SECTION 01 00 00 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY OF WORK

Project titled "Exterior Improvements Seed Project" includes constructing, maintaining and repairing the exterior of buildings and structures around Malmstrom Air Force Base. Work may include window replacement/installation, exterior painting, masonry repair, soffit and fascia repair, parapet wall repair, siding repair, exterior insulation and finish system (EIFS) repair, overhead door replacement, exterior man doors replacement and other work associated with maintenance and repair on the exterior of buildings and structures.

Provide all items, articles, materials, operations, or methods listed, mentioned or scheduled on the drawings and/or as specified herein, including all labor, materials, equipment, and incidentals necessary and required for completion of the scope of this project.

ANY MATERIAL THAT IS TO BE INSTALLED MUST BE SUBMITTED AND APPROVED BY BASE CEO INSPECTOR AND THE COR.

1.2 UTILITIES:

A. All reasonable quantities of utilities will be made available from existing utilities to the Contractor without charge. Any temporary connection or lines that may be required will be installed, maintained, and removed by the Contractor at his own expense and in such a manner satisfactory to the Contracting Officer. Removal of such connections or lines will be accomplished prior to final acceptance of the construction. The Contractor shall provide any necessary portable power.

1.3 SAFETY:

A. The Contractor shall comply with all existing Occupational Safety and Health Act (OSHA) standards of safety at all times in the performance of this contract. Hazards to the safe use of the premises due to the Contractor's work and/or equipment shall be suitably marked at all times. Pedestrian and vehicle traffic ways shall be kept clear and unobstructed.

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

3.1 INSPECTION:

A. There will be one primary Contracting Officer Representative (COR) assigned to inspect for compliance. An alternate COR will also be assigned and will perform all inspection duties in the absence of the primary COR. The COR will be the spokesman for compliance with the specifications and drawings. Controversies between the COR and the Contractor will be resolved by the Contracting Officer. If, for some reason, a change in the primary or alternate COR is required, the

Contractor will be notified. The Contractor shall coordinate Contractor activities with Construction Management.

3.2 CONTRACTOR VEHICLES AND EQUIPMENT:

A. The Contractor shall provide all vehicles and equipment necessary to accomplish the contract work. Power equipment shall be equipped with safety and noise limiting devices. The equipment shall be in a safe and efficient operating condition. The Contractor shall not park vehicles in the project area during non-working hours. A designated parking area for vehicles and equipment will be provided. Vehicles will not be allowed on lawns or sidewalks without prior written approval. All equipment will be clearly marked with the Company name.

B. Truckload Limits: The following load limits shall apply to all contractor-operated equipment on this project:

April 1 to June 1	--	350 #/inch width of tire
All Other Times	--	400 #/inch width of tire

3.3 CONTINUED USE OF FACILITIES:

A. Nearby building, structures, facilities, and utilities will continue in use by the Government during this contract. The Contractor shall notify the Contracting Officer's Representative (Construction COR and/or Contract Specialist) when a no-work condition will occur for more than one day by the Contractor or sub-contractors (except weekends and federal holidays).

3.4 MAINTENANCE OF AIR FORCE OPERATIONS

A. It is required and essential that the primary use of the nearby facilities continue uninterrupted throughout the contract period. Work, once commenced, shall be carried to completion with a minimum of interruption to Government operations.

3.5 AS-BUILT FIELD DATA

Not applicable.

3.6 CONCEALED WORK

A. All items of work to be concealed shall be Government inspected prior to concealment.

3.7 OPERATING AND MAINTENANCE INSTRUCTIONS:

A. If required: One complete set of instructions, in post-form binders, containing the manufacturer's operating and maintenance instructions for all equipment shall be furnished to the Contracting Officer. In addition, (2) CD-ROM discs containing the same information as the hard copy shall be provided. Where information or instructions are included for more than one model, the Contractor shall clearly mark the model actually installed on the job. The manuals shall be sectionalized using

dividers with labeled tabs identifying the product/item behind the dividers. One complete set shall be furnished at the time test procedures are submitted, and the remaining sets shall be furnished before the contract is completed. Furnishing operating and maintenance instructions does not relieve the Contractor of the responsibility of furnishing framed instructions and schematics where specified. Each binder shall be indelibly marked on the exterior front and edge with the project name, project number, contract number, name of contractor and the date.

3.8 CONTRACTOR FURNISHED EQUIPMENT DATA:

A. Ten days prior to final inspection and acceptance of work, the Contractor shall submit the following data:

1. Equipment List: An itemized equipment list showing unit retail value and nameplate data including serial number, model number, size, manufacturer, etc., for all Contractor furnished electrical and mechanical equipment installed under this contract. A sample form showing minimum data required is provided at the end of this section.

2. Guarantees: Provide a list of all equipment items which are specified to be guaranteed, accomplished by a copy of each specified guarantee therefore. For each specific guaranteed item on the list shall include the name, address, and telephone numbers of the subcontractor who installed the item, the supplier, or distributor and the manufacturer. The completion data of the guarantee period shall correspond to the applicable specification requirements for each guarantee item.

3.9 RESERVED

3.10 SHOP DRAWINGS:

A. If required, shop drawings will include specially prepared technical data for this project and will consist of drawings, diagrams, performance curves, schedules, calculations, measurements, and will expand the general application to this specific project. Shop drawings show complete and accurate descriptions of specific equipment or systems to be installed. This will include detailed drawings showing routings, material types, installation and anchoring methods, component sizes, mounting methods, spacing, interface with existing systems, wiring and electrical systems, and all other details associated with the installation.

3.11 START OF WORK NOTIFICATION:

A. The Contractor shall notify the Construction Management (CM) Office and the Contracting Officer 5 working days in advance of the start of all work. This shall include, but is not limited to, notifying CM when the initial work shall begin; notifying CM when work shall resume after a work stoppage of more than five work days; notifying CM when work shall begin following the end of all specified

exclusion periods. The Contractor shall be aware that the Notice to Proceed is not sufficient notification to the CM when initial work will begin.

3.12 NOTICE OF PRE-FINAL AND FINAL INSPECTIONS:

A. The Contractor shall, after notifying the Construction Office Representative 7 days prior, schedule a date with the Contracting Officer for a pre-final inspection. After all discrepancies found during the pre-final inspections have been corrected, the Contractor shall schedule a final inspection with the Contracting Officer 7 days prior to his projected completion of the project. The red line "As-Built" drawings shall be provided by the Contractor at the final inspection.

3.13 CONSTRUCTION NEAR UTILITY SYSTEMS:

A. All contractors shall be responsible for processing their own **Work Clearance Request (AF Form 103)** and coordinating with CORs as required. The contractor is responsible for obtaining all coordination signatures for the permit. The approved permit shall be valid for a period not to exceed 90 calendar days. **To the maximum extent possible, eliminate permanent markings on pavement and curbs.** The contractor shall be responsible for maintaining all utility markings. Location marks shall be removed after 14 calendar days if not used. All markings shall be accomplished with water-based chalk (Aervoe Pacific Inc. 1-800-227-0196 or equal). No paints will be used. **Detailed permit procedures and guidelines shall be provided to the contractor during the Pre-performance Conference.** Digging within three feet of buried communications cables, environmental monitoring wells, electrical cables, irrigation systems, and gas lines shall be performed by hand digging until the utility is exposed. The Project Inspector shall be notified three days prior to digging within a three-foot area near this utility. A representative from the Communications Office must be present during excavation of Communications Cables. The cable routes must be marked prior to excavation in the area. The Contractor shall be held responsible for any damage to a marked or identified utility by excavation procedures. Once the utility is exposed, mechanical excavation may be used if there is no chance of damage occurring to the cable or piping system. The contractor is responsible for marking all excavations he will do, five (5) work days prior to needing existing utilities marked by the government.

B. Reburial of Exposed Utilities: When existing utility lines are reburied, a tape, detectable by pipe detector systems, shall be installed above the uncovered length of the utility at a depth of 12 inches below grade. Tape shall be a minimum five mil plastic tape with metallic tracer, minimum six inches wide, lettering on tape continuously marked "BURIED UTILITY", and brightly colored. If tape marked "BURIED UTILITY" is not readily available, special order tape with the correct lettering shall be acquired by the contractor.

C. Access to Communications Manhole or Handhole: No communications manhole or handhole shall be entered without first obtaining a fiber optic cable briefing.

Coordinate through Construction Management with the Base Communications Officer.

D. All repairs due to cable cuts on communications cables shall be the responsibility of the Contractor. Repair actions must be accomplished by the current communications contractor and paid for and coordinated under this contract at no additional cost to the Government if the contractor is deemed to be at fault by the Contracting Officer. Work to restore lost service must begin within one hour after the cut and must continue unceasingly until the job is completed, tested, and accepted. Work will be inspected by Communications Squadron and personnel.

E. All utilities or anticipated underground obstacle crossings must be located by manual and other non-destructive excavation (hydro-vac) prior to mechanical excavation. All non-destructive excavation shall be considered incidental to project completion.

3.14 UTILITY OUTAGES

A. All utilities programmed to be interrupted during construction shall be scheduled at least 14 working days in advance of the outage and at a time convenient for the government. The "Utility Outage Notice" will be completed by the Contractor and submitted to Construction Management for approval. No interruptions shall be made until the outage notice is approved and returned to the Contractor. Notification forms that are to be filled out by the contractor, will be provided at the pre-construction conference. Utilities will include all overhead and underground utilities and road closures or partial closures.

3.15 SUBMITTALS

A. Contractor shall submit three copies of all submittals using AF IMT Form 3000, to be recorded on AF Form 66. Submittal items, including samples, shall be marked with a number corresponding to the item number on the AF Form 66, and the page and paragraph number of the specification requiring the submittal. Contractor shall hi-lite specifics when submitting catalogs, etc. It is the **responsibility of the contractor to complete column 13, "Required Submission Date", in the submittal form** and insert dates for each submittal item not already designated by the Government as having a mandatory due date. The contractor shall schedule and submit all required items for major systems (such as HVAC, etc) at the same time to enhance review of interrelated components. It is the Contractor's responsibility to ensure the dates provided on the form do not create any delays in construction. Provide the completed form to the Contracting Officer at or prior to the Pre-Construction meeting. The completed form will then be used by the Government for tracking submittal progress. **If the contractor is proposing to use an exact brand name or product identified, a submittal for that item is not required.** In lieu of a submittal, the contractor shall submit a letter to the Contracting Officer outlining each item that will be provided exactly as specified. These items will also be annotated as such on the AF Form 66. Even though a specified product is provided, in some circumstances a submittal may still be required for color selection,

etc. If a recycle initiative product is specified and the contractor wishes to provide a substitute product, the Contractor shall request the substitution as indicated in paragraph 3.28 of this Section.

3.16 CONTRACTOR STORAGE AREA AND WORK SITE:

A. Prior to notice to proceed, Contractor will be provided a storage area on the base within three miles of the project site or as designated on the site plan. All contractor equipment and materials shall be stored in this area except for materials that will be used on the job within a 48 hour period. Contractor is responsible for the security of assigned storage area (3,000 S.F., more or less). Temporary storage buildings (excluding tractor trailers) sited in the storage area shall conform to the base color scheme (Antique Linen, Fed. No. 23578). Architectural and structural features of all temporary facilities (including tractor trailers) shall be maintained in good repair as required by the Contracting Officer. Storage areas shall be enclosed by 6' chain link fence with access gates. Spare keys to any locked gates shall be provided to the base fire department dispatch office. Storage areas and job sites shall be clean, orderly, and free of debris, demolished/excess materials, etc. Job sites will be cleaned daily and refuse and debris removed from the site. Fences will be maintained. Grass and weeds shall be cut weekly at the storage area and work site. All landscaping, trees and shrubs will be protected, irrigated and maintained. If irrigation system to an existing area is interrupted due to construction activities, the Contractor shall provide a means of temporary irrigation until the permanent system is operational. If at any time during the life of the contract, the Contracting Officer determines that base standards are not being met, he/she may direct the Contractor to perform such actions as necessary to bring the area and/or facilities up to base standards at no additional cost to the Government. If the contractor fails to bring the area and/or facilities up to standards, the Contracting Officer may direct the Contractor to remove themselves and/or the facility/storage unit or materials from the base at no cost to the Government.

3.17 REPAIR OF ROAD CUTS

A. Asphaltic surface shall be completely in-place within 48 hours after placement of base gravel. Between placement of base gravel and pavement, road shall be kept in drivable and passable condition.

3.18 QUALITY CONTROL

A. General. THE CONTRACTOR IS RESPONSIBLE FOR QUALITY CONTROL WHICH IS CONSIDERED BY THE GOVERNMENT TO BE A MAJOR INSPECTABLE ITEM OF THIS CONTRACT. In addition to CONTRACT CLAUSE, INSPECTION OF CONSTRUCTION, the Contractor shall comply with the Quality Control Provisions as specified herein. The Contractor shall perform all Quality Control inspection and/or testing required by this contract unless specifically designated to be performed by the Government. The Quality

Control system must consist of personnel, plans, procedures, and organization necessary to provide materials, equipment, workmanship, fabrication, construction, and operations which comply with contract requirements. The system shall cover construction operations, including fabrication both on-site and off-site, and shall be keyed to the proposed construction sequence. If the Contractor fails to submit an acceptable Quality Control Plan within the time herein prescribed, the Contracting Officer will refuse to allow construction to start.

B. Quality Control Plan: General: Prior to the start of construction, the Contractor's Quality Control Plan must be acceptable to the Government. Construction will be permitted to begin only after acceptance of the contractor's Quality Control Plan. The Contractor's Quality Plan shall identify the personnel, procedures, instructions, records, forms, and as a minimum, shall include the following:

1. A description of the Quality Control management organization including an organizational chart.

2. The number, classifications, qualifications, duties, responsibilities, and authorities of personnel: A copy of a letter, signed by an authorized official of the firm, which describes the responsibilities and delegates the authorities of the Quality Control manager shall be furnished. The Quality Control manager must have a minimum of five years of documented experience in the primary areas of construction included in this contract. Include qualifications in the submitted plan for Government approval.

3. This contract <u>does require a full time Quality Control Manager</u>. The individual assigned may have other duties within the contractor's organization but must commit, as a minimum, an average of two hours per day towards fulfilling the QC requirements of this section. Hours dedicated to this function will be annotated on the submitted QC records.

   a) The Contractor's Quality Control activities to be performed, include those of subcontractors, off-site fabricators, and suppliers. A job specific detailed work item list for inspection purposes will be developed by the contractor. The list will be broken into sections identical to the contract specifications and will contain all inspection actions necessary to ensure full compliance with the contract. A sample from a simplified and generic project is included as Attachment 1 to indicate the level of detail expected in this checklist.

   b) Quality Control testing procedures including corrective actions to be taken where non-compliance is noted by the Quality Control Manager.

   c) Documentation format for Contractor's Quality Control activities and testing. The attached form is to be used for documenting daily inspections, corrective actions, etc.

d) Procedures for ensuring As-Builts are accurate and updated daily.

e) Safety program that ensures complete compliance with OSHA and the U.S. Army Corps of Engineers manual EM 385-1-1, Safety Health Requirements Manual. Any non-compliance issues are the responsibility of the Contractor and not the Government.

f) Methods to ensure scheduled appointments are met and documentation to verify arrival and departure times at the work site.

g) A listing of all required electrical testing and operational tests.

C. Acceptance: The Quality Control Plan will be reviewed and approved, if acceptable, by the Contracting Officer. The Contractor shall make such changes and additions necessary for clarity and completeness as requested by the Contracting Officer. Acceptance is conditional and the Government reserves the right to require the Contractor to make changes in the Quality Control Plan, personnel, and operations to correct deficiencies found by the Government during performance of work. No change shall be implemented prior to acceptance in writing by the Contracting Officer. Non-compliance with the Quality Control Plan will result in one or more of the following actions at the Government's discretion:

1. Directed removal and replacement of the QC Manager.

2. Cure notices and other applicable contracting actions up to and including possible contract termination for default.

3. Other contractual actions deemed appropriate by the Contracting Officer.

D. Quality Control Records: The Quality Control Records shall contain a record of daily inspections for all work accomplished. Specific items of work checked each day will be annotated. All work-in-place must be certified as complying with the contract plans and specifications. Non-compliance items must be clearly noted. Corrective actions must be outlined and detailed for non-compliance items. The Contractor shall maintain daily records, which will be on-the-job site and available for review by the Contracting Officer or his technical representative. Daily reports will be signed by the designated Quality Control Manager and will indicate hours spent on Quality Control that day. A copy of the QC daily reports shall be given to Construction Management by noon on the following day.

E. Submittals: The contractor will submit three copies of the proposed Quality Control Plan for acceptance not more than 10 days after Award. No work will start until acceptance is made by the Contracting Officer. No exceptions will be provided to this requirement.

3.19 CONTRACT PROGRESS SCHEDULE AND REPORT

A. Contractor shall complete Project Schedule Form 3064 using bi-monthly intervals, starting at the Notice to Proceed until Final Acceptance. The project schedule is required to be delivered to the Contracting Officer for review and approval prior to the start of work. Work may not commence until the project schedule is approved unless the Contracting Officer waives the requirement.

B. Contractor shall complete Progress Report Form 3065 and submit to the Contracting Officer every two weeks, starting at the Notice to Proceed until Final Acceptance. The Progress Report shall mirror the intervals approved on the Project Schedule.

3.20 1354 CHECKLIST

A. Contractor shall complete the Property Inventory checklist and submit it to the Contracting Officer 10 days prior to final inspection. Prior to completing the Form 1354 checklist, the Contractor shall request assistance from the Resource Management Flight. The checklist will be delivered to the Contractor at the Preconstruction conference.

3.21 WORK SCHEDULE

A. Working hours for the Contractor will normally be between the hours of 7:00 a.m. and 5:00 p.m. excluding Saturdays, Sundays, and Federal Holidays. With prior government approval, the Contractor may work 4-10 hour days per week, Monday through Thursday or Tuesday through Friday. If the Contractor desires to work during periods other than above, additional government inspection forces may be required. The Contractor must notify the Contracting Officer three days in advance of his/her intention to work during other periods to allow assignment of additional inspection forces when the Contracting Officer determines that they are reasonably available. If such force is reasonably available, the Contracting Officer may authorize the Contractor to perform work during periods other than normal duty hours/days.

B. Weekly construction meetings will be held throughout the duration of the project at a time and place specified in the Pre-construction Conference.

3.22 NUCLEAR DENSOMETERS

A. The use of nuclear densometers or other devices containing radioactive elements on Malmstrom AFB is controlled for safety and management purposes. The contractor must have proof of a Nuclear Regulatory Committee (NRC) permit for its use. The Contractor must also keep all radioactive equipment locked up when not in use and remove it from the base at completion of the work day. All projects requiring use of radioactive devices will be required to submit, for approval 30 days prior to use, the following information for review by the Base Radiation Safety Officer in (341 MDOS/SGOAB, Fax 406 731-2469):

1. Brief description of proposes activity.

2. Copy of current NRC or Agreement State License with NRC form 241

3. Name, address, phone number of responsible local representative and Radiation Safety officer (RSO) named on their license.

