

DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD
ENGINEERING SERVICES DIVISION

SPECIFICATIONS
FOR
REPLACE ROOFS AND SHUTTERS
U.S. COAST GUARD STATION
OREGON INLET
NAGS HEAD, NORTH CAROLINA

JUNE 2020

COMMANDING OFFICER
UNITED STATES COAST GUARD
CIVIL ENGINEERING UNIT, RM 2179
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Final

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DIVISION 1
(May 2019 Version)

SECTION 01 11 00
SCOPE OF WORK

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

1.1 Base Work:

1.1.1 Remove and replace cedar shake roof systems and associated components on the Multi-Purpose Building, Shop Building, and Pump House. Remove asphalt shingle roof and sheathing from Guard Shack and replace with new sheathing and cedar shake roof system. This work is provided in the drawings and specifications in accordance with the latest edition of United Facilities Criteria (UFC) 3-110-03, Roofing.

1.2 Work Items:

1.2.1 Item #1: Remove 50 existing hurricane shutters on the Multi-Purpose Building and Shop Building. Patch all holes and voids with sealant. Four (4) existing roll up hurricane shutters are to remain. See Drawings A-04, A-05, and A-06. Install 50 new roll up hurricane shutters on the Multi-Purpose Building and Shop Building. See Drawings A-10, A-11, and A-12.

1.2.2 Item #2: Inspect XPO window flashing seal, lower level of multi-purpose building, and repair any identified defects in the flashing prior to placing new hurricane shutter. See Drawings A-11 and A-15.

1.3 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 will be made available in a format determined by the solicitation method. CEU Cleveland will not provide hard copies of drawings.

2.1	Construction Drawings:	<u>CG DWG. 8603-D SHEETS 1 THROUGH 17</u>
2.2	Reference Drawings:	<u>None</u>
2.3	Reference Documents:	<u>CEUC USCG Approved Equipment Enrollment Catalog.pdf</u> <u>CEUC Equipment Enrollment Form.xlsx</u>

SECTION 01 12 16
PROJECT PHASING

1. To minimize interference with Coast Guard operations, utilize the following phasing sequence to accomplish contract work. Coordinate timing between successive phases with Coast Guard personnel to allow for necessary relocations.

PHASE I – Coordinate contractor laydown area with COR. Mobilize equipment and stage materials.

PHASE II – Remove lightning protection system from Shop Building and store for reinstallation. Remove and replace Shop Building roof system. Reinstall lightning protection system.

PHASE III – Remove lightning protection system from Multi-Purpose Building and store for reinstallation. Remove and replace Multi-Purpose Building roof systems. Reinstall lightning protection system.

PHASE IV – Remove existing hurricane shutters from Shop Building and Multi-Purpose Building. Inspect XPO window flashing and repair as necessary. Install new hurricane shutters on Shop Building and Multi-Purpose Building.

PHASE V – Remove and replace roof systems on Pump House and Guard Shack.

SECTION 01 14 00
CONTRACTOR WORK HOURS

1. WORK HOURS: Accomplish work during normal unit operational hours of 7:00 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 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 01 14 13
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 Oregon Inlet, at (252) 441-6260. The Officer in Charge may limit hours of access or levy certain restrictions regarding visits to the site. Schedule site visit at least seven (7) days in advance.

SECTION 01 14 14
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.

SECTION 01 14 16
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 Representative at least five working days in advance of any planned outages of water, electrical, telephone, or sanitary facilities. Notify the Contracting Officer's 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 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 01 14 19 FIELD ADJUSTMENTS

1. The Contracting Officer's 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 01 18 14 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 01 18 17 ENVIRONMENTAL PERMITS

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

SECTION 01 26 13 REQUESTS FOR INFORMATION

1. SUMMARY:

A. Section Includes: Administrative requirements for requests for information.

2. DEFINITIONS:

A. Request for Information: A document submitted by the Contractor requesting clarification of a portion of the contract documents, hereinafter referred to as RFI (Request for Information).

B. Proper RFIs: A properly prepared request for information shall include a detailed written statement that indicates the specific Drawings or Specification in need of clarification and the nature of the clarification requested.

1. RFIs shall be sequentially numbered.

2. Drawings shall be identified by drawing number and location on the drawing sheet.

3. Specifications shall be identified by Section number, page and paragraph.

C. Improper RFIs: RFIs that are not properly prepared.

1. Improperly prepared RFIs will not be processed by the Contracting Officer but will be returned unprocessed.

D. Frivolous RFIs: RFIs that request information that is clearly shown on the Contract Documents.

1. Frivolous RFIs may be returned unprocessed.

3. CONTRACTOR'S REQUESTS FOR INFORMATION:

A. When the Contractor is unable to determine from the Contract Documents, the material, process or system to be installed, the Contracting Officer shall be requested to make a clarification of the indeterminate item.

1. Wherever possible after contract award, such clarification shall be requested at the next site visit by the Contracting Officer's Representative (COR), with the response entered on the daily reports. When clarification at the COR's site visit is not possible either because of the urgency of the need, or the complexity of the item, Contractor shall prepare and submit an RFI to the Contracting Officer.

B. Contractor shall endeavor to minimize the number of RFIs. In the event that the process becomes unwieldy, in the opinion of the Contracting Officer because of the number and frequency of the RFIs submitted, the Contracting Officer may require the Contractor to abandon the process and submit future requests as either submittals, substitutions or requests for change.

C. RFIs shall be submitted on the form provided by the Contracting Officer. Forms completely filled in, and if prepared by hand, shall be fully legible after photocopying or fax transmission. Each page of the attachments to RFIs shall bear the RFI number in the upper right corner.

D. RFIs shall be originated by the Prime Contractor.

1. RFIs from subcontractors or material suppliers shall be submitted through, reviewed by, and signed by the Prime Contractor prior to submitting to the Contracting Officer.

2. The Contracting Officer will neither act on nor respond to RFIs received directly from subcontractors or suppliers.

E. Contractor shall carefully study the Contract Documents to assure that the requested information is not available therein. RFIs which request information available in the Contract Documents will be deemed either Improper or Frivolous as defined above.

F. In cases where RFIs are issued to request clarification of coordination issues, for example, pipe and duct routing, clearances, specific locations of work shown diagrammatically,

and similar items when feasible, Contractor shall fully lay out a suggested solution using drawings or sketches drawn to scale and submit with the RFI.

G. RFIs shall not be used for the following purposes:

1. To request approval of submittals.
2. To request approval of substitutions.
3. To request changes which entail additional cost or credit.
4. To request different methods of performing work than those drawn and specified.

H. In the event the Contractor believes that a clarification by the Contracting Officer results in additional cost or time, the Contractor shall not proceed with the work indicated by the RFI until a modification is prepared and approved. RFIs do not automatically justify a cost increase in the work or a change in the project schedule.

1. Answered RFIs shall not be construed as approval to perform extra work.

I. Contractor shall prepare and maintain a log of RFIs, and at any time requested by the Contracting Officer, Contractor shall furnish copies of the log showing outstanding RFIs. Contractor shall note unanswered RFIs in the log.

J. Contractor shall allow up to 14 days review and response time for RFIs, however, the Contracting Officer will endeavor to respond in a timely fashion to RFIs.

K. The Government reserves the right to issue a change order to expedite the work per FAR Clause 52.243-4, Changes.

4. CONTRACTING OFFICER'S RESPONSE TO RFIs:

A. Contracting Officer will respond to RFIs on one of the following forms:

1. Proper RFIs:
 - a. Change Order
 - b. Request for Proposal
2. Improper or Frivolous RFIs:
 - a. Unprocessed RFIs will be returned with a stamp or notation: Not Reviewed.
3. Answers to properly prepared RFIs may be made directly upon the RFI form with supplementary instructions as necessary.

SECTION 01 31 19 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 01 32 16
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 01 32 26
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 cannot 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 immediately to the Contracting Officer at (216) 902-6278.

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 COR when the contractor fails to submit daily reports.

SECTION 01 33 00
SUBMITTAL PROCEDURES

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. DEVIATIONS

3.1 Deviation from specification:

3.1.1 The Contracting Officer will consider requests for deviations/substitutions only if submitted within fifteen (15) calendar days after award.

3.1.2 Deviations may be considered when a product becomes unavailable through no fault of the Contractor.

3.1.3 The Contractor shall document each request with complete data substantiating compliance of proposed deviation with the Contract documents. *Request for deviation shall not be submitted on a Request for Information (RFI) form.*

3.1.4 A request constitutes a representation that the Contractor:

3.1.4.1 Has investigated proposed product and determined that it meets or exceeds quality level of specified product.

3.1.4.2 Will provide the same warranty for deviation as for specified product.

3.1.4.3 Will coordinate installation and make changes to other work which may be required for the work to be completed at no additional cost to the Government.

