area will not be permitted.

2. COORDINATION: Two weeks prior to construction, the Contractor shall contact the Officer in Charge, U.S. Coast Guard Station Milford Haven, Virginia at telephone 804-725-2125. to verify the condition of the staging area.

3. ADJACENT AREAS: The Contractor shall ensure that all land and vegetation adjacent to the staging area and access drive remain undisturbed and undamaged; all damages shall be repaired at no cost to the Government.

SECTION 01650
RECOVERED MATERIALS NOTICE

1. GENERAL: It is the intent of CEU Cleveland to comply with the requirements of Section 6002 of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA or the Act) as amended, 42 U.S.C. 6962 and Executive Order 12873 as they apply to the procurement of the materials designated in paragraph 2.

2. DESIGNATED RECOVERED MATERIALS It is the purpose of this section to designate items that are or can be made with recovered materials. These designated items can be found at <http://www.epa.gov/epaoswer/non-hw/procure/products.htm> .

3. CONTRACTOR RESPONSIBILITY: The contractor should provide recycled materials to the extent practical, provided the materials meet all other requirements of the applicable specification section.

SECTION 01720
AS BUILT DRAWINGS

1. GENERAL: Maintain one full size set of contract drawings to record variations from the original design. **All deviations shall be neatly and clearly marked in RED** on these drawings to show work and/or materials actually provided. As Built drawings shall be **updated** as work progresses and kept at the work site for the duration of the contract. These drawings shall be available for Contracting Officer Technical Representative review upon request.
2. DISCOVERED UTILITIES: Indicate the exact location of any **underground utility lines discovered in the course of the work** on the As-Built drawings.
3. PERMITTED VARIATIONS: As Built drawings shall reflect the actual construction and materials provided when alternative materials or work methods are allowed in the specifications and/or drawings or if the scope is altered by award of bid items, subsequent changes or modifications.
4. STANDARDS: Variations shown on As Built drawings shall be neat, clear and conform with standard drafting practices. Mark-ups shall include supplementary notes, legends, and details necessary to convey the exact representation of construction actually provided. **To comply with Computer Assisted Design (CAD) practices, only full size AS BUILT drawings are acceptable.**
5. SUBMITTAL: Submit As Built drawings for Contracting Officer's Technical Representative acceptance upon completion of the contract. **Final payment will not be until all required As Built drawings are accepted.** Maximum retention shall be withheld for late or incomplete As Built drawings.

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CONTRACT ITEM ACCEPTANCE REQUEST

Contract Number: HSCG83-
Contract Specialist:
Contractor Name:

DO/TO: HSCG83-
Project Number:

URGENT YES NO (if yes) **CONTRACTOR FAX #:** _____

Submittal # _____ **Job Location:** _____

NOTE: Contractor must mark Deviation column if submittal deviates from contract requirements

Item No.	Spec Section and Paragraph	Description of Material Include Type, Model #, Manufacturer, Etc.	Deviation	Status

STATUS ABBREVIATION GUIDE:

- AC - Accepted
 - AC w/ CMT - Accepted with Comment
 - R-Resubmit
- Comments:**

Typed Name & Title	Signature	Date
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NOTE: Review and acceptance of submittals by the Government is intended to verify general conformance with the design intent as shown on the contract drawings and in the specifications. Acceptance by the Contracting Officer Technical Representative does not relieve the Contractor of responsibility for any errors and/or omissions in the submittals, nor from the responsibility for complying with the requirements of the contract, except with respect to variations described and approved in accordance with FAR 52.243-4 CHANGES.

SECTION 024113
SITE DEMOLITION

PART 1 - GENERAL

1.1 Work Included: Furnish all labor, materials, and equipment necessary to demolish and remove from the site all items noted on the drawings and required to accomplish the contract work according to all federal, state and local regulations.

1.2 References: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. Refer to the latest editions.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

ANSI A10.6 Demolition Operations - Safety Requirements

1.3 Submittals: Submit the following in accordance with Section 01300 entitled "Submittals."

1.3.1 Provide the Contracting Officer with a demolition plan. The demolition plan shall indicate equipment to be used for demolition and proposed sequence of operations for review prior to start of work.

1.3.2 Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Coast Guard's on site operations.

1.4 General Requirements: Do not begin demolition until authorization is received from the Contracting Officer (KO). Remove rubbish and debris from the project site. Store materials that cannot be removed daily in areas specified by the COTR. Notify the COTR a minimum one week prior to start of demolition unless otherwise noted.

1.5 Regulations and Safety Requirements: Comply with federal, state and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses", safety requirements shall conform with ANSI A10.6, "Demolition Operation - Safety Requirements". It is the responsibility of the Contractor to be aware of and comply with all pertinent environmental regulations.

1.6 Protection:

1.6.1 Existing Work and Utilities: Conduct work and provide protection so not to damage existing work and utilities which are to remain in place, be reused, be relocated, or remain the property of the Government. Such items damaged shall be restored to their original condition or replaced with new. Provide new supports and reinforcement for existing construction weakened by demolition or removal work. Repairs, reinforcement, or structural replacement must have Contracting Officer's Technical Representative approval. The Contractor is financially responsible for damage to existing work and utilities.

1.6.2 Provide temporary barricades and other forms of protection to protect Coast Guard personnel and general public from injury due to demolition and removal work.

1.7 Hazardous Materials: If hazardous materials, not previously identified as hazardous, are encountered during demolition operations, contact the Contracting Officer immediately. Comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure and environmental pollution.

PART 2 - PRODUCTS

2.1 Materials: None.

PART 3 - EXECUTION

3.1 Inspection: Prior to commencement of selective demolition and removal work, the Contractor shall verify and document existing conditions of structure surfaces, equipment, or surrounding properties that could be misconstrued as damage resulting from selective demolition work. Provide documentation per Section 01030.

3.2 Demolition and Removal: Demolish and remove completely all indicated items and other items as required to install new work.