4. Copy of part of the Air Force Contract describing work to be done and inclusive dates of the work.

5. An acknowledgement that the installation RSO can make periodic checks on use of the equipment.

3.23 REFERENCES

A. All references listed in these specifications are intended to be the current version or edition.

3.24 ENERGY EFFICIENT PRODUCTS

A. All equipment supplied under this contract that requires energy usage shall be ENERGY STAR compliant.

END OF SECTION 01 00 00

QUALITY CONTROL REPORT TO INSPECTOR

Date: _____

CONTRACT NO.	**TITLE AND LOCATION** MALMSTROM AFB MT	**REPORT NO.**
CONTRACTOR (Prime or Subcontractor)	**NAME OF SUPERINTENDENT OR QC REP**	
WEATHER	**TEMPERATURE**	
WEATHER EFFECTS		

PRIME CONTRACTORS/SUBCONTRACTOR WORKFORCE
(If space provide below is inadequate, use additional sheets

NUMBER	TRADE	HOURS	EMPLOYER	ACTIVITY/TASK PERFORMED	COMP	NON COMP

TOTAL WORK HOURS ON JOB SITE THIS DATE	_____	KTR INITIALS CERTIFY INSPECTION OF ACTIVITY INITIALS
CUMULATIVE TOTAL OF WORK HOURS FROM PREVIOUS REPORT	_____	WERE THERE ANY LOST TIME ACCIDENTS THIS DATE? ☐ YES ☐ NO
TOTAL WORK HOURS FROM START OF CONSTRUCTION		IF YES, A COPY OF THE COMPLETED OSHA REPORT IS REQUIRED

CONSTRUCTION AND PLANT EQUIPMENT LEFT ON JOB SITE UNTIL USE IS COMPLETED

DESCRIPTION	DATE FIRST ON JOB (FIRST TIME ONLY)	HOURS WORKED THIS DATE	HOURS IDLED	DATE OF FINAL REMOVAL FROM JOB SITE

CONSTRUCTION AND PLANT EQUIPMENT NOT LEFT ON JOB SITE PERMANENTLY
(This will include pickup trucks and mobile mounted items, such as compressor, that are also used for transportation to and from the job)

DESCRIPTION	HOURS WORKED	HOURS IDLED

SPEC PARA AND/OR DRAWING NO.	LOCATION AND DESCRIPTION OF DEFICIENCIES (Materials, Equipment, Safety, and/or Workmanship) ACTION TAKEN OR TO BE TAKEN

DEFICIENCIES CORRECTED THIS DATE	REFERENCE REPORT NO.	REFERENCE COMPLIANCE NOTICE NO.

INSPECTION AND/OR TESTING PERFORMED TODAY-FOLLOW WITH REPORT	LOCATION AND/OR ELEMENT OF WORK	REMARKS RESULTS OF INSPECTION/TESTING

SPEC PARA/ DRAWING NO.	EQUIPMENT/MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB (Description, Sizes, Quantity)	SUBMITTAL NO. OR CERTIFICATION	DATE APPROVED

REMARKS:
(Document Total QC Hours for this Day, Directions Received from Government, and Compliance Notices, Etc)

Quality Control Rep Date

CONSTRUCTION REPRESENTATIVES REMARKS AND/OR EXCEPTIONS TO THIS REPORT

Construction Representative Date

SECTION 01 00 10 - SECURITY

PART 1 - GENERAL

1.1 IDENTIFICATION OF EMPLOYEES

The Contractor shall furnish an Entry Authority List (EAL) of employees needing access on base to the Base Contracting Officer. Employees without a badge and identification in their possession will be denied access to the base and work areas. All security issues will be discussed during the preconstruction conference. Note that it may take up to 14 calendar days after submitting EAL to be cleared to receive badge.

1.2 FORCE PROTECTION

Contractor personnel are required to abide by all real world Force Protection Condition (FPCON) measures, random anti-terrorism measures (RAMs), shelter-in-place orders, evacuations and lock-down notices as directed. Examples include mandatory badge or ID checks, facility single points-of-entry and searches of hand carried items.

1.3 ANTI-TERROISM (AT) AWARENESS TRAINING

In accordance with DoDI O-2000.16v1_AFI 10-245-O, Antiterrorism (AT) Program Implementation, ensure Level I - AT Awareness Training is completed by all personnel within 30 days of requiring access, and annually thereafter. The training will be provided by the government. The objective of the training is to provide personnel with requisite knowledge necessary to remain vigilant and enable employment of AT tactics, techniques, and procedures. This training will be conducted by 341st Contracting Squadron, by providing a written pamphlet for review.

1.4 PICTURES ON ANY DOD FACILITY

No pictures shall be allowed of any government property or component, which includes pictures of government property, from non-government property (EX: pictures of buildings physically on Malmstrom AFB, from exterior private property adjacent base perimeter), without prior consent from Malmstrom 341st Contracting Squadron. Any photograph, sketch, picture, drawing, map, or graphical representation of US Government property to include: facilities, aircraft, components, equipment, or other resources, is prohibited without first obtaining permission from the government (e.g. Security Forces convoys, Helicopters, Entry Control Points, etc.)

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.1 CONDUCT OF WORK

A. Coordination and Access to Site: Coordination with using agencies shall be made through the Contracting Officer or designated representative to assist the Contractor in completing the work with a minimum of interference and inconvenience.

B. General Area Requirements: Security requirements and procedures shall be coordinated with the 34l Security Forces Squadron, Operations Section (extension 731-1288 / 1385), Malmstrom AFB. Activities of the Contractor and the Contractor's employees and subcontractors and their employees while on the base, will be in accordance with base regulations, including those of the Fire Marshall, as well as security directives. This includes, but is not limited to, giving way to all emergency vehicles that are in a response mode. All personnel performing duties as an escort official(s) for contractors within a restricted area are briefed thoroughly on control methods and actions to take to enforce control. Contractors will be briefed on security procedures and their responsibilities prior to the start of a contract. Contractor personnel are required to abide by all real world FPCON measures, RAMs (Random Anti-Terrorism Measures) shelter-in-place, evacuations, lock-down notices as directed, search of personnel and items, and ID checks. Contractors will be notified as necessary, to changes in security procedures.

1. Identification Credentials: All Contractor personnel, except those not under the Contractor's direct control, such as material deliveries, will be required to process in and obtain an Application for Civilian Identification Card (Air Force Form 355 or AF Form 1172) from the Malmstrom AFB Contracting Office in Building 145. After completion of the AF Form 355 or AF Form 1172, proceed to the Visitor Control Center in Bldg 192, open 0730-1630, to obtain identification badge. In addition, all private vehicles requiring access to the base will be required to display a vehicle sticker (AF Form 75) which may also be obtained in Bldg 192 after presentation of vehicle registration and certification of vehicle insurance coverage. The Contractor shall notify the 341 Security Forces Squadron, Operations Section, through the Contracting Officer, of any lost badges within 48 hours after the loss, by name, address, social security number, and badge number. Employees who have terminated employment or who have been dismissed must surrender their AF Form 75 Visitor/Vehicle Pass and Identicard 2000 Contractor ID Card to the Visitors Control Center through the Contracting

Officer. Employees without a badge in their possession will be denied access to the base and work areas and may be subject to detainment until proper identification is made. The badge shall not be worn or displayed off the military base.

2. Commercial or company vehicles will be allowed access to the base provided company emblems are permanently attached to the sides of the vehicles. Magnetic signs are not acceptable. Personnel still require a badge or pass as identified in paragraph 1.

C. Restricted Area Requirements:

1. Within the restricted area(s) no photography authorized in certain areas, personnel will be monitored when performing work in certain locations, contractor will enter through certain facility entrances.
2. Scheduling of Work: The Contractor shall submit to the 341 Security Forces Squadron, Operation Section, through the Contracting Officer a work plan delineating work areas, work crews, and the size of each crew. The work areas will be definitive showing their relationship to roadways, adjacent structures, and the restricted area. The approved work plan shall be kept current. Construction shall be scheduled to proceed in a logical construction sequence and sufficient approved materials shall be on hand to complete entire segments of work as scheduled.
3. Escorts: Planning shall stress the need for a minimum number of escorts by localizing each segment of work. One Air Force escort shall accompany each work activity of six people or less, depending upon the task to be performed. The escorts will normally be available from 7:30 a.m. to 4 p.m., Monday through Friday. At the preconstruction conference, the Contractor shall be prepared to discuss the number of escorts they will require, and any work schedule change(s) proposals. When the work requires Contractor personnel to exit and reenter the area several times daily, they will be escorted between the work area and the Entry Control Point. Therefore, these activities shall be kept to a minimum.
4. Free Zone: No “Free Zone” will be established without a written request and the approval by the Installation Commander in concert with the Base Security Council. Free Zone Plans must be coordinated HQ AFSPC/SFO no later than 60 days before work starts. It must include an area map depicting the proposed free zone. Contractors must be under escort at all times while in the area.
5. Work Area Restrictions during Air Force Inspections, Exercises, and Investigations: Contractor personnel may be required to leave the area or stop working and relocate within the area during Air Force inspections and exercises. For certain Air Force actions, the Contractor will be prohibited from entering specified areas. If personnel are already in the restricted area,

they may be allowed to relocate or may be required to exit the area entirely. (These actions can be expected to occur five (5) times for periods up to 1 hour per occurrence each week during the contract period). In addition, there is the possibility that for a single period of up to 10 working days during the contract the Contractor will be denied access to the Weapons Storage Area for a major Air Force Inspection. Notice of this exclusion period will be provided to the Contractor as soon as possible, but due to the nature of the inspection, this notification may be less than 48 hours in advance of the shutdown. During certain actual exercises and investigations, Contractor personnel will be under increased surveillance although they may not be working near the area affected. If the Contractor personnel are involved in the investigation, these personnel can continue with their work. Convoy movements of strategic Air Force resources may necessitate Contractor personnel being asked to relocate to an area sufficiently away from the convoy movement until convoy has safely passed.

6. Entry Authority List (EAL): EAL(s) will be prepared by the unit or agency responsible for monitoring or administrating the contract. The EAL(s) must be signed by the preparers unit commander or agency chief, and then forwarded to the Installation Commander or designated representative for final approval. Contractor vehicles must be listed on the EAL(s) including year, make, model, VIN, and license number as stated on registration. Privately Owned Vehicle(s) are not authorized within the Weapons Storage Area. The Contractor shall submit a list of personnel, including subcontractors, who will work within or adjacent to the restricted area(s). This list, which shall contain the name (Last, First and MI), address, Civilian Agency Affiliation, clearance information (If applicable), and social security number of each employee, no later than 1 week prior to initial start of work. This list shall be submitted on stationary with the company's letterhead and be signed by a responsible member of that company. After the list has been submitted, it will be the Contractor's responsibility to keep the list current. In addition to the 72-hour notification as noted below, not less than every 2 weeks, the Contractor shall submit a complete up-to-date list of persons desiring access to restricted area to include any additions or deletions made to the list during the preceding 2 weeks. The information listed above must be provided for new employees whose names were not listed on the initial list at least 72 hours prior to the time said new employees need access to the restricted areas. Employees who have terminated employment or who have been dismissed must be identified and removed as soon as possible from the entry authority list but no later than 24 hours after termination. Only those employees with base entry badges whose names are on the list will be permitted entry into the restricted area.

7. Entry Procedures: Contractor personnel will be subject to personal search and or transfrisk upon entering and leaving the WSA and will be escorted

into the restricted area. Prior to entering and exiting the restricted area, Contractor personnel will be logged in and signed out on an Air Force Form at the entry control point by the escort official. The entry controller will check the employee's badge and one other form of photo identification against the prepositioned entry authority list prior to authorization of entry. Contractor personnel will be allowed access to the entrapment area on a first-come, first-serve, in-and-out basis with other personnel who may be requiring entry to or exit from the area. One exception to this is, emergency personnel responding (such as fire, ambulance and Security Forces) will be given priority entrance and exit at all times.

8. Vehicle search procedures will be in effect at all times upon entering and leaving the WSA. Each time a contractor vehicle enters the vehicle entrapment area at the Weapons Storage Area, the vehicle will be searched by a Security Force member and observed by the escort official and escortee. Exterior bins and compartments shall be accessible for inspection. The entrapment area will accommodate one vehicle at a time. Primary emphasis of the searches will be placed on locating large obviously explosive devices, unusual objects, intruders, and other objects of suspicious nature. Contracting vehicles will be allowed access to the entrapment area on a first-come, first serve, in-and-out basis, with other vehicles requiring entry or exit from the area. The same two exceptions stated above apply.
9. Flame and Spark Producing Devices: The use of flame and spark producing devices within the Weapons Storage Area is discouraged. Flame and or spark producing equipment (i.e. Cutting torch, or similar devices) required to accomplish work will only be allowed after written approval from the Contracting Officer. The Contractor will give the base fire department 24-hour prior notification so that arrangements can be made to have a base fire truck standby during the period the device is in use. Smoking is permitted in designated area's only.
10. The work area, if practical, shall be fenced by the Government. Contractor personnel will be restricted to the project construction area within and adjacent to the restricted area. If fencing is erected, the fenced area cannot block access to other structures or hinder emergency or security forces.
11. Contractor shall not stockpile equipment within 30 feet of interior/exterior of a perimeter fence.
12. Existing lighting for security purposes must be functional at all times during the hours of darkness. Deficiencies in security lighting or power shall be repaired and replaced prior to the end of the workday.
13. Existing Power System: Power outages affecting intrusion detection system shall be requested in writing and approved a minimum of 48 hours in advance of the outage with the 341 Security Forces Squadron, Operations Section through the Contracting Officer.
14. Motorized Equipment:

a. Unattended vehicles inside or within 100 feet of a restricted area shall be rendered immobile by removing the keys or by other suitable means.

14. Fire Extinguishers: Motorized equipment operated within the WSA shall be equipped with fire extinguishers as follows:

a. Pickup truck or other light passenger vehicles: one extinguisher per vehicle, rating 5 BC.
b. All other trucks and heavy motorized equipment: two extinguishers per vehicle, rating 10 BC.

END OF SECTION 01 00 10

SECTION 01 36 00

ENVIRONMENTAL PROTECTION

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Attachment 1-013600, Summary of Solid Waste Disposal and Diversion
Attachment 2-013600 - EESOH-MIS Hazardous Materials List

I. 1.0 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The Contractor shall conform to the Occupational Safety & Health Act, Environmental Protection Agency, Montana Department of Environmental Quality (MDEQ), U.S. Air Force and all other Federal, State and Local environmental regulatory requirements.

29 CFR	Occupational Safety and Health Administration
40 CFR	Environmental Protection Agency
49 CFR	Department of Transportation
EM 385-1-1	U.S. Army Corps of Engineers Safety and Health Requirements Manual (1996)
WETLANDS	U.S. Army Corps of Engineers Wetlands Delineation Manual

HWMP	Malmstrom Hazardous Waste Management Plan
ISWMP	Malmstrom Integrated Solid Waste Management Plan
SWMP	Malmstrom Storm Water Management Plan
AFMAN32-7002	Environmental Compliance and Pollution Prevention (4 February 2020

II. 2.0 PERMITS AND FEES

A. 2.1 No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. The contract price shall include all costs associated with this section. The Contractor shall pay all fines, fees, or other costs for violation or non-compliance with Federal, State, Regional and local laws and regulations.

B. 2.2 The Contractor shall obtain and comply with all environmental permits and commitments required by Federal, State, regional, and local environmental laws and regulations unless otherwise stated.

C. 2.3 Environmental Deliverables: The Contractor shall provide all applicable environmental permits, forms, plans, etc. to the Contract Officer (CO), Contract Officer Representative (COR), Quality Assurance Examiner (QAE), Project Manager, or other Government representatives. Deliverables shall include all required signatures.

Deliverables include (as applicable):

- construction dewatering permit (see §4.2.2)
- construction storm water notice of intent (see §4.2.2.A)
- construction storm water pollution prevention plan (see §4.2.2.B)
- construction storm water notice of termination (see §4.2.1.1.C)
- asbestos documents (see §6.1.3)

III. 3.0 AIR QUALITY

A. 3.1 Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

B. 3.2 The Contractor shall not conduct open burning of waste material on Malmstrom Air Force Base or Missile Field property.

C. 3.3 Particulates - The contractor shall not operate a construction site or demolition project unless reasonable precautions are taken to control particulate matter emissions. Airborne particulate matter emissions shall not exceed 20 % opacity as defined in Title 40 Code of Federal Regulations (CFR) Chapter 60 Appendix A. In general, this means that the contractor shall reduce or eliminate any visible dust plume or other visible emissions.

D. 3.4 Sound Intrusions - The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise.

E. 3.5 Ozone Depleting Substances (ODS) -The contractor shall ensure activities performed under this contract comply with Air Force Manual (AFMAN)32-7002, paragraphs 3.3.1.6, 3.3.5.1, 5.6.4.1.1, etc. The contractor shall not purchase, use, or specify the use of any Class I ODS in the production, design, or maintenance of the end item. Class II ODS may be used or specified only with the written approval of the Contracting Officer. For reference, 40 CFR 82 defines Class I and Class II ODS.

F. 3.6 Heating, Ventilation, and Air-Conditioning (HVAC) Systems - The contractor shall comply with all refrigerant handling standards or regulations during HVAC maintenance, repair, replacement or demolition work. The contractor shall meet all applicable HVAC permitting, licensing, or other Federal, state, or local requirements.

Refrigerant technicians shall possess the necessary state and local certifications for HVAC repairs, refrigerant handling, or operating refrigerant reclamation or recycling equipment. Refrigerant technicians shall use only EPA-certified refrigerant recovery or reclamation equipment during HVAC work.

The contractor shall not intentionally vent or cause to be vented any chlorofluorocarbon (CFC) or hydro chlorofluorocarbon (HCFC) refrigerants during HVAC equipment repair, replacement, maintenance, or demolition. Replacement compressors and other replacement equipment used in repairing CFC-containing systems shall be compatible with CFC replacement refrigerants.

IV. 4.0 WATER RESOURCES AND STORM WATER DISCHARGE

A. 4.1 GENERAL

1. 4.1.1 The Contractor shall monitor construction activities to prevent surface water and ground water pollution. The Contractor shall not apply toxic or hazardous chemicals to soil or vegetation unless otherwise directed. The Contractor shall monitor all water areas affected by construction activities. For construction activities immediately adjacent to surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State- or Federally- issued Clean Water Act permits.

2. 4.1.2 Municipal Separate Storm Sewer System (MS4) - The Contractor shall not discharge any contaminated materials into the MAFB MS4. The Contractor shall consult with CES/CEIE regarding discharges of any non-storm water effluent such as irrigation drainage, pavement wash-waters, uncontaminated ground water, etc. The contractor shall obtain MDEQ General Permit coverage for disinfected water discharges into the MS4 from hydrant testing, hydrostatic testing, water mains disinfection, disinfected potable water, or similar.

B. 4.2 STORM WATER

1. 4.2.1 Construction Dewatering- The Contractor shall obtain coverage under the MDEQ General Permit for Construction Dewatering, MTG070000, prior to construction dewatering activities where necessary.

