DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD
MAINTENANCE AND LOGISTICS COMMAND

SPECIFICATIONS
FOR
REHAB ST. JOSEPH NORTH PIERHEAD LIGHT
U.S. COAST GUARD STATION
MUSKEGON
MUSKEGON, MI

JULY 23

COMMANDING OFFICER
UNITED STATES COAST GUARD
CIVIL ENGINEERING UNIT, RM 2179
1240 EAST NINTH STREET
CLEVELAND, OHIO 44199-2060

AUTHOR:	D. G. Ward	DIV 1	Final

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DIVISION 1
(JANUARY 2002 VERSION)

SECTION 01010
SCOPE OF WORK

Work Included: Major items of work shall include the following:

1.1 Cut and remove the outer concrete from the base of the lighthouse, including access steps. Fabricate and install jacks to support the lighthouse upon concrete removal. Jacks shall be incorporated into the permanent work. Temporarily shore and brace the tower from lateral movement until the new concrete foundation has been constructed. Place formwork and bend/fabricate rebar as indicated and place concrete. Drill and dowel rebar into existing concrete as detailed.

1.2 Remove the expanded steel upper deck grating as shown. Fabricate and weld new steel angle bracing around the inner perimeter of the deck. Cut and install new fiberglass grating and secure with new stainless steel hardware as recommended by the grating manufacturer, drilled and bolted to the framing. Secure the fog signal and detector reusing existing fasteners. Coordinate installation of aids to navigation equipment with Station Muskegon AtoN personnel.

1.3 Weld the plate covering the upper access door to its frame and the plates covering the porthole to the tower as shown. Welds shall be continuous and completely seal the openings. Weld spatter and slag shall be removed and the surfaces wire brush cleaned prior to painting.

1.4 Remove the existing glazing in the cupola/lantern area, salvaging the existing brass bead material. Strip and clean and coat with a clear coat urethane. Fabricate new glass panels, cut and shaped to fit in openings. Secure with existing brass bead material, drilled, tapped and fastened to the mullions as shown. Thoroughly clean and paint mullions, sills and surrounding surfaces prior to installing new glazing.

1.5 Clean and paint the lighthouse in its entirety, both interior and exterior. Remove all loose dirt, grease, rust, and scale to obtain clean surfaces for painting. Contain all debris and handle and dispose as lead containing material. Completely prime and paint all surfaces as indicated. Colors shall be as indicated on the drawings.

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

1.7 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.

1.8 Construction Drawings: 7613-D, sheets 1 through 4 of 4

SECTION 01015
CONTRACTOR WORK HOURS

1. WORK HOURS: Limit work hours from 7:00 a.m. to 6:00 p.m., Monday through Friday. Since the breakwater and lighthouse are only accessible through an adjoining city park, work will not be permitted on weekends or holidays.

2. 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 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 Aids to Navigation (AtoN) Officer, U.S. Coast Guard Station Muskegon at telephone (231) 759-8581. The AtoN Officer 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 equipment and facilities potentially affected by the work under this contract and photograph the conditions in order to document their pre-construction site condition. Electronic copies of the photos 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. GENERAL REQUIREMENTS: Accomplish work in a manner that causes minimal impact on the area immediately surrounding the lighthouse. The All portions on the breakwater shall be fully accessible at all times. Notify the Contracting Officer's Technical Representative at least one week prior to beginning construction. . The Contractor's equipment shall be conspicuously marked for identification.

2. MATERIAL STORAGE: All materials and equipment shall be stored offsite. Storage in the adjoining park and on the breakwater is prohibited.

3. STORM PROTECTION: Take precautions to minimize any danger to persons and protect the work site. Store loose materials and secure scaffolding and temporary work.

4. AIDS TO NAVIGATION EQUIPMENT: Coordinate disconnection of aids to navigation equipment with the Station Muskegon at least one week prior to any work directly affecting the operation of AtoN equipment. Notify the Commander, Ninth Coast Guard District (dpw) at (216) 902-6070 for issuance of "Notice to Mariners" a minimum of 10 (ten) days in advance of taking any AtoN equipment out of service. D9 (dpw) may limit the duration of any outage. Temporary AtoN equipment shall be installed for outages that exceed that duration.

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:

1.1 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.

1.2 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.

1.3 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. Placement of portable shall be as directed by the City of St. Joseph.

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 include any required protective measures in the Safety Plan (See SECTION 01540). 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, PARKING AND STAGING AREAS

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. Small off-road vehicles may be used to transport materials and equipment along the breakwater. Vehicles shall not be left on the breakwater unattended.

2. PARKING: Park vehicles and work trucks in locations designated by the City of St. Joseph. Assure that parking arrangements are approved prior to construction. All driveways and entrances shall be kept clear and available to emergency vehicles at all times.

3. STAGING AREAS: The Contractor shall arrange for storage and staging of materials and equipment. Materials or equipment shall not be stored on the breakwater.

SECTION 01566
GENERAL CLEANUP & SITE RESTORATION OF WORK AREAS

1. GENERAL: The Contractor shall remove and properly dispose of all trash and debris from the breakwater. Under no circumstance shall any debris spill or blow into the water.

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.

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, 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 01567
POLLUTION CONTROL

1. Volatile Organic Compound (VOC) Regulations: Contractors are required to comply with local, state and federal VOC compliance laws and regulations in the foregoing order of precedence. In order to comply with the provisions of the Clean Air Act, each state must have a State Implementation Plan. Some contractors may be required to abide by the provisions of a Title V Permit. Some contractors may be required by state or local law to operate under the terms of a Compliance Plan to reduce VOC Emissions.