3.3 Title to Materials: Except where specified in other sections, all materials and equipment removed and not to be salvaged, shall become the property of the Contractor and shall be removed from Government Property. Title to materials resulting from demolition, and materials and equipment to be removed, is vested in the Contractor upon removal from the site after approval by the Contracting Officer (KO) of the Contractor's demolition and removal procedures. The Government will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.

3.4 Cleanup: Remove tools, equipment, and demolished materials from the site. Remove protections, barricades and temporary work. Remove and transport debris and rubbish in a manner that will prevent spillage into waters, onto streets or adjacent area. Restore work site to a condition comparable or better than originally encountered prior to demolition.

END OF SECTION 024113

SECTION 032110
STEEL FOR CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 Scope: This section covers steel reinforcement of cast in place concrete slabs.

1.2 Reference: American Society for Testing and Materials (ASTM):

A615-06	Steel Bars for Concrete Reinforcement
A185-06	Plain Steel Welded Wire for Concrete Reinforcement

PART 2 - PRODUCTS

2.1 Reinforcing Steel:

2.1.1 ASTM A 615 steel billet bars size #3 thru #6.

2.1.2 ASTM A185 plain steel welded wire fabric for concrete slab reinforcement. Size 6x6 W2.9-W2.9, 42 lb per CSF.

2.2 Metal Accessories: Include spacers, chairs, ties and other devices necessary for properly placing, spacing, supporting and fastening of reinforcement.

PART 3 - EXECUTION

3.1 Provide steel reinforcement and anchors for concrete work.

3.2 Storage: Store reinforcement in a manner that will avoid excessive rusting or coating with grease, oil, dirt, and other objectionable materials. Store in separate piles or racks so as to avoid confusion or loss of identification after bundles are broken.

3.3 Placing Reinforcement:

3.3.1 Set reinforcement and anchors before pouring concrete on chairs at 4'-0" spacing.

3.3.2 Place reinforcement where shown. Wire reinforcement together at intersections so it shall be securely and accurately held in place during placing of concrete.

3.3.3 Lap steel 12 inches minimum at splices.

3.3.4 Place reinforcement steel a minimum of 1 1/2 inches from edge of concrete, and 3" above ground.

3.3.5 Concrete slab reinforcement shall be extended 15" past vertical joints.

3.3.6 Vertical wall bars shall be embedded a minimum of 15” into concrete footing.

END OF SECTION 032110

SECTION 033053
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 Scope: This section covers mix design formwork, installation, curing, and testing of cast in place concrete, for small paving and building projects.

1.2 References:

1.2.1 American Society for Testing and Materials (ASTM):

C31-03	Making and Curing Concrete Test Specimens in the Field
C33-03	Concrete Aggregates
C39-05	Compressive Strength of Cylindrical Concrete Specimens
C94-05	Ready-Mixed Concrete
C143-05	Slump of Portland Cement Concrete
C172-04	Sampling Fresh Concrete
C309-03	Liquid Membrane-Forming Compounds for Curing Concrete

1.3 Submittals:

1.3.1 Mix Design: Submit mix design for cement concrete pavement. Submittal shall include type of cement, water cement ratio, source of materials, air content, slump, compression strength, name and location of plant. Submit mix design to contracting officer for approval 21 days before site work is scheduled to begin.

1.3.2 Curing Compound: General description of curing operation, type of curing compound, time duration of curing period, and when forms will be removed.

PART 2 - PRODUCTS

2.1. Concrete: ASTM C-94 ready mix concrete; with portland cement (type 1), 4000 psi compressive strength, with slump range of 2 ½" to 4", and air entrainment of 4 to 7%.

2.2 Curing Compound: ASTM C309 spray on liquid membrane curing compounds.

2.3 Stone Base: AASHTO M-43; #57 stone.

PART 3 - EXECUTION

- 3.1 General: Construct new concrete as shown on contract drawings.
- 3.2 Temperature Requirements: Concrete placement shall be done when 10 day forecast temperatures range from 40 degrees to 100 degrees.
- 3.3 Saw cut vertical end joint at edge of paved driveway. Form edges of new concrete, so ends and joints match existing surface. Form edges so concrete footings are level. Concrete shall be vibrated, surfaced leveled with a screed or trowel finished, and hand finished, with a soft broom.
- 3.4 Provide spray on application of curing compound over all new concrete surfaces exposed to weather. Prohibit foot and vehicular traffic and other sources of abrasion for not less than 72 hours after curing compound application. Maintain continuity of the coating for the entire curing period and immediately repair any damage.
- 3.5 Testing and Acceptance of Concrete: Sampling and testing shall be conducted by the Contractor. Perform the following tests:
- 3.5.1 Strength Tests: A set consisting of at least 4 cylinders shall be made in accordance with ASTM. The cylinders shall be tested in accordance with ASTM C39. Two specimens shall be tested at 28 days for acceptance and one shall be tested at 7 days for information. The acceptance test results shall be the average of the strengths of the two specimens tested at 28 days. If one specimen in a test shows evidence of improper sampling, molding, or testing, it shall be discarded and the fourth cylinder shall be tested and averaged to give the test result.
- 3.5.2 Slump Tests: Conduct slump test in accordance with ASTM C143. Water may be added to the concrete in the field to bring the concrete to the specified slump. The slump of concrete shall be determined whenever strength test cylinders are made. Additional tests shall be made when directed by the COTR. Slump shall not exceed 5”.
- 3.5.3 Air Content Tests: Conduct tests at the time of concrete placement when strength test cylinders are made and as often as necessary for control checks. Conduct tests in accordance with ASTM C138, C173, or C231.
- 3.5.4 The COTR may test concrete by impact hammer, sonoscope, or other non-destructive device to determine relative strengths at various locations in the structure as an aid in evaluating concrete strength in place or for selecting areas to be cored.

END OF SECTION 033053

SECTION 051223
STRUCTURAL METAL FRAMING

PART-1 GENERAL

1.1 WORK INCLUDED: This work covers the supply and installation of structural steel for small waterfront marina facilities.