2. 4.2.2 Construction Activities – The Contractor shall obtain coverage under the MDEQ General Permit for Storm Water Discharges Associated with Construction Activity, MTR10000 (Construction General Permit), prior to projects which will disturb 1 acre or more of land. This includes sub-phases of larger projects that will disturb 1 acre or more of land.

a) 4.2.2.1 If a permit is required, the contractor shall submit a completed Notice of Intent (NOI) package to CES/CEIE for review prior to submitting to MDEQ. Allow 10 business days for CES/CEIE review. The package shall contain the following:

a. Notice of Intent Form

b. A Storm Water Pollution Prevention Plan (SWPPP). This plan must meet the basic SWPPP requirements provided in the Construction General Permit. The SWPPP must also include:
   - detailed site plan, including construction traffic control plans, in a format that can be maintained and updated throughout the project
   - project activity timelines including excavation and landscaping schedules in a format that can be maintained and updated throughout the project
   - initial descriptions and locations of construction storm water Best Management Practices (BMP) in a format that can be maintained and updated throughout the project

b) 4.2.2.2 The contractor shall perform the following in accordance with the Construction General Permit:

a. The Contractor shall keep the SWPPP, associated plans and logbooks, and copies of the NOI and Construction General Permit on site.

b. Throughout the project, the Contractor shall perform inspections specified in the Construction General Permit, Part III. The Contractor shall record all SWPPP

changes, modifications, and updates in logbooks or as notations on the documents.

c. When the contactor determines that the site has achieved final stabilization the contractor will prepare and submit a Notice of Termination (NOT) to 341 CES/CEIE for review prior to submittal to MDEQ. CES/CEIE will inspect the site and determine if final stabilization has been achieved. MAFB and the Construction General Permit define final stabilization as:

- The time at which all soil disturbing activities at the site are complete.
- The Contractor has established vegetative cover with a density of at least 70 percent of pre-disturbed conditions.

The Contractor shall not submit the NOT to MDEQ until CES/CEIE concurs that final stabilization was achieved.

d. Throughout the life of the project if the SWPPP Administrator, identified in the NOI, changes the Contractor shall notify CEIE through the CO or COR of that change. The Contractor shall provide a name, contact information, and a current State of Montana SWPPP Administrator Certification of the new Administrator.

c) 4.2.2.3 The contractor should reference the MDEQ's website: https://deq.mt.gov for NOI Forms, instructions, SWPPP information, and other storm water requirements and guidelines.

3. 4.2.3 Concrete Truck Washout and Masonry Cleanup - All concrete truck washout, masonry cleanup, and tool cleaning must occur off base or at a designated concrete washout containment area designated by the CO, COR, or QAE. The contractor will identify the area with visible signage. Contractor shall control and contain all concrete washout fluids and debris and remove them from the site prior to project completion.

C. 4.3 SANITARY SEWER - The Contractor shall not discharge any restricted materials down the sanitary sewer or wastewater disposal system without Government approval. All discharges to the sewer shall meet Federal, State, and Local regulatory requirements and shall meet the permit requirements limiting MAFB discharges.

The Contractor shall coordinate with the CO, COR, QAE, and CES/CEIE for any discharges to the sanitary sewer greater than 100,000 gallons/day.

1. 4.3.1 Restricted wastewater materials include:

a) 4.3.1.1 Any pollutants which create a fire or explosion hazard, specifically any waste stream with a closed cup flashpoint of less than sixty degrees Celsius;

b) 4.3.1.2 Any pollutant which will cause corrosive structural damage but in no case with a pH lower than pH 5.5;

c) 4.3.1.3 Any solid or viscous substances which may cause obstruction in the sewage system;

d) 4.3.1.4 Any other discharge that causes Pass Through or Interference at the City of Great Falls Wastewater Treatment Plant;

e) 4.3.1.5 Any water or waste containing metals in excess of the following limits:

Arsenic	1.57 milligrams per liter (mg/L)
Cadmium	3.51 mg/L
Chromium, Total	5.92 mg/L
Chromium III	0.57 mg/L
Chromium VI	0.04 mg/L
Copper	0.19 mg/L
Lead	0.14 mg/l
Mercury	0.02 mg/L
Nickel	0.59 mg/L
Silver	0.62 mg/L
Selenium	0.002 mg/L
Zinc	2.13 mg/L
Sulfide	3608 mg/L

f) 4.3.1.6 Any trucked or hauled waste to include liquid waste from portable toilet facilities

V. 5.0 EROSION, SEDIMENT CONTROLS, AND WETLANDS

A. 5.1 WETLANDS - The Contractor shall not enter, disturb, destroy, place fill into, or allow discharge of contaminants into any wetlands except as specifically authorized by the Government. The Contractor shall protect MAFB wetlands. Government authorization to enter specific wetlands shall not relieve the Contractor from any obligation to protect other wetlands within, adjacent to, or in the vicinity of the construction site and associated boundaries. The Contractor may obtain MAFB wetlands maps from CES/CEIE.

B. 5.2 The Contractor shall select, provide, and maintain erosion and sediment control BMPs in accordance with Federal, State, local laws, and regulations, and the MS4 Storm Water Management Plan (SWMP). The selected BMPs shall function such that they do not violate water quality standards as a result of the Contractor's construction activities.

The Contractor should minimize the area of exposed bare soil due to construction activities. Construction site plans shall include or record updated descriptions of any exposed bare soil, BMP installation and maintenance, corrective actions, etc.

C. 5.3 The Contractor shall construct or install temporary or permanent erosion and sediment control BMPs in accordance with the MS4 SWMP or the Construction SWPPP (if applicable; see Section 4.2.2). BMPs may include, but are not limited to:

- vegetation cover
- stream bank stabilization
- slope stabilization
- silt fences
- terrace construction
- interceptor channels
- sediment traps
- culvert or flow channel inlet and outfall protection
- diversion channels
- sedimentation or retention basins

The Contractor shall remove all temporary BMPs after the area has reached stabilization and prior to the project's completion or the Construction SWPPP NOT submittal.

VI. 6.0 TOXICS

The Contractor shall ensure that no employees and no Government personnel suffer toxic material exposure such as airborne asbestos, lead from lead base paint, polychlorinated biphenyls (PCBs), etc.

A. 6.1 ASBESTOS AND BUILDING DEMOLITION - The Contractor shall conform to all the requirements of Montana Code Annotated, 75-2, Chapter 5, "Asbestos Control Act", Administrative Rules of Montana 17.74, Subchapter 3, "Asbestos Control" and associated Federal Regulations.

1. 6.1.1 BUILDING DEMOLITION OR RENOVATION - The Contractor shall ensure that a MDEQ-accredited asbestos inspector thoroughly inspects the facility in accordance with Administrative Rules of Montana (ARM) 17.74.354(2) prior to demolition or renovation. Note: This inspection may have occurred during the design phase (Type A or B reports). If so, the contractor may use the Accredited Asbestos Inspection Report from that project phase.

2. 6..1.2 BUILDING DEMOLITION - The Contractor shall notify the Montana Department of Environmental Quality, Asbestos Control Program (1520 East 6th Avenue, PO Box 200901, Helena, MT. 59620-0901) at least 10 (ten) business days prior to any demolition work where load bearing members are removed, whether or not asbestos is present. Contractor shall use MDEQ Form MTACP02-R6 or equivalent for this notification.

3. 6.1.3 ASBESTOS HAZARDS - The Contractor shall remove or abate all construction materials which contain asbestos per the findings and recommendations detailed in the Accredited Asbestos Inspection Report (see §6.1.1). Disturbed asbestos-containing materials which equal or exceed ten (10) square feet in area or 3 linear feet of piping insulation are subject to Montana Asbestos Abatement Project regulations. If so, the Contractor shall obtain Asbestos Project Permit coverage from MDEQ prior to starting any demolition or renovation work.

The Contractor will also comply with Occupational Health and Safety Administration (OSHA) regulations in 29 CFR 1910 (General Industry Standard) and 29 CFR 1926 (Construction Industry Standard). Note: the OSHA regulations apply to all areas which contain asbestos, including smaller areas not subject to MDEQ permitting requirements.

4. 6.1.4 ASBESTOS DOCUMENTS - The Contractor (or the Architect and Engineering consultant during design phases - see 6.1.1) shall provide copies of the following documents, as applicable, to the CO or COR. They will forward the documents to the CES/CEIE Asbestos Program manager:

a. Accredited Asbestos Inspection Report
b. Montana Asbestos Control Program records specified at ARM 17.74.360(3)(a) - (f) to include, at minimum:
   (a) contractor/supervisor, worker name(s), accreditations
   (b) project location, description, ACM amount abated
   (c) start date, end date for each abatement project
   (d) waste disposal facility name(s), address(es)
   (e) shipping manifests or tipping receipts from waste disposal facility
   (f) waste transporter or shipper's records

B. 6.2 PAINT AND PAINT HAZARDS - Existing Paint: Existing painted surfaces may contain lead-based paint. The Contractor shall ensure that no employee is exposed to concentrations of lead in excess of the permissible exposure limit (PEL) equal to an eight-hour time weighted average of 50 micrograms per cubic meter (ug/m3).

The Contractor shall conform to all the requirements of 29 CFR 1926.62. Lead Workers shall wear respirators unless air testing establishes that lower protection factors are sufficient. Engineering and work practice controls may be sufficient to reduce exposure to or below the PEL. If the lead PEL is exceeded all workers shall wear appropriate personal protective equipment.

The Contractor may opt to use a steady spray of water during demolition work in order to limit worker exposures. If so, the Contractor shall contain all discharges to prevent watershed, MS4, sanitary sewer, or any other contamination. The Contractor shall not contaminate the soil with lead due to excessive use of water.

The Contractor shall limit public access and the Contractor shall prevent public exposure to any lead concentrations above the PEL.

For any remodeling or renovation work in base housing or child-occupied facilities built before 1978, certified renovators shall direct all lead paint removals, remediations, or abatemenets. The certified renovator shall meet 40 CFR 745.90(a), 40 CFR 745.90(b)(2), and all other applicable training, certification, or credentialing requirements.

For lead-based paint removal in base housing or child-occupied facilities, the Contractor shall develop a written Occupant Protection Plan. The Occupant Protection Plan is unique to the structure and shall include the requirements of 40 CFR 745.227(e)(5). Abatement workers must have appropriate EPA certification.

1. 6.2.1 New-Paint Restriction - The Contractor shall not furnish or use any paints or coatings containing mercury or lead for interior or exterior applications. Paints, solvents, and surface preparation chemicals shall not contain Hexavalent Chromium.

2. 6.2.2 No oil-based paints or coatings are to be used on base unless the entire liquid material is applied to the intended surface. No oil-based paint liquid is to be left for disposal by base personnel. This material shall be properly disposed of by the contractor.

3. 6.2.3 The Government recommends that the Contractor use environmentally safe water base paints and stains where possible.

C. 6.3 POLYCHLORINATED BIPHENYLS (PCBS) - No PCBs or products containing PCBs shall be installed on Malmstrom AFB.

1. 6.3.2 The contractor shall assume that hermetically sealed electrical equipment contains greater than 50 parts per million (ppm) PCB unless the equipment bears a label which states that it contains no PCBs.

2. 6.3.3 Turn in all PCB containing light ballasts, capacitors, transformers, switch gear, etc. to CES/CEIE.

3. 6.3.4 Contractor shall:

a) 6.3.4.1 Count the number of units for turn in.

b) 6.3.4.2 Place units in a 49 CFR 178.500, Subpart L shipping container furnished by the Contractor. Ensure the container meets Department of Transportation regulations and bears the proper labels.

c) 6.3.4.3 Call CES/CEIE (731-6163) three days in advance to schedule contractor delivery.

VII. 7.0 EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT.

For contracts over $100,000, contractors shall comply with the Toxic Release Inventory reporting provisions of Emergency Planning and Right-to-Know Act (EPCRA) Section 313.

The Contractor shall provide a list of any hazardous substances listed under EPCRA along with maximum inventory and consumption. HAZMART registration fulfills this requirement. Contractors shall provide this information to CES/CEIE and HAZMART.

References: Federal Register, August 10, 1995, Vol. 60, No. 154, p40987-40992 and Federal Register, September 29, 1995, Vol 60, No. 189, p50737-50743.

VIII. 8.0 HAZARDOUS MATERIALS

A. 8.1 Hazardous Materials (HAZMAT) Contractor Authorization Procedures - Contractors must obtain an authorization prior to bringing any HAZMAT onto MAFB. HAZMAT includes all items covered under EPCRA (or other federal, state or local) tracking requirements, the OSHA HAZCOM Standard, and all Class I and Class II ODS.

MAFB tracks HAZMAT through the Enterprise Environmental, Safety, and Occupational Health Management Information System (EESOH-MIS). The contractor may obtain guidance from CES/CEIE at 731-6163 or 731-6441.

B. 8.2 HAZMAT INVENTORY SUBMITTAL

1. 8.2.1 Following contract award and a minimum of 30 calendar days prior to beginning work, the Contractor and all their subcontractors must submit their HAZMAT inventory to CES/CEIE through the CO, COR, or QAE. The Contractor shall provide a complete HAZMAT inventory intended for use during the contract, process or procedure descriptions, total quantities, individual container types and sizes, etc. The Contractor should use the form template provided in Attachment 2-013600.

2. 8.2.2 The HAZMAT inventory must include a Safety Data Sheet (SDS) for each item listed. Each SDS shall be three (3) years old or less.

3. 8.2.3 Special consideration: Single Contractors (i.e., those with no subcontractors) **and** with proposed HAZMAT inventories of 15 or fewer items may submit their list a minimum of 10 calendar days prior to beginning work.

C. 8.3 CES/CEIE will review the submittal and identify those hazardous materials requiring HAZMAT authorization procedures within EESOH-MIS. Note that MAFB may prohibit use of some materials that the Contractor lists on Attachment 2-013600. Materials which do not require EESOH-MIS entry require no additional authorization. CES/CEIE will forward the identified hazardous materials list to the CO, COR, or QAE.

CES/CEIE and the Hazardous Materials Pharmacy (HAZMART) will coordinate entry of the listed HAZMAT into the EESOH-MIS tracking system. Note that any emergency response issues, such as acquisition of unplanned new HAZMAT, require prior CES/CEIE approvals.

D. 8.4 HAZMART will issue bar codes each time the Contractor brings formally authorized HAZMAT onto the installation. The contractor shall provide monthly HAZMAT consumption reports to the HAZMART.

E. 8.5 Prior to contract completion, the Contractor will submit a final report of the actual quantities used on base. CES/CEIE will coordinate with HAZMART or the Contractor to reconcile actual HAZMAT usage during the contract period. The Contractor shall submit a HAZMART account close out report to the CO ten (10) days prior to the final acceptance inspection as a formal contract submittal.

F. 8.6 The Contractor shall remove of all excess HAZMAT from the base upon contract completion.

IX. 9.0 STORAGE OF HAZARDOUS MATERIALS

A. 9.1 The contractor shall properly store all hazardous materials used on base property in designated areas in accordance with all Federal, State, local, and MAFB Fire Department regulatory requirements. Storage shall include, but not be limited to:

1. 9.1.1 Keep containers closed when not in use.

2. 9.1.2 Label containers and provide appropriate warning labels. Empty containers shall be labeled as empty.
3.
4. 9.1.3 Post hazardous signs as required.
5.
6. 9.1.4 Provide storage with secondary containment and routinely check for leaks and spills.
7.
8. 9.1.5 Store materials at a central location.
9.
10. 9.1.6 Flammable items must be stored in an approved flammable storage locker.
11.

12. 9.1.7 All fuel storage tanks must have secondary containment.
13.
14. 9.1.8 Compressed Gas Cylinders segregated and secured to prevent falling over.
15.
16. 9.1.9 Valve protection cap for a cylinder designed to accept a cap shall always be in place except when in use or connected for use.

B. 9.2 Storage, fueling, and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. The Contractor shall store fuel, lubricants, fluids, oil, etc. in accordance with all Federal, State, Regional, and local laws and regulations. The Contractor shall store used lubricants, oil, or other fluids intended to be discarded in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations.

X. 10.0 HAZARDOUS WASTE

A. 10.1 The contractor shall properly dispose of any hazardous wastes generated from their operations and shall manage those wastes (except for those that come under Universal Waste Rules) in accordance with 40 CFR Subchapter I, Parts 260 - 268.

The contractor shall manifest all hazardous wastes per 40 CFR 263.20 and submit a copy of each waste manifest to CES/CEIE, 731-6163, within 45 calendar days of hazardous waste removal.

The contractor may obtain informal guidance from CES/CEIE on proper storage and handling of hazardous and universal waste from the contractor's MAFB operations. However, all responsibility rests with the contractor to comply with federal and state hazardous waste requirements. Any information obtained from CES/CEIE does not remove responsibility from the contractor for proper waste management.

1. 10.1.1 The contractor shall properly collect and identify all hazardous waste generated at MAFB from their operations, including spill cleanup.

2. 10.1.2 In the event that the Government responds to any Contractor-caused spill cleanup or hazardous waste event not covered by the Contract, the Contractor shall reimburse the government all costs associated with the disposal of the spill or hazardous waste.
3.
4. 10.1.3 The contractor is responsible for all fines and penalties which may stem from an EPA or State of Montana Department Environmental Quality hazardous waste inspection of their operation.

B. 10.2 UNIVERSAL WASTE - See 40 CFR 273.9 for Universal Waste definitions.

1. 10.2.1 Construction Contractors shall manage all Universal Wastes in accordance with 40 CFR 273.1 - 273.81.

2. 10.2.2 Service Contractors shall turn Universal Waste in to CES/CEIE. Contact CES/CEIE at 731-6163 prior to any Universal Waste turn-in.

XI. 11.0 SOLID WASTE

A. 11.1 SOLID WASTE HANDLING AND DISPOSAL - The Contractor shall properly handle and dispose of all job site solid waste including any laboratory testing, waste characterization, or documentation submittals required by the CO, landfill owner, local, state, or Federal agencies.

1. 11.1.1 The Contractor shall transport all solid waste off Government property and dispose of it in compliance with local, State, and Federal solid waste disposal requirements.

2. 11.1.2 The Contractor shall demonstrate that they dispose of wastes generated from their operations at the proper Landfill Classification for each Waste Group. Refer to ARM 17.50.503 for Waste Group II, III, and IV definitions and ARM 17.50.504 for Landfill Classification II, III, and IV definitions.

3. 11.1.3 The Contractor shall comply with the following requirements in AFMAN32-7002 where applicable:

- Paragraph 6.8.3, Construction and Demolition (C&D) waste characterization requirements
  - Note: see ARM 17.50.502(6) for the definition of C&D waste
- Paragraph 6.8.4, C&D waste disposal
  - Note that "... Conditionally exempt small quantity generator hazardous waste that is generated as a part of a construction or demolition [C&D] project and that cannot practicably be removed from the construction and demolition waste may be included in waste disposed of in Class IV units", per ARM 17.50.504(c).
- Paragraph 6.9, *et seq*, Asbestos-contaminated C&D waste disposal provisions
- Paragraph 6.10, *et seq*, Lead paint or other lead-contaminated C&D waste disposal provisions

B. 11.2 The Contractor shall place solid wastes, excluding grubbing and clearing debris, in containers that are emptied on a regular schedule.

C. 11.3 The Contractor shall employ waste segregation or other measures to prevent solid waste and hazardous waste co-mingling or cross-contamination.

D. 11.4 The Contractor shall not place any wastes in Government-owned containers or abandon any waste at MAFB, including but not limited to C&D waste.