1.1 State Implementation Plan: In accordance with the Notice To Proceed Letter, the contractor will submit copies of any local, state or federal implementation plans, permits or compliance plans required/applicable to the use/application of VOCs at contractor's facility or offsite work places.

1.2 Notarized Letter: If local, state or federal implementation plans, permits or compliance plans are not required/applicable to the use/application of VOCs, then the contractor shall submit to the designated Contracting Officer a letter, notarized under oath, that such documents are not required.

1.3 VOC Rating Documentation: If the use of paint is required the contractor shall submit to the Contracting Officer and in accordance with the Notice to Proceed Letter, certificates, specifications or manufacturing data verifying the VOC rating.

1.4 SPILL RESPONSE PLAN: The Contractor shall submit a Spill Response Plan covering all regulated materials brought to the site for execution of work and all wastes generated as a result of the work to the Contracting Officer. The plan shall include, at a minimum, the following: types and quantity of all substances covered under this plan; the reportable quantity (RQ) for each substance; the on site storage location of each substance; the Contractor's spill response equipment, if applicable; procedures to be followed for responding to a spill, including initial responses to be taken; procedures to be followed in reporting a spill, including the names and telephone numbers for all federal, state, and local agencies/authorities to be notified; and the name, address, and telephone number (work, home, cell and pager) of all Contractor response and media relations personnel.

1.5 In the event of a spill or release, the Contractor shall be responsible for immediate implementation of the spill response plan and restoration of the site to pre-spill condition at no cost to the Government. The Contractor shall also immediately notify the Contracting Officer to coordinate further notifications.

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.

2. METALS: Unless noted otherwise, scrap metal shall be treated as hazardous waste. Recycle all scrap metal by smelting or any other acceptable recycling process.

3. SUBMITTALS: Hazardous Waste Documents: The Contractor shall provide the Contracting Officer with signed and fully executed originals of all hazardous waste profiles, test results, hazardous waste manifests and/or other shipping papers, electric lamp disposal documents and all other required documentation. Maximum payment retention shall be withheld until this documentation is received.

SECTION 01570
LIGHTS, SIGNS AND BARRICADES

1. GENERAL: The contractor shall provide and maintain all warning lights, sign, and barriers to insure the safety of pedestrians near the work site.

2. LIGHTING: All lighting requirements shall meet table 7-1 in the US Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1).

3. BARRICADES: Barricades shall consist of chain link fence 5’ tall. Post shall have bases for flush mounting on the breakwater and drilled and secured to the concrete breakwater. Maximum spacing of fence post shall be 8’. The fence shall be offset 3’ from the base of the lighthouse and completely encircle the work area. Concrete shall be patched with 5,000 psi grout upon removal of fence posts.

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 RESPONSBILITY: 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 Represenative 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.

LIST OF SUBMITTALS

SECT	PARA	ITEM	GENERAL USE COLUMN
01030	1	Site Condition Verification	
01310	1.1	Construction Schedule	
	1.2	Schedule of Values	
01540	3	Safety Plan	
01542	1	Material Safety Data Sheet	
01567	1.1	State Implementation Plan	
	1.2	Notarized Letter	
	1.3	VOC Rating Documentation	
	2	Spill Response Plan	
01569	3	Hazardous Waste Documents	
01720	5	As Built drawings	
02093	1.2.1	Hazardous Waste Management Plan	
	1.2.2	Handling and Site Storage Plan	
	1.2.3	Disposal Documentation	
02220	1.3.1	Demolition plan	
03300	1.2.1	Drawings	
	1.2.2	Mix Design	
	1.2.3	Delivery Tickets	
05124	1.2.1	Fabrication Drawings	
	1.2.2	Descriptive Literature	
	1.2.3	Certificates of Compliance	
08800	1.2	Manufacturers Catalog Data for Glazing and Setting Materials	
09915	1.2.1	Paint System Descriptive Literature	
	1.2.1a.	Zinc-rich primer	
	1.2.1b.	Epoxy intermediate coat	
	1.2.1c.	Urethane top coats	
10992	1.2	Grating System Description	

CONTRACT ITEM ACCEPTANCE REQUEST

Contract Number: HSCG83- **DO/TO: HSCG83-**

Contract Specialist: **Project Number:**

Contractor Name:

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

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.

DIVISION 2 – SITEWORK

SECTION 02093
LEAD CONTAINING DEBRIS GENERATION AND DISPOSAL

1.

PART 1 GENERAL

1.1 References:

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910	Occupational Safety and Health Standards
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
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 268	Land Disposal Restrictions
49 CFR 178	Specifications for Packaging

1.2 Submittals:

1.2.1 Hazardous Waste Management Plan: Hazardous Waste Management Plan shall be prepared that complies with applicable requirements of Federal, state, and local hazardous waste regulations and addresses. The plan shall include the following:

a. Identification or documentation of potential hazardous wastes associated with the work.
b. Estimated quantities of wastes to be generated
c. Names and qualifications of each Contractor that will be transporting, storing, treating, and disposing of the wastes; the facility location, phone number, and name of a 24-hour point of contact shall be included. Two copies of EPA, state, and local hazardous waste permit applications, permits, and EPA identification numbers.
d. Work plan and schedule for waste containment, removal, and disposal.

