802D Civil Engineer Squadron
Engineering Flight
Joint Base San Antonio

Repair Multi-Svc Troop Facility, B2263

JBSF180069

JBSA Sam Houston, Texas

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ATTACHMENTS:

ATT-1 - DoD Instruction 5200.02

ATT-2 - Army Regulation 190-13

ATT-3 - Army Regulation 190-51

ATT-4 - Army Regulation 380-5

ATT-5 - SIPR Network Technical Implementation Criteria

ATT-6 - MEDCOM Conceptual Space Layout

ATT-7 - MEDCOM Requirements

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SECTION 01 11 00

SUMMARY OF WORK
03/26

PART 1 GENERAL

1.1 REFERENCES

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 38-22	(2022) Standard Guideline for Investigating and Documenting Existing Utilities

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

ASHRAE 62.1	(2022) Ventilation for Acceptable Indoor Air Quality
ASHRAE 90.1 - IP	(2019) Energy Standard for Buildings Except Low-Rise Residential Buildings
ASHRAE FUN IP	(2025) Fundamentals Handbook, I-P Edition
ASHRAE GUIDELINE 36	(2024) High-Performance Sequences of Operation for HVAC Systems

AIR FORCE CORPORATE FACILITIES STANDARDS (AFCFS)

IFS-FSH	Installation Facility Standards - JBSA Sam Houston

CPS ENERGY (CPSE)

CPSE/ESS	(2021) Electrical Service Standards
CPSE/GSS	(2021) Gas Service Standards

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC	(2024) International Building Code
ICC IEBC	(2024) International Existing Building Code
ICC IECC	(2024) International Energy Conservation Code
ICC IgCC	(2024) International Green Construction Code
ICC IMC	(2024) International Mechanical Code
ICC IPC	(2024) International Plumbing Code

NATIONAL COUNTERINTELLIGENCE AND SECURITY CENTER (NCSC)

IC Tech Spec	(2021) Technical Specifications for Construction and Management of Sensitive Compartmented Information Facilities

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(2026) Standard for Portable Fire Extinguishers
NFPA 13	(2025; TIA 25-5) Standard for Installation of Sprinkler Systems
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 101	(2024) Life Safety Code
NFPA 110	(2025) Standard for Emergency and Standby Power Systems
NFPA 241	(2022; ERTA 22-1) Standard for Safeguarding Construction, Alteration, and Demolition Operations
NFPA 291	(2025) Recommended Practice for Fire Flow Testing and Marking of Hydrants

U.S. AIR FORCE (USAF)

AFMAN 32-7002	(2020) Environmental Compliance and Pollution Prevention

U.S. ARMY (DA)

AR 190-13	(2019) The Army Physical Security Program
AR 190-51	(2019) Security of Unclassified Army Resources (Sensitive and Nonsensitive)
AR 380-5	(2019) Army Information Security Program

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements
ERDC/ITL SR-23-1	(2023) A/E/C Graphics Standard, Release 2.2
ERDC/ITL SR-24-3	(2024) A/E/C CAD Standard - Release 6.2

U.S. Code (USC)

42 USC 4151	Architectural Barriers Act

U.S. DEPARTMENT OF DEFENSE (DOD)

DoDM 5200.01 Vol 3	(2012; with Change 3, 2020) DoD Information Security Program: Protection of Classified Information
UFC 1-200-01	(2022; with Change 4, 2024) DoD Building Code
UFC 1-200-02	(2020; Change 3, 2025) High Performance and Sustainable Building Requirements
UFC 1-300-02	(2025) Unified Facilities Guide Specifications (UFGS) Format Standard
UFC 1-300-08	(2026) Criteria for Transfer and Acceptance of DoD Real Property
UFC 3-101-01	(2020; with Change 4, 2024) Architecture
UFC 3-120-01	(2014; witch Change 4, 2023) Design: Sign Standards
UFC 3-120-10	(2018; with Change 3, 2025) Interior Design
UFC 3-190-06	(2026) Protective Coatings and Paints
UFC 3-201-01	(2022) Civil Engineering
UFC 3-301-01	(2023; with Change 5, 2026) Structural Engineering
UFC 3-401-01	(2025; with Change 1, 2026) Mechanical Engineering
UFC 3-410-01	(2025; with Change 1, 2026) Heating, Ventilating, and Air Conditioning Systems
UFC 3-410-02	(2018; with Change 2, 2021) Direct Digital Control for HVAC and Other Building Control Systems
UFC 3-420-01	(2021) Plumbing Systems
UFC 3-501-01	(2024) Electrical Engineering
UFC 3-520-01	(2025; with Change 1, 2026) Interior Electrical Systems
UFC 3-530-01	(2023; with Change 1, 2023) Interior And Exterior Lighting Systems
UFC 3-540-01	(2014; with Change 4, 2026) Engine-Driven Generator Systems for Prime and Standby Power Applications
UFC 3-570-01	(2016; with Change 1, 2019) Cathodic Protection