E. 11.5 WASTE DOCUMENTATION AND SOLID WASTE DIVERSION - Contractors shall document waste disposal and they shall divert wastes for recycling or other uses "... in the most cost-effective manner possible in accordance with [Department of Defense Instruction] DoDI 4715.23, with consideration given to cost savings and cost avoidance ..." (AFMAN32-7002, Paragraph 6.6.1)

1. 11.5.1 The Contractor shall coordinate with CES/CEIE and the current MAFB Installation Solid Waste Management Plan to establish a list of wastes that are qualified for diversion, recycling, or entry into the MAFB Qualified Recycling Plan.
   - [Deputy Assistant Secretary of Defense] DASD memo Dated 16 March 2020, Objective/Goal to divert 60 percent of C&D debris from landfill.

2. 11.5.2 The Contractor shall document the weights and cost data of all disposed wastes, diverted, or recycled materials on the "Summary of Solid Waste Disposal and Diversion" form at Attachment 1-013600. CES/CEIE must receive the completed form by the 10th of each month. In general, the Contractor must report weights and cost data of:
   - recycled materials
   - diverted wastes
   - non-hazardous wastes
   - C&D wastes or debris, to include as separate items:
     - uncontaminated C&D waste or debris
     - asbestos-contaminated C&D waste
     - lead-paint or other lead-contaminated C&D waste

3. 11.5.3 The Contractor shall provide copies of all disposal documents, weight tickets, etc. to the CO, COR, or QAE.

F. 11.6 The Contractor shall bear cleanup costs for improperly disposed wastes or for removal of improperly placed hazardous waste materials.

XII. 12.0 SPILLS AND SPILL RESPONSE

A. 12.1 The Contractor shall immediately report spills of any type of material (excluding clean water) to CES/CEIE (731-1423) and the CO, COR, or QAE for evaluation to determine cleanup procedures and evaluate the need for reporting.

B. 12.2 The Contractor shall reimburse the Government for the costs of any cleanups or disposal accomplished by Malmstrom personnel or by a Malmstrom cleanup contractor.

C. 12.3 The Contractor shall comply with the MAFB Spill Prevention Control and Countermeasure Plan (SPCC). Only trained personnel shall handle or clean up spills. Refer to 40 CFR 112, 29 CFR 1910.120 and the MAFB SPCC for detailed information.

D. 12.4 Any hazardous product or material of environmental concern cleaned up at MAFB must be tested to determine if it is a hazardous waste.

E. 12.5 SPILL RESPONSE PROCEDURES.

1. 12.5.1 Determine if the Contractor can contain the spill. If so, follow the procedures in Paragraph 12.5.5.

2. 12.5.2 For spills beyond the Contractor's capabilities, immediately call the MAFB Fire Department at 911 from a base phone or 731-3746 from a cell phone.

3. 12.5.3 Evacuate the area downwind of the spill if warranted by type of release.

4. 12.5.4 Ensure all workers safely shut down their operations and secure their equipment, time permitting.

5. 12.5.5 If the spill can be contained without injury to personnel and without assistance from the MAFB Fire Department or other emergency response personnel, perform the following:

a) 12.5.5.1 Stop the spill's source.

b) 12.5.5.2 If on site containment, safety equipment, and absorbent materials are available: Contain and/or control the release. Clean up the release using proper absorbent media for the chemical spilled. Recover as much of the spill as possible using absorbent media or approved vacuum device to minimize hazardous waste volume. DO NOT hose down the spilled material into floor trench drains, storm drains, or sanitary sewer manholes.

c) 12.5.5.3 *Immediately* report the spill to the CO, COR, or QAE ***and*** CES/CEIE (731-1423). CES/CEIE will provide reporting guidance and suggested disposal procedures for recovered material. Regardless of CES/CEIE guidance, however, the Contractor shall be responsible for proper handling and disposal of clean up materials.

XIII. 13.0 DISCOVERY OF CONTAMINATED SOILS, MILITARY MUNITIONS, AND HISTORIC, ARCHAEOLOGICAL, OR CULTURAL RESOURCES

A. 13.1 CONTAMINATED SOIL - indicated by petroleum odors, unnatural colors, unusual textures, etc.

1. 13.1.1 The Contractor shall follow the spill procedures in Section 12.0 if they encounter any contaminated soil. Immediately notify the CO, COR, or QAE and CES/CEIE (731-1423).

2. 13.1.2 Following site evaluation, the CO, in collaboration with CES/CEIE, will advise of the steps that the contractor must follow to complete the work through the contaminated area. Work practices or personnel requirements may include but not be limited to:

- 40 hour Hazardous Waste Operations and Emergency Response training
- Confined Space Entry training and permitting
- Respiratory protection
- Completion of a Site Safety & Health Plan

3. 13.1.3 MAFB Contracting Squadron personnel will negotiate any additional costs for work in the contaminated area not specified in the original contract.

B. 13.2 MILITARY MUNITIONS - In the event the Contractor discovers or uncovers military munitions as defined in 40 CFR 260.10, the Contractor shall immediately stop work in that area and immediately inform the CO, COR, or QAE.

C. 13.3 HISTORIC, ARCHAEOLOGICAL, OR CULTURAL RESOURCES

1. 13.3.1 The Contractor shall protect Historical, Archaeological, and Cultural Resources and shall be responsible for their preservation during the life of the Contract.

2. 13.3.2 If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to:

- any human skeletal remains or burials
- artifacts
- shell, midden, bone, charcoal, or other deposits

- rock or coral alignments, paintings, wall, or other constructed features
- any indication of agricultural or other human activities.

3. 13.3.3 Upon such discovery or find, the Contractor shall immediately:
   - Cease all activities that may result in impact to or the destruction of these resources.
   - Notify the CO, COR, or QAE ***and*** 341 CES/CEIE so that the appropriate authorities may be notified, and a determination made as to their significance and what, if any, special disposition of the finds should be made.
   - Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

XIV. 14.0 CONSTRUCTION CERTIFICATIONS – PUBLIC WATER SUPPLY AND WASTEWATER SYSTEMS

A. 14.1 During this project's development stages, designers submitted the final drinking water system (or sewer system) plans and specifications to MDEQ for review and approval. Per ARM 17.38.101(4), the plans and specifications must bear a Montana-licensed Professional Engineer (PE) seal. MDEQ has approved the sealed plans and specification for construction. In the absence of properly sealed plans and specifications, the Contractor shall cease work and coordinate with the CO regarding the path forward.

B. 14.2 Per ARM 17.38.101(13), a Montana-licensed PE shall prepare and submit a letter to MDEQ certifying that the system or portion of the system constructed, altered, or extended to that date was completed in accordance with plans and specifications approved by MDEQ (see Paragraph 14.1). The Contractor must submit this letter before any person may commence or continue operation of a public water supply or wastewater system. The Contractor shall provide a copy of the letter to the CO and 341 CES/CEIE

C. 14.3 Per ARM 17.38.101(14), a Montana-licensed PE shall prepare, sign and submit certified "as built" drawings and, if required, operations and maintenance manuals to the MDEQ within 90 days after the completion of construction, alteration, or extension of a public water supply or wastewater system, or any portion of such system. The Contractor shall provide one full size mylar copy of the as-built drawings, two paper copies, one AutoCAD compatible drawing file, and one Adobe Acrobat (PDF-format) file on compact disk to the CO.

D. 14.4 The Contractor shall provide qualified inspectors or coordinate with the Montana-licensed PE throughout the project as necessary to meet the requirements in Paragraphs 14.1 to 14.3. During project activities, the Contractor shall provide construction inspection services as required by the Montana-licensed PE who will seal the "as built" drawings.

XV. 15.0 ENVIRONMENTAL MANAGEMENT SYSTEM

A. 15.1 Contractor personnel shall receive appropriate environmental training in accordance with Federal Acquisition Regulation (FAR) 52.223-19 if the contract has potential to negatively impact the environment.

END OF SECTION 01 36 00

ATTACHMENT 1-013600

SUMMARY OF SOLID WASTE DISPOSAL AND DIVERSION

Project:_____

Project Number:_____ Contract Number:_____

Contractor Names:_____

Address:_____ Phone: _____

Submitter's Name:_____ Report Period Start: _____ End: _____

Provide information MONTHLY by the 10th day after end of reporting period.

Type of Material	Disposed in Municipal Solid Waste Landfill		Diverted from Landfill by Recycling/Reuse QTY/Cost/Profit		
	Weight / Units (lb, ton, etc.)	Total Cost (Tipping fee, Transport, etc.)	Weight / Units (lb, ton, etc.)	$ received (recycled) or <*$ paid*> (disposal)	Other (donation, etc.)
Asphalt					
Concrete					
Pipe Insulation					
Ferrous Metal					
Non-Ferrous Metal					
Wood					
Debris					
Glass					
Porcelain					
Brick					
Bond Paper					
Newsprint					
Cardboard					
Plastic					
Gypsum					
Paint and paint cans					
Other					

Signature:_____ Title:_____

Date:_____ Questions? Call Solid Waste Manager at 731-6448 Data Base Input:_____

ATTACHMENT 2-013600 - EESOH-MIS Hazardous Materials List

Contractor Name:		Project Name / Description:	Contract #:		**Container**		**Aerosol? Y/N**
LINE #	**TRACK**	**MATERIAL TYPE (Product Name)**	**MSN ***	**SDS ***	**Type ***	**Size ***	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

* MSN = Material Stock Number. * SDS = Safety Data Sheet. * Container type: Box, can, tube, barrel, pail, etc. * Container size: INCLUDE UNITS (pounds, gallons, ounces, etc.)

Waste Management Plan

From: _____
Project: _____
Date: _____

I. Total Project Waste

Quantity (tons)	Landfill Site	Tip fee/ton	Total cost of disposal, including hauling, container rental, tip fees	Total cost/ton

II. Alternatives to Landfilling

Type of material	Quantity (tons)	Destination and means of transportation	Cost to handle and transport	Expected revenue & tip fee earnings	Net cost	Cost if landfilled	Comparison cost (+) /savings (-)
Cardboard							
Dimensional wood							
Beverage containers							
Land debris							
Concrete							
CMU							
Asphalt							
Metals – all types							
Gypsum board							
Paint							
Carpet							
Insulation							
Glass							
Cast stone							
Wood materials							
Electric cable							
PVC piping							
Rubber flooring							
Raised flooring							
			III. Total net cost (+) or savings (-) from all alternatives to landfilling all project waste				

IV. Means of keeping recyclables free of contamination	V. Meetings to be held to address waste management
All similar materials will be grouped together based on the requirements of the recycling center. All dissimilar materials will be kept in separate containers/bins in order to avoid contamination	At regularly scheduled jobsite coordination/progress meetings and at job safety meetings, waste management requirements will be discussed to clarify any confusion with the craftpeople.

RECOVERED MATERIALS WRITTEN DETERMINATION FORM

This form is needed only if item(s) being procured are subject to the installation's Affirmative Procurement Program for EPA-Designated Recycled Content Products.

The contracting officer must place in the contract file a written justification if an acquisition of EPA-designated products above the micro-purchase threshold does not contain recovered material. The procurement originator and/or contracting officer must check the appropriate justification(s), provide a written explanation, and sign and date the form.

Procurement Request / Project No._____

EPA Designated Recycled Content Item NOT being Procured: _____

___ Designated Item is not competitively available within a reasonable period of time.
*(If contract is greater than $25,000, on DD Form 350, line B12F, choose "**B**.")*

Need Date: _____ Date Available: _____

___ Designated Item is at an unreasonable price (recycled item costs more).
*(If contract greater than $25,000, on DD Form 350, line B12F, choose "**C**.")*

Price of Designated Item: _____

Price of Non-Recycled Item: _____

___ Designated Item does not meet the installation's performance standards.
(If contract greater than $25,000, on DD Form 350, line B12F, choose "**D**.")

Describe the performance need, document and section number and explain briefly why a recycled content product will not meet that need.

_____

_____

_____

_____

_____

_____

This written determination is made in accordance with FAR 23.405(c).

_____	_____	_____	_____
Procurement Originator Signature	Date	Contracting Officer Signature	Date

RECYCLED MATERIAL USE REPORT

PROJECT NUMBER:					
PROJECT TITLE:					
Construction Products	**Total Qty Used**	**Qty Used with Recycled Content**	**Value of Qty Used ($)**	**Value of Qty Used with Recycled Content ($)**	**Provide rationale if not used in project**
Cement/Concrete (with fly ash or ground granulated blast furnace slag)					
Structural Fiberboard					
Carpet					
Floor Tiles					
Patio Blocks					
Laminated Paperboard					
Building Insulation					
LANDSCAPING PRODUCTS					
Hydraulic Mulch					
Compost					
PARK AND RECREATIONAL PRODUCTS					
Playground Surfaces					
Running Tracks					

Submit a copy of this worksheet to the contracting officer prior to final acceptance.
This information is required to provide data tracking for compliance with 40 CFR 247 and Executive Order 12873.

MONTHLY REPORT OF SOLID WASTE DISPOSAL AND DIVERSION

Project:_____

Project Number:_____ Contract Number:_____

Contractor Names: _____

Address: _____

Phone: _____ Project QAE:_____ Report Period:_____

Please provide information monthly to 341 CES/CEANP by the 10th day after end of reporting period.

Type of Material	Disposed in Municipal Solid Waste Landfill (Quantity in Tons) QTY/Cost		Diverted from Landfill by Recycling/Reuse (Quantity in Tons) QTY/Cost		Other
	This Period	Accumulated	This Period	Accumulated	
Asphalt					
Concrete					
Pipe Insulation					
Ferrous Metal					
Non-Ferrous Metal					
Wood					
Debris					
Glass					
Porcelain					
Brick					
Bond Paper					
Newsprint					
Cardboard					
Plastic					
Gypsum					
Paint and paint cans					
Other					

Signature:_____ Title:_____

Date:_____ Questions call Solid Waste Manager at 731-6448 Input to Data Base:_____

XXXXXXXX	YYYYYYYYYYYY	ZZZZZZ-ZZ-Z-ZZZZ		Date Submitted		Container		Aerosol
ITEM #	TRACK	MATERIAL TYPE (Product Name)	MSN	MSDS	3952'S	Type	Size	Y/N
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
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21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								

X = Contractor Name Y = Project Name Z = Contract Number

Sample of Hazardous Material List

SECTION 02 41 19 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor. Exceptions apply for all items which have a Government Serial number or otherwise indicated in specific task order, drawings, or contract notes. All items with a serial number issued by the Government must be returned to the Government.

1.5 PREINSTALLATION MEETINGS

A. Pre-demolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
4. Review areas where existing construction is to remain and requires protection.

1.6 FIELD CONDITIONS

A. Conduct selective demolition so Government's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Government as far as practical.

C. Notify Government of discrepancies between existing conditions and drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
   1. If suspected hazardous materials are encountered, do not disturb; immediately notify Contracting Officer.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

G. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that affected utilities have been disconnected and capped before starting selective demolition operations. Unless otherwise noted, Contractor will be responsible for disconnecting and capping utilities.

B. Review record documents of existing construction provided by Government. Government does not guarantee that existing conditions are same as those indicated in record documents.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. It is the Contractor's responsibility to report all conflicts to the Contracting Officer.

3.2 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.3 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Contracting Officer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.4 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be, reused, salvaged, reinstalled, or otherwise indicated to remain Government's property, remove demolished materials from Project site.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials. Any activity which may create a spark or flame must have prior written approval from Malmstrom AFB Fire Department.

C. Disposal: Transport demolished materials off Government's property and legally dispose.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07 24 10- EXTERIOR INSULATION AND FINISH SYSTEM – CLASS PB

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Exterior insulation and finish system (EIFS) applied over masonry surfaces.

1.3 DEFINITIONS

A. Class PB EIFS is defined by ASTM PS 49 as a "non-load bearing exterior wall cladding system that consists of an insulation board attached either adhesively, mechanically, or both to the substrate as required by the manufacturer; an integrally reinforced base coat, and a texture protective finish coat.

1.4 PERFORMANCE REQUIREMENTS

A. General: Provide systems that comply with the following performance requirements:

1. Bond Integrity: Free from bond failure within the system components or between system and supporting wall construction, resulting from exposure to fire, wind loads, weather or other in-service conditions.

2. Weather tightness: Resistant to water penetration from exterior into system and assemblies behind it or through them into the interior of the building that results in deterioration of thermal-insulating effectiveness or other degradation of system and assemblies behind it, including substrates, supporting wall construction and interior finish.

B. Physical Properties of Class PB System: Provide EIFS whose physical properties and structural performance comply with the following when tested per methods referenced:

1. Accelerated Weathering Characteristics: Sample of size suitable for test equipment and consisting of 1-inch thick EIFS mounted on 1.2-inch thick gypsum board; cured for 28 days and showing no cracking, checking, crazing, erosion, blistering, peeling, or delamination after testing for 2000 hours when viewed under five times magnification per Method 1 of ASTM G23.

2. Water Penetration: Sample consisting of 1-inch thick EIFS mounted on 2 ½-inch thick gypsum board, cured for 28 days; and showing no water penetration into the plane of the base coat to expanded polystyrene board interface of the test specimen after 15 minutes at 6.24 lbf/sq.ft of air pressure difference or 20 percent of positive design wind pressure, whichever is greater, across the specimen during a test period when tested per EIMA 101.02.

3. Water Resistance: Sample consisting of 1-inch thick EIFS mounted on 1.2-inch thick gypsum board; cured for 28 days and showing no cracking, checking, crazing, erosion, blistering, peeling, or delamination after testing for 14 days per ASTM D2247.

4. Impact Resistance: Sample consisting of 1-inch thick EIFS when constructed, conditioned and tested per EIMA 101.86; and meeting or exceeding the following impact classification and range:
    a. Standard Impact Resistance: 25-49 inch-lb.

C. Structural Performance of Prefabricated Panels: Provide prefabricated panels capable of withstanding the effects of normal thermal movement, gravity leads, and the following loads and stresses within the limits and under conditions indicated:

1. Wind Loads: Uniform pressure (velocity pressure) of 25 lbf/sq.ft acting inward or outward.
2. Normal thermal movement is defined as that resulting from the following maximum change (range) in ambient temperature. Base design calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
    a. Temperature Change (Range): 100 deg F.
3. Deflection: Limit deflection of framing members to less than 1/240 of the member.

1.5 SUBMITTALS

A. Hi –lite all descriptive literature to accomplish identification of specific components which are proposed to be furnished. Government will not react to descriptive material/literature which has not been hi-lited, except to reject the Submittal.

B. Product Data: For each component of EIFS specified.

C. Shop Drawings: Show fabrication and installation of system including plans, elevations, sections, details of components, joint locations and configurations within system and between system and construction penetrating it, termination details and attachments to construction behind the system.

D. Samples for Initial Selection: Manufacturer's color charts and small scale samples consisting of units or sections of units showing the full range of colors, textures and patterns available for each finish choice indicated.
    1. Submit sealant manufacturer's standard bead samples consisting of strips of actual products showing the full range of colors available.

E. Samples for Verification: 24-inch square panels for each finish, color, texture and pattern specified. Prepare samples using same tools and techniques intended for actual work.
    1. Incorporate within each sample a typical control joint filled with sealant of color indicated or selected.

F. Installer Certificates: Signed by system manufacturer certifying that installers comply with specified requirements.

G. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and address of architect and owners and other information specified.

H. Product Test Reports: Indicated compliance of proposed EIFS with physical property requirements specified in "Performance Requirements" Article based on comprehensive testing of current products by a qualified testing and inspecting agency.