1.2.2 Handling and Site Storage Plan: Prepare a plan that addresses the handling and storage of LBP debris in accordance with the requirement of 40 CFR 262 and 40 CFR 265. The Contractor shall confirm that an EPA identification number has been obtained so that proper manifesting of the waste will be addressed, and that site storage limitations, including the time of storage, container requirements, contingency plan, and personnel training have been complied with. Include the landfill name, address, and telephone number. A copy of the landfill's state and locally issued license, and a signed agreement that the landfill will accept the LBP wastes. Detailed delivery tickets shall be prepared, signed, and dated by an agent of the landfill, certifying the amount of LBP containing materials delivered to the landfill.

1.2.3 Disposal Documentation: Submit disposal documentation for hazardous waste as outlined in paragraph 3.3.2.

1.3 Safety and Health Regulatory Requirements: Work shall be performed in accordance with requirements of the applicable regulations including, but not limited to 29 CFR 1910, 29 CFR 1926, especially Section .62. Where these requirements vary, the most stringent shall apply.

1.3.1 Respirators: Air-purifying respirators shall be approved by NIOSH for use with dust, fumes, and mists having high-efficiency particulate air (HEPA) filters. Respirators shall comply with the requirements of 29 CFR 1926 Section .62 and shall be used in accordance with 29 CFR 1926 Section .103 and 29 CFR 1910Section 134.

2.

PART 2 PRODUCTS

Not Used

3.

PART 3 EXECUTION

3.1 Work Procedures: Work shall include the containment, transportation and disposal of lead containing debris generated from hand and power cleaning operations of the exterior surfaces of the lighthouse. Enclosure of work areas in which cleaning operations are being performed and placement of polyethylene sheeting around the bas of the lighthouse shall be included.

3.1.1 General: LBP abatement and related work shall be performed in accordance with the accepted Contractor's LBP Management Plan as approved. Procedures and equipment required to limit occupational and environmental exposures to lead during LBP removal shall be in accordance with 29 CFR 1926 Section .62, and as specified herein. Paint chips and associated waste shall be disposed of in compliance with Federal, state and local regulations.

3.1.2 Containment: Use polyethylene or other sheeting to isolate and contain debris and paint chips generated from hand and power tool cleaning. Additionally, the base of the light shall be encircled with polyethylene or tarps to collect debris at the base of the light. Tarps and containment materials shall be cleaned of their debris and paint chips daily. Assure that wind speeds are not anticipated to exceed 10 mph during cleaning and removal operations.

3.2 Cleanup: Areas in the vicinity of cleaning operations shall be maintained free of accumulations of paint chips and dust. Spread of dust and debris shall be restricted; waste shall not be distributed over the work area. Dry sweep or compressed air shall not be used for cleanup.

3.2.1 Containerizing Debris: Lead-contaminated debris shall be containerized in accordance with CFR regulations. Waste bags shall not be overloaded, shall be securely sealed and stored in the designated area until disposal.

3.3 Disposal

3.3.1 General: Lead-contaminated waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing, which may produce airborne concentrations of lead particles shall be stored in 49 CFR 178 approved 55 gallon drums. Each drum shall be labeled to identify the type of waste as defined in 49 CFR 172 and the date lead-contaminated wastes were first put into the drum. The Uniform Hazardous Waste Manifest forms from Federal and state agencies shall be obtained and completed. Land disposal restriction notifications shall be as required by 40 CFR 268. Lot deliveries of hazardous wastes shall be made as needed to ensure that drums do not remain on the work site longer than 90 calendar days from the date affixed to each drum. Lead-contaminated waste shall be handled, stored, transported, and disposed of in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Land disposal restriction notification shall be as required by 40 CFR 268.

3.3.2 Disposal Documentation: Written evidence shall be provided that the hazardous waste treatment, storage, or disposal facility is approved for lead disposal by the EPA and state or local regulatory agencies. One copy shall be submitted of the completed manifest; signed, and dated by the initial transporter in accordance with 40 CFR 262.

---End of Section---

SECTION 02220
SITE DEMOLITION

1.

PART 1 GENERAL

1.1 References:

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.6 Demolition Operations

1.2 General Requirements: Do not begin demolition until authorization is received from the Contracting Officer's representative. Remove rubbish and debris from the project site; do not allow accumulations on the breakwater. Store materials that cannot be removed daily in a contained and protected area that will not allow debris to enter the water.

1.3 Submittals:

1.3.1 Demolition plan: Submit a demolition plan prior to beginning demolition. Include demolition and removal procedures necessary to remove those portions of work indicated.

1.4 Regulatory 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.

1.5 Debris and Dust Control: Prevent the spread of dust and debris in the surrounding area, including occupied portions of building, throughout station grounds and in Coast Guard operational areas. Avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution

1.6 Protection:

1.6.1 Existing Work: Protect work that is to remain in place, be reused, or remains the property of the Government. Repair items that are to remain which are to be salvaged and which are damaged during performance of the work to their original condition, or replace with new. Provide new supports and reinforcement for existing construction weakened by demolition or removal work.

2.

PART 2 PRODUCTS

Not used.

3.

PART 3 EXECUTION

3.1 Existing Facilities To Be Removed:

3.1.1 Concrete Foundation: Remove the existing concrete on the foundation as indicated. Remove concrete from the steps and the base of the lighthouse. Provide temporary supports for the lighthouse until new concrete is placed. Protect existing anchor bolts from damage and assure they are secured to the existing foundation. Protect the existing submarine power cable and ice protection during work. Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces.