3.1.4.4 Waives claims for additional costs or time extension which may subsequently become apparent.

3.1.4.5 Will reimburse the Government for review or redesign services associated with re-approval by the Contracting Officer.

3.1.5 If the deviation has a lesser value than the product originally specified, the Contractor shall provide a credit to the Government.

3.1.6 Deviations will not be considered when they are indicated or implied on Shop Drawings or Product Data submittals, without a separate written request, or when acceptance will require revisions to the Contract documents.

3.2 Deviation submittal procedures:

3.2.1 The Contractor shall mark the "Deviation" block on the Contract Item Acceptance Request (CIAR) form and provide the information stated in Paragraph 3.1.

3.2.2 The Contractor shall submit shop drawings, product data, and certified test results attesting to proposed product equivalence. Burden of proof is on the Contractor.

3.2.3 The Contracting Officer will then review the "deviation" request and either accept or reject the deviation. The Contracting Officer's acceptance of the deviation signifies that the Contractor has provided the information required in Paragraph 3.1. If a credit is due the government, the Contracting Officer will notify the Contract Specialist and the deviation will be processed utilizing the Change Request procedures for a modification to the contract/task order.

3.2.4 The Contracting Officer will notify the Contractor of acceptance/rejection of the deviation via an accepted or rejected CIAR. The Contracting Officer will notify the Contractor, in writing, if a modification to the contract is required.

3.2.5 If a request for deviation is received without the documentation stated above, the Contracting Officer will return the submittal to the contractor for the required information.

4. 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.

4.1 **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.

5. 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.

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

SECTION 01 35 29 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 01 56 00, “Lights, Signs & Barricades”) 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 01 51 00 TEMPORARY UTILITIES

1. GENERAL: All temporary utility connections shall be compatible with existing materials and equipment to provide safe and efficient installation, operation and removal. The contractor shall provide portable toilets and other services necessary to complete the project.

2. ELECTRICITY AND WATER: Electrical power and water are available on the site. The Contractor will be permitted to utilize these utilities in performing the work, provided that the existing systems are not overloaded. The Contractor is responsible for installing and removing all connections to existing systems and shall ensure work and materials are in accordance with local codes. The use of the electricity shall be limited to tools that can be operated on 60 Hertz, single phase, 20 ampere, 120 volt circuits.

3. TELEPHONE: Telephone services will not be available for use by the Contractor.

4. WATER HOOKUP: All connections to the water system shall be equipped with back flow protection. Temporary potable water pipes and hoses shall be sterilized before being placed in operation and every time the system is opened to the atmosphere for repair or relocation.

5. 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 01 51 16 TEMPORARY FIRE PROTECTION

1. **TEMPORARY FIRE PROTECTION:** Install and maintain temporary fire-protection facilities to protect against predictable and controllable fire loss. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations".

1.1 Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher at each floor stairwell and one at each building construction opening for personnel egress.

1.2 Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways and other access routes for fighting fires.

1.3 Provide independent supervision of welding, flame cutting and other open flame work. Provide each fire supervisor with an appropriate fire extinguisher.

1.4 Provide training for all personnel on-site in the proper operation of each type of fire extinguisher provided. Provide all personnel with the proper notification procedure to summon the local fire department or emergency medical service.

1.5 There shall be NO SMOKING or unsupervised open flame permitted inside any structure, temporary or permanent; nor within 25 feet of combustible material or within 50 feet of flammable liquids or compressed gasses.

SECTION 01 55 00 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 01 55 29
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 Oregon Inlet at (252) 441-6260, 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 01 56 00
LIGHTS, SIGNS & BARRICADES

1. GENERAL: The contractor shall provide and maintain all warning lights, sign, and barriers to insure the safety of pedestrians or vehicles traveling near or through any hazardous area caused by the execution of the Contract work.

SECTION 01 57 23
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 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 workplaces.

1.2 If no local, state or federal implementation plans, permits or compliance plans are 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 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.

2. **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 onsite 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.

2.1 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 01 65 00 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 <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program#products>.

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 01 66 13 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, documented/manifested, transported and disposed of in

accordance with all applicable regulations.

2. **METALS**: Unless noted otherwise, scrap metal shall not be landfilled or treated as hazardous waste. Recycle all scrap metal by smelting or any other acceptable recycling process. Scrap metal includes ductwork, light fixture housings, pipe, mechanical and electrical equipment, doors and frames, etc.

3. **SUBMITTALS**: 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 01 66 16 SAFETY DATA SHEETS AND MATERIAL HANDLING PROCEDURES

1. **DATA SHEETS**: Submit a Safety Data Sheet (SDS) for all materials containing hazardous substances required for contract execution. Information provided in SDS's shall meet the requirements of 29 CFR 1910.1200. SDS'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 complies 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 SDS'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 01 35 29, "Safety Program"). The Contracting Officer's 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 SDS and all applicable federal, state, and local laws and regulations.

SECTION 01 71 33 PROTECTION FROM WEATHER AND CONSTRUCTION OPERATIONS

1. **TEMPORARY ENCLOSURES**: Protect existing facilities/equipment and new construction, whether in progress or newly completed, from the adverse effects of the weather

and construction operations. Provide temporary enclosures, coverings and barriers as required to afford protection against exposure, weather and wind damage and from construction operations which could degrade, stain, age, or reduce the finished quality of new work or damage existing facilities and equipment.

2. **REAPPLICATION**: All temporary closures or enclosures shall be made ready for immediate re-application in the event of sudden storms or man-made conditions requiring protection of existing facilities or completed construction.

3. **CLIMATE CONTROL**: Where temporary heat is required during construction to protect work completed or to heat facilities in operation by the Coast Guard, all openings shall be made weather tight to allow the maintenance of 68 degrees F heat minimum with the existing or temporary heating equipment or 78 degrees F. maximum with existing or temporary cooling. **NOTE TO OFFEROR: CLIMATE CONTROL SPECIFICALLY REQUIRED BY THIS CONTRACT WILL BE SPECIFIED IN THE STATEMENT OF WORK AND/OR ASSOCIATED DRAWINGS.**

4. **PIPING**: Prevent water-filled pipes or tanks from freezing for both interior and exterior systems installed or in storage.

SECTION 01 74 00 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 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 Representative, final acceptance will not be approved.

SECTION 01 78 00
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 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 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.

SECTION 01 78 23
OPERATING INSTRUCTIONS AND TRAINING

1. **MANUALS:** Upon completion of the work, but before the work is accepted by the Government, the Contractor must forward two complete bound sets of instructions, tabbed and identified for reference, for all equipment and/or systems provided under this contract. The instructions shall include component parts, manufacturer's certificates, warranty slips, parts lists, descriptive brochures, and manufacturer's maintenance and operating instructions.

SECTION 01 80 00
FACILITY PREVENTATIVE MAINTENANCE PROGRAM (FPMP)

1. **GENERAL:** The intent of this section is for the Contractor to complete the Equipment Enrollment Form (EEF) spreadsheet for systems that have been installed or demolished under this project and are listed in the USCG Approved Equipment Enrollment Catalog. Both the USCG Approved Equipment Enrollment Catalog and Equipment Enrollment Form (EEF) are provided as Reference Documents in the solicitation.