1.2 APPLICABLE PUBLICATIONS:

1.2.1 American Society for Testing and Materials (ASTM):

A6	Rolled Steel Bars, Plates, Shapes, and Pilings
A36	Structural Carbon Steel
A153	Zinc Coating on Iron and Steel Hardware
A307	Carbon Steel Externally Threaded Standard Fasteners
A325	Steel Nuts and Bolts; Heat Treated
A992	Structural Steel Shapes

1.2.2 American Welding Society (AWS):

D1.1 Structural Welding Code

1.3 SUBMITTALS:

1.3.1 Shop Drawings Prepare and submit drawings of new steel building frame and roof details for approval. Approval of the drawings covers the requirements for strength only. No responsibility is assumed for errors in dimensions or connection alignment details. Show full detailed dimensions and sizes of component parts of the structure and details of all miscellaneous parts (such as pins, nuts, bolts, drains, weld symbols, etc.) on shop drawings for steel structures.

1.3.2 Furnish a copy of all mill orders and certified mill test reports. Show on the mill test reports the chemical analyses and physical test results for each heat of steel used in the work. If approved, furnish "Certificates of Compliance," in lieu of mill test reports for material that normally is not supplied with mill test reports and for items such as fills, minor gusset plates, and similar material when quantities are small and the material is taken from stock.

PART 2 - PRODUCTS

2.1 STEEL: Steel beams, angles, plates and channels shall conform to specification of A.S.T.M. Grade A992, 50ksi.

2.2 STEEL CONNECTIONS: Nuts, bolts and washers shall conform to specifications of A.S.T.M. Grade A-325 or grade 5 heat treated with zinc coating.

2.3 STRUCTURAL WELDS: AWS E70X Welds

PART 3 - EXECUTION

- 3.1 STORAGE OF MATERIAL: Store structural material above the ground on platforms, skids, or other supports. Keep material free from dirt, grease, and other foreign matter and provide appropriate protection from corrosion.
- 3.2 BOLT HOLES: Punch or drill all bolt holes. Holes may be punched 0.063 inch (2 mm) larger than the nominal diameter of the bolts where the thickness of the material is not greater than 0.75 inch (19 mm). Punched holes. Use a die diameter that is not more than 0.063 inch (2 mm) larger than the punch diameter. Ream holes that require enlarging to admit bolts. Clean cut the holes without torn or ragged edges. Ream or drill holes so they are cylindrical and perpendicular to the member.
- 3.3 WASHERS: Where the outer face of the bolted parts has a slope greater than 1:20 with respect to a plane normal to the bolt axis, use a hardened beveled washer to compensate for the lack of parallelism. Where necessary, washers may be clipped on one side not closer than 7/8 of the bolt diameter from the center of the washer.
- 3.4 CONNECTIONS: Nuts and bolts shall be tightened by "turn of nut method". Nuts shall be tightened to a snug fit (snug being the point where nut resistance is developed This may be attained by a few impacts of an impact wrench or the full effort of a worker using an ordinary spud wrench.), plus one additional 1/2 turn.

END OF SECTION 051223

SECTION 074113
METAL ROOF

PART 1 - GENERAL

1.1 Work Included: Provide labor, materials, and equipment to install new sheet metal roof, trim, and related items as shown on drawings.

1.2 APPLICABLE PUBLICATIONS:

1.2.1 American Society for Testing and Materials (ASTM):

A6	Rolled Steel Bars, Plates, Shapes, and Pilings
A36	Structural Carbon Steel
A153	Zinc Coating on Iron and Steel Hardware
A307	Carbon Steel Externally Threaded Standard Fasteners
A992	Structural Steel Shapes

1.3 Submittals: Submit to the Contracting Officer for approval manufacturer's descriptive literature and manufacturer's color samples similar to color noted on drawings. The Contracting Officer shall select final color from manufacturer's standard colors.

1.4 Delivery, Storage, and Handling: Package and protect materials during shipment and inspect them for damage, dampness, and stains upon delivery. Replace damaged and stained materials that cannot be restored to like-new condition. Carefully handle sheet metal items to avoid damage to surfaces, edges, and ends. Store materials in dry, weathertight, ventilated areas until immediately before installation.

PART 2 - PRODUCTS

2.1 Roof Panels: Steel 26 gage, 50ksi, PBR roof panels, pre-painted with factory applied finish coat galvalum (color red).

2.2 Connection Bolts: Self drilling screws with rubber gaskets. Exact size and length shall be as shown on contract drawings or in accordance with roof manufacture's instruction.

2.3 Joint Sealant: As recommended by the roof manufacturer.

2.4 Rib End Covers: Provide roof manufacturer's standard (metal, foam, or plastic) panel end covers to seal gaps beneath panel ribs, at each end of roof.

PART 3 - EXECUTION

- 3.1 Contractor is responsible for the proper installation of panel system, and that all roof sub framing member are properly aligned in accordance with AISC specification. Contractor is responsible for correct panel lengths, and all accessory sizes and quantities.
- 3.2 Roof system shall be water tight when complete. Provide sealer tape over panel joints if necessary. Roof panels shall overlap rain gutter, and this over lap shall also be water tight.
- 3.3 Touch up scratched paint after erection with small touch up brush and compatible oil based paint.
- 3.4 Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
- 3.5 Contractor shall protect work during construction to ensure that work will be without damage or deterioration other than natural weathering at end of project. Bent or damaged panels shall be replaced.

END OF SECTION 074113

SECTION 077123
METAL RAIN GUTTERS AND FASCIA

PART 1 - GENERAL

- 1.1 Work Included: Provide labor, materials, and equipment to install new gutters, downspouts, and related items in the locations as shown on drawings.
- 1.2 Delivery, Storage, and Handling: Package and protect materials during shipment and inspect them for damage, dampness, and stains upon delivery. Replace damaged and stained materials that cannot be restored to like-new condition. Carefully handle sheet metal items to avoid damage to surfaces, edges, and ends.