I. Research/Evaluation Reports: Evidence of EIFS compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experiences installer who has completed systems similar in material, design and extent to those indicated for this Project and with a record of successful in-service performance.
B. Manufacturer Qualifications: Engage a firm experienced in manufacturing systems similar to those indicated for this Project and with a record of successful in-service performance.

C. Source Limitations: Obtain materials for system from one source and by a single manufacturer or by manufactures approved by EIFS manufacturer as compatible with other system components.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original, unopened packages with manufacturer's labels intact and clearly identifying products.

B. Store materials inside and under cover; keep them dry and protected from the weather, direct sunlight, surface contamination, aging, corrosion, damaging temperatures, construction traffic and anything else that may damage the materials.
1. Stack insulation board flat and off the ground.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: do not install system when ambient outdoor air and substrate temperatures are 40 deg F and falling unless temporary protection and heat are provided to maintain ambient temperatures above 40 deg F during installation of wet materials and until they are dried thoroughly and become weather resistant, but for a least 24 hours after installation.

1.9 COORDINATION AND SCHEDULING

A. Coordinate installation of EIFS with related Work specified in other Sections to ensure that wall assemblies including sheathing, flashing, trim, joint sealers, windows, and doors are protected against damage from the effects of weather, age, corrosion, moisture and other causes.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide EIFS Class PB systems by one of the following:

1. Dryvit Systems, Inc.
2. Senergy Div. of Harris Specialty Chemicals, Inc.
3. Sto Corp. of Sto Finish Systems Div.
4. Thoro System Products
5. Approved equal.

2.2 MATERIALS

A. Compatibility: Provide substrates, adhesive, board insulation, reinforcing meshes, base and finish coat materials, sealants, and accessories that are compatible with one another and approved for use by system manufacturer for the Project.

B. Colors, Textures and Patterns of Finish Coat: Comply with the following requirements:

1. Provide Contracting Officer's selections from system manufacturer's full range of colors, textures and patterns for types of finish coat indicated.

C. Fasteners for Exterior Cement Board: 1-5/8-inches, No. 8 wafer head steel drill screws complying with ASTM C954, with an organic polymer coating or other corrosion protective coating having a salt spray resistance of more than 500 hours per ASTM B 117.

D. Molded Polystyrene Board Insulation: Rigid, cellular, thermal insulation formed by expansion of polystyrene resin beads or granules in a closed mold. Comply with system manufacturer's requirements, ASTM C 578 for Type I and "EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board" for more stringent requirements for material performance and qualities of insulation, including dimensions and permissible variations and the following:

1. Before cutting and shipping, age insulation in block form by air drying for not less than six weeks or by another method approved by EIMA that produces equivalent results.
2. Provide insulation in boards not more than 24 by 48 inches and in thickness indicated but not more than 4-inches or less that that allowed by ASTM PS 49.

E. Reinforcing Mesh: Balance, alkali-resistant, open-weave glass-fiber mesh treated for compatibility with other system materials, made from continuous multi-end strands with retained mesh tensile strength of not less than 120 lbf/in per EIMA 105.01, complying with ASTM D 578 and the following requirements for minimum weight:

1. Standard Reinforcing Mesh: Not less than 4.0 oz/sq.yd.

F. Base-Coat Materials: System manufacturer's standard mixture complying with the following requirements for material composition and method of combining materials:

1. Factory-mixed formulation of polymer-emulsion adhesive and inert fillers that I ready to use without adding other materials.
2. Factory blended dry formulation of Portland cement, dry polymer admixture and inert fillers to which only water is added at the Project site.
3. Job combined formulation of manufacturer's standard polymer-emulsion adhesive and manufacturer's standard dry mix containing Portland cement.
4. Job mixed formulation of Portland cement complying with ASTM C 150, Type I, white or natural color, and manufacturer's standard polymer-emulsion adhesive designed for use indicated.
5. Any formulation indicated above as per the manufacturer.

G. Finish Coat Materials: System manufacturer's standard mixture complying with the following requirements for material composition and method of combining materials:

1. Factory mixed formulation of polymer-emulsion binder, colorfast mineral pigments, sound stone particles and fillers.

H. Water: potable.

I. Mechanical Fasteners: System manufacturer's standard corrosion resistant fasteners consisting of thermal cap, standard washer and shaft attachments, and fastener indicated below; selected for properties of pullout, tensile strength required to resist design loads of application indicated; capable of pulling fastener head below surface of insulation board; and the following description:

1. For attachment to masonry and concrete substrates, provide sheathing dowel in the form of a plastic wing tipped fastener with thermal cap, sized to fit insulation thickness indicated and to penetrate substrate to depth required to secure anchorage.

2.3 ELASTOMERIC SEALANTS

A. Elastomeric Sealant Products: Provide system manufacturer's listed and recommended chemically curing, elastomeric sealant that is compatible with joint fillers, joint substrates and other related materials, and complies with requirements for products and testing indicated in "EIMA Guide for Use of Sealants with Exterior Insulation and Finish Systems, Class PB" and with requirement in Division 7 section "Joint Sealants" for products corresponding to description indicated below:

1. Low modulus silicone sealant.

B. Sealant Color: comply with the following requirements:

1. Match finish coat color of system.

2.4 MIXING

A. General: Comply with system manufacturer's requirement for combining and mixing materials. Do not introduce admixtures, water or other materials except as recommended by system manufacturer. Mix materials in clean containers. Use material within time period specified by system manufacturer or discard.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas and conditions with Installer and Contracting Officer's Representative present for compliance with requirements for installation tolerances and other conditions affecting performance of system. Proceed with installation of system only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect contiguous work from moisture deterioration and soiling caused by application of systems. Provide temporary covering and other protection needed to prevent spattering of exterior finish coats on other work.

C. Protect system, substrates and wall construction behind them from inclement weather during installation. Prevent infiltration of moisture behind system and deterioration of substrates.

D. Prepare and clean substrate to comply with system manufacturer's written requirements to obtain optimum bond between substrate and adhesive for insulation.

1. Apply primer sealer over substrates where required by system manufacturer for improving adhesion or for protecting substrates from degradation.

3.3 INSTALLATION

A. Comply with ASTM PS 49 and system manufacturer's written instructions for installation of system as applicable to each type of substrate indicated.

B. Adhesively and mechanically attach insulation to comply with ASTM PS 49, system manufacturer's written requirements and the following:

1. Apply adhesive to insulation by notched-trowel method in a manner that results in adhesive's coating the entire surface of gypsum sheathing once insulation is adhered to sheathing unless system manufacturer's written instructions specify using primer sealer with ribbon and dab method. Apply adhesive to a height of not less than 1/4-inch for factory mixed and not less than 3/8-inch for field mixed, measured from the surface of the insulation board before placement.

2. Allow adhered insulation to remain undisturbed for period recommended by system manufacturer, but not less than 24 hours, before installing mechanical fasteners, beginning rasping and sanding insulation or applying base coat and reinforcing mesh.

3. Mechanically attach insulation to substrate by method complying with system manufacturer's written requirements. Space fasteners according to system manufacturer's written requirements for attachment to Project substrate for performance indicated. Install top surface of fastener head flush with plane of insulation. Install fasteners into or through substrates with the following minimum penetration:

   a. Steel Framing: 5/16-inch
   b. Masonry: 1-inch

4. Apply insulation boards over dry substrates in courses with long edges oriented horizontally. Begin first course from a level base and work upward.

5. Apply insulation boards over dry substrates in courses with long edges oriented horizontally. Begin first course from drip screed and work upward. Work from perimeter casing beads toward interior of panels in possible.

6. Stagger vertical joints in successive courses to produce running bond pattern. Locate joints so no piece of insulation is less than 12-inchs wide or 6-inches high. Offset joints not less than 6-inches from corners or window and door openings.

a. Offset joints of insulation not less than 6-inches from horizontal and 4-icnhes from vertical joints in sheathing.

7. Abut boards tightly at joints within and between each course to produce flush, continuously even surfaces without gaps or raised edges between insulation boards. If gaps greater than 1/16-inch occur, full with insulation cut to fit gaps exactly; insert insulation without using adhesive or other material.

8. Cut insulation to fir openings, corners, and projections precisely and to produce edges and shapes complying with details indicated.

9. Rasp or sand flush entire surface or insulation to remove irregularities projecting more than 1/32-inch from surface of insulation and to remove yellowed areas due to sun exposure, do not create depressions deeper than 1/16-inch.

10. Coordinate flashing installation with installation of insulation to produce a wall system that does not allow water to penetrate behind protective coating.

C. Install trim accessories at locations indicated according to system manufacturer's written instructions.

D. Install expansion joints at locations indicated, where required by system manufacturer.

E. Embed reinforcing mesh of type indicated below in wet base coat to produce wrinkle free installation with mesh continuous at corners and overlapped not less than 2-1/2-inched or otherwise treated at joints to comply with ASTM OS 49 and system manufacturer's written requirements. Do not lap reinforcing mesh within 8-inches of corners. Completely embed mesh, applying additional base coat if necessary, so reinforcing mesh color and pattern are not visible.

1. Standard reinforcing mesh, unless otherwise indicated.

F. Apply finish coat over dry primer, maintaining a wet edge at all times for uniform appearance, in thickness required by system manufacturer to produce a uniform finish of color and texture matching approved sample.

G. Apply finish coat over dry base coat, maintaining a wet edge at all times for uniform appearance, in thickness required by system manufacturer to produce a uniform finish of color and texture matching approved sample.

3.4 INSTALLATION OF JOINT SEALANTS

A. Prepare joints and apply sealants, of type and at locations indicated to comply with applicable requirements in Division 7 Section "Joint Sealants" and in "EIMA Guide for Use of Sealants with Exterior Insulation and Finish Systems Class PB".

1. Clean surfaces to receive sealants to comply with indicated requirements and system manufacturer's written instructions.

2. Apply primer recommended in writing by sealant manufacturer for surfaces to be sealed.

3. Install sealant backing to control depth and configuration of sealant joint and to prevent sealant from adhering to back of joint.

4. Apply masking tape to protect areas adjacent to sealant joints. Removed tape immediately after tooling joints, without disturbing joint seal.

5. Recess sealant sufficiently from surface of system so an additional sealant application, including backing rod, can be installed without protruding beyond system surface.

6. Apply joint sealants after base coat has cured but before applying finish coat.

3.5 REPAIR OF HOLES OR IMPACT DAMAGE

A. Holes or Damage: Mask off an area slightly larger than the damaged area. With a sharp utility knife, hand or circular saw with a carborundum blade, cut into the EIFS down to the substrate, outside the damaged area. Care must be taken to prevent rupturing the surface of the substrate. Remove the damaged EIFS exposing a neat uniform sized area of insulation slightly larger than the damaged area. Grind off finish a minimum 3-inches to expose the existing base coat layer.

B. Using the appropriate fasteners and/or adhesive, install the new EPS. Ensure overall tightness at the cut line and sliver if necessary. Apply new base coat and mesh overlapping onto existing exposed base coat layer approximately 2 ½-inches. Ensure that the newly applied base coat is flat and seated approximately 1/16-inches below the surface of the existing finish. Allow to fully dry a minimum of 24 hours.

C. If necessary again, precisely mask off the existing finish. Apply new finish and new finish into existing finish. While the finish is still wet, remove the masking tape and feather the edges of patch so they will blend with the surrounding area. Use a brush, nail, toothpick or similar tool to blend the edges of the patch and to precisely match the texture of the patch with the surrounding area.

3.6 REPAIR DAMAGED CORNERS

A. Using a sharp knife, hand or circular saw with a carborundum blade, cut approximately 3-inches along each side of the corner down to the substrate. With a margin trowel or similar tool, carefully remove the sections. Examine the piece removed to determine if there is any damage to the sheathing. If there is damage to the substrate, repair prior to the EIFS application.

B. Grind off excessive finish coat a minimum of 3-inches on each side of the cut out section to expose the existing base coat layer. Do not cut into the reinforcing mesh with the grinder. The edges of the finish should be sharp, clean and non-tapered from the finish down to the base coat layer.

C. Install new insulation board to the substrate tight against the EPS with the appropriate adhesive or fasteners. Sliver all gaps to ensure there is no space between EPS boards. Do not use the base coat to fill gaps between EPS board joints.

D. Mask off the existing finish coat. Apply a layer of corner mesh compatible with the system embedded in the base coat over newly installed EPS section overlapping a minimum 2 ½-inches onto the base coat.

E. Install a continuous piece of reinforcing mesh wrapping around the corner and extended past the opposite side of exposed EPS and lap onto existing base coat and mesh a minimum 2 ½-inches. Ensure that the base coat between the old and new is flat and seated approximately 1/16-inches below the surface of the existing finish coat. Allow to fully dry.

F. Precisely mask off the existing finish. Apply new finish and blend new texture into the existing texture.

3.7 CRACK REPAIR

A. Using a sharp knife, hand or circular saw with a carborundum blade, cut an approximate 3-inch by 3-inch square into the EIFS at the crack location, down to the substrate. With a margin trowel carefully remove the section.

B. Verify that the substrate is undamaged and structurally sound.

C. Cut out a minimum of 3-inches on each side of the crack down to the substrate. Grind off finish a minimum of 3-inches on each side of the cut out section to expose the existing base coat layer. Do not cut into the reinforcing mesh with the grinder. The edges of the finish should be sharp, clean and non-tapered from the finish down to the base coat layer.

D. Install new insulation board to the substrate tight against the PES with the appropriate adhesive and fasteners. Sliver all gaps to ensure there is no space between EPS boards. Do not use the base coat to fill gaps between EPS board joints.

E. Mask off the existing finish, apply base coat and mesh on the new insulation board and overlap onto the existing exposed base coat layer approximately 2-1/2-inches. Ensure that the base coat between the old and new is flat and seated. A 1/16-icnh recess is necessary so the finish coat, when applied, will become overall flush with the existing finish coat. Allow to fully dry.
F. Precisely mask off the existing finish. Apply new finish and blend new texture into the existing texture.

3.8 CRACKS AT CORNERS OF DOORS, WINDOWS ETC.

A. Using a sharp knife, hand or circular saw with a carborundum blade, cut into EIFS down to substrate approximately 6-icnhes along jamb and sill or jamb and head depending on crack location. These cuts should be long enough to totally remove the cracked area. Make vertical and horizontal cuts so that a square piece of EPS is removed. With a margin trowel carefully remove the section.

B. Verify that the substrate is undamaged and structurally sound.

C. Grind off finish a minimum of 3-inches on each side of the cut out section to expose the existing base coat layer. Do not cut into the reinforcing mesh with the grinder. The edges of the finish should be sharp, clean and non-tapered from the finish down to the base coat layer.

D. Attach mesh compatible with the EIFS system. Install a new continuous "L" shaped piece of insulation board tight against the existing EIFS. Attach the new EPS to the substrate using the appropriate adhesive or fasteners. Sliver all gaps to ensure overall tightness and hold EPS bask a minimum of ¾-inches from the frame to allow for proper sealant joint application.

E. Mask off the existing finish coat. Install a 9-inch by 12-inch piece of mesh embedded in base coat at a 45 degree angle. Apply base coat and mesh overlapping onto existing exposed base coat layer approximately 2 ½-inches. Ensure that the base coat between the old and the new is flat and seated approximately 1/16-inches below the surface of the existing finish coat. Allow to fully dry.

3.9 CLEANING AND PROTECTING

A. Remove temporary covering and protection of other work. Promptly remove coating materials from window and door frames and other surfaces outside areas indicated to receive system coatings.

B. Provide final protection and maintain conditions in a manner acceptable to Installer and Contracting Officer's Representative, and system manufacturer that ensure system is without damage or deterioration at the time of Substantial Completion.

END OF SECTION 07241

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 PROHIBITED MATERIALS

A. Asbestos-containing materials are prohibited.

1.3 SUMMARY

A. This Section includes joint sealants for the applications indicated in the Joint-Sealant Schedule at the end of Part 3 and following applications, including those specified by reference to this Section:

1. Exterior joints in the following vertical surfaces and horizontal nontraffic surfaces:

    a. Construction joints in cast-in-place concrete.
    b. Control and expansion joints in unit masonry.
    c. Joints between metal panels.
    d. Joints between different materials listed above.
    e. Perimeter joints between materials listed above and frames of doors and louvers.
    f. Other joints as indicated.

2. Exterior joints in the following horizontal traffic surfaces:

    a. Control and expansion joints in concrete masonry.
    b. Joints between different materials listed above.
    c. Joints between metal wall panels and other materials.
    d. Other joints as indicated.

3. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:

    a. Control and expansion joints on exposed interior surfaces of exterior walls.
    b. Perimeter joints of exterior openings where indicated.
    c. Vertical joints on exposed surfaces of interior unit masonry .
    d. Perimeter joints between interior wall surfaces and frames of interior doors and windows .

e. Joints between plumbing fixtures and adjoining walls, floors, and counters.
f. Other joints as indicated.

4. Interior joints in the following horizontal traffic surfaces:

a. Isolation joints in cast-in-place concrete slabs.
b. Other joints as indicated.

B. Related Sections include the following:

1. Section 092900 "Gypsum Board " for sealing perimeter joints of gypsum board partitions to reduce sound transmission.

1.4 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.5 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.

D. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

E. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

B. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period preceding the Work.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.

1.7 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F(5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.

3. Sealant Primers for Porous Substrates: 775 g/L.

C. Colors of Exposed Joint Sealants: As selected by Contracting Officer from manufacturer's full range.

D. Joint Sealant Schedule: Joint Sealant Schedule at the end of this section outlines a description of joint construction and location where sealants referenced by FS numbers are typically applied, however, material and sealant manufacturer's recommendations shall also be consulted for appropriate sealant applications.

2.3 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

C. Suitability for Immersion in Liquids. Where elastomeric sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247 and qualify for the length of exposure indicated by reference to ASTM C 920 for Class 1 or 2. Liquid used for testing sealants is deionized water, unless otherwise indicated.

D. Single-Component Neutral-Curing Silicone Sealant ES-2 and 5:

1. Available Products:

   a. Dow Corning Corporation; 790.
   b. GE Silicones; SilPruf LM SCS2700.
   c. Tremco; Spectrem 1 (Basic).
   d. Dow Corning Corporation; 791.
   e. Dow Corning Corporation; 795
   f. GE Silicones; SilPruf NB SCS9000.
   g. GE Silicones; UltraPruf II SCS2900.
   h. Pecora Corporation; 865.
   i. Pecora Corporation; 895.
   j. Pecora Corporation; 898.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

a. Use O Joint Substrates: color anodic aluminum galvanized steel and concrete masonry.

6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.

E. Single-Component Mildew-Resistant Acid-Curing Silicone Sealant ES-6:

1. Available Products:

a. Dow Corning Corporation; 786 Mildew Resistant.
b. GE Silicones; Sanitary SCS1700.
c. Tremco; Tremsil 200 Clear.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O.

F. Single-Component Nonsag Urethane Sealant ES-4:

1. Products:

a. Bostik Findley; Chem-Calk 900.
b. Bostik Findley; Chem-Calk 915.
c. Bostik Findley; Chem-Calk 916 Textured.
d. Bostik Findley; Chem-Calk 2639.
e. Pecora Corporation; Dynatrol I-XL.
f. Polymeric Systems Inc.; Flexiprene 1000.
g. Polymeric Systems Inc.; PSI-901.
h. Schnee-Morehead, Inc.; Permathane SM7100.
i. Schnee-Morehead, Inc.; Permathane SM7108.
j. Schnee-Morehead, Inc.; Permathane SM7110.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 50.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O.