LIST OF SUBMITTALS

SECT	PARA	ITEM	KEY	GENERAL USE COLUMN
Division 01				
01 14 14	1	Pre-Con Site Conditions		
01 32 16	1.a	Construction Schedule		
	1.b	Schedule of Values		
	2.a	Progress Schedule		
01 35 29	3	Safety Plan		
01 57 23	1.1	State Implementation Documentation		
	1.2	Notarized Letter		
	1.3	VOC rating documentation		
	2	Spill Response Plan		
01 66 13	4	Hazardous Waste Documents		
01 66 16	1	SDS		
	3	Protective Measures		
01 78 00	5	As-Built Drawings		
01 78 23	1	Operating Instructions		
01 80 00	3	Equipment Enrollment Form(s)		
Division 02				
02 41 00	1.6	Notification	X	
Division 06				
06 10 00	1.4.3	Preservative-treated		
06 10 00	1.6.1	Certificates of Grade		
Division 07				
07 31 29.13	1.4	Drawings		
07 31 29.13	2.1	Qualifications	X	
07 31 29.13	2.1.1.2	Cedar Shake Shingle	X	
07 31 29.13	2.1.2	Underlayment Membrane	X	
07 31 29.13	1.3	Cleaning and Maintenance		
07 31 29.13	1.7	Contractor's Warranty		
07 31 29.13	1.7	Manufacturer's Warranty		
07 31 29.13	1.7	Inspection Reports		
07 60 00	2.1.1	Exposed Sheet Metal	X	
07 60 00	3.1.9	Base Flashing	X	
07 60 00	3.1.10	Drip Edges	X	
07 60 00	3.1.11	Valley Flashing	X	
07 60 00	3.1.12	Eave Flashing	X	
07 60 00	1.4.3	Cleaning and Maintenance		
07 92 00	2.1	Sealants	X	
07 92 00	2.2	Primers	X	
07 92 00	2.3	Bond Breakers	X	
07 92 00	2.4	Backstops	X	
Division 10				
10 71 13.13	2.2.1	Roll Shutters	X	
10 71 13.13	2.2	Shutter O&M		

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's 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 02 41 00
DEMOLITION AND DECONSTRUCTION
05/10

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.6 (2006) Safety & Health Program Requirements for Demolition Operations - American National Standard for Construction and Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

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

40 CFR 61 National Emission Standards for Hazardous Air Pollutants

1.2 PROJECT DESCRIPTION

1.2.1 Definitions

1.2.1.1 Demolition

Demolition is the process of wrecking or taking out any load-supporting structural member of a facility together with any related handling and disposal operations.

1.2.1.2 Deconstruction

Deconstruction is the process of taking apart a facility with the primary goal of preserving the value of all useful building materials.

1.2.2 General Requirements

Do not begin demolition or deconstruction until authorization is received from the Contracting Officer. The work of this section is to be performed in a manner that maximizes the value derived from the salvage and recycling of materials. Remove rubbish and debris from the station daily; do not allow accumulations inside or outside the buildings. The work includes

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

1.3 ITEMS TO REMAIN IN PLACE

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

1.3.1 Existing Construction Limits and Protection

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide temporary shoring and bracing for support of building components to prevent settlement or other movement. Provide protective measures to control accumulation and migration of dust and dirt in all work areas. Remove snow, dust, dirt, and debris from work areas daily.

1.4 BURNING

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

1.5 AVAILABILITY OF WORK AREAS

Areas in which the work is to be accomplished will be available in accordance with the following schedule:

Schedule	
Areas	Dates
1. Shop Buildings (SB)	(23) weeks from "Construction Contract Award - NTP" to "Final Acceptance"
2. Multi-Purpose Building (MPB)	(23) weeks from "Construction Contract Award - NTP" to "Final Acceptance"

Schedule	
3. Pump House	(23) weeks from "Construction Contract Award - NTP" to "Final Acceptance"
4. Guard Shack	(23) weeks from "Construction Contract Award - NTP" to "Final Acceptance"

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following:

SD-07 Certificates

Notification; G

1.7 QUALITY ASSURANCE

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

1.7.1 Dust and Debris Control

Prevent the spread of dust and debris to occupied portions of the building and 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.

1.8 PROTECTION

1.8.1 Traffic Control Signs

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

Provide a minimum of 2 FAA type L-810 steady burning red obstruction lights on temporary structures (including cranes) over 100 feet, but less than 200 ft, above ground level. The use of LED based obstruction lights are not permitted. Lights shall be operational during periods of reduced visibility, darkness, and as directed by the

Contracting Officer. Maintain the temporary services during the period of construction and remove only after permanent services have been installed and tested and are in operation.

1.8.2 Protection of Personnel

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

1.9 RELOCATIONS

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

1.10 EXISTING CONDITIONS

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Contracting Officer showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs sized 4 inch will be acceptable as a record of existing conditions. Include in the record the elevation of the top of foundation walls, finish floor elevations, possible conflicting electrical conduits, plumbing lines, alarms systems, the location and extent of existing cracks and other damage and description of surface conditions that exist prior to before starting work. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document. Submit survey results.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

3.1.1 Structures

- a. Locate demolition and deconstruction equipment throughout the structure and remove materials so as to not impose excessive loads to supporting walls, floors, or framing.

3.1.2 Roofing

Remove existing roof system and associated components in their entirety down to existing roof deck. Remove Modified Bitumen Membrane roofing to effect the connections with new flashing or roofing. Cut existing felts along straight lines. Remove roofing system without damaging the roof deck. Sequence work to minimize building exposure between demolition or deconstruction and new roof materials installation.

3.1.2.1 Temporary Roofing

Install temporary roofing and flashing as necessary to maintain a watertight condition throughout the course of the work. Remove temporary work prior to installation of permanent roof system materials unless approved otherwise by the Contracting Officer. Make provisions for worker safety during demolition, deconstruction, and installation of new materials as described in paragraphs entitled "Statements" and "Regulatory and Safety Requirements."

3.1.2.2 Reroofing

When removing the existing roofing system from the roof deck, remove only as much roofing as can be recovered by the end of the work day, unless approved otherwise by the Contracting Officer. Do not attempt to open the roof covering system in threatening weather. Reseal all openings prior to suspension of work the same day.

3.1.3 Miscellaneous Metal

Salvage light-gage metal such as metal gutters, and downspouts. Recycle scrap metal as part of demolition and deconstruction operations. Provide separate containers to collect scrap metal and transport to a scrap metal collection or recycling facility, in accordance with the Waste Management Plan.

3.1.4 Carpentry

Salvage for reuse finished boards, and sort by type and size.

3.2 DISPOSITION OF MATERIAL

3.2.1 Reuse of Materials and Equipment for Reinstallation

Remove and store materials and equipment to be reused or relocated to prevent damage and reinstall as the work progresses.

3.3 CLEANUP

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

3.4 DISPOSAL OF REMOVED MATERIALS

3.4.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other nonsalvageable materials resulting from removal operations with all applicable federal, state and local regulations as contractually specified in the Waste Management Plan . Storage of removed materials on the project site is prohibited.

3.4.2 Burning on Government Property

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

3.4.3 Removal to Spoil Areas on Government Property

Transport noncombustible materials removed from demolition and deconstruction structures to designated spoil areas on Government property.

3.4.4 Removal from Government Property

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

3.5 REUSE OF SALVAGED ITEMS

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

-- End of Section --

SECTION 06 10 00
ROUGH CARPENTRY
08/16

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN WOOD COUNCIL (AWC)

AWC NDS (2015) National Design Specification (NDS) for Wood Construction

AWC WFCM (2012) Wood Frame Construction Manual for One- and Two-Family Dwellings

AMERICAN WOOD PROTECTION ASSOCIATION (AWPA)

AWPA M2 (2016) Standard for the Inspection of Preservative Treated Wood Products for Industrial Use

AWPA M6 (2013) Brands Used on Preservative Treated Materials

APA - THE ENGINEERED WOOD ASSOCIATION (APA)

APA E30 (2016) Engineered Wood Construction Guide

APA L870 (2010) Voluntary Product Standard, PS 1-09, Structural Plywood

ASTM INTERNATIONAL (ASTM)

ASTM A153/A153M (2016) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM F547 (2017) Standard Terminology of Nails for Use with Wood and Wood-Base Materials

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2018) International Building Code

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following:

SD-06 Test Reports

Preservative-treated

SD-07 Certificates

Certificates of Grade

1.3 DELIVERY AND STORAGE

Deliver materials to the site in an undamaged condition. Store, protect, handle, and install prefabricated structural elements in accordance with manufacturer's instructions and as specified. Store materials off the ground to provide proper ventilation, with drainage to avoid standing water, and protection against ground moisture and dampness. Store materials with a moisture barrier at both the ground level and as a cover forming a well ventilated enclosure. Adhere to requirements for stacking, lifting, bracing, cutting, notching, and special fastening requirements. Do not use materials that have visible moisture or biological growth. Remove defective and damaged materials and provide new materials. Store separated reusable wood waste convenient to cutting station and area of work.

1.4 GRADING AND MARKING

1.4.1 Lumber

Mark each piece of framing and board lumber or each bundle of small pieces of lumber with the grade mark of a recognized association or independent inspection agency. Such association or agency must be certified by the Board of Review, American Lumber Standards Committee, to grade the species used. Surfaces that are to be exposed to view must not bear grademarks, stamps, or any type of identifying mark. Hammer marking will be permitted on timbers when all surfaces will be exposed to view.

1.4.2 Plywood

Mark each sheet with the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood. The mark must identify the plywood by species group or span rating, exposure durability classification, grade, and compliance with APA L870. Surfaces that are to be exposed to view must not bear grademarks or other types of identifying marks.