UFC 3-575-01	(2012; with Change 1, 2021) Lightning and Static Electricity Protection Systems
UFC 3-580-01	(2024) Information and Communications Technology Infrastructure Planning and Design
UFC 3-600-01	(2016; with Change 6, 2021) Fire Protection Engineering for Facilities
UFC 4-010-01	(2018; with Change 3, 2024) DoD Minimum Antiterrorism Standards for Buildings
UFC 4-010-05	(2023) SCIF/SAPF Planning, Design, and Construction
UFC 4-010-06	(2023) Cybersecurity of Facility-Related Control Systems
UFC 4-021-01	(2008; with Change 1, 2010) Design And O&M: Mass Notification Systems
UFC 4-021-02	(2025) Electronic Security Systems

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

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction

1.2 SUBMITTALS

Government Acceptance or Approval does not remove responsibility from the Contractors for their actions or liability.

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Salvage Plan; G

Qualifications Of Designer of Record; G

Contractor Laydown Area Request; G

SD-05 Design Data

Geotechnical Report; D

Site Survey; D

Subsurface Utility Survey; D

DD Form 1391; G

SD-06 Test Reports

Analytical Report; G

DOR Inspection Report; D

SD-07 Certificates

Draft Interim DD 1354; G

Qualifications Of Designer Of Record; G

1.3 DEFINITIONS

1.3.1 Scope Review Meeting

Government led meeting held concurrently or separately with Contracting Kick-Off/Pre-Construction Meeting. Government to determine length of meeting based on project scope. Meeting will review Government provided specifications with the contractor and Contracting. Government will provide clarification, direction, or answer contractor questions pertaining to the specifications.

1.3.2 Remove

The term remove, and its past and future tenses, as used in Government provided specifications shall be understood to mean that the Contractor shall disconnect and demolish item indicated. This shall include uninstallation from its supportive element base, uninstallation from its mechanical connections, uninstallation from its electrical connections, and disposal of the item and incidental items off the Installation.

1.3.3 Provide

The term provide, and its past and future tenses, as used in Government provided specifications shall be understood to mean that the Contractor shall supply item indicated. Item shall be installed according to manufacturer's printed instructions; applicable code and specification requirements; and standard industry best practices. Item shall be complete and fully functional for its intended purpose, with no ancillary construction or other work required to be performed to achieve the required functionality.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

1.4.1 Project Description

The work includes remediation, investigation, design, construction to complete renovation, and incidental related work. Renovation work is not to restore the overall historic fabric and character, but to provide new work that will not permanently alter or degrade the historic structure. Contractor shall refer to *Appendix C* and be familiar with the HAZMAT report's findings, prior to beginning any work on the facility. Contractor shall verify dimensions & conditions prior to any work. Special inspections and testing required by the Designer of Record (DOR) shall be performed by the Contractor at no additional cost to the Government.

List of Appendices:

Appendix A - Specification Attachments

List of items is shown in the Table of Contents of each applicable specification section.

Appendix B - B2263 Available Data

(1) 19871207 As-built
(2) 19880620 As-built
(3) 19880720 As-built
(4) 19920409 As-built
(5) 19940711 As-built
(6) 20000301 As-built
(7) JBSF160009 As-built
(8) 2018 Unverified As-Built_Reduced
(9) Observed Site Conditions

Appendix C - Environmental

(1) Profile Sheet Non-Haz Asp Con
(2) Hazmat Report
(3) Hazmat Report 2024
(4) Additional Sampling

1.4.1.1 General Guidelines

1.4.1.1.1 Safety

Contractor shall perform all work in accordance with 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS.

1.4.1.1.2 Privatized Utilities

a. Modification to any of American Water's assets requires that a Connection Charge Agreement between the Prime Contractor and American Water be entered into. All work to American Water assets will