3.1.2 Expanded Steel Deck: Remove the expanded steel deck material from the upper walk around the upper section of the lighthouse. Temporarily remove the fog signal and fog detector prior to removals. Drill and remove fasteners as necessary to prevent the underlying framing.

3.1.3 Lantern Glazing: Carefully remove exterior brass bead strips that secure existing glazing to mullions. Drill fasteners as required to remove beads. Cut and strip glazing compound and remove glazing without damaging frames. Openings shall be power and hand tool cleaned upon removal of glazing. The existing lantern shall be covered and protected during removal operations.

3.2 Disposition of materials: All materials and equipment removed, and not reused, 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.

3.2.1 Reuse of Materials and Equipment: Remove and store materials and equipment indicated to be reused or relocated to prevent damage, and reinstall as the work progresses.

-- End of Section --

DIVISION 3 – CONCRETE

SECTION 03200
CONCRETE REINFORCEMENT

1.

PART 1 GENERAL

1.1 References:

AMERICAN CONCRETE INSTITUTE (ACI)

ACI 301	Structural Concrete for Buildings
ACI 315	Details and Detailing of Concrete Reinforcement

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 82	Steel Wire, Plain, for Concrete Reinforcement
ASTM A 123	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 496	Steel Wire, Deformed, for Concrete Reinforcement
ASTM A 615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 934	Epoxy-Coated Prefabricated Steel Reinforcing Bars

AMERICAN WELDING SOCIETY, INC. (AWS)

AWS D1.4	Structural Welding Code Reinforcing Steel

1.2 Delivery, Storage, And Handling: Store reinforcement in racks raised above the ground to avoid excessive rusting. Protect from contaminants such as grease, oil, and dirt.

2.

PART 2 PRODUCTS

2.1 Reinforcing: Bars: ACI 301 unless otherwise specified. ASTM A 615 with the bars marked A, Grade 60. Bars shall be epoxy coated in accordance with ASTM A 934

2.1.1 Mechanical Reinforcing Bar Connectors: ACI 301. Provide 125 percent minimum yield strength of the reinforcement bar.

2.1.2 Wire: ASTM A 82 or ASTM A 496.

2.1.3 Reinforcing Bar Supports: Provide bar ties and supports of a galvanized material.

3.

PART 3 EXECUTION

3.1 General: ACI 301. Provide bars, wire fabric, wire ties, supports, and other devices necessary to install and secure reinforcement. Reinforcement shall not have rust, scale, oil, grease, clay, or foreign substances that would reduce the bond. Tack welding is prohibited. Bars, fabrics, connectors, and chairs shall be galvanized

3.1.1 Formwork: Cut and fabricate formwork to attain the concrete shapes and contours shown. Formwork shall be rigid and capable of supporting wet concrete without deformation during placing or curing.

3.1.2 Reinforcement Supports: Place reinforcement and secure with galvanized or non-corroding chairs, spacers, or metal hangers. For supporting reinforcement on the ground, use chairs to assure that reinforcing is at the appropriate elevation.

3.1.3 Splices: In accordance with ACI 301. Do not splice at points of maximum stress. AWS D1.4 welded splices shall be approved prior to use.

3.1.4 Cover: ACI 301 for minimum coverage, unless otherwise indicated.

-- End of Section --

SECTION 03300
CAST-IN-PLACE CONCRETE

1.

PART 1 GENERAL

1.1 Applicable Publications:

AMERICAN CONCRETE INSTITUTE (ACI)

301	Specifications for Structural Concrete for Buildings
305R	Hot Weather Concrete Placement

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

A309	Liquid Membrane Curing Compounds for Curing Concrete
C33	Concrete Aggregates
C150	Portland Cement
C173	Air Content of Freshly Mixed Concrete
C260	Air Entraining Admixtures for Concrete
C920	Elastomeric Joint Sealants

1.2 Submittals:

1.2.1 Drawings: Showing layout of foundation piers, pilasters walls, slabs and walkways.

1.2.2 Mix Design: Provide the mix design showing the gradation of aggregates, proportion of cement and water/cement ratio.

1.2.3 Delivery Tickets: Provide the on-site representative with copies of delivery tickets showing design strength, cement content on a 96 pound sack per cubic yard basis, water content, time of mixing and other pertinent information.

2.

PART-2 PRODUCTS

2.1 Concrete: Concrete mix design shall be in accordance with ACI 301. Concrete shall have a 28-day compressive strength of 4500-psi (528 pounds of cement per cubic yard of concrete), 4 to 6 percent air (ASTM C173), and maximum water to cement ratio of 0.48 by weight.

2.1.1 Cement: ASTM C150, Type I or II.

2.1.2 Water: Clean, fresh and potable, including free water in aggregate.

2.1.3 Aggregate: ASTM C33, size No. 57 or 67. Aggregates shall be free from any substance that may be deleteriously reactive with alkalis in the cement.

2.1.4 Air Entraining: ASTM C260

2.2 Forms: Use dimensional lumber, plywood sheeting or composite material reinforced with standard framing lumber or bracing as required to prevent bulging.

2.2.1 Form Oil: Non-staining linseed oil specifically formulated for concrete forms stripping.

2.3 Sealant: Moisture curing high-performance polyurethane sealant conforming to ASTM C920 with 250 psi tensile strength.

2.4 Expansion Joint Material: Bituminous impregnated pressed fiberboard suitable for on-grade concrete applications.

3.