1.4.3 Preservative-Treated Lumber

The Contractor is responsible for the quality of treated wood products. Each treated piece must be inspected in accordance with AWWA M2 and permanently marked or branded, by the producer, in accordance with AWWA M6. The Contractor must provide Contracting Officer's Representative (COR) with the inspection report of an approved independent inspection agency that offered products comply with applicable AWWA Standards. The appropriate Quality Mark on each piece will be accepted, in lieu of inspection reports, as evidence of compliance with applicable AWWA treatment standards.

1.5 QUALITY ASSURANCE

1.6 CERTIFICATIONS

1.6.1 Certified Wood Grades

Provide certificates of grade from the grading agency on graded but unmarked lumber or plywood attesting that materials meet the grade requirements specified herein.

PART 2 PRODUCTS

2.1 LUMBER

2.2 PLYWOOD, STRUCTURAL-USE, AND ORIENTED STRAND BOARD (OSB) PANELS

2.2.1 Roof Sheathing

2.2.1.1 Plywood

C-D Grade, Exposure 1, with an Identification Index of not less than 24/0 . Provide exterior grade material with phenol resin for all applications. Repair or replace plywood roof sheathing as required (up to but not to exceed 20% of the overall roof area) once existing cedar shake shingle roofing system has been removed.

2.3 OTHER MATERIALS

2.3.1 Building Paper

FS UU-B-790, Type I, Grade D, Style 1.

2.4 ROUGH HARDWARE

Unless otherwise indicated or specified, rough hardware must be of the type and size necessary for the project requirements. Sizes, types, and spacing of fastenings of manufactured building materials must be as recommended by the product manufacturer unless otherwise indicated or specified. Rough hardware exposed to the weather or embedded in or in contact with preservative treated wood, exterior masonry, or concrete walls or slabs must be hot-dip zinc-coated in accordance with ASTM A153/A153M.

2.4.1 Nails

ASTM F547, size and type best suited for purpose. For sheathing length of nails must be sufficient to extend 1 inch into supports. Nails used with treated lumber and sheathing must be hot-dipped galvanized in accordance with ASTM A153/A153M. Nailing must be in accordance with the recommended nailing schedule contained in AWC WFCM. Where detailed nailing requirements are not specified, nail size and spacing must be sufficient to develop an adequate strength for the connection. The connection's strength must be verified against the nail capacity tables in AWC NDS. Reasonable judgment backed by experience must ensure that the designed connection will not cause the wood to split. If a load situation exceeds a reasonable limit for nails, a specialized connector must be used.

PART 3 EXECUTION

3.1 INSTALLATION

Do not install building construction materials that show visual evidence of biological growth.

Conform to AWC WFCM and install in accordance with the National Association of Home Builders (NAHB) Advanced Framing Techniques: Optimum Value Engineering, unless otherwise indicated or specified. Select lumber sizes to minimize waste. Provide adequate support as appropriate to the application, climate, and modulus of elasticity of the product. Spiking and nailing not indicated or specified otherwise must be in accordance with the Nailing Schedule contained in ICC IBC. Spikes, nails, must be drawn up tight.

3.1.1 Building Paper

Provide building paper where indicated. Apply paper shingle fashion, horizontally, beginning at the bottom of the wall. Lap edges 4 inches, and nail with one inch, zinc-coated roofing nails, spaced 12 inches o.c. and driven through tin discs.

3.1.2 Plywood and Structural-Use Panel Roof Sheathing

Install with the grain of the outer plies or long dimension at right angles to supports. Stagger end joints and locate over the centerlines of supports. Allow 1/8 inch spacing at panel ends and 1/4 inch at panel edges. Nail panels with 8-penny common nails or 6-penny annular rings or screw-type nails spaced 6 inches o.c. at supported edges and 12 inches o.c. at intermediate bearings. Do not use staples in roof sheathing. Where the support spacing exceeds the maximum span for an unsupported edge, provide adequate blocking, tongue-and-groove edges, or panel edge clips, in accordance with APA E30.

-- End of Section --

SECTION 07 31 29.13
WOOD SHINGLES
08/09

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM D226/D226M-09 (2017) Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing

ASTM E108-11 (2017) Fire Tests of Roof Coverings

CEDAR SHAKE AND SHINGLE BUREAU (CSSB)

CSSB (2010) New Roof Construction Manual

NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)

NRCA 3740 (2005) The NRCA Waterproofing Manual

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1793 (2012) Architectural Sheet Metal Manual, 7th Edition

1.2 SYSTEM DESCRIPTION

A. Provide labor, equipment, and materials to remove and replace cedar shake and asphalt shingle roofing systems on structures identified in the construction drawings. Work shall consist of the removal of the existing cedar shake and asphalt shingles and associated roofing complete and provide new cedar shake and asphalt shingles and associated roofing systems. Establish units of work, including removal of existing materials, preparation of existing surfaces and application of underlayment, nailers, and related temporary and/or permanent flashing. The progression of work shall be laid out and presented to the Contracting Officer to prevent other trades from working on or above completed roofing. Do not store materials on roof decks in such a manner as to overstress and/or damage the deck and supporting structure. Avoid placing of loads at midspans of framing so that superimposed loads are well distributed. Vertical surfaces which project through the roof surface at a right angle to the slope of the roof shall have a cricket (sometimes referred to as a saddle) built into the roof to divert water away from the back of the vertical member, as shown.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following:

SD-02 Shop Drawings

Drawings; G

SD-03 Product Data

Cedar Shake Shingle; G

SD-07 Certificates

Qualifications; G

SD-10 Operation and Maintenance Data

Cleaning and Maintenance

Submit manufacturer's instructions for wood shingles.

SD-11 Closeout Submittals

Contractor's Warranty; G
Manufacturer's Warranty; G
Inspection Reports

1.4 QUALITY ASSURANCE

Provide qualified workers, trained and experienced in installing cedar shake shingle roofing systems of this configuration, and submit documentation of 10 consecutive years of work of this type. Show familiarity with and perform work in accordance with SMACNA 1793 and NRCA 3740. As proof of Qualifications, submit documentation showing qualifications of personnel proposed to perform the roofing work, and a list of installations (3 past projects minimum) made identifying when, where, and for whom the installations were made. Submit drawings showing cedar shake shingle installation and appearance details, flashing details, and nailing patterns for the cedar shake shingle.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver materials in manufacturer's unopened bundles and containers with the manufacturer's brand and name marked clearly thereon. Store shingles in accordance with manufacturer's printed instructions and roll goods on-end in an upright position. Immediately before laying,

store roofing felt for 24 hours in an area maintained at a temperature not lower than 50 degrees F.

1.6 PROJECT/SITE CONDITIONS

Perform cedar shake shingle roofing operations when existing and forecasted weather conditions permit work in accordance with manufacturer's recommendations and warranty requirements. Apply underlayment only in fair weather when air and surface temperatures are above 40 degrees F. Provide temporary protection materials maintained on the site at all times for temporary roofing, flashing, and other protection when delays and/or changed weather conditions do not permit completion of each unit of work prior to the end of each working day. Remove and discard materials which have been used for temporary roofing, flashing and other protection.

1.7 WARRANTY

Furnish a manufacturer's warranty against defects in material and contractor's warranty for workmanship of cedar shake shingle roof assembly, including related metal flashing for a period of 10 years from date of final acceptance of the work. Contractor shall inspect the completed project every 12 months for the first 3 years of the warranty period, at year 5 and a final inspection at year 10. Inspections shall be from a remote access device such as a bucket lift or cherry picker and shall not include any foot traffic on the cedar shake shingle.

PART 2 PRODUCTS

2.1 QUALIFICATIONS

Contractor must provide qualification outlining a minimum of 10 years' experience installing cedar shake shingle roofing and submit at least 3 past projects of similar cedar shake shingle roofing work.

2.1.1 Sheathing

3/4 inch rough sawn or dimensional lumber of a naturally durable wood species.

2.1.1.1 Flashing

Roof flashing shall be 26 gauge minimum, painted galvanized steel or painted aluminum.

2.1.1.2 Cedar Shake Shingle

No. 1 fire-retardant treated, class C, red cedar shingles, 18" length, 5 1/2" exposure, grade 1, natural finish.

2.1.1.3 Nails

Stainless steel, hot dipped zinc coated, or aluminum minimum 4d box except for hips and ridges which shall be long enough to penetrate sheathing 3/4 inch.