PART 2 - PRODUCTS

- 2.1 Rain Gutter: Steel, gage 26, 5" wide x 6" high painted red.
- 2.2 Downspout: Steel, gage 26, 3"x4" painted red.
- 2.3 Drip Edge: Steel, gage 26" pre-painted red custom bent shape to match edge of roof
- 2.4 Fascia: Steel, gage 26" pre-painted red custom bent shape to match edge of roof
- 2.5 Metal Accessories: Provide end caps, gutter drains, downspout elbows, straps, hangers, gutter support bars, fasteners and similar accessory units as required for installation. Accessories shall match color and be noncorrosive and compatible with gutters and downspouts being installed. Size and gage as recommended by gutter and downspout manufacturer.
- 2.6 Sealant: As recommended by the gutter and downspout manufacturer.

PART 3 - EXECUTION

- 3.1 Installation:
- 3.1.1 Install gutters and downspouts in accordance with manufacturer's printed instructions.
- 3.1.2 Materials shall be clean, dry and free from foreign matter before application of gutter seal. Place gutter seal in sufficient quantity on both surfaces just prior to assembly to insure water tight joints. In addition, place a head of gutter seal along the edge of joints on inside of gutter in sufficient quantity to seal cracks that might be present.
- 3.1.3 Install work with joints and seams watertight and weatherproof.
- 3.1.4 Anchor gutters a minimum of 3'-0" on center. Anchor downspouts at a minimum of

three locations.

3.1.5 Pitch gutters a minimum of 1/16 inch per foot toward downspout. Test gutter after installation for good drainage (no standing water) and leaks. To assure positive water drainage from roof edges into new gutters, test with full running garden hose applied 5' above gutter.

3.2 Cleaning and Protection:

3.2.1 Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

3.2.2 Contractor shall protect work during construction to ensure that work will be without damage or deterioration other than natural weathering at end of project.

END OF SECTION 077123

SECTION 099713
PAINTING OF STRUCTURAL STEEL

PART 1 - GENERAL

- 1.1 Work Included: This work covers structural steel columns, plates, channels, I-Beams, to be painted or repainted.
- 1.2 References: Steel Structures Painting Council (SSPC):
- 1.2.1 Paint system guide 1.04; Three Coat Oil Alkyd Painting System
 - 1.2.2 PA 1; Shop, field, and Maintenance Painting of Steel
 - 1.2.3 Paint Application Guide No. 4
 - 1.2.4 Paint 25: Alkyd Primer
 - 1.2.5 Paint 104 White or Tinted Alkyd Paint
 - 1.2.6 SP-2: Hand Tool Cleaning
- 1.3 Submittals: Submit product literature and colors for approval before delivery.

PART 2 -PRODUCTS

- 2.1 Prime Coat (All): SSPC paint 25; color-white.
- 2.2 Intermediate Coat (All): SSPC paint 104; color-off white.
- 2.3 Finish Coat (Structural Steel): SSPC paint 104; color-green
- 2.4 Finish Coat (Metal Trim): SSPC paint 104; (color-red match roof).

PART 3 -EXECUTION

- 3.1 DELIVERY: Deliver materials to job site in original containers, with seals unbroken and labels intact. Before application, mix materials thoroughly until pigments are in suspension and maintain at a uniform consistency during application. Do not open containers until required for use. Mix only in well-ventilated areas.
- 3.2 PREPARATION: Provide clean, dry surfaces, free from materials which might bleed through finish coating or otherwise affect paint coating to surface. Remove hardware from surfaces to be coated wherever practical, and replace upon completion of finishing. Hand clean metal surface in accordance with SSPC-SP2 with wire brush or scraper as needed to remove all dirt, rust and rough projections. After hand cleaning, prepare surface by soap and water wash.

3.3 APPLICATION:

3.3.1 Application. Apply paint when the following conditions are met.

- (a) The surface to be painted is thoroughly dry.
- (b) The ambient air temperature and the surface temperature are between 40 degrees and 100 degrees F (4 degrees and 38 degrees C) or other temperature range as recommended by the paint manufacturer.
- (c) The surface temperature is 5 degrees F (3 degrees C) or more above the dew point.
- (d) The humidity is 85% or less.
- (e) Rain, fog, or ambient air temperature below 40 degrees F (4 degrees C) is not predicted during the drying period.

3.3.2 Each coat shall be of sufficient thickness to cover completely previous coat or surface. Dry Film Thickness of Paint System: Not less than the following as measured in accordance with SSPC-PA 2, "Measurement of Dry Paint Thickness with Magnetic Gages" - the total dry film thickness at any point should not be less than 5.5 mils (140 microns). This means that areas of cleaned bare steel will require 1.5-2.0 mils (38-50 microns) of primer, 1.5-2.0 mils (38-50 microns) of intermediate coat, and 1.5-2.0 (38-50 microns) of finish coat. Finish coat shall be smooth and free from runs, sags, and other defects. Make coating edges adjoining other materials or colors sharp and clean without overlapping. At completion touch-up and restore finish where damaged and leave in good condition.

3.3.3 Finish Color: Steel frame, and connection hardware shall be a tinted semi-gloss as stated in 2.1.2. "Trim" shall consist of unpainted rain gutters, downspouts, metal fascia, and accessories. All remaining metal shall be painted to match color of steel frame.

3.4 Painting is not required for Stainless steel zinc plated and galvanized hardware. Field painting is not required for steel roof, rain gutters and fascia that is delivered with a factory applied finish coat.

3.5 Clean Up. Leave one gallon extra of each type of finish coat paint with station for future touch up. Remove all debris generated from contract work to an approved dump site.

END OF SECTION 099713

SECTION 221113
FACILITY WATER SERVICE

PART 1 - GENERAL

1.1 Work Included: Work shall include all labor, equipment, and supervision necessary for construction of water service for Coast Guard facilities.

1.2 References: The publications listed below form a part of this specification to the extent referenced. BOCA National Plumbing code

1.3 General Requirements:

1.3.1 Notification of the CEU contracting officer's technical representative (COTR), and unit on site representative, is required one week prior to delivery of materials. Deliver materials to on site storage location designated by Coast Guard representative.