PART-3 EXECUTION

3.1 Preparation for Concrete Placement: Clean and remove loose concrete and thoroughly was exposed surfaces to receive concrete. Remove all debris, dirt clods and other objectionable material from work area that may be deleterious to concrete. Surfaces shall be coated with an epoxy bonding agent.

3.1.1 Forms, Reinforcement and Miscellaneous Materials: Attach forms to side of foundation and secure in place as specified in section 03200 and in accordance with all applicable standards. Square and properly align forms with existing foundation. Use form oil on interior of all forms.

3.1.2 Expansion Joints: Place fiberboard expansion joint material into forms at joint locations shown on drawings. Upon cure of concrete, seal top of fiberboard with elastomeric sealant.

3.2 Measuring, Mixing, Conveying and Placing Concrete:

3.2.1 Mixing and Conveying: ACI 301 and as specified herein. Begin mixing within 30 minutes after the cement has been added to the aggregates. The time between the introduction of water to the cement and the start of placing of the concrete in final position shall not exceed 45 minutes if the air temperature is greater than 85 degrees F. Re-tempering concrete that has lost the required slump is strictly prohibited.

3.2.2 Placing: Place and consolidate concrete so to prevent segregation of materials and to ensure concrete is thoroughly worked around embedded items, around reinforcement and into corners. Do not place concrete in uncovered areas during periods of precipitation; or in standing water. Consolidate concrete with high frequency, internal, mechanical vibrating equipment supplemented by hand spading and tamping.

3.2.3 Hot Weather: ACI 305. Concrete temperature from initial mixing through final cure shall not exceed 90 degrees F. Shade the fresh concrete and start curing as soon as the surface of the fresh concrete is sufficiently hard to permit curing.

3.3 Finishing:

3.3.1 Initial Finish: Consolidate and immediately strike off concrete to bring the top surface of the slab to proper contour, grade, and elevation as shown. Concrete shall be flush with tops of forms. Immediately bull float the surface with wooden tools so as to correct any unevenness. Complete striking-off before bleed water appears. Drag bleed water off using a rubber hose.

3.3.2 Final Finish: Float the surface by hand with a wood trowel. Floating of any one area shall be the minimum necessary to produce an even finish. Once concrete has attained sufficient set, texture surface using a stiff bristle broom transverse to the direction of traffic.

3.3.3 Edging and Jointing: Once finish is attained, hand tool expansion joints, evenly spaced, and edging in concrete surfaces. All edging and shrinkage crack control joints shall be scored into the concrete with hand tools prior to final concrete.

3.4 Curing and Protection: Protect concrete adequately from injurious action by weather and mechanical injury for a minimum of 72 hours. Keep concrete moist during curing period.

---End of Section---

DIVISION 5 - METALS

SECTION 05124
STRUCTURAL STEEL - NAVIGATIONAL AID STRUCTURES

1.

PART-1 GENERAL

1.1 References:

AMERICAN INSTUTUTE FOR STEEL CONSTRUCTION (AISC)

AISC M016	ASD Manual of Steel Construction

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36	Structural Steel
ASTM A 53	Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless
ASTM A 123	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 780	Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM E 709	Standard Guide for Magnetic Partical Inspection
ASTM F 593	Stainless Steel Bolts, Hex Cap Screws and Studs
ASTM F 594	Stainless Steel Nuts

AMERICAN WELDING SOCIETY, INC. (AWS)

AWS D1.1	Structural Welding Code Steel

1.2 Submittals:

1.2.1 Fabrication Drawings: Submit fabrication drawings for approval prior to fabrication. Use AWS standard welding symbols.

1.2.2 Descriptive Literature: Submit for welding equipment showing that all arc welding will be accomplished with welding machines capable of producing the welds intended. Equipment shall be as recommended by AWS D1.1.

1.2.3 Certificates of Compliance: Steel, Fasteners and welding rods and accessories.

2.

PART-2 PRODUCTS

2.1 Steel: ASTM A 36/ A 36M structural grade steel for shapes and ASTM A 53 for pipe.

2.2 Fasteners:

2.2.1 Bolts: ASTM F 593 Grade 304, 18-8 stainless steel

2.2.2 Nuts: ASTM F 594 Grade 304, 18-8 stainless steel

2.2.3 Washers: Grade 304, 18-8 stainless steel

2.3 Galvanizing: Galvanizing of structural steel items so indicated shall be performed in accordance with ASTM A123. Items shall be galvanized upon completion of fabrication.

2.4 Structural Steel Accessories: Welding Electrodes and Rods shall be selected for the appropriate steel, alloys, positions, methods and conditions for the intended use. All electrodes shall be selected to provide full strength and of equivalent characteristics of the respective steel being welded. All welding materials shall be in good condition with no damage to the flux.

3.

PART-3 EXECUTION

3.1 Fabrication:

3.1.1 General: Material must be straight before laid off or worked. If straightening is necessary, it shall be done by methods that will not impair the metal. Sharp kinks or bends shall be cause for rejection of the material. Bends, except for minor details, shall be made by approved dies, press brakes, or bending rolls. Shearing shall be accurately done and be square and true unless otherwise shown on the drawings. Finished members shall be free from twists, bends, and open joints.

3.1.2 Structural Steel Fabrication: Surfaces and edges to be welded shall be prepared in accordance with AWS D1.1 to maintain proper root clearances and allow for welding of tubular joints. Joints shall be milled to a close fit and corner joints shall be coped or mitered, well formed, and in true alignment. Welding shall be continuous and uniform along the entire area of contact. Drilling and punching shall produce clean true lines and surfaces. Holes shall be oversized by 1/16 inch of the bolt sizes shown.