2.1.2 Underlayment Membrane

Furnish an underlayment membrane on all surfaces to be covered with shingles. Membrane shall consist of asphalt-saturated organic felt No. 30. Submit a 1 by 1 foot section.

2.1.3 Ice Barrier

Three foot wide minimum, self-adhering polymer modified bitumen sheet.

PART 3 EXECUTION

3.1 PROTECTION OF ROOF SURFACES

Use equipment (such as padded ridge ladders) and techniques to prevent damage to roof as a result of foot or material traffic. Personnel who are working on the roof shall wear proper shoes which will not further damage shingles; shoe soles shall be made of a material which will aid in preventing falls.

3.1.1 Installation Plan

Submit a detailed installation plan for approval prior to beginning the work indicating the methods to be used to apply the shingles to the roof and protect the installed shingles from damage. The plan shall contain a narrative description and a drawing clearly depicting the layout for work access devices such as padded roof jacks for walkways, padded chicken walk placements between walkways, and other means of protecting newly installed shingles. Details shall be provided that clearly indicate how work access devices shall be installed/incorporated and the sequence of Work to include these devices. Under no circumstances shall any foot traffic be allowed on newly installed shingles. The Plan shall indicate how the work access devices will keep foot traffic off the shingles at all times.

3.1.2 Inspection

Contractor's quality control inspections and inspections by the Government shall take place as the Work progresses to coordinate with the installation and removal of the work access devices. Notify the Contracting Officer a minimum of 48 hours in advance of requested inspections and maintain work access devices in place to provide access to uninspected areas until final acceptance by the Government.

3.2 PREPARATION OF SURFACES

Roof deck surfaces shall be smooth, clean, firm, dry, and free from loose boards, large cracks, and projecting ends that might damage the roofing. Foreign particles shall be cleaned from interlocking areas to ensure proper seating and to prevent water damming. Prior to installation of shingles, vents and other projections through roofs shall be properly flashed and secured in position, and projecting nails shall be driven firmly home.

3.3 ROOFING FELT

Lay felt in horizontal layers with joints lapped toward eaves and at ends at least 2 inches and secured along laps and at ends as necessary to hold the felt in place and protect the structure until covered with the shingles. Felt shall be preserved unbroken, tight and whole. Felt shall lap hips and ridges at least 12 inches to form a double thickness and shall be lapped 2 inches over the metal of valleys or built-in gutters.

3.4 METAL FLASHING

Metal flashing shall be as shown at intersections of vertical or projecting surfaces through the roof or against which the roof abuts, such as walls, parapets, dormers, and sides of chimneys. Flashing installation shall be in accordance with Section 07 60 00 FLASHING AND SHEET METAL.

3.5 SHINGLING

Install shingles, beginning at the lower end with a double layer starter course, projecting shingles 1-1/2" beyond sheathing. Space adjoining shingles 1/4" to 1/2" apart, nailing each shingle with two nails spaced 3/4" from the edge of shingle and 1" above butt line of subsequent courses. Stagger edge joints a minimum of 1-1/2" in succeeding courses. Install shingles to provide weather exposure as indicated. Cut and fit shingles at ridges and edges to provide maximum weather protection.

3.5.1 Nailing

Fasten each shingle with nails of sufficient length to penetrate the roof decking at least 3/4 inch or through the decking thickness, whichever is less. Where the underside of roof decking is exposed to view, such as in overhanging eaves, the nails shall be long enough to penetrate the roof decking but not so long that they may be driven through the decking. The heads of shingling nails shall just touch the shingle and shall not be driven "home" or draw the shingle but left with the heads just clearing the shingle so that the shingle hangs on the nail. Nails in shingles, overlapping sheet metalwork shall not puncture the sheet metal. Exposed nails are permissible only in top courses where unavoidable but covered with elastic cement. Hip shingles and ridge shingles shall be laid in elastic cement spread thickly over unexposed surface of under courses of shingle, nailed securely in place.

3.5.2 Vertical Surfaces

Fit shingles neatly around pipes, ventilators, chimneys and other vertical surfaces.

3.5.3 Hips

Lay hips to form a mitered hip as indicated.

3.5.4 Ridges

Lay ridges to form saddle ridges. Pass the nails of the combing shingles through the joints of the shingles below. Lay the combing shingles with the same exposure as the next course down. Project combing shingles sloping away from the direction of the prevailing storms 1 inch above the combing shingles on the opposite side of ridge.

3.5.5 Valleys

Lay valleys to form closed valleys. Form open-type valleys with the main roof at cricket areas. The size of the cricket is largely determined by the roof condition. Unless noted otherwise, the slope of the cricket shall be the same as the slope of the roof.

-- End of Section --

SECTION 07 60 00
FLASHING AND SHEET METAL
05/17

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM B101	(2012) Standard Specification for Lead-Coated Copper Sheet and Strip for Building Construction
ASTM B209	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM D41/D41M	(2011; R 2016) Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
ASTM D4586/D4586M	(2007; E 2012; R 2012) Asphalt Roof Cement, Asbestos-Free

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1793	(2012) Architectural Sheet Metal Manual, 7th Edition
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1.2 GENERAL REQUIREMENTS

Finished sheet metal assemblies must form a weathertight enclosure without waves, warps, buckles, fastening stresses or distortion, while allowing for expansion and contraction without damage to the system. The sheet metal installer is responsible for cutting, fitting, drilling, and other operations in connection with sheet metal modifications required to accommodate the work of other trades. Coordinate installation of sheet metal items used in conjunction with roofing with roofing work to permit continuous, uninterrupted roofing operations.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following:

SD-02 Shop Drawings

Exposed Sheet Metal Coverings; G

Base Flashing; G

Drip Edges; G

Valley Flashing; G

Eave Flashing; G

SD-10 Operation and Maintenance Data

Cleaning and Maintenance

1.4 MISCELLANEOUS REQUIREMENTS

1.4.1 Product Data

Indicate thicknesses, dimensions, fastenings, anchoring methods, expansion joints, and other provisions necessary for thermal expansion and contraction. Scaled manufacturer's catalog data may be submitted for factory fabricated items.

1.4.2 Finish Samples

Submit two color charts and two finish sample chips from manufacturer's standard color and finish options for each type of finish indicated.

1.4.3 Operation and Maintenance Data

Submit detailed quality control during installation, cleaning and maintenance, for each type of assembly indicated.

1.5 DELIVERY, HANDLING, AND STORAGE

Package and protect materials during shipment. Uncrate and inspect materials for damage, dampness, and wet-storage stains upon delivery to the job site. Remove from the site and replace damaged materials that cannot be restored to like-new condition. Handle sheet metal items to avoid damage to surfaces, edges, and ends. Store materials in dry, weather-tight, ventilated areas until installation.

PART 2 PRODUCTS

2.1 MATERIALS

Do not use lead, lead-coated metal, or galvanized steel. Use any metal listed by SMACNA 1793 for a particular item, unless otherwise indicated. Provide materials, thicknesses, and configurations in accordance with SMACNA 1793 for each material. Different items need not be of the same metal, except that contact between dissimilar metals must be avoided.

Furnish sheet metal items in 8 to 10 foot lengths. Single pieces less than 8 feet long may be used to connect to factory-fabricated inside and outside corners, and at ends of runs. Factory fabricate corner pieces with minimum 12 inch legs. Provide accessories and other items essential to complete the sheet metal installation. Provide accessories made of the same or compatible materials as the items to which they are applied. Fabricate sheet metal items of the materials specified below and to the gage, thickness, or weight shown in Table I at the end of this section. Provide sheet metal items with mill finish unless specified otherwise. Where more than one material is listed for a particular item in Table I, each is acceptable and may be used, except as follows:

2.1.1 Exposed Sheet Metal Items

Must be of the same material. Consider the following as exposed sheet metal: cap, valley, steeped, base, and eave flashings and related accessories.

2.1.2 Drainage

Do not use copper for an exposed item if drainage from that item will pass over exposed masonry, stonework or other metal surfaces. In addition to the metals listed in Table I, lead-coated copper may be used for such items.

2.1.3 Lead-Coated Copper Sheet

Provide in accordance with ASTM B101.

2.1.4 Aluminum Alloy Sheet and Plate

Provide in accordance with ASTM B209 anodized clear form alloy, and temper appropriate for use. Provide material not less than 0.032-in in thickness.