PART 2 - PRODUCTS

2.1. Water pipe: See contract drawings for applicable pipe diameter. Exterior and underground shall be Black steel, ASTM A-53, schedule 40. Interior pipe shall be Copper type L.

2.2 Hydrants: Freezeless wall hydrant 12" long. Hydrant shall have a pressure rating of 125 psi.

2.3 Gate Valve: Brass 125psi isolation valve with handel.

2.4 Accessories: provide all bends, fittings, unions, check valves, strainers, and miscellaneous materials and hardware necessary for plumbing code compliance.

PART 3 - EXECUTION

3.1 SERVICE LINE: Service line shall be installed by a plumber licensed in the State of Virginia. Underground service lines shall be set in an underground trench a minimum depth of 3'-0" below ground. Provide Tee connection to existing pipe. Provide check valve if required by local plumbing code. Interior pipes above ground shall be fastened to wall or ceiling at intervals not to exceed 10 feet. New facilities shall include isolation valves at branch tee connections.

3.2 Testing and Sterilization:

3.2.1 After installation is completed place water system in operation and test thoroughly for safe, efficient operation. Test water piping at 75 psi hydrostatic pressure for 30 minutes or more.

3.2.2 Perform tests prior to concealment. Should leakage occur, correct and retest.

3.2.3 Sterilize all new piping of length greater than 2 feet by filling with a water-chlorine solution containing at least 200 parts per million of chlorine and allow to stand for 3 hours. Following the standing time the system shall be flushed with clean potable water until no chlorine remains in the water coming from the system.

3.2.4 If inspection or tests show defects in the new work, replace material or work at no cost to the Government. Notify the Contracting Officer and COTR when tests are to be conducted. Flush or blow foreign matter out of pipes, fixtures and equipment. Leave items clean and ready for use.

END OF SECTION 221113

SECTION 260519
LOW VOLTAGE ELECTRICAL WORK

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS:

1.1.1 American National Standards Institute (ANSI):

467	Grounding and Bonding Equipment
C2	National Electrical Safety Code
C80.1	Specification for Rigid Metal Conduit, Zinc-Coated
C82.4	Ballasts

1.1.2 American Society for Testing and Materials (ASTM):

D2686	Insulation Tape, Electrical, (Pressure Sensitive Adhesive, Plastic)
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1.1.3 National Fire Protection Association (NFPA):

70-2008	National Electrical Code
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1.1.4 National Electrical Manufacturer's Association (NEMA):

FB 1	Fittings, Cast Metal Boxes, and Conduit
OS 1	Sheet-Steel Outlet Boxes, Device Boxes, Covers and Box Supports
PB 1	Panel boards
TC 2	Electrical Plastic Tubing and Conduit
TC 3	PVC Fittings for Use with Rigid PVC Conduit and Tubing
WC 5	Thermoplastic-Insulated Wire and Cable

1.4 OPERATION AND MAINTENANCE MANUALS AND INSTRUCTION:

1.4.1 Provide manuals and instruction as specified in Section 01730, Operating Instructions.

1.5 DELIVERY AND STORAGE:

1.5.1 Equipment and materials shall be properly stored, adequately protected, and carefully handled to prevent damage before and during installation. Equipment and materials shall be handled, stored, and protected in accordance with the manufacturer's recommendations and as approved by the Contracting Officer's Technical Representative (COTR). Damaged or defective items, in the opinion of the COTR, shall be replaced with new items at no cost to the Government.

PART 2 - PRODUCTS

2.1 CONDUCTORS (600 VOLTS OR LESS): NEMA WC5; WC 7;

2.1.1 Conductors shall be copper. Conductors manufactured more than 12 months before date of delivery to the site shall not be used.

2.1.2 Power Conductors: Minimum size of conductors shall be No. 12 AWG. Interior conductors shall be types THW or THWN. Conductors in exterior raceway shall be Type XHHW. Conductors shall be suitable for use in dry and wet locations at temperatures not exceeding 75 degrees C.

2.1.3 Power Conductor Color Coding: Achieve by a continuous factory-applied color compound or coating except that where factory-applied coating is not available, apply colored pressure-sensitive tape for a distance of 6 inches along the length of the conductor, at terminal points and locations where the conductor is accessible. Color code power and lighting conductors according to the voltage of the electrical system in which they are used, as follows:

208Y/120V AC

Three Phase System

Phase A - Black

Phase B - Red

Phase C - Blue

Neutral - White

Ground - Insulated Green

2.1.4 Lighting and power wire sizes No. 10 AWG and smaller shall be solid. Wire sizes No. 8 AWG and larger shall be stranded.

2.2 CONDUIT, FITTINGS, AND BOXES:

2.2.1 Boxes: NEMA OS 1; galvanized, steel only. Plastic boxes shall not be provided.

2.2.2 Rigid Metal Conduit: ANSI C80.1; fittings shall conform to NEMA FB 1, galvanized.

2.2.3 Flexible Metal Conduit: UL 1, galvanized steel; Fittings shall conform to NEMA FB 1, galvanized.

2.2.4 Plastic Conduit: NEMA TC 2; Polyvinyl Chloride (PVC) Schedule 40. Fittings shall conform to NEMA TC 3. PVC conduit shall be securely fastened and supported so that movement from thermal expansion or contraction is permitted in accordance with 352.30 (A) and (B) or permitted to be unsupported in accordance with 352.30(C). Expansion fittings for PVC conduit shall be provided to compensate for thermal expansion and contraction where the length change, in accordance with table 352.44.

2.3 LUMINAIRES: UL listed;

2.3.1 Each luminaire shall be equipped with the proper number of new lamps of the correct size as indicated on the drawing. Luminaire's junction boxes shall be listed for feed-through branch circuit wiring.

2.4 TAPE:

2.4.1 Insulating natural rubber tape shall meet the requirements of UL 510. Vinyl tape shall meet the requirements of ASTM D2686.