3.2 Welding:

3.2.1 General: Welding of structural steel shall be by an electric arc welding process, using a method which excludes the atmosphere from the molten metal. Welding shall conform to the applicable provisions of AWS D1.1.

3.2.2 Welding Equipment: All welding equipment shall meet the requirements of AWS D1.1.

3.2.3 Filler Metal: The electrode, electrode-flux combination, and grade of weld metal shall conform to the appropriate AWS specification for the base metal and welding process being used.

3.3 Workmanship Requirements:

3.3.1 Tubular Connections: All tubular connections shall be accomplished with full penetration welds to develop 100 percent joint efficiency. Where welding can be accomplished from one side only, all joints shall be carefully mitered and coped to enable 100 percent fusion of the root weld. Beveling of edges shall be performed as required to facilitate welding.

3.3.2 Rolled Shapes and Plates: Flanges/webs of structural shapes shall be coped/mitered as required to attain near full contact between joints prior to welding. Gaps in joints shall not exceed 1/8-inch. Sections shall be joined with 100 percent penetration welds to develop 100 percent joint efficiency.

3.4 Quality Control and Inspection:

3.4.1 Preparation: All welds shall be free of slag, spatter, dirt grease, oil and loose scale.

3.4.2 Visual Examination: Prior to any welding, the Contractor shall visually inspect the preparation of material for welding to assure compliance with AWS D1.1. All completed welds shall be cleaned and examined carefully by the Contractor for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement, and other surface defects.

3.4.3 Nondestructive Examination: The Contractor shall perform non-destructive examination accordance with ASTM E 709. Spot non-destructive examination of approximately twenty percent of the welds may be required to ensure adequate quality of welds.

3.5 Galvanizing: Galvanize those items designated for galvanizing in accordance with ASTM A 123 after fabrication has been completed of such items. All weld flux and spatter shall be removed and steel shall be thoroughly clean of all grease, dirt and rust prior to galvazing. Repair damage to galvanized coatings using ASTM A 780 zinc rich paint for galvanizing damaged by handling, transporting, cutting, welding and bolting. Do not heat surfaces to which repair paint has been applied.

---End of Section---

DIVISION 8 – WINDOWS AND DOORS

SECTION 08800
GLAZING

1.

PART 1 GENERAL

1.1 References:

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 669	(1995) Glazing Compounds for Back Bedding and Face Glazing of Metal Sash
ASTM C 920	(1995) Elastomeric Joint Sealants
ASTM C 1036	(1991) Flat Glass

GLASS ASSOCIATION OF NORTH AMERICA (GANA)

GANA GM	Glazing Manual
GANA SM	Sealant Manual

1.2 Submittals: Manufacturers Catalog Data for Glazing and Setting Materials.

1.3

2.

PART 2 PRODUCTS

2.1 Glass: ASTM C 1036, Clear Glass, Type I, Class 1 (clear), Quality q5. 1/8 inch thick for openings up to 15 square feet, 3/16 inch for 15 to 30 square feet, and 1/4 inch for 30 to 45 square feet.

2.2 Setting and Sealing Materials: As specified in GANA GM, SIGMA TM-3000, and manufacturer's recommendations.

2.2.1 Glazing Compound: ASTM C 669. For face glazing metal sash. Do not use with insulating glass units or laminated glass.

2.2.2 Elastomeric Sealant: ASTM C 920, Type S or M, Grade NS, Class 12.5, Use G. Use for channel or stop glazing metal sash.

2.2.3 Preformed Channels: Neoprene, vinyl, or rubber, as recommended by glass manufacturer for the particular use.

2.2.4 Sealing Tapes: Preformed, semisolid, polymeric-based material of proper size and compressibility for the particular condition. Use where glazing rabbet is designed for tape and tape is recommended by glass manufacturer.

2.2.5 Setting Blocks and Edge Blocks: Neoprene of 70 to 90 Shore "A" durometer hardness, chemically compatible with sealants used. Sizes as recommended by glass manufacturer.

3.

PART 3 EXECUTION

3.1 Preparation: Completely clean the opening of all rust, dirt and debris that will interfere with attaining a proper seal of the glazing. Conform to GANA GM, GANA SM, SIGMA TM-3000, and manufacturer's recommendations. Determine sizes to provide required edge clearances by measuring actual opening to receive glass. Grind edges smooth that will be exposed in finish work.

3.2 Glass Setting: Handle and install glazing materials in accord with GANA GM, GANA SM, SIGMA TM-3000, and manufacturer's instructions. Use beads or stops furnished with items to be glazed to secure glass in place.

3.3 Cleaning: Clean glass surfaces and remove labels, paint spots, putty, and other defacement as required to prevent staining. Glass shall be clean at time work is accepted.

-- End of Section –

DIVISION 9 – FINISHES

SECTION 09915
PAINTING OF NAVIGATIONAL AID STRUCTURES

1.