2.1.4.1 Alclad

When fabricated of aluminum, fabricate the following items with Alclad 3003, Alclad 3004, or Alclad 3005, clad on both sides unless otherwise indicated.

a. Flashing

2.1.5 Finishes

Provide exposed exterior sheet metal and aluminum with a baked on, factory applied color coating of polyvinylidene fluoride (PVF2) or approved equal fluorocarbon coating. Dry film thickness of coatings must be 0.8 to 1.3 mils. Color to be selected from manufacturer's standard range of color choices. Field applications of color coatings are prohibited and will be rejected.

2.1.6 Aluminum Alloy, Extruded Bars, Rods, Shapes, and Tubes

ASTM B221.

2.1.7 Bituminous Plastic Cement

Provide in accordance with ASTM D4586/D4586M, Type I.

2.1.8 Asphalt Primer

Provide in accordance with ASTM D41/D41M.

2.1.9 Fasteners

Use the same metal as, or a metal compatible with the item fastened. Confirm compatibility of fasteners and items to be fastened to avoid galvanic corrosion due to dissimilar materials.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Workmanship

Make lines and angles sharp and true. Free exposed surfaces from visible wave, warp, buckle, and tool marks. Fold back exposed edges neatly to form a 1/2 inch hem on the concealed side. Make sheet metal exposed to the weather watertight with provisions for expansion and contraction.

Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry, and free of defects and projections. For installation of items not shown in detail or not covered by specifications conform to the applicable requirements of SMACNA 1793, Architectural Sheet Metal Manual. Provide sheet metal flashing in the angles formed where roof decks abut walls, curbs, ventilators, pipes, or other vertical surfaces and wherever indicated and necessary to make the work watertight. Join sheet metal items together as shown in Table II.

3.1.2 Nailing

Confine nailing of sheet metal generally to sheet metal having a maximum width of 18 inches. Confine nailing of flashing to one edge only. Space nails evenly not over 3 inch on center and approximately 1/2 inch from edge unless otherwise specified or indicated. Face nailing will not be permitted. Where sheet metal is applied to other than wood surfaces, include in shop drawings, the locations for sleepers and nailing strips required to secure the work. Secure flashing at one-half the normal interval to ensure a wind-resistant installation.

3.1.3 Cleats

Provide cleats for sheet metal 18 inches and over in width. Space cleats evenly not over 12 inches on center unless otherwise specified or indicated. Unless otherwise specified, provide cleats of 2 inches wide by 3 inches long and of the same material and thickness as the sheet metal being installed. Secure one end of the cleat with two nails and the cleat folded back over the nailheads. Lock the other end into the seam. Pre-tin cleats for soldered seams.

3.1.4 Seams

Straight and uniform in width and height with no solder showing on the face.

3.1.4.1 Flat-lock Seams

Finish not less than 3/4 inch wide.

3.1.4.2 Loose-Lock Expansion Seams

Not less than 3 inches wide; provide minimum one inch movement within the joint. Completely fill the joints with the specified sealant, applied at not less than 1/8 inch thick bed.

3.1.5 Soldering

Where soldering is specified, apply to copper, terne-coated stainless steel, zinc-coated steel, and stainless steel items. Pre-tin edges of sheet metal before soldering is begun. Seal the joints in aluminum sheets of 0.040 inch or less in thickness with specified sealants. Do not solder aluminum.

3.1.6 Welding and Mechanical Fastening

3.1.6.1 Mechanical Fastening of Aluminum

Use No. 12, aluminum alloy, sheet metal screws or other suitable aluminum alloy or stainless steel fasteners. Drive fasteners in holes made with a No. 26 drill in securing side laps, end laps, and flashings. Space fasteners 12 inches maximum on center. Where end lap fasteners are required to improve closure, locate the end lap fasteners not more than 2 inches from the end of the overlapping sheet.

3.1.7 Protection from Contact with Dissimilar Materials

3.1.7.1 Aluminum

Do not allow aluminum surfaces in direct contact with other metals except stainless steel, zinc, or zinc coating. Where aluminum contacts another metal, paint the dissimilar metal with a primer followed by two coats of aluminum paint. Where drainage from a dissimilar metal passes over aluminum, paint the dissimilar metal with a non-lead pigmented paint.

3.1.7.2 Metal Surfaces

Paint surfaces in contact with mortar, concrete, or other masonry materials with alkali-resistant coatings such as heavy-bodied bituminous paint.

3.1.7.3 Wood or Other Absorptive Materials

Paint surfaces that may become repeatedly wet and in contact with metal with two coats of aluminum paint or a coat of heavy-bodied bituminous paint.

3.1.8 Expansion and Contraction

Provide expansion and contraction joints at not more than 32 foot intervals for aluminum and at not more than 40 foot intervals for other metals. Provide an additional joint where the distance between the last expansion joint and the end of the continuous run is more than half the required interval. Space joints evenly. Join extruded aluminum gravel stops and fascia by expansion and contraction joints spaced not more than 12 feet apart.

3.1.9 Base Flashing

Lay the base flashings with each course of the roof covering, shingle fashion, where practicable, where sloped roofs abut chimneys, curbs, walls, or other vertical surfaces. Extend up vertical surfaces of the flashing not less than 8 inches and not less than 4 inches under the roof covering. Where finish wall coverings form a counterflashing, extend the vertical leg of the flashing up behind the applied wall covering not less than 6 inches. Overlap the flashing strips or shingles with the previously laid flashing not less than 3 inches. Fasten the strips or shingles at their upper edge to the deck. Horizontal flashing at vertical surfaces must extend vertically above the roof surface and fastened at their upper edge to the deck a minimum of 6 inches on center with large headed aluminum roofing nails hex headed, galvanized shielded screws a minimum of 2 inch lap of any surface. Solder end laps and provide for expansion and contraction. Extend the metal flashing over crickets at the up-slope side of chimneys, and similar vertical surfaces extending through sloping roofs, the metal flashings. Extend the metal flashings onto the roof covering not less than 4.5 inches at the lower side of dormer walls, chimneys, and similar vertical surfaces extending through the roof decks. Install and fit the flashings so as to be completely weathertight. Provide factory-fabricated base flashing for interior and exterior corners. Do not use metal base flashing on built-up roofing.

3.1.10 Metal Drip Edges

Provide a metal drip edge, designed to allow water run-off to drip free of underlying construction, at eaves and rakes prior to the application of roofing shingles. Apply directly on the wood deck at the eaves and over the underlay along the rakes. Extend back from the edge of the deck not more than 3 inches and secure with compatible nails spaced not more than 10 inches on center along upper edge.

3.1.11 Valley Flashing

Provide valley flashing free of longitudinal seams, of width sufficient to extend not less than 6 inches under the roof covering on each side. Provide a 1/2 inch fold on each side of the valley flashing. Lap the sheets not less than 6 inches in the direction of flow and secure to roofing construction with cleats attached to the fold on each side. Nail the tops of sheets to roof sheathing. Space the cleats not more than 12 inches on center. Provide exposed flashing not less than 4 inches in width at the top and increase one inch in width for each additional 8 feet in length. Where the slope of the valley is 4.5 inches or less per foot, or the intersecting roofs are on different slopes, provide an inverted V-joint, one inch high, along the centerline of the valley; and extend the edge of the valley sheets 8 inches under the roof covering on each side.

3.1.12 Eave Flashing

One piece in width, applied in 8 to 10 foot lengths with expansion joints spaced as specified in paragraph EXPANSION AND CONTRACTION. Provide a 3/4 inch continuous fold in the upper edge of the sheet to engage cleats spaced not more than 10 inches on center. Locate the upper edge of flashing not less than 18 inches from the outside face of the building, measured along the roof slope. Fold lower edge of the flashing over and loose-lock into a continuous edge strip on the fascia. Where eave flashing intersects metal valley flashing, secure with one inch flat locked joints with cleats that are 10 inches on center.

3.1.13 Single Pipe Vents

See Table I, footnote (d). Set flange of sleeve in bituminous plastic cement and nail 3 inches on center. Bend the top of sleeve over and extend down into the vent pipe a minimum of 2 inches. For long runs or long rises above the deck, where it is impractical to cover the vent pipe with lead, use a two-piece formed metal housing. Set metal housing with a metal sleeve having a 4 inches roof flange in bituminous plastic cement and nailed 3 inches on center. Extend sleeve a minimum of 8 inches above the roof deck and lapped a minimum of 3 inches by a metal hood secured to the vent pipe by a draw band. Seal the area of hood in contact with vent pipe with an approved sealant.

3.1.14 Stepped Flashing

Provide stepped flashing where sloping roofs surfaced with shingles abut vertical surfaces. Place separate pieces of base flashing in alternate shingle courses.

3.2 PAINTING

Touch ups in the field may be applied only after metal substrates have been cleaned and pretreated in accordance with manufacturer's written instructions and products.