2.5 NAMEPLATES:

2.5.1 Provide engraved black bakelite, 1 X 3-1/2 inch, 1/8 inch high white letters, machine screw retained for permanent identification of all switchboards, panelboards, circuit breakers in separate enclosures, motor-starters, contactors, fuse cabinet, time switches, and other cabinet-enclosed apparatus.

2.6 CABLE MARKER STRIP: Red plastic, black letters, "Caution-Electrical Line Buried Below," six inches wide.

2.7 PANELBOARDS:

2.7.1 NEMA PB 1; circuit breaker type with bolt-on circuit breakers; Type 1 enclosure.

2.7.2 The short-circuit current bracing rating of each panelboard and the short-circuit current interrupting rating of the panelboard's circuit breakers shall not be less than the available fault current.

2.7.3 Furnish 3 keys for each cabinet lock. Key all panelboard locks alike.

2.7.4 Type directories to indicate load service by each circuit and mount in a holder behind transparent protective covering.

PART 3 - EXECUTION

3.1 GENERAL:

3.1.1 The Contractor shall furnish all labor, equipment and materials (except as noted), tools, And services necessary for the proper completion of all electrical work for this project in accordance with these specifications, the contract drawings, and the intent thereof.

3.1.2 All work shall be executed in a thorough, workmanlike manner by competent and efficient laborers, mechanics, electricians, or artisans in strict accordance with these specifications and the contract drawings and to the entire satisfaction of the Construction Representative.

3.1.3 All material removed shall become the property of the Contractor and shall be removed from Coast Guard property. Its value shall be reflected in the bid price.

3.1.4 The Contractor shall make allowances for voltage drop in accordance with recommendations of NFPA 70 when sizing main circuits, feeders, and branch circuits.

3.2 CUTTING, PATCHING, AND RELATED WORK:

3.2.1 The Contractor shall set and seal all sleeves and shall cut all holes necessary for the installation of his work. The Contractor shall discuss at the time of walk-thru with the COTR and On-site Representative about the lay out and obtain approval before cutting any holes. No holes shall be cut in finished floor areas.

3.2.2 The Contractor shall have the proper trades to patch all holes resulting from this contract, including any holes that are cut unnecessarily and any holes that remain due to removals.

3.2.3 All control devices, junction boxes, pull boxes, and specialties shall be located to provide easy access for operation, repair, and maintenance. Access doors shall be flush types unless otherwise indicated.

3.2.4 All repairs in unfinished areas shall be made as required to match existing conditions.

3.2.5 The COTR shall have the right to relocate any outlet or fixture within a ten-foot radius and prior to wiring without additional cost to the Government.

3.3 CONDUIT INSTALLATION:

3.3.1 PVC conduit and outlet boxes shall not be used indoors or above ground unless otherwise indicated.

3.3.2 All conductors shall be run in conduit. Minimum conduit size shall be 3/4 inch unless

otherwise indicated and shall conform to the regulations of NFPA 70.

3.3.3 Interior conduit shall be Rigid Metal Conduit unless otherwise indicated.

3.3.4 Exterior conduit shall be PVC insulated rigid metal conduit unless otherwise indicated.

3.3.5 Branch circuits and feeders that extend outside buildings or enclosures in direct buried underground conduit shall be installed in PVC insulated rigid metal conduits unless otherwise indicated.

3.3.6 Provide flexible metal conduit for terminations of conduit at equipment that generates vibration or noise, is subject to vibration or movement, for motors, and for recessed and semi-recessed lighting fixtures. Flexible metal conduit in wet locations shall be liquid-tight. No length of flexible conduit shall exceed four feet.

3.3.7 Install separate conduit systems for each of the following circuits: Low voltage, control, and power.

3.3.8 Install exposed conduit in unfinished areas. Keep conduit parallel with or at right angles to ceilings, walls, and structural members. Pull boxes or conduit outlet bodies shall be used as necessary to permit conduit to be routed close to corners formed by wall intersections.

3.3.9 Support conduit securely by pipe straps, wall brackets, hangers, or ceiling trapeze. Do not cut reinforced concrete beams. In suspended ceiling construction, run conduit above the ceiling; do not support conduits from the ceiling support system.

3.3.10 Make changes in direction of conduit runs with symmetrical bends or conduit outlet bodies. Make field-made bends and offsets with a hickey or conduit-bending machine. Crushed or deformed conduits shall not be installed. Ends shall be free from dents or flattening. Plaster, dirt, or trash shall be prevented from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of obstructions.

3.3.11 Install pull wires in empty raceways. Pull wire shall be plastic having minimum 200 pound tensile strength. Leave at least 12 inches of slack at each end of the pull wire.

3.4 LUMINAIRES:

3.4.1 Install lighting fixtures based on manufacturer's instructions.

3.4.2 Install lamps.

3.5 CONDUCTOR IDENTIFICATION:

3.5.1 Provide conductor identification within each enclosure where a tap, splice, or termination is made. Identification shall be by color-coded insulated conductors, plastic-coated self-sticking printed markers, colored nylon cable ties and plates, or heat shrink type sleeves. Identify control

circuit terminations.

3.6 SPLICES (600 VOLTS OR LESS):

3.6.1 Make splices in accessible locations. All splices shall be made in outlet or junction boxes. No splices will be permitted in the conduit. Splices in wires No. 10 AWG and smaller shall be made with an insulated pressure type connector. Splices in wire No. 8 AWG and larger shall be made with a solderless connector and covered with an insulation material equivalent to the conductor insulation. Composition or porcelain "wire-nuts" will not be acceptable for connecting any wires, regardless of size.

3.7 GROUNDING:

3.7.1 All grounding shall be in accordance with Article 250 of NFPA 70. Equipment grounding and bonding shall be in accordance with ANSI 467.

3.7.2 All conduits shall have a grounding conductor installed. This conductor shall be separate from the electrical system neutral conductor. In addition, all conduits shall be grounded.

3.7.3 All connections and splices for grounding wires, except the terminal connections at equipment, shall be brazed. Compression type of solderless connection shall be used at equipment terminations. Solder lugs will not be permitted.