G. Single-Component Pourable Urethane Sealant ES-1 and 3:

1. Available Products:

a. Bostik Findley; Chem-Calk 950.
b. Pecora Corporation; Urexpan NR-201.
c. Polymeric Systems Inc.; Flexiprene 952.

d. Schnee-Morehead, Inc.; Permathane SM7101.
e. Tremco; Tremflex S/L.
f. Tremco; Vulkem 45.

2. Type and Grade: S (single component) and P (pourable).
3. Class: 25.
4. Use Related to Exposure: T (traffic).
5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O.

2.4 LATEX JOINT SEALANTS

A. Joint Sealant Schedule: Joint Sealant Schedule at the end of this section outlines a description of joint construction and location where sealants referenced by LS numbers are typically applied.

B. Latex Sealant LS-7: Comply with ASTM C 834, Type P, Grade NF.

C. Available Products:

1. Bostik Findley; Chem-Calk 600.
2. Pecora Corporation; AC-20+.
3. Schnee-Morehead, Inc.; SM 8200.
4. Sonneborn, Division of ChemRex Inc.; Sonolac.
5. Tremco; Tremflex 834.

2.5 ACOUSTICAL JOINT SEALANTS

A. Joint Sealant Schedule: Joint Sealant Schedule at the end of this section outlines a description of joint construction and location where sealants referenced by AS numbers are typically applied.

B. Acoustical Sealant for Exposed and Concealed Joints AS-8: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:

1. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
2. Available Products:

a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.

2.6 PREFORMED JOINT SEALANTS

A. Preformed Silicone-Sealant System: Manufacturer's standard system consisting of precured low-modulus silicone extrusion, in sizes to fit joint widths indicated, combined with a neutral-curing silicone sealant for bonding extrusions to substrates, at locations required.

1. Available Products:

a. Dow Corning Corporation; 123 Silicone Seal.
b. GE Silicones; UltraSpan US1100.
c. Pecora Corporation; Sil-Span.
d. Tremco; Spectrem Ez Seal.

B. Preformed Foam Sealant: Manufacturer's standard preformed, precompressed, open-cell foam sealant that is manufactured from high-density urethane foam impregnated with a nondrying, water-repellent agent; is factory produced in precompressed sizes in roll or stick form to fit joint widths indicated; is coated on one side with a pressure-sensitive adhesive and covered with protective wrapping; develops a watertight and airtight seal when compressed to the degree specified by manufacturer; and complies with the following:

1. Available Products:

a. EMSEAL Joint Systems, Ltd.; Emseal 25V.
b. illbruck Sealant Systems, Inc.; Wilseal 600.
c. Polytite Manufacturing Corporation; Polytite B.
d. Polytite Manufacturing Corporation; Polytite Standard.
e. Sandell Manufacturing Co., Inc.; Polyseal.

2. Properties: Permanently elastic, mildew resistant, nonmigratory, nonstaining, and compatible with joint substrates and other joint sealants.

2.7 PREFORMED TAPE SEALANTS

A. Expanded Cellular Tape Sealant: Closed-cell, PVC foam tape sealant; factory coated with adhesive on both surfaces; packaged on rolls with release liner protecting adhesive; and complying with AAMA 800 for the following types:

1. Type 1, for applications in which tape acts as the primary sealant.
2. Type 2, for applications in which tape is used in combination with a full bead of liquid sealant.

2.8 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for

applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) O (open-cell material) [B (bicellular material with a surface skin) [or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.9 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Masonry.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

    a. Metal.
    b. Glass.

B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

H. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping, taking care not to pull or stretch material, producing seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures where expansion of sealant requires acceleration to produce seal, apply heat to sealant in compliance with sealant manufacturer's written instructions.

3.4 CLEANING

Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

	DESCRIPTION OF JOINT CONSTRUCTION AND LOCATION WHERE SEALANT IS TYPICALLY APPLIED*	JOINT SEALERS
	Exterior expansion joints in slabs and joints between exterior concrete slabs and vertical surfaces of adjacent structures.	Polyurethane Joint Filler w/ Single-Component Pourable Urethane Sealant
	Exterior joints between metal and concrete or masonry; joints in metal flashings; joints in metal and masonry including expansion joints; joints between dissimilar materials; joints in translucent panel systems; Additional Movement Capability.	Single-Component Neutral Curing Silicone Sealant
	Interior floor joints, floor expansion joints, and other floor joints in concrete slabs and around floor penetrations.	Single-Component Pourable Urethane Sealant, 50 hardness
	Exterior steel manufactured wall panel systems and at interior joints of rooms.	Single-Component Nonsag Urethane Sealant
	Interior wall perimeter joints in masonry; door and glazing joints; joints between dissimilar materials; Additional Movement Capability.	Single-Component Neutral-Curing Silicone Sealant
	Interior joints between plumbing fixtures and masonry.	Single Component Mildew Resistant-Silicone Sealant
	Interior joints in field-painted vertical and overhead surfaces at perimeter of hollow metal door frames, in gypsum drywall, concrete and all other joints not indicated otherwise.	Acrylic-Emulsion Sealant
	Vertical edges and tops abutting dissimilar materials of all gypsum board partitions scheduled with acoustical batt insulation.	Acoustical Sealants for Joints

* Install sealant indicated in joints fitting descriptions and locations listed as well as locations indicated on Drawings matching listed descriptions.

END OF SECTION 07 92 00

DIVISION 8- OPENINGS
SECTION 08 11 13- STEEL DOORS AND FRAMES

PART 1 GENERAL
1.1 REFERENCES
A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M	(2025) Structural Welding Code – Steel

ASTM INTERNATIONAL (ASTM)

ASTM A653/A653M	(2025a) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A879/A879M	(2012; R 2017) Standard Specification for Steel Sheet, zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
ASTM A924/A924M	(2022a) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM C578	(2023) Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
ASTM C591	(2022) Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation
ASTM C612	(2025) Standard Specification for Mineral Fiber Block and Board Thermal Insulation
ASTM D2863	(2019) Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
ASTM E1300	(2024) Standard Practice for Determining Load Resistance of Glass in Buildings
ASTM F2247	(2018) Standard Test Method for Metal Doors Used in Blast Resistant Applications (Equivalent Static Load Method)

ASTM F2248	(2012) Standard Practice for Specifying an Equivalent 3-Second Duration Design Loading for Blast Resistant Glazing Fabricated with Laminated Glass
ASTM F2927	(2012) Standard Test Method for Door Systems Subject to Airblast Loadings

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.115	(2016) Hardware Preparation in Steel Doors and Steel Frames

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM HMMA 810	(2009) Hollow Metal Doors

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80	(2025) Standard for Fire Doors and Other Opening Protectives
NFPA 105	(2025) Standard for Smoke Door Assemblies and Other Opening Protectives
NFPA 252	(2022) Standard Methods of Fire Tests of Door Assemblies

STEEL DOOR INSTITUTE (SDI/DOOR)

SDI/DOOR 111	(2009) Recommended Details for Standard Steel Doors, Frames, and Accessories and Related Components
SDI/DOOR 113	(2023) Standard Practice for Determining the Steady-State Thermal Transmittance of Steel Door and Frame Assemblies
SDI/DOOR A250.3	(2019) Test Procedure and Acceptance Criteria for Factory Applied Finish Coatings for Steel Doors and Frames
SDI/DOOR A250.4	(2022) Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors
SDI/DOOR A250.6	(2020) Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames
SDI/DOOR A250.8	(2023) Specifications for Standard Steel Doors and Frames
SDI/DOOR A250.11	(2022) Recommended Erection Instructions for Steel Frames

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 4-010-01	(2018; with Change 3, 2024) DoD Minimum Antiterrorism Standards for Buildings
UL SOLUTIONS (UL)	
UL 10C	(2016; Reprint May 2021) UL Standard for Safety Positive Pressure Fire Tests of Door Assemblies

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Doors; G

Frames; G

Accessories

SD-03 Product Data

Doors; G Recycled Content for Steel Door Product; S

Frames; G Recycled Content for Steel Frame Product; S

Accessories

[SD-04 Samples

Factory-applied Enamel Finish; G

]1.3 DELIVERY, STORAGE, AND HANDLING

Deliver doors, frames, and accessories undamaged and with protective wrappings or packaging.[Strap knock-down frames in bundles.][Provide temporary steel spreaders securely fastened to the bottom of each welded frame.] Store doors and frames on platforms under cover in clean, dry, ventilated, and accessible locations, with 1/4 inch airspace between doors. Remove damp or wet packaging immediately and wipe affected surfaces dry. Replace damaged materials with new.

PART 2 PRODUCTS

2.1 STANDARD STEEL DOORS

SDI/DOOR A250.8, except as specified otherwise. Prepare doors to receive door hardware as specified in Section 08 71 00 DOOR HARDWARE. Undercut where indicated. Provide exterior doors with top edge closed flush and sealed to prevent water intrusion. Provide doors at 1-3/4 inch thick, unless

otherwise indicated. Provide door material that uses a minimum of 25 percent recycled content. Submit shop drawings showing each type of door. Provide a schedule of doors within the shop drawing submittal identifying door number, door and frame types and construction, dimensions, thickness,[methods of assembly,][door louvers,][fire ratings,][hardware sets,][accessories,][and glazing size and type]. Provide data indicating percentage of recycled content for steel door product.[Provide exterior glazing in accordance with ASTM F2248 and ASTM E1300.][Exterior doors must be tested in accordance with ASTM F2247 or ASTM F2927 to meet requirements of UFC 4-010-01.]

2.1.1 Classification - Level, Performance, Model

2.1.1.1 Standard Duty Doors

SDI/DOOR A250.8, Level 1, physical performance Level C, Model [1] [2], of size(s) and design(s) indicated and core construction as required by the manufacturer. Provide [where shown][for doors No. [_____]].

2.1.1.2 Heavy Duty Doors

SDI/DOOR A250.8, Level 2, physical performance Level B, Model [1][2], with core construction as required by the manufacturer [for interior doors][and][for exterior doors], of size(s) and design(s) indicated.[Where vertical stiffener cores are required, the space between the stiffeners must be filled with board insulation.][Provide Level 2 [where indicated][for doors No. [_____]].]

2.1.1.3 Extra Heavy Duty Doors

SDI/DOOR A250.8, Level 3, physical performance Level A, Model [1][2][3] with core construction as required by the manufacturer [for interior doors][and][for indicated exterior doors], of size(s) and design(s) indicated.[Where vertical stiffener cores are required, the space between the stiffeners must be filled with board insulation.][Provide Level 3 [where indicated] [for doors No. [_____]].]

2.1.1.4 Maximum Duty Doors

SDI/DOOR A250.8, Level 4, physical performance Level A, Model [1][2] with core construction as required by the manufacturer [for interior doors][and
][for indicated exterior doors], of size(s) and design(s) indicated.[
Where vertical stiffener cores are required, the space between the stiffeners must be filled with board insulation.][Provide Level 4 [where indicated] [for doors No. [_____]].]

[2.2 CUSTOM HOLLOW METAL DOORS

Provide custom hollow metal doors where nonstandard steel doors are indicated. Provide custom steel doors in the door size(s), design(s), materials, construction, gages, and finish as specified for custom steel doors and complying with the requirements of NAAMM HMMA 810. Fill all spaces in exterior doors with insulation. Close top and bottom edges with steel channels not lighter than 16 gage.[Close tops of exterior doors flush with an additional channel and seal to prevent water intrusion.] Prepare doors to receive hardware specified in Section 08 71 00 DOOR HARDWARE.[Undercut doors where indicated.] Provide doors at 1-3/4 inch thick, unless otherwise indicated.[Provide exterior glazing in accordance with

ASTM F2248 and ASTM E1300.][Exterior doors much be tested in accordance with ASTM F2247 and ASTM F2927 to meet the requirements of UFC 4-010-01.]

][2.3 INSULATED STEEL DOOR SYSTEMS

Provide insulated steel doors and frames in accordance with SDI/DOOR 113 at entrances to dwelling units and where indicated. Meet energy requirements including Solar Heat Gain Coefficient (SHGC) and U-factor. Provide insulated steel doors with a core of polyurethane foam; face sheets, edges, and frames of galvanized steel not lighter than 23 gage, 16 gage, and 16 gage respectively; magnetic weatherstripping; nonremovable-pin hinges; thermal-break aluminum threshold; and vinyl door bottom. Provide to doors and frames a phosphate treatment, rust-inhibitive primer, and baked acrylic enamel finish. Test doors in accordance with SDI/DOOR A250.4 and meet the requirements for Level C. Prepare doors to receive specified hardware. Provide doors 1-3/4 inch thick.

]2.4 ACCESSORIES

2.4.1 Shelves for Dutch Doors

SDI/DOOR 111. Fabricate shelves of steel not lighter than 16 gage, [[_____] inches wide][of the size indicated]. Provide brackets of stock type fabricated of the same metal used to fabricate shelves.

2.4.2 Louvers

2.4.2.1 Interior Louvers

SDI/DOOR 111. Where indicated, provide louvers of stationary [sightproof][and][lightproof] type[where scheduled].[Louvers for lightproof must not transmit light.] Detachable moldings on room or non security side of door; on security side of door, moldings to be integral part of louver. Form louver frames of 20 gage steel and louver blades of a minimum 24 gage.[Louvers for lightproof doors must have minimum of 20 percent net-free opening.][Sightproof louvers to be inverted ["V" blade design with minimum 55][and][inverted ["Y"] blade design with minimum 40] percent net-free opening.]

2.4.2.2 Exterior Louvers

Provide louvers of the inverted ["Y"]["V"]["Z"] type with minimum of [30][55][35] percent net-free opening. Weld or tenon louver blades to continuous channel frame and weld assembly to door to form watertight assembly. Form louvers of hot-dip galvanized steel of same gage as door facings. At louvers provide steel-framed [insect][bird] screens secured to room side and readily removable. Provide [aluminum wire cloth, 18 by 18 or 18 by 16 inch mesh, for insect screens][galvanized steel, 1/2 by 1/2 inch mesh hardware cloth, for bird screens]. Net-free louver area to be before screening.

2.4.3 Astragals

For pairs of exterior steel doors which will not have aluminum astragals or removable mullions, as specified in Section 08 71 00 DOOR HARDWARE provide overlapping steel astragals with the doors.

2.4.4 Moldings

Provide moldings around glass of interior and exterior doors and louvers of interior doors. Provide nonremovable moldings on outside of exterior doors and on corridor side of interior doors. Other moldings may be stationary or removable. Secure inside moldings to stationary moldings, or provide snap-on moldings.

2.5 INSULATION CORES

Provide insulating cores at all exterior doors[and other specific doors noted in the door schedule], and provide an apparent U-factor of .37 BTU/h x ft2 x degrees F in accordance with SDI/DOOR 113 and conforming to:

a. Rigid Cellular Polyisocyanurate Foam: ASTM C591, Type I or II, foamed-in-place or in board form, with oxygen index of not less than 22 percent when tested in accordance with ASTM D2863; or

b. Rigid Polystyrene Foam Board: ASTM C578, Type I or II; or

c. Mineral board: ASTM C612, Type I.

2.6 STANDARD STEEL FRAMES

SDI/DOOR A250.8, Level [1][2][3][4], except as otherwise specified. Form frames to sizes and shapes indicated, with[welded corners][or][knock-down field-assembled corners]. Provide steel frames for doors,[transoms,][sidelights,][mullions,][cased openings,][and][interior glazed panels,] unless otherwise indicated. Submit shop drawings showing each type of frame. Provide frame product that uses a minimum of 25 percent recycled content. Provide data indicating percentage of recycled content for steel frame product.

2.6.1 Welded Frames

Continuously weld frame faces at corner joints. Mechanically interlock or continuously weld stops and rabbets. Grind welds smooth.

Weld frames in accordance with the recommended practice of the Structural Welding Code Sections 1 through 6, AWS D1.1/D1.1M and in accordance with the practice specified by the producer of the metal being welded.

[2.6.2 Knock-Down Frames

Design corners for simple field assembly by concealed tenons, splice plates, or interlocking joints that produce square, rigid corners and a tight fit and maintain the alignment of adjoining members. Provide locknuts for bolted connections.

]2.6.3 Mullions and Transom Bars

Provide mullions and transom bars of closed or tubular construction with heads and jambs butt-welded together[or knock-down for field assembly]. Bottom of door mullions must have adjustable floor anchors and spreader connections.

2.6.4 Stops and Beads

Provide form and loose stops and beads from 20 gage steel. Provide for glazed and other openings in standard steel frames. Secure beads to frames with oval-head, countersunk Phillips self-tapping sheet metal screws or concealed clips and fasteners. Space fasteners approximately 12 to 16 inch on center. Miter molded shapes at corners. Butt or miter square or rectangular beads at corners.

2.6.5 Terminated Stops

Where indicated, terminate interior door frame stops 6 inch above floor.[Do not terminate stops of frames for [lightproof,] [soundproof,] [or lead-lined] doors.]

2.6.6 Cased Openings

Fabricate frames for cased openings of same material, gage, and assembly as specified for metal door frames, except omit door stops and preparation for hardware.

2.6.7 Anchors

Provide anchors to secure the frame to adjoining construction. Provide steel anchors, zinc-coated not lighter than 18 gage.

2.6.7.1 Wall Anchors

Provide at least three anchors for each jamb. For frames which are more than 7.5 feet in height, provide one additional anchor for each jamb for each additional 2.5 feet or fraction thereof.

a. Masonry: Provide anchors of corrugated or perforated steel straps or 3/16 inch diameter steel wire, adjustable or T-shaped;

b. Stud partitions: Weld or otherwise securely fasten anchors to backs of frames. Design anchors to be fastened [to wood studs with nails,] [to closed steel studs with sheet metal screws, and to open steel studs by wiring or welding];

c. Completed openings: Secure frames to previously placed concrete or masonry with expansion bolts in accordance with SDI/DOOR 111; and

d. Solid plaster partitions: Secure anchors solidly to back of frames and tie into the lath. Provide adjustable top strut anchors on each side of frame for fastening to structural members or ceiling construction above. Provide size and type of strut anchors as recommended by the frame manufacturer.

2.6.7.2 Floor Anchors

Provide floor anchors drilled for 3/8 inch anchor bolts at bottom of each jamb member.[Where floor fill occurs, terminate bottom of frames at the indicated finished floor levels and support by adjustable extension clips
resting on and anchored to the structural slabs.]

2.7 FIRE [AND] [SMOKE] DOORS AND FRAMES

Provide fire[and smoke] doors and frames in accordance with NFPA 80[and][NFPA 105] and this specification.[Include insulated core materials in fire doors where indicated in the door schedule.]

2.7.1 Labels

Provide fire doors and frames bearing the label of Underwriters Laboratories (UL), Factory Mutual Engineering and Research (FM), or Warnock Hersey International (WHI) attesting to the rating required. Testing must be in accordance with NFPA 252 or UL 10C. Provide labels that are metal with raised letters, bearing the name or file number of the door and frame manufacturer. Labels must be permanently affixed at the factory to frames and to the hinge edge of the door. Do not paint door and labels.