Field-paint sheet metal for separation of dissimilar materials.

3.2.1 Aluminum Surfaces

Clean with solvent and apply one coat of zinc-molybdate primer and one coat of aluminum paint.

3.3 CLEANING

Clean exposed sheet metal work at completion of installation. Remove grease and oil films, handling marks, contamination from steel wool, fittings and drilling debris, and scrub-clean. Free the exposed metal surfaces of dents, creases, waves, scratch marks, and solder or weld marks.

3.4 REPAIRS TO FINISH

Scratches, abrasions, and minor surface defects of finish may be repaired in accordance with the manufacturer's printed instructions and as approved. Repair damaged surfaces caused by scratches, blemishes, and variations of color and surface texture. Replace items which cannot be repaired.

3.5 FIELD QUALITY CONTROL

Include quality control, but not be limited to, the following:

- a. Observation of environmental conditions; number and skill level of sheet metal workers; condition of substrate.
- b. Verification that specified material is provided and installed.
- c. Inspection of sheet metalwork, for proper size(s) and thickness(es), fastening and joining, and proper installation.

3.5.1 Procedure

Submit for approval prior to start of roofing work. Include a checklist of points to be observed. Document the actual quality control observations and inspections. Furnish a copy of the documentation to the Contracting Officer at the end of each day.

TABLE I. SHEET METAL WEIGHTS, THICKNESSES, AND GAGES	
Sheet Metal Items	Aluminum, inch
Flashings:	
Base	.040
Eave	-
Stepped	.032
Valley	.032
Pipe vent sleeve (a)	
(a) 2.5 pound minimum lead sleeve with 4 inch flange. Where lead sleeve is impractical, refer to paragraph SINGLE PIPE VENTS for optional material.	

-- End of Section --

SECTION 07 92 00
JOINT SEALANTS
08/16

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM C509	(2006; R 2015) Elastomeric Cellular Preformed Gasket and Sealing Material
ASTM C920	(2018) Standard Specification for Elastomeric Joint Sealants
ASTM C1193	(2013) Standard Guide for Use of Joint Sealants
ASTM C1521	(2013) Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints
ASTM D1056	(2014) Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following:

SD-03 Product Data

Sealants; G

Primers; G

Bond Breakers; G

Backstops; G

1.3 PRODUCT DATA

Include storage requirements, shelf life, curing time, instructions for mixing and application, and accessories. Provide manufacturer's Safety Data Sheets (SDS) for each solvent, primer and sealant material proposed.

1.4 ENVIRONMENTAL CONDITIONS

Apply sealant when the ambient temperature is between 40 and 90 degrees F.

1.5 DELIVERY AND STORAGE

Deliver materials to the jobsite in unopened manufacturers' sealed shipping containers, with brand name, date of manufacture, color, and material designation clearly marked thereon. Label elastomeric sealant containers to identify type, class, grade, and use. Handle and store materials in accordance with manufacturer's printed instructions. Prevent exposure to foreign materials or subjection to sustained temperatures exceeding 90 degrees F or lower than 0 degrees F. Keep materials and containers closed and separated from absorptive materials such as wood and insulation.

1.6 QUALITY ASSURANCE

1.6.1 Compatibility with Substrate

Verify that each sealant is compatible for use with each joint substrate in accordance with sealant manufacturer's printed recommendations for each application.

1.6.2 Joint Tolerance

Provide joint tolerances in accordance with manufacturer's printed instructions.

1.6.3 Adhesion

Provide in accordance with ASTM C1193 or ASTM C1521.

PART 2 PRODUCTS

2.1 SEALANTS

Provide sealant products that have been tested, found suitable, and documented as such by the manufacturer for the particular substrates to which they will be applied.

In areas with ambient temperatures that exceed 110 degrees F, do not use polybutene, bituminous, acrylic-latex, polyvinyl acetate latex sealants, polychloroprene (neoprene), polyvinyl chloride (PVC), and polyurethane foams, and neoprene, PVC, and styrene butadiene

rubber extruded seals and closure strips due to these materials having maximum recommended surface temperature ranges from 130 to 180 degrees F.

2.1.1 Exterior Sealants

For joints in vertical surfaces, provide ASTM C920, Type S or M, Grade NS, Class 25, Use NT. For joints in horizontal surfaces, provide ASTM C920, Type S or M, Grade P, Class 25, Use T.

2.2 PRIMERS

Non-staining, quick drying type and consistency as recommended by the sealant manufacturer for the particular application. Provide primers for interior applications that meet the indoor air quality requirements of the paragraph SEALANTS above.

2.3 BOND BREAKERS

Type and consistency as recommended by the sealant manufacturer to prevent adhesion of the sealant to the backing or to the bottom of the joint. Provide bond breakers for interior applications that meet the indoor air quality requirements of the paragraph SEALANTS above.

2.4 BACKSTOPS

Provide glass fiber roving, neoprene, butyl, polyurethane, or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Provide 25 to 33 percent oversized backing for closed cell and 40 to 50 percent oversized backing for open cell material, unless otherwise indicated. Provide backstop material that is compatible with sealant. Do not use oakum or other types of absorptive materials as backstops.

2.4.1 Rubber

Provide in accordance with ASTM D1056, Type 1, open cell, or Type 2, closed cell, Class A round cross section for cellular rubber sponge backing.

2.4.2 Synthetic Rubber

Provide in accordance with ASTM C509, Option I, Type I preformed rods for synthetic rubber backing.

2.4.3 Neoprene

Provide in accordance with ASTM D1056, closed cell expanded neoprene cord Type 2, Class C, Grade 2C2 for neoprene backing.

2.5 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer and in accordance with environmental requirements herein. Protect adjacent aluminum and bronze surfaces from solvents.

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

Perform a field adhesion test in accordance with manufacturer's instructions and ASTM C1193, Method A or ASTM C1521, Method A, Tail Procedure. Remove sealants that fail adhesion testing; clean substrates, reapply sealants, and re-test. Test sealants adjacent to failed sealants.

3.2 SURFACE PREPARATION

Prepare surfaces according to manufacturer's printed installation instructions. Clean surfaces from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would destroy or impair adhesion. Remove oil and grease with solvent; thoroughly remove solvents prior to sealant installation. Wipe surfaces dry with clean cloths. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant. For surface types not listed below, provide in accordance with sealant manufacturer's printed instructions for each specific surface.

3.2.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finished work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue free solvent. Remove resulting debris and solvent residue prior to sealant installation.

3.2.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive prior to sealant application. For removing protective coatings and final cleaning, use non-staining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

3.2.3 Concrete and Masonry Surfaces

Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Remove laitance, efflorescence and loose mortar from the joint cavity. Remove resulting debris prior to sealant installation.

3.2.4 Wood Surfaces

Ensure wood surfaces that will be in contact with sealants are free of splinters, sawdust and other loose particles.

3.3 SEALANT PREPARATION

Do not add liquids, solvents, or powders to sealants. Mix multicomponent elastomeric sealants in accordance with manufacturer's printed instructions.

3.4 APPLICATION

3.4.1 Joint Width-To-Depth Ratios

Acceptable Ratios:

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch	1/2 of width	Equal to width
For wood, concrete, masonry:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch to 1/2 inch	1/4 inch	Equal to width
over 1/2 inch to 1 inch	1/2 inch	5/8 inch
Over 1 inch	prohibited	

Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding is prohibited at metal surfaces.

3.4.2 Unacceptable Sealant Use

Do not install sealants in lieu of other required building enclosure weatherproofing components such as flashing, drainage components, and joint closure accessories, or to close gaps between walls, floors, roofs, windows, and doors, that exceed acceptable installation tolerances. Remove sealants that have been used in an unacceptable manner and correct building enclosure deficiencies to comply with contract documents requirements.

3.4.3 Masking Tape

Place masking tape on the finished surface on one or both sides of joint cavities to protect adjacent finished surfaces from primer or sealant smears. Remove masking tape within 10 minutes of joint filling and tooling.

3.4.4 Backstops

Provide backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide joints in specified depths. Provide backstops where indicated and where backstops are not indicated but joint cavities exceed the acceptable maximum depths specified in JOINT WIDTH-TO-DEPTH RATIOS Table.

3.4.5 Primer

Clean out loose particles from joints immediately prior to application of. Apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's printed instructions. Do not apply primer to exposed finished surfaces.

3.4.6 Bond Breaker

Provide bond breakers to surfaces not intended to bond in accordance with, sealant manufacturer's printed instructions for each type of surface and sealant combination specified.