3.7.4 Noncurrent carrying metallic parts associated with electrical equipment shall have a maximum resistance to solid earth ground not exceeding the following values:

Grounded secondary distribution system neutral and noncurrent carrying metal parts associated with distribution systems and grounds not otherwise covered. 25 ohms

3.8 CLEANING, REMOVAL AND PROTECTION:

3.8.1 Prior to leaving the job, the contractor shall thoroughly clean all conductor, conduit, electrical equipment including all fixtures.

3.8.2 Protect all government personnel, equipment, and buildings from damage during construction.

3.8.3 The Contractor shall not allow refuse or work debris to accumulate, but shall remove them from the premises when and as directed by the COTR.

3.9 TESTING:

3.9.1 After the installation and connection of all equipment has been accomplished, the Contractor shall place the equipment in operation and test it for a period of at least 8 hours to demonstrate that all equipment and devices operate in accordance with the requirements of the drawings and specifications (coordinate with the COTR). Any defects or adjustments in the

wiring or equipment provided by the Contractor shall promptly be corrected by the Contractor at his expense. The Contractor shall furnish all labor, material, and equipment to accomplish the testing.

3.9.2 Measure steady state load currents at the Panelboards feeder. Should the difference between phases exceed 20 percent, rearrange circuits in the Panelboards to balance the phase loads within 20 percent. Take care to maintain proper phasing for multi-wire branch circuits.

3.9.3 Should any cable fail due to a weakness of conductor insulation or due to defects or injuries incidental to the installation or because of improper installation of cable, cable joints, terminations, or other connections, the Contractor shall make necessary repairs or replace cables as directed.

3.9.4 Acceptance checks and tests shall include, but not be limited to the following:

3.9.4.1 Compare actual connections with wiring diagrams. If differences are found, determine if error is in diagram or in actual wiring and correct as necessary.

3.9.4.2 Inspect all devices, equipment, and materials for damage or maladjustment caused by shipment or installation.

3.9.4.3 Each device subject to manual operation shall be operated at least three times demonstrating satisfactory operation each time.

3.9.4.4 Test all 600-volt class conductors to verify that no short circuits or accidental grounds exist.

3.9.4.5 Verify minimum resistance to ground of all grounding systems.

3.9.4.6 Remove wedges, ties, and blocks installed by the manufacturer to prevent damage during shipment.

3.9.5 Upon completion of all acceptance checks, settings, and tests, the Contractor shall show by demonstration in service that all circuits and devices are in good operating condition and properly performing their intended function.

END OF SECTION 260519

SECTION 312323
EXCAVATION AND BACKFILL

PART 1 - GENERAL

- 1.1 Work Included: This work covers all labor, material and equipment required for excavation and backfill of waterfront construction projects and shoreline grading.

PART 2 - PRODUCTS

- 2.1 None

PART 3 - EXECUTION

3.1 Excavation: Excavate earth from around new structures and new ditches as required for construction. Where pavement is partially removed, saw-cut edge of new existing pavement a minimum of 2" deep, and leave a straight vertical edge. Where unsuitable material is encountered, it shall be removed and disposed of off site. Unsuitable material may include, stones, cemented gravel, ashes, cinders, refuse, organic material, or unstable materials. Excavated material shall be piled in a manner that will not endanger the work nor obstruct sidewalks and driveways. Natural water courses shall not be obstructed. Where water is encountered in an excavated trench, it shall be drained, and the trench so maintained until the area is backfilled.

3.2 Backfill and Compaction: As various structures are completed, the contractor shall refill the excavations with excavated earth. All material used for back filling shall be free from perishable and objectionable material and shall contain no stones larger than 3 inches in diameter. Backfill shall not be done in freezing weather, and shall not be done with frozen material, nor shall any fill be made when material already in the trench is frozen. Mechanical compactor/tampers, gas powered, or hand operated may be used to compact all backfill. The backfill shall be placed in 12 inch lifts (loose depth). Every lift shall be compacted with a minimum of 3 passes of compactor or tamper. Trench area shall be backfilled in flat continuous lifts that prevent ponding of water. Backfill all holes left from clearing and grubbing. Grade all disturbed areas to match grade of grass lawn, and paved surfaces. Grade new ditches for drainage toward waterfront.

END OF SECTION 312323

SECTION 321216
HOT-MIX ASPHALT PAVEMENT

PART 1 - GENERAL

1.1 Work Included: This section covers all new asphalt/bituminous concrete paving indicated on the drawings.

1.2 References: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. Refer to the latest editions.

- 1.2.1 FHWA STANDARD SPECIFICATION FOR ROAD CONSTRUCTION
- 1.2.2 AASHTO MATERIALS MANUAL
- 1.2.3 ASTM STANDARD SPECIFICATIONS

1.3 Submittals:

1.3.1 Mix Design: Submit mix design for asphalt concrete surface course. Submittal shall include asphalt content, aggregate gradation, source of materials, water content, name and location of plant. Submit mix design to contracting officer (KO) for approval 14 days before site work is scheduled to be begin.

1.3.2 Base Gradation: Submit gradation of aggregate base to contracting officer (KO) for approval 14 days before work is scheduled to begin. Include source of supply.

PART 2 - PRODUCTS

2.1 Aggregate Base: AASHO M43 #5, #56, or #57 stone gradation

2.2 Bituminous Concrete Surface: Hot plant mix consisting of a mixture of course aggregate, fine aggregate, and asphalt or tar cement. Mix design shall be submitted by contractor to Contracting Officer for approval two weeks before paving operation is schedule to begin. Mix formulas shall be a local standard and compare roughly to the following:

Aggregate: <u>Sieve</u>	<u>Percent Passing</u>
3/4"	100
1/2"	97-100
#4	57-69
#8	41-49
#30	22-30
#50	13-21
#200	3-8

Mineral Filler: 1/2 of #200 sieve fraction

Asphalt Cement: 4 1/2 - 7 1/2%
Temperature: 250°-300°F.
Stability 1300 lb.
Flow: 7-18
Void Content: 3-7%

2.3 Edge Joint Seal: Hot poured elastic asphalt, rubber based joint seal mixture that conforms to AASHTO M 173; or cold poured silicone rubber base material that conforms to Fed. Spec. TT-S-1543, Class A.