2.7.2 Oversized Doors

For fire doors and frames which exceed the size for which testing and labeling are available, furnish certificates stating that the doors and frames are identical in design, materials, and construction to a door which has been tested and meets the requirements for the class indicated.

2.7.3 Astragal on Fire [and Smoke] Doors

On pairs of labeled fire doors, conform to NFPA 80 and UL requirements.[On smoke control doors, conform to NFPA 105.]

2.8 EXTERIOR FRAMES

Provide thermal insulation in all exterior frames. Provide frames of a minimum Level 4, with frames of a minimum thickness of 0.067 inch, 14 gage.

2.9 HARDWARE PREPARATION

Drill and tap doors and frames to receive finish hardware. Prepare doors and frames for hardware in accordance with the applicable requirements of SDI/DOOR A250.8 and SDI/DOOR A250.6. For additional requirements refer to ANSI/BHMA A156.115. Drill and tap for surface-applied hardware at the project site. Build additional reinforcing for surface-applied hardware into the door at the factory. Punch door frames[, with the exception of frames that will have weatherstripping [or] [lightproof] [or] [soundproof] gasketing,] to receive a minimum of two rubber or vinyl door silencers on lock side of single doors and one silencer for each leaf at heads of double doors. Set lock strikes out to provide clearance for silencers.

2.10 FINISHES

[2.10.1 Factory-Primed Finish

Thoroughly clean all surfaces of doors and frames then chemically treat and factory prime with a rust inhibiting coating as specified in SDI/DOOR A250.8 [.][, or paintable A25 galvannealed steel without primer. Where coating is removed by welding, apply touchup of factory primer.]

][2.10.2 Hot-Dip Zinc-Coated and Factory-Primed Finish

Fabricate [exterior][interior][scheduled] doors and frames from hot dipped zinc coated steel, alloyed type, that complies with ASTM A924/A924M and ASTM A653/A653M. The coating weight must meet or exceed the minimum requirements for coatings having 0.4 ounces per square foot, total both sides, i.e., A40. Repair damaged zinc-coated surfaces by the application of zinc dust paint. Thoroughly clean and chemically treat to insure maximum paint adhesion. Factory prime as specified in SDI/DOOR A250.8.[Provide for [exterior doors][and][interior doors][door openings No. [_____]]].

]2.10.3 Electrolytic Zinc-Coated Anchors and Accessories

Provide electrolytically deposited zinc-coated steel in accordance with ASTM A879/A879M, Commercial Quality, Coating Class A. Phosphate treat and factory prime zinc-coated surfaces as specified in SDI/DOOR A250.8.

[2.10.4 Factory-Applied Enamel Finish

Provide coatings that meet test procedures and acceptance criteria in accordance with SDI/DOOR A250.3. After factory priming, apply [one coat][two coats] of [low-gloss][medium-gloss] enamel to exposed surfaces.
Separately bake or oven dry each coat. Drying time and temperature requirements must be in accordance with the coating manufacturer's recommendations. Provide finish coat color(s) [as indicated][_____] to match approved color sample(s).

]2.11 FABRICATION AND WORKMANSHIP

Provide finished doors and frames that are strong and rigid, neat in appearance, and free from defects, waves, scratches, cuts, dents, ridges, holes, warp, and buckle. Provide molded members that are clean cut, straight, and true, with joints coped or mitered, well formed, and in true alignment. Dress exposed welded and soldered joints smooth. Design door frame sections for use with the wall construction indicated. Corner joints must be well formed and in true alignment. Conceal fastenings where practicable.[Frames for use in solid plaster partitions must be welded construction.][On wraparound frames for masonry partitions, provide a throat opening 1/8 inch larger than the actual masonry thickness.][Design[other] frames in exposed masonry walls or partitions to allow sufficient space between the inside back of trim and masonry to receive caulking compound.]

2.12 PROVISIONS FOR GLAZING

Materials are specified in Section 08 81 00, GLAZING.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Frames

Set frames in accordance with SDI/DOOR A250.11. Plumb, align, and brace securely until permanent anchors are set. Anchor bottoms of frames with expansion bolts or powder-actuated fasteners. Build in or secure wall anchors to adjoining construction.[Where frames require ceiling struts or overhead bracing, anchor frames to the struts or bracing.]

3.1.2 Doors

Hang doors in accordance with clearances specified in SDI/DOOR A250.8. After erection and glazing, clean and adjust hardware.

3.1.3 Fire [and Smoke] Doors and Frames

Install fire doors and frames, including hardware, in accordance with NFPA 80.[Install[fire rated] smoke doors and frames in accordance with [NFPA 80][and][NFPA 105].]

3.2 PROTECTION

Protect doors and frames from damage. Repair damaged doors and frames prior to completion and acceptance of the project or replace with new, as directed. Wire brush rusted frames until rust is removed. Clean thoroughly. Apply an all-over coat of rust-inhibitive paint of the same type used for shop coat.

3.3 CLEANING

Upon completion, clean exposed surfaces of doors and frames thoroughly.
Remove mastic smears and other unsightly marks.

-- End of Section --

DIVISION 8 – OPENINGS

SECTION 08 33 23- OVERHEAD COILING DOORS

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 CIVIL ENGINEERS (ASCE)

ASCE 7-16	(2017; Errata 2018; Supp 1 2018) Minimum Design Loads and Associated Criteria for Buildings and Other Structures

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE FUN IP	(2025) Fundamentals Handbook, I-P Edition

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B29.400	(2001; (R 2008) (R 2013) (R 2018) (R 2023)) Combination, "H" Type Mill Chains, and Sprockets

ASTM INTERNATIONAL (ASTM)

ASTM A36/A36M	(2019) Standard Specification for Carbon Structural Steel

ASTM A47/A47M	(1999; R 2022; E 2022) Standard Specification for Ferritic Malleable Iron Castings
ASTM A48/A48M	(2022) Standard Specification for Gray Iron Castings
ASTM A53/A53M	(2024) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A123/A123M	(2024) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153/A153M	(2023) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A307	(2023) Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM A653/A653M	(2025a) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A666	(2023) Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar
ASTM A780/A780M	(2020) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM A924/A924M	(2022a) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM B209	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B209M	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric)

ASTM B221	(2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B221M	(2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM E84	(2025) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E283/E283M	(2019) Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E330/E330M	(2014; R 2021) Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
ASTM F568M	(2007) Standard Specification for Carbon and Alloy Steel Externally Threaded Metric Fasteners

DOOR AND ACCESS SYSTEM MANUFACTURERS ASSOCIATION (DASMA)

ANSI/DASMA 105	(2017) Test Method for Determining Air Leakage of Sectional Doors
ANSI/DASMA 108	(2017) Standard Method for Testing Sectional Garage Doors, Rolling Doors and Flexible Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA ICS 1	(2022) Standard for Industrial Control and Systems: General Requirements
NEMA ICS 2	(2000; R 2020) Industrial Control and Systems Controllers, Contactors, and Overload Relays Rated 600 V
NEMA ICS 6	(1993; R 2016) Industrial Control and Systems: Enclosures
NEMA MG 00001	(2024) Motors and Generators

NEMA ST 1	(1988; R 1994; R 1997) Specialty Transformers (Except General Purpose Type)

NATIONAL FENESTRATION RATING COUNCIL (NFRC)

NFRC 400	(2017) Procedure for Determining Fenestration Product Air Leakage

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2026; TIA 26-1; ERTA 26-1; TIA 26-2; TIA 26-3; TIA 26-4; TIA 26-5; TIA 26-6; TIA 26-7; ERTA 26-2; ERTA 26-3) National Electrical Code
NFPA 80	(2025) Standard for Fire Doors and Other Opening Protectives

UL SOLUTIONS (UL)

UL 325	(2017; Reprint Sep 2025) UL Standard for Safety Door, Drapery, Gate, Louver, and Window Operators and Systems
UL 674	(2022) UL Standard for Safety Electric Motors and Generators for Use in Hazardous (Classified) Locations

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Overhead Coiling Doors[; G]

Counterbalancing Mechanism[; G]

Manual Door Operators[; G]

Electric Door Operators[; G]

Bottom Bars[; G]

Guides[; G]

Mounting Brackets[; G]

Hood[; G]

Installation Drawings[; G]

SD-03 Product Data

Overhead Coiling Doors[; G]

Hardware[; G]

Counterbalancing Mechanism[; G]

Manual Door Operators[; G]

Electric Door Operators[; G]

Recycled content for steel curtain slats; S

Recycled content for stainless steel curtain slats; S

SD-05 Design Data

Overhead Coiling Doors[; G]

Hardware[; G]

Counterbalancing Mechanism[; G]

Manual Door Operators[; G]

Electric Door Operators[; G]

SD-07 Certificates

Air Leakage Test Reports

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals, Data Package 2[; G]

SD-11 Closeout Submittals

Warranty[; G]

1.3 QUALITY CONTROL

1.3.1 Warranty

Furnish a written guarantee that the helical spring and counterbalance mechanism are free from defects in material and workmanship for not less than [two] [_____] years after completion and acceptance of the project.

Warrant that upon notification by the Government, any defects in material, workmanship, and door operation are immediately correct within the same time period covered by the guarantee, at no cost to the Government.

1.3.2 Operation And Maintenance Submittals

Submit [6] [_____] copies of the operation and maintenance manuals 30 calendar days prior to testing the Overhead Coiling Door Assemblies. Update and resubmit data for final approval no later than 30 calendar days prior to cContract completion.

Submit Operation and Maintenance Manuals for Overhead Coiling Door Assemblies, including the following items:

[Manual Door Operators

] Electric Door Operators

[Hood

] Counterbalancing Mechanism

Painting

Provide operation and maintenance manuals which are consistent with manufacturer's standard brochures, schematics, printed instructions, operating procedures, and safety precautions.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver doors to the jobsite wrapped in a protective covering with the brands and names clearly marked thereon. Store doors in an adequately ventilated dry location that is free from dirt and dust, water, or other contaminants. Store in a manner that permits easy access for inspection and handling. Handle doors carefully to prevent damage. Remove damaged items that cannot be restored to like-new condition and provide new items.

1.5 PERFORMANCE REQUIREMENTS

Air Leakage: Exterior overhead coiling doors forming part of the building thermal envelope must have a maximum air leakage rate of 0.4 cfm/ft^2 of door area at a minimum static air pressure differential of 1.57 psf when tested in accordance with ANSI/DASMA 105, NFRC 400, or ASTM E283/E283M. Testing must be performed on the complete door assembly, including guides, curtain, hood, and perimeter seals, in the fully closed and latched position.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

Provide overhead coiling doors with interlocking slats, complete with anchoring and door hardware, guides, hood, and operating mechanisms, and designed for use on openings as indicated. Doors must be spring counterbalanced, rolling type, and designed for use on [exterior] [or] [interior] openings, as indicated. Doors must be operated [by means of lifting handles] [by hand chain with gear or sprocket reduction] [by hand crank with gear or sprocket reduction] [by electric-power with auxiliary hand chain operation]. Doors to be surface-mounted type with guides at jambs set back a sufficient distance to provide a clear opening when door is in open position. [Mount exterior doors [as indicated] [on interior face of walls].] [Where doors are indicated to be chain- or crank-operated, the door design and construction must allow for future installation of electric-power operation.]

2.1.1 Design Requirements

2.1.1.1 Door Detail Shop Drawings

Provide installation drawings for door assemblies which show: elevations of each door type, shape and thickness of materials, finishes, details of joints and connections, details of guides and fittings, rough opening dimensions, location and description of hardware, anchorage locations, and counterbalancing mechanism and door operator details. Show locations of replaceable fusible links on wiring diagrams for power, signal and controls.
[For motor-operated doors include supporting brackets for motors, location, type, and ratings of motors, and safety devices.] Include a schedule showing the location of each door with the drawings.

2.1.2 Performance Requirements

2.1.2.1 Wind Loading

Design and fabricate door assembly to withstand the wind loading pressure of at least [_____] pounds per square foot in accordace with ANSI/DASMA 108.
Provide test data showing compliance with ASTM E330/E330M. Sound engineering principles may be used to interpolate or extrapolate test results to door sizes not specifically tested. Ensure that the complete assembly meets or exceeds the requirements of ASCE 7-16.

2.1.2.2 Operational Cycle Life

Design all portions of the door, hardware and operating mechanism that are subject to movement, wear, or stress fatigue to operate through a minimum number of [10] [_____] cycles per [day] [hour]. One complete cycle of door operation is defined as when the door is in the closed position, moves to the fully open position, and returns to the closed position.

2.2 COMPONENTS

2.2.1 Overhead Coiling Doors

2.2.1.1 Curtain Materials and Construction

[Provide curtain slats fabricated from Grade A steel sheets conforming to ASTM A653/A653M, with the additional requirement of a minimum yield point of 33,000 psi. Provide [24][22][20][18] gauge sheets, Grade 40 steel with galvanized steel zinc coating in conformance with ASTM A653/A653M and ASTM A924/A924M. Provide steel curtain slats containing a minimum of [20][_____] percent recycled content. Submit data identifying percentage of recycled content for steel curtain slats.

][Provide curtain slats fabricated from Type 304 stainless steel sheets conforming to ASTM A666; sheet thickness as required by the size of the door to meet the required windload. Provide stainless steel curtain slats containing a minimum of [60][_____] percent recycled content. Submit data identifying percentage of recycled content for stainless steel curtain slats.

][Provide curtain slats fabricated from aluminum sheets conforming to ASTM B209, or ASTM B221 extrusions, alloy and tempering standard from the manufacturer for type of use and finish indicated; with a thickness as required by the size of the door to meet the required windload.

] Fabricate doors from interlocking cold-rolled slats, with section profiles as specified, designed to withstand the specified wind loading. Ensure the provided slats are continuous without splices for the width of the door.

2.2.1.2 Curtain Bottom Bar

Install curtain bottom bars as pairs of angles or using extrusions from the manufacturer's standard steel, stainless and aluminum extrusions not less than 2.0 by 2.0 inches by 0.188 inch. Do not use aluminum on doors more than 16 feet wide. Ensure steel extrusions conform to ASTM A36/A36M. Stainless steel extrusions conforming to ASTM A666, Type 304. Aluminum extrusions conforming to ASTM B221. Galvanize angles and fasteners in accordance with ASTM A653/A653M and ASTM A924/A924M. Coat welds and abrasions with paint conforming to ASTM A780/A780M.

[Provide two minimum 2 inch by 2 inch by 1/8 inch structural steel angles.

]2.2.1.3[Vision Lites

Provide complete manufacturer's standard vision panels assembly consisting of clear acrylic glazing panels or fire-rated glass as required for the type door.

]2.2.1.4 Endlocks (and Windlocks)

Provide endlocks of Grade B cast steel conforming to ASTM A47/A47M, galvanized in accordance with ASTM A153/A153M. Secure locks at every other curtain slat. [In addition to endlocks, exterior doors which are more than 16 feet wide or which have a design wind load of more than 20 pounds per square foot, must have windlocks of manufacturer's standard design.
Windlocks must prevent curtain from leaving guide because of deflection from wind pressure or other forces.]

2.2.1.5 Weather Stripping

Provide a hood baffle inside the hood that is a minimum 1/16 inch thick sheet of vinyl, neoprene rubber or equivalent. Provide guide weather stripping that is a minimum 1/16 inch thick sheet of vinyl, neoprene rubber, or equivalent.

Provide bottom bar weather-stripping that is a minimum 1/16 inch thick sheet of vinyl, neoprene rubber, or equivalent.

2.2.1.6 Locking Devices

Ensure that the slide bolt engages through slots in tracks for locking by padlock, located on both left and right jamb sides, operable from coil side.

Provide a locking device assembly which includes cylinder lock, operating handle, cam plate, and adjustable locking bars to engage through slots in tracks.

[Provide a chain lock keeper suitable for a standard padlock.

]2.2.1.7 Safety Interlock

Equip power-operated doors with a safety interlock switch to disengage power supply when the door is locked, or provide an operator with an internal lock sensing device to prevent the door opening when the door is locked.

2.2.2 Hardware

Ensure that all hardware conforms to ASTM A153/A153M, ASTM A307, and ASTM F568M.

2.2.2.1 Guides

Fabricate curtain jamb guides from the manufacturer's standard angles or channels of same material and finish as curtain slats unless otherwise indicated. Provide guides with sufficient depth or incorporate a steel locking bar to retain the curtain in place under the wind pressure specified. Ensure curtain operates smoothly. Slot bolt holes for track adjustment. Securely attach guides to adjoining construction with not less than 3/8 inch diameter bolts, spaced near each end and not over 30 inches apart.

[Ensure guides are roll-formed steel channel bolted to angle or structural grade, three angle assembly of [steel][stainless steel][aluminum] to form a slot of sufficient depth to retain curtains in guides to achieve 20 psf windload standard. Guides may be provided with integral windlock bars and removable bottom bar stops.

][Fabricate with [structural steel][stainless steel][aluminum] angles. Provide windlock bars of same material when windlocks are required to meet specified wind load. Flare the top of inner and outer guide angles outwards to form bellmouth for smooth entry of curtain into guides. Provide removable guide stoppers to prevent over travel of curtain and bottom bar.

]2.2.2.2 Hood

Provide a hood with a minimum[24-gauge][aluminum 18-gauge B&S][galvanized][stainless steel] sheet metal, flanged at top for attachment to header and flanged at bottom to provide longitudinal stiffness. The hood encloses the curtain coil and counterbalance mechanism.

[Hoods for openings more than 12 feet in width must have intermediate support brackets to prevent excessive sag.] [Provide a weather baffle at the lintel or inside the hood of each exterior door.

]2.2.3 Counterbalancing Mechanism

Counterbalance doors by means of manufacturer's standard mechanism with an adjustable-tension, steel helical torsion spring mounted, around a steel shaft and contained in a spring barrel connected to top of curtain with barrel rings. Use grease-sealed or self-lubricating bearings for rotating members.

2.2.3.1 Brackets

Provide the manufacturer's standard mounting brackets with one located at each end of the counterbalance barrel conforming to ASTM A36/A36M. Provide brackets of hot-rolled steel.

[Brackets will be of[3/16 inch][1/4 inch] minimum thick steel plates, with permanently sealed ball bearings. Designed to enclose ends of coil and provide support of counterbalance pipe at each end.

]2.2.3.2 Counterbalance Barrels

Curtain must roll up on a barrel supported at head of opening on brackets and be balanced by a torsion spring system in the barrel. Fabricate spring barrel of manufacturer's standard hot-formed, structural-quality, welded or seamless carbon-steel pipe, conforming to ASTM A53/A53M or equivalent. Ensure the barrel is of sufficient diameter and wall thickness to support rolled-up curtain without distortion of slats. Limit barrel deflection to not more than 0.03 inch per foot of span under full load.

a. Barrel

Provide steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot of width.

b. Spring Balance

Provide an oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door. Ensure that effort to operate manually operated units does not exceed 25 lbs. At least 80 percent of the door weight must be counterbalanced at any position. Provide wheel for applying and adjusting spring torque.

2.2.3.3 Spring Balance

Install one or more oil-tempered, heat-treated steel helical torsion springs within the barrel, capable of producing sufficient torque to assure easy operation of the door curtain. Provide and size springs to

counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Secure ends of springs to barrel and shaft with cast-steel barrel plugs.

2.2.3.4 Torsion Rod for Counter Balance

Fabricate rod from the manufacturer's standard cold-rolled steel, sized to hold fixed spring ends and carry torsional load.