PART-1 GENERAL

1.1 Applicable Publications

STEEL STRUCTURES PAINTING COUNCIL (SSPC):

SSPC-PA-1	(1991) Shop, Field and Maintenance Painting
SSPC-PA-2	(1991) Measurement of Dry Paint Thickness With Magnetic Gages
SSPC Paint 22	Epoxy Polyamide Paints (Primer, Intermediate, and Topcoat)
SP-3	Solvent Cleaning
SP-2	Hand Tool Cleaning
SP-3	Power Tool Cleaning
SSPC-Guide to Vis 3	Visual Standard for Power- and Hand- Tool Cleaned Steel

FEDERAL SPECIFICATIONS AND STANDARDS (Fed. Spec/Std):

Fed Std 595	Colors Used in Government Procurement
MIL-P-24441	Zinc Rich Primer
MIL-C-83286B	Coating; Urethane, Alaphatic, Isocyanate

1.2 Submittals

1.2.1 Paint System Descriptive Literature: Provide a complete description of the coating system. Include the name of the manufacturer, the product name, conditions and directions for use. Provide a description for each of the following components:

a. Zinc-rich primer

b. Epoxy intermediate coat

c. Urethane top coats

1.3 Certificate of compliance: Submit certificates of compliance for the coating system.

1.4 Delivery, Storage and Handling: Paint materials shall be delivered, stored and handled in accordance with manufacturers recommendations. Paints shall remain in their original sealed and labeled containers until used.

2.

PART-2 PRODUCTS

2.1 Paint System

2.1.1 All paints and related products for painting shall be the products of one manufacturer compatible to and integral with each other for the application indicated.

2.1.2 Base (Primer) Coats: Inorganic silicone zinc-rich coating meeting DOD-P-23236 Type 1 Class 3 (referred to as IOZ) and MIL-P-24441/29 Green Primer, Formula 150, Type IV

2.1.3 Intermediate Coats: Heavy duty, high build two component epoxy-polyamide conforming to MIL-P-24441/3A. Color off-white (preferred to as HB epoxy).

2.1.4 Top Coats: High gloss alaphatic isocyanate urethane, 2 component, meeting MIL-C-83286. Color of top coats shall be Fed-Std 595 Insignia White (referred to as urethane).

3.

PART 3 - EXECUTION

3.1 Painting Requirements

3.1.1 General: Provide the Government inspector five days advance notice prior to surface preparation and painting. Allow the government inspector to approve each dry film prior to placing the next coat. Perform measurement in accordance with SSPC-PA-2. Allow each coat to cure as recommended by the manufacturer prior to applying successive coats.

3.1.2 Mixing: Mix paint thoroughly prior to application. Use mechanical stirrers, paddle mixers, can vibrators, or can shakers. If mechanical aids are not available, mixing by hand is acceptable provided the equipment is clean.

3.1.3 Pot-life: After mixing, do not allow paint to set in pots beyond the limits specified by the paint manufacturer. If any limited is exceeded, empty the spray pot and mix new paint materials. Thin paint only as recommended by the manufacturer and discard paint which has exceeded its pot-life.

3.1.4 Applied Thickness: Apply paint materials in accordance with manufacturer's instructions to dry mill thickness specified. Avoid excessive build or dry spray. If either occurs, it shall be removed by blasting and re-coated to the proper thickness.

3.1.5 Defects: All coating shall be free from defects such as sags, pinholes, holidays, voids, bubbles, and other defects. Touch up defects and areas of damage coating with the appropriate paint component prior to the application of succeeding coats. Do not paint within four inches of areas not blast cleaned.

3.2 Atmospheric Conditions: Paint when the following atmospheric conditions are satisfied and conditions will not adversely affect the permanence of the coating system:

a. Ensure that the ambient air temperature is between 50 degrees F and 85 degrees F or as recommended by the manufacture. Do not paint in direct sunlight.
b. Do not paint on wet surfaces in wet weather such as fog, mist or rain.
c. Do not paint when the humidity if above 85 percent or when atmospheric conditions are conducive for rain or thunderstorm activity.

3.3 Surface Preparation

3.3.1 General: Solvent clean and ower and hand tool clean surfaces in accordance with SP-1, 2 and 3. Surface shall be free of dirt, oil, grease and other foreign matter. Use SP-1 emulsion or alkaline cleaner. The cleaned surface when viewed without magnification shall be found free of visible mill scale, rust, corrosion, oxides, paint, oil or other foreign matter. Grind smooth rough welds, burrs and sharp surface projections and corners and ensure welding flux is removed from crevices prior to blast cleaning. Remove abrasive dust upon completion of blast cleaning. Provide a containment curb with liner around the base of the light to contain all liquid generated from SP-1. Surfaces shall be wiped with wet cloths in lieu of power washing. Feather edges with light sanding to blend low areas with intact coating. Inspect in accordance with SSPC-Guide to Vis 3.

3.3.2 Cleaning Defects: Weld splatter, slivers, laminations and underlying mill scale not removed during fabrication and exposed before and during blasting shall be removed by appropriate mechanical means and the edges smoothed.

3.3.3 Atmospheric Limitations: Do not clean when metal surface temperatures are less than 5 degrees F above the dew point and when the relative humidity if above 85 percent. Perform blast cleaning during daylight hours only.

3.4 Painting of steel surfaces

3.4.1 Primer Coats: Apply a two primer coats to prepared surfaces as recommend by the manufacturer to attain a dry film thickness of 2.5 to 3.5 mils. Primer coats shall have a self curing solvent. The cleaned metal surface shall have the prime coat applied within a period not to exceed four hours after cleaning.

3.4.2 Intermediate Coats: Apply one to two coats of a high build epoxy polyamide to achieve a dry film thickness of 4 to 6 mils. Allow individual coats to fully cure prior to applying successive coats. Apply a thin uniform mist coat by thinning the paint with the proper solvent (usually xylene, MIBK or MEK). Allow mist coat to flash dry 15 to 30 minutes before applying the full intermediate coat. Then apply the full intermediate coat in accordance with manufacturer's recommendations.