PART 3 - EXECUTION

3.1 Traffic Control: Existing waterfront facilities shall remain open to traffic during and after working hours. Contractor shall provide signing as required for a safe working environment.

3.2 Pavement Demolition: Demolish and remove existing pavement where called for on contract drawings. Saw cut transverse joint at beginning and end of pavement demolition area.

3.3 Grading: Grade earth base as required to provide a smooth firm pavement base. Compact earth with a minimum of (5) passes with paving roller. Grade sub-base so that finished edges will match existing pavement and lawns.

3.4 Aggregate Base: New aggregate pavement base shall conform to lines and grades as drawn on contract plans. Aggregate base shall be compacted to a minimum depth of 6 inches over graded earth. Compact aggregate with a 5 ton roller, or mechanical vibrating tamper for difficult to access edges and corners, a minimum of 3 passes. Sub-bases shall not be placed during rain, on a wet surface, or if temperature is less than 40°F.

3.5 Bituminous Concrete: Pavement shall not be placed during rain, on a wet surface, or if temperature is less than 40°F. Depth tolerance shall be 1/2 inch and density shall be 90% of batch plant average. Asphalt cement shall conform to AASHTO M 226 for AC-20 grade. Submittal shall also include source of aggregate and name and address of production plant. Do not use mixtures produced from different plants unless the mixtures are produced according to the same job mix formula approved by Contracting Officer. Crown or slope pavement for drainage to nearest storm sewer or ditch.

3.6 Rolling: Compact new pavement with 5 ton roller or mechanical vibrating hand tamper for difficult to access edges, a minimum of 6 passes. Thoroughly and uniformly compact the asphalt surface by rolling. Do not cause undue displacement, cracking, or shoving. Continue rolling until all roller marks are eliminated. Along forms, curbs, headers, walls, and other places not accessible to the rollers, compact the mixture with alternate equipment. All parts of the pavement shall receive substantially equal compaction.

3.7 Surface Smoothness: Test finished surface of each hot-mixed asphalt course for

smoothness, using 10-foot straightedge applied parallel with and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding 3/16 inch.

3.8 Joints, Trimming Edges: At connections to existing pavements and previously placed lifts, make the joints vertical to the depth of the new pavement. Form joints by cutting back on the previous run to expose the full depth course. Place the asphalt concrete mixture as continuously as possible. Do not pass rollers over the unprotected end of a freshly laid mixture. Seal top of joints between new and existing pavement with liquid joint seal material. Use a squeegee or other suitable equipment to force the mixture into the joints. Immediately screed the joint sealant or asphalt mixture to the elevation of the existing surface. Use a squeegee to ensure that a 3 inch wide band is centered on the finished joint.

END OF SECTION 321216

SECTION 329219
TURF RESTORATION

PART 1 - GENERAL

1.1 Work Included: This section covers all seeding, fertilizing, mulching, and miscellaneous work required for turf establishment.

PART 2 - PRODUCTS

2.1 Topsoil: Natural, fertile, sandy, loam soil capable of sustaining vigorous plant growth and of uniform composition throughout.

2.1.1 Topsoil shall conform to the following mechanical analysis:

Sand (0.05-2.0 mil dia.)	30-70%
Silt (0.002-.5 mil dia.)	20-50%
Clay (less than .002 mil dia.)	5-25%
95% of topsoil shall pass a 2.0 mil sieve	

2.1.2 Topsoil shall be free from stones of one-inch length or greater. Topsoil shall be free of all plant parts, lumps, and deleterious material. Topsoil shall possess 5 to 10% organic matter. Topsoil shall maintain a pH of 6.5 to 7.0.

2.1.3 Topsoil that has been removed and stock piled from the site for reuse shall be modified to meet these requirements.

2.2 Fertilizers: Granular, non-burning product composed of no less than 50% organic, and shall contain 10% nitrogen, 20% phosphoric acid, and 15 % potash.

2.3 Seed Mixture: Locally standard "sun mixture". Seed may be dry spread or hydro seeded.

2.4 Mulch: Clean oat or wheat straw, well seasoned before bailing, free from mature seed bearing stalks or roots of prohibitive or noxious weed.

PART 3 - EXECUTION

3.1 Topsoil: Provide 4" of topsoil over a 3 feet wide strip along unpaved edges of new structure, (120 feet). Sub base shall be loosened and scarified to a depth of four inches prior to spreading of topsoil in order to provide proper drainage and bonding of topsoil to sub base. Topsoil shall be cultivated and tilled until it is uniformly friable and mellow condition. Cultivating shall be done to a depth of at least 4 inches. Rake and level to provide topsoil that is smooth, without hollows, with a fine and uniform earth surface ready for seeding. Contractor shall do all fine grading necessary with drag or rake prior to seeding. Irregularities in the surface shall be corrected in order to prevent the formation of depressions or water pockets.

3.2 Sowing: The seed shall be sown while the seedbed is in a friable condition. Topsoil not in a friable condition just prior to seeding shall be harrowed with a disk, spring tooth drag, or spike tooth drag. Spread seeds at a minimum rate of 2 lb. per 1000 square feet. Seed all areas within contract limits and areas disturbed as a result of construction. Seed when the soil is dry and wind velocity does not exceed 5 miles per hour. Install seed evenly by sowing equal quantities in two passes over area to be seeded. After seeding, rake or drag surface of soil lightly to incorporate seed into top 1/8th inch of soil.

3.3 Mulch: Place mulch on seeded areas within 24 hours after seeding. Place mulch uniformly in a continuous blanket at a rate of 2-50 pound bales per 1000 square feet. The mulch shall be loose enough to allow sunlight to penetrate and air to slowly circulate, but thick enough to shade the ground, reduce rate of water evaporation, and prevent or reduce water or wind erosion.

END OF SECTION 329219