[2.2.3.5 Counterbalance Shaft Assembly

[a. Barrel

Provide steel pipe capable of supporting the curtain load with maximum deflection of 0.03 inches per foot of width.

][b. Spring Balance

Provide an oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door. Ensure that maximum effort to operate does not exceed 25 pounds. Provide wheel for applying and adjusting spring torque.

]2.2.4] Manual Door Operators

[2.2.4.1 Manual Push-Up Door Operators

Provide lifting handles on both sides of door and counterbalance in a manner to provide easy operation while raising or lowering the curtain by hand. Adjust counterbalance mechanisms so that the required lift or pull for operation does not exceed 25 pounds unless another type of door operator is indicated. Provide pull-down straps or pole hooks on bottom rail of doors over 7 feet high.

][2.2.4.2 Manual Chain-Hoist Door Operators

Provide door operators which consist of an endless steel hand chain, chain-pocket wheel, guard, and a geared reduction unit [of at least a 3 to 1 ratio] [with a maximum lifting force of[25 lbf][30 lbf]]. Required pull for operation cannot exceed 35 pounds. Chain must extend to within 3 feet of floor.

Provide chain hoists with a mechanism allowing the curtain to be stopped at any point in its upward or downward travel and to remain in that position until moved to the fully open or closed position. Provide hand chains of galvanized steel. Ensure that the yield point of the chain is at least three times the required hand-chain pull.

Provide chain sprocket wheels of cast iron conforming to ASTM A48/A48M.][2.2.4.3 Manual Crank-

Hoist Door Operators

Provide door operators which consist of crank and crank gearbox, steel crank drive shaft, and gear-reduction unit with a maximum[25 lbf][30 lbf] force to turn crank. Fabricate gearbox to be oil tight and

to completely enclose operating mechanism. Gears must be high-grade gray iron, cast from machine-cut patterns.

]2.2.5 Electric Door Operators

Provide electrical wiring and door operating controls conforming to the applicable requirements of NFPA 70 and UL 325. The door manufacturer must furnish automatic control and safety devices, including extra flexible type SO cable and spring-loaded automatic takeup reel or equivalent device, as required for proper operation of the doors. Conduit, wiring, and mounting of controls are specified in Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM.

[Electrical materials, equipment, and devices for installation in hazardous locations, as defined by NFPA 70, must be specifically approved by Underwriters Laboratories or an independent testing agency using equivalent standards, for the particular chemical group and the class and division of hazardous location involved.

] Electric door-operator assemblies need to be the sizes and capacities recommended and provided by the door manufacturer for specified doors.
Furnish complete assemblies with electric motors and factory-prewired motor controls, starter, gear reduction units, solenoid-operated brakes, clutch, remote-control stations, manual or automatic control devices, and accessories as required for proper operation of the doors.

Design the operators so that motors may be removed without disturbing the limit-switch adjustment and affecting the emergency auxiliary operators.

Provide a manual operator of crank-gear or chain-gear mechanisms with a release clutch to permit manual operation of doors in case of power failure. Arrange the emergency manual operator so that it may be put into and out of operation from floor level, and its use does not affect the adjustment of the limit switches. Provide an electrical or mechanical device that automatically disconnects the motor from the operating mechanism when the emergency manual operating mechanism is engaged.

2.2.5.1 Door-Operator Types

[Provide an operator mounted to the right or left door head plate with the operator on top of the door-hood assembly and connected to the door drive shaft with drive chain and sprockets. Headroom is required for this type of mounting.]

[Provide an operator mounted to the right or left door head plate with the operator on coil side of the door-hood assembly and connected to the door drive shaft with drive chain and sprockets. Front clearance is required for this type of mounting.]

[Provide an operator mounted to the inside front wall on the left or right side of door and connected to door drive shaft with drive chain and sprockets. Side room is required for this type of mounting. Wall mounted operator can also be mounted above or below shaft; if above shaft, headroom is required.]

[Provide a bench mounted operator mounted to the right or left door head plate and connected to the door drive shaft with drive chain and sprockets. Side room is required for this type of mounting.]

[Provide a through-wall operator which is mounted on other side of wall from coil side of door.]

2.2.5.2 Electric Motors

Provide motors which are the high-starting-torque, reversible, constant-duty electrical type with overload protection of sufficient torque and horsepower to move the door in either direction from any position. Ensure they produce a door-travel speed of not less than 8 nor more than 12 inches per second without exceeding the horsepower rating.

Provide motors which conform to NEMA MG 00001 designation, temperature rating, service factor, enclosure type, and efficiency to the requirements specified. Motors must be suitable for operation on current of the characteristics indicated.[Single-phase motors must not have commutation or more than one starting contact.][Motor enclosures must be the drip-proof type or NEMA TEFC and TENV type.] Install motors in approved locations.

[Certify and label explosion-proof motors to indicate conformance to the following:

[UL 674, Class I, Groups C and D]

[UL 674, Class II, Groups F and G]]

2.2.5.3 Motor Bearings

Select bearings with bronze-sleeve or heavy-duty ball or roller antifriction type with full provisions for the type of thrust imposed by the specific duty load.

Pre-lubricate and factory seal bearings in motors less than 1/2 horsepower.

Equip motors coupled to worm-gear reduction units with either ball or roller bearings.

Equip bearings in motors 1/2 horsepower or larger with lubrication service fittings. Fit lubrication fittings with color-coded plastic or metal dust caps.

In any motor, bearings that are lubricated at the factory for extended duty periods do not need to be lubricated for a given number of operating hours. Display this information on an appropriate tag or label on the motor with instructions for lubrication cycle maintenance.

2.2.5.4 Motor Starters, Controls, and Enclosures

Provide each door motor with: a factory-wired, unfused, disconnect switch; a reversing, across-the-line magnetic starter with thermal overload protection; 24-volt operating coils with a control transformer limit switch; and a safety interlock assembled in a NEMA ICS 6 type enclosure as specified herein. Ensure control equipment conforms to NEMA ICS 1 and NEMA ICS 2.

Provide adjustable switches, electrically interlocked with the motor controls and set to stop the door automatically at the fully open and fully closed position.

2.2.5.5 Control Enclosures

Provide control enclosures that conform to NEMA ICS 6 for [NEMA Type

4][NEMA Type 4X][general purpose NEMA Type 1]. [oil-tight and dust-tight NEMA Type 12.] [explosion-proof, NEMA Type 7, group as indicated.] [explosion-proof NEMA Type 9, group as indicated.]

2.2.5.6 Transformer

Provide starters with 230/460 to 115 volt control transformers with one secondary fuse when required to reduce the voltage on control circuits to 24volts or less. Provide a transformer conforming to NEMA ST 1.

2.2.5.7 Sensing-Edge Device

Provide each door with a pneumatic or electric sensing device that meets UL 325, extends the full width of the door, and is located within a U-section neoprene or rubber astragal, mounted on the bottom rail of the bottom door section. Device needs to immediately stop and reverse the door upon contact with an obstruction in the door opening or upon failure of the device or any component of the control system and cause the door to return to its user-defined open position. Any momentary door-closing circuit must be automatically locked out and the door must be operable manually or with constant pressure controls until the failure or damage has been corrected. A sensing device is not a substitute for a limit switch.

Connect sensing device to the control circuit through a retracting cord and reel.

2.2.5.8 Remote-Control Stations

[Remote control stations must be installed at height standards above floor per ABA, and all switches must be located so that the operator will always have complete visibility of the door. Provide interior remote control stations that are full-guarded, momentary-contact three-button, heavy-duty, surface-mounted NEMA ICS 6 type enclosures as specified. Mark buttons "OPEN," "CLOSE," and "STOP." The "OPEN" and "STOP" buttons must be of the type requiring only momentary pressure to operate. The "CLOSE" button must be of the type either requiring constant pressure to maintain the closing motion of the door or momentary pressure when installed with a monitored entrapment detection device which, upon failure of the device or any component of the control system, cause the door to return to its full open position. When the door is in motion and the "STOP" button is pressed, ensure the door stops instantly and remains in the stopped position. From the stopped position, the door may then be operated in either direction by the "OPEN" or "CLOSE" buttons. When the door is in motion, and the "CLOSE" button of the constant pressure type is released, the door must stop and remain in the stop position or reverse to the user set up position; from the stop position, the door may then be operated in either direction by the "OPEN" or "CLOSE" buttons. Controls must be adjustable to automatically stop the doors at their fully open and closed positions. Open and closed positions must be readily adjustable.

][Provide exterior control stations that are full-guarded, momentary-contact three-button standard-duty, surface-mounted, weatherproof type, NEMA ICS 6, Type 4 enclosures, key-operated, with the same operating functions as specified herein for interior remote-control stations.

]2.2.5.9 Speed-Reduction Units

Provide speed-reduction units consisting of hardened-steel worm and bronze worm gear assemblies or planetary gear reducers running in oil or grease and inside a sealed casing, coupled to the motor through a flexible coupling. Drive shafts need to rotate on ball- or roller-bearing assemblies that are integral with the unit.

Provide minimum ratings of speed reduction units in accordance with AGMA provisions for class of service.

Ground worm gears to provide accurate thread form; machine teeth for all other types of gearing.

Surface harden all gears. Provide antifriction type bearings equipped with oil seals.

2.2.5.10 Chain Drives

Provide roller chains that are a power-transmission series steel roller type conforming to ASME B29.400, with a minimum safety factor of 10 times the design load.

Heat-treat or otherwise harden roller-chain side bars, rollers, pins, and bushings.

Provide high-carbon steel chain sprockets with machine-cut hardened teeth, finished bore and keyseat, and hollow-head setscrews.

2.2.5.11 Brakes

Provide 360-degree shoe brakes or shoe and drum brakes. Ensure the brakes are solenoid-operated and electrically interlocked to the control circuit to set automatically when power is interrupted.

2.2.5.12 Clutches

Ensure clutches are friction type or adjustable centrifugal type.

2.2.5.13 Weather/Smoke Seal Sensing Edge

Provide automatic stop control by an automatic sensing switch within neoprene astragal extending the full width of door bottom bar.

Provide an electric sensing edge device. Ensure the door immediately stops downward travel when contact occurs before door fully closes. Provide a self-monitoring sensing edge connection to the motor operator.

2.2.6 Surface Finishing

Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
Noticeable variations in the same metal component are not acceptable.
Variations in appearance of adjoining components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

2.2.6.1 Galvanized and Shop-Primed Finish

Surfaces specified must have a zinc coating, a phosphate treatment, and a shop prime coat of rust-inhibitive paint. The galvanized coating must conform to ASTM A653/A653M, coating designation Z275 (G90), for steel sheets[, except that hoods located on interior of the building may be Z180 (G60)], and ASTM A123/A123M for iron and steel products. The weight of coatings for products must be as designated in Table I of ASTM A123/A123M for the thickness of base metal to be coated. The prime coat must be a type especially developed for materials treated by phosphates and adapted to application by dipping or spraying. Repair damaged zinc-coated surfaces by the materials and methods conforming to ASTM A780/A780M and spot prime. At the option of the Contractor, a two-part system including bonderizing, baked-on epoxy primer, and baked-on enamel top coat may be applied to slats and hoods before forming, in lieu of prime coat specified.

2.2.6.2 Baked-Enamel or Powder-Coat Finish

Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with the coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

2.2.7 Air Infiltration Performance

Provide exterior overhead coiling doors in accordance with the air leakage requirements of paragrapgh PERFORMANCE REQUIREMENTS. Supply doors with perimeter and guide seals as required to achieve specified performance. Submit certified laboratory air leakage test reports for the complete assembly.

PART 3 EXECUTION

3.1 INSTALLATION

Install overhead coiling door assembly, anchors and inserts for guides, brackets, motors, switches, hardware, and other accessories in accordance with approved detail drawings and manufacturer's written instructions. Upon completion of installation, ensure doors are free from all distortion.

Install overhead coiling doors, motors, hoods, and operators at the mounting locations as indicated for each door in the Contract Documents and as required by the manufacturer.

Install overhead coiling doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility and as required by the manufacturer.

3.1.1 Field Painted Finish

Ensure field painted steel doors and frames are in accordance with Section 09 90 00 PAINTS AND COATINGS and the manufacturer's written instructions. Protect the weather stripping from paint. Ensure that the finishes are free of scratches or other blemishes.

3.2 ADJUSTING AND CLEANING

3.2.1 Acceptance Provisions

After installation, adjust the hardware and moving parts. Lubricate bearings and sliding parts as recommended by manufacturer to provide smooth operating functions for ease movement, free of warping, twisting, or distortion of the door assembly. Adjust seals to provide a weather-tight fit around entire perimeter.

Engage a factory-authorized service representative to perform startup service and checks according to the manufacturer's written instructions.

Test the door opening and closing operation when activated by controls[or alarm-connected fire-release] system. Adjust controls and safeties. Replace damaged and malfunctioning controls and equipment. Reset the door-closing mechanism after a successful test.

Test and make final adjustment of new doors at no additional cost to the Government.

3.2.1.1 Maintenance and Adjustment

Not more than 90 calendar days after completion and acceptance of the project, examine, lubricate, test, and re-adjust doors as required for proper operation.

3.2.1.2 Cleaning

Clean doors in accordance with manufacturer's approved instructions.

-- End of Section --

DIVISION 09-FINISHES

SECTION 09 90 00-PAINTS AND COATINGS

PART 1 – GENERAL

A. This guide specification covers the requirements for painting of new and existing exterior substrates, including masonry, concrete, stucco and other miscellaneous materials.

1.1 SUBMITTALS

A. Submit the following information:

1. Shop drawings, Product certification, Product materials, Manufacture Tech Sheet, Color Samples (Cross referenced to drawings), Certificates, Quality Testing reports, Application Instructions, manufactures Safety Data sheets, O and M Data, Closeout Submittals.

2. Highlight all descriptive literature to accomplish identification of specific components/items which are proposed to be furnished.

1.2 QUALIFICATION DATA

A. For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.3. REGULATORY REQUIREMENTS

A. Environmental Protection: In addition to requirements specified elsewhere for environmental protection, provide coating materials that conform to the restrictions of the local Air Pollution Control District and regional jurisdiction. Notify Contracting Officer of any paint specified herein which fails to conform. Do not use coatings containing lead, zinc-chromate or strontium-chromate, asbestos, mercury or mercury compounds, free crystalline silica, or ACGIH0100 confirmed human carcinogens (A1) or suspected human carcinogens (A2).

1.4 PACKAGING, LABELING, AND STORAGE

A. Paints shall be in sealed containers that legibly show the contract specification number, designation name, formula or specification number, batch number, color, quantity, date of

manufacture, manufacturer's formulation number, manufacturer's directions including any warnings and special precautions, and name and address of manufacturer. Pigmented paints shall be furnished in containers not larger than 5 gallons. Paints and thinners shall be stored in accordance with the manufacturer's written directions, and as a minimum, stored off the ground, under cover, with sufficient ventilation to prevent the buildup of flammable vapors, and at temperatures between 40 to 95 degrees F.

1.5 SAFETY AND HEALTH

A. Apply coating materials using safety methods and equipment in accordance with the following:

1. Work shall comply with applicable Federal, State, and local laws and Regulations. Safety Methods Used During Coating Application Comply with the requirements of SSPC PA Guide 3.

B. Toxic Materials: To protect personnel from overexposure to toxic materials, conform to the most stringent guidance of:

1. The applicable manufacturer's Material Safety Data Sheets (MSDS) or local regulation.
2. 29 CFR 1910.1000.
3. ACGIH 0100, threshold limit values.
4. The appropriate OSHA standard in 29 CFR 1910.1025 and 29 CFR 1926.62 for surface preparation on painted surfaces containing lead. Removal and disposal of coatings which contain lead is specified in. Additional guidance is given in SSPC Guide 6 and SSPC Guide 7.
5. The appropriate OSHA standards in 29 CFR 1910.1001 for surface preparation of painted surfaces containing asbestos.

1.6 ENVIRONMENTAL CONDITIONS

A. Comply, at minimum, with manufacturer recommendations for space ventilation during and after installation. Do not apply coating when air or substrate conditions are:

1. Less than 5 degrees F above dew point;

2. Below 50 degrees F or over 95 degrees F, unless specifically pre-approved by the Contracting Officer and the product manufacturer. Under no circumstances shall application conditions exceed manufacturer recommendations.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers Names: The following manufacturers are referred to by use of shortened versions of their names, which are shown in parentheses:
   1. Fuller-O'Brien Paints (Fuller)
   2. Benjamin Moore & Co. (Moore)
   3. Sherwin-Williams Co. (SW)
   4. Approved equal

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors: Provide color selections made by the Contracting Officer to match existing/adjacent colors.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with paint application requirements.

   1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.

   2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

   3. Coordinate primers specified in other Sections with undercoats and finish materials specified in this Section to ensure compatibility of materials. Some finish-coat materials, such as lacquers and epoxies, lift oil and oleoresinous air-dry primers. A long-oil finish coat may crawl and have poor adhesion when used over zinc-dust phenolic or baked primers.

   4. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish

information on characteristics of finish materials to ensure use of compatible primers. Notify the Contracting Officer about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Proper surface preparation is essential for satisfactory coating performance. Expand requirements, if necessary, to include special procedures requested by manufacturers or to satisfy special Project conditions.

1. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

2. Coordination of shop-applied primers with finish coats is critical. See the "Coordination of Work" Paragraph in the "Examination" Article. If compatibility problems develop, it may be necessary to provide barrier coats over shop-applied primers or remove the primer and reprime the substrate.

3. Provide barrier coats over incompatible primers or remove and reprime.

4. Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
5. Use abrasive blast-cleaning methods if recommended by paint manufacturer.

6. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's written instructions.

7. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

8. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.

9. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

10. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

2. Provide finish coats that are compatible with primers used.

3. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.

4. Sand lightly between each succeeding enamel or varnish coat.

B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Insert restrictions or limits on use of spray equipment if necessary to suit special Project conditions.

2. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.

3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.

2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

D. Minimum Coating Thickness: Apply paint materials no thinner than the manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

1. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.

2. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

3.4 FIELD QUALITY CONTROL

A. The Government reserves the right to invoke the following test procedure at any time and as often as the Government deems necessary during the period when paint is being applied:

1. The Government may engage the services of an independent testing agency to sample the paint material being used. Samples of material delivered to the Project will be taken, identified, sealed, and certified in the presence of the Contractor.

2. The testing agency will perform appropriate tests for the following characteristics as required by the Government:

    1. Quantitative material analysis.
    2. Abrasion resistance.
    3. Apparent reflectivity.
    4. Flexibility.
    5. Washability.
    6. Absorption.
    7. Accelerated weathering.
    8. Dry opacity.
    9. Accelerated yellowness.
    10. Recoating.
    11. Skinning.
    12. Color retention.
    13. Alkali and mildew resistance.

3. The Government may direct the Contractor to stop painting if test results show material being used does not comply with specified requirements. The Contractor shall remove noncomplying paint from the site, pay for testing, and repaint surfaces previously coated with the rejected paint. If necessary, the Contractor may be required to remove rejected paint from previously painted surfaces if, on repainting with specified paint, the 2 coatings are incompatible.

3.5 CLEANING

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site. Delete subparagraph below if final cleaning is not done by the painter.After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.6 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Contracting Officer.

B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

END OF SECTION 09 90 00