3.4.3 Top Coats: Apply two coats of aliphatic polyurethane to achieve a dry film thickness of three mils. Allow top coat adequate curing time prior to handling items which receive the coating system. The two coats shall be applied as follows: One tack coat, followed in 15 to 30 minutes by the remainder of the urethane coat.

3.5 Equipment

3.6 General: Spray equipment shall have a ½ inch minimum inside diameter hose no more than 50 feet in length. The air hose shall have a moisture trap between the air supply and the pressure-pot pressure feed to the gun which continually traps and bleeds off water or oil from the air supply. The equipment shall have suitable and properly working regulators and gauges for both the air supply to the pressure pot and the air supply to the pressure gun.

3.6.1 Pressures: The spray pot pressure shall be regulated to deliver not more than 24 ounces per minute of paint material from the spray gun. The air pressure shall be regulated to comply with the recommendations of the coating manufacturer.

3.6.2 Technique: Clean lines and pot before adding new paint material. Hold the spray gun at right angles to the surface, no closer than 6 inches nor more than 10 inches from the surface. Make parallel, uniform passes and overlap the previous pass by 50 percent. Large surfaces shall receive passes in two directions at right angles to each other (cross-hatched). Brush out all runs and sags immediately.

3.6.3 Roller Application: Use of rollers will be permitted for field painting of surfaces on the ice as allowed by the Contracting Officer's Representative. Apply coatings with rollers only under atmospheric specified for spray application.

3.6.4 Brush Application: Use brush application only for small areas not readily accessible by sprayer or roller. Brushes shall be of style and quality that will permit proper application of paint. Round or oval brushes shall be used for bolts, irregular surfaces and rough or pitted steel. Paint shall be worked into all crevices and corners. Runs or sags shall be brushed out. In brushing any of the solvent-type coatings, care shall be taken not to lift prior coats. Use brushes for touch up painting.

3.7 Causes for Rejection

3.7.1 Surface Preparation: Surface preparation considered unsatisfactory by the Contracting Officer for any specified reason, including flash rusting, presence of dust, dampness, or unnecessary extended period of time between cleaning and coating.

3.7.2 Coating System Application: Not obtaining the minimum number of coats of the thickness required, insufficient curing time between coats and inadequate drying, curing, hardening of coating and failure to obtain a properly coated surface.

3.8 Coating System Repairs

3.9 Defective Coating: Repair defective areas in the same manner in which the original coating was applied, including preparation. In the event a completely coated surface is found to have insufficient mil thickness the surface shall receive an additional coat or coats until minimum thickness is achieved.

3.10 Inspection: The film thickness of the individual coats shall be within the limits recommended by the manufacturer for the respective coats. Check film thickness with a calibrated film thickness gauge.

---End of Section---

DIVISION 10 – SPECIALTIES

SECTION 10992
GRATING

1.

PART-1 GENERAL

1.1 Applicable Publications

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

ASTM E84	Standard Test Method for Surface Burning Characteristics of BuildingMaterials
ASTM D2584-68	Standard Test Method for Ignition Loss of Cured Reinforced Resins

1.2 Submittals: Grating System Description: Submit copies of the complete description of the grating system, including fasteners and associated items necessary for a complete installation, to be used. This shall include catalog cuts of the load charts, description of the chemical and physical properties, and description of the fastening system. Test reports from the manufacturer showing compliance with ASTM E84 shall be included. Drawings show layout and fastening arrangements shall be included.

2.

PART-2 PRODUCTS

2.1 Fiberglass Grating:

2.1.1 General: All grating shall be fabricated from new fiberglass grating designated as 1-1/2" high, 1-1/2" X 1-1/2" square mesh. Fiberglass grating shall be a reinforced composite molded monolithically with smooth molded surfaces. The top wearing surface shall receive a non-skid treatment. The grating shall be black.

2.1.2 Fire Resistance and Resin System: Grating shall be molded from a premium grade thermosetting resin. The resin system shall be UV resistant. The resin shall exhibit a flame spread rating of 25 or less.

2.1.3 Glass Content: The glass content of the grating shall be a minimum of 25% and a maximum of 35% by weight as determined by ASTM-D-2584 for maximum sunlight and chemical resistance. Grating panels may have no exposed dry glass or voids containing dry glass.

2.1.4 Walking Surface: Fiberglass grating bars shall have a non-porous, concave top surface to provide a skid resistant walking surface.

2.1.5 Minimum Load Requirements: The vendor shall maintain a Statistical Control program to assure that the fiberglass production grating meets published Load/Deflection requirements. The maximum standard deviation shall be less than 2.5%. The vendor shall be required to furnish certified load/deflection SQC charts and load/deflection information to aid in customer evaluation.

2.1.6 Color: Color of grating shall be gray.

3.

PART-3 EXECUTION

3.1 Installation

3.1.1 General: The fiberglass grating shall be installed in accordance with the manufacturer's recommendations. All cut edges shall be sealed to prevent water absorption. All grating shall be fastened to the support steel using stainless steel fasteners and heavyweight elastic locknuts or nylon insert locknuts and in accordance with the manufacturer's instructions.

3.1.2 Fitting: All grating which requires cutting during installation shall have the affected surfaces sealed with catalyzed resin sealant of equal or superior corrosion resistance to the grating.

---End of Section---