3.4.7 Sealants

Provide sealants compatible with the material(s) to which they are applied. Do not use a sealant that has exceeded its shelf life or has jelled and cannot be discharged in a continuous flow from the sealant gun. Apply sealants in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Work sealant into joints so as to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Apply sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply additional sealant, and tool smooth as specified. Apply sealer over sealants in accordance with the sealant manufacturer's printed instructions.

3.5 PROTECTION AND CLEANING

3.5.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled and no residual tape marks remain.

3.5.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

- a. **Masonry and Other Porous Surfaces:** Immediately remove fresh sealant that has been smeared on adjacent masonry, rub clean with a solvent, and remove solvent residue, in accordance with sealant manufacturer's printed instructions. Allow excess sealant to cure for 24 hours then remove by wire brushing or sanding. Remove resulting debris.
- b. **Metal and Other Non-Porous Surfaces:** Remove excess sealant with a solvent moistened cloth. Remove solvent residue in accordance with solvent manufacturer's printed instructions.

-- End of Section --

SECTION 10 71 13.13
STORM SHUTTERS
04/06

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

- | | |
|------------------------------|---|
| AAMA 611 | (2014) Voluntary Specification for Anodized Architectural Aluminum |
| AAMA 2604 | (2017a) Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels |
| AAMA/WDMA/CSA 101/I.S.2/A440 | (2011; Update 1 2014) North American Fenestration Standard/Specification for Windows, Doors, and Skylights |

ASTM INTERNATIONAL (ASTM)

- | | |
|-----------------|--|
| ASTM A653/A653M | (2019) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process |
| ASTM B221 | (2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes |
| ASTM D4216 | (2017) Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly (Vinyl Chloride) (CPVC) Building Products Compounds |

1.2 DEFINITIONS

1.2.1 Tropical Cyclones

Tropical Cyclone is a terminology for storms of cyclonic atmospheric conditions originating over tropical waters. The following are international classifications for tropical cyclones:

- a. Tropical disturbance: Thunderstorms in the tropics for 24 hours or more.
- b. Tropical depression: Wind speed 38 miles per hour (33 knots) or less.
- c. Tropical storm: Wind speed range of 39 to 73 miles per hour (34 to 63 knots).
- d. Hurricane: Wind speed 74 miles per hour or more (64 knots).

1.2.2 Weather Warnings

Weather warnings are issued for expected wind velocities. The following are international terminologies issued for weather warnings:

- a. Gale warnings: Issued for expected wind velocity of 39-54 miles per hour (34-47 knots).
- b. Storm warnings: Issued for expected wind velocity of 55-73 miles per hour (48-63 knots).
- c. Hurricane watch: Issued for hurricane conditions within 36 hours.
- d. Hurricane warning: Issued for sustained winds of 74 miles per hour (64 knots) expected in 24 hours or less.

1.2.3 Wind Velocities

Wind velocities for tropical cyclones and weather warnings are measurements taken 32 feet 10 inches above ground level.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following:

SD-02 Shop Drawings

Roll shutters; G

Submit plans coordinated with shutter schedule, elevations of shutter units, half-sized sections, thickness and gages of materials, fastenings, method of anchorage, size and spacings of anchors, and location of hardware. Include frame and mullion details, details of installation, and connection to other work, including details of adjacent window and wall construction.

Schedule of shutters

Identification numbers, locations, sizes, and types of shutters.

SD-03 Product Data

Roll shutters

Submit for shutters and accessories.

SD-10 Operation and Maintenance Data

Shutters; G

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver products to the project site in undamaged condition. Store products out of contact with the ground, under weathertight covering, and protect against damage. Damaged shutters shall be repaired to an "as new" condition as approved by the Contracting Officer. If shutters cannot be repaired, the Contractor shall replace the damaged units.

1.5 PERFORMANCE REQUIREMENTS

Storm shutters shall be fabricated and reinforced to withstand a minimum wind load 80 pounds per square foot. The maximum allowable deflection is 1/30 of the opening width or 2 inches, whichever is less. The maximum deflection shall be a minimum of one inch from the window glass.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Aluminum

AAMA/WDMA/CSA 101/I.S.2/A440 and ASTM B221.

2.1.2 Polyvinyl Chloride (PVC)

ASTM D4216.

2.2 SHUTTERS

2.2.1 Roll Shutters

2.2.1.1 Slats

- a. Aluminum slats. Extruded aluminum 6063-T6, double wall slats, curved profile 0.50 inch thick and 2 inches wide, with bottom bars complete with weather seal. Maximum wall thickness of 0.50 inch.

- b. Polyvinyl Chloride (PVC) Slats. Reinforced double wall extruded slats, curved profile of 0.50 inch thick and 2 inches wide with bottom slat or bar complete with weather seal. Minimum wall thickness of 0.04 inch. Color shall be uniform through the thickness of the PVC slats.

2.2.1.2 Housing

Aluminum 0.04 inch thick with cast aluminum end frame covers.

2.2.1.3 Frame and Tracks

Extruded aluminum alloy, 6063-T6, standard with the manufacturer.

2.2.1.4 Structural Supports

Provide storm bar assembly of purlins, header frames and mullions of aluminum tube extrusions, 6063-T5, as indicated. Finish shall be the same as the frame and tracks.

2.2.1.5 Reel and Counterbalance Assembly

- a. Extruded aluminum reel, 6063-T.
- b. Spring barrel or shaft shall be corrosion resistant metal of sufficient strength with maximum deflection of 0.03 inch per foot of span. Barrel or shaft shall house oil-tempered, helically wound steel spring. Springs shall be adjustable.

2.2.1.6 Locking Device

The operation of the roll shutter shall automatically hold the shutters in a closed position. Provide non-key locking device to hold shutter in closed position. The shutter shall be closed from the inside.

2.2.1.7 Manual Operation

- a. Manual Strap Operator shall be a recoil strap, 3-1 strap crank. Locate the operator as indicated.
- b. Pole Crank Operator shall be fully encased with self-lubricating hardened steel gears. The crank shall be fixed and located as indicated.

2.2.1.8 Accessories

Provide shutters complete with hardware, stainless steel fasteners, anchors, and other items necessary for complete installation, resist wind loads and corrosion for proper operation.

2.3 FINISHES

2.3.1 Aluminum Surfaces

Provide exposed aluminum with factory finish of anodic coating or organic coating.

a. Anodic Coating: AAMA 611

Integral color-anodized, designation AA-M10-C22-A42, Architectural Class I 0.07 mil or thicker.

b. Organic Coating

Clean and prime aluminum surfaces. Powder coated finish shall be a high performance finish in accordance with AAMA 2604 with total dry film thickness of not less than 1.2 mil. The finish color shall be as indicated.

2.3.2 Concealed Metal Surfaces

a. Concealed ferrous metal surface shall be hot dipped galvanized.

b. Surfaces to receive a finish shall have a zinc coating, a phosphate treatment, and a shop prime coat of rust-inhibitive paint. The galvanized coating shall conform to ASTM A653/A653M, coating designation products. The prime coat shall be compatible with phosphate treatments and applied by dipping or spraying.

PART 3 EXECUTION

3.1 EXAMINATION

3.1.1 Field Measurement

Field measure for exact dimensions to fabricate shutters on exterior surface of wall.

3.1.2 Windows

Verify location of operable window sash to lock shutters from inside the building.

3.2 INSTALLATION

3.2.1 Method of Installation

Install shutters on exterior wall surfaces with stainless steel fasteners and in accordance with manufacturer's printed instructions. Locate the fasteners a minimum of 3 inches from the edge.

3.2.2 Dissimilar Materials

Where aluminum surfaces are in contact or fastened to masonry, concrete, wood, or dissimilar metals, except stainless steel or zinc, the aluminum surface shall be protected from dissimilar materials as recommended in the Appendix to AAMA/WDMA/CSA 101/I.S.2/A440. Surfaces in contact with sealants after installation shall not be coated with any type of protective material.

3.2.3 Field Quality Control

The manufacturer's technical representative shall visit the site as necessary during installation of shutters. Inspections shall be conducted in the presence of the Contracting Officer. An inspection report shall be submitted to the Contracting Officer within 2 working days. The inspection report shall note compliance with manufacturer's instructions and requirements, work quality, deficiencies, and recommended corrective actions.

3.3 ADJUSTING

Test every shutter for ease of operations and lock position in the presence of the Contracting Officer. Lubricate and adjust the roll, accordion, and hinged shutters to operate freely. Adjust the frames of removable shutters to receive the panels.

-- End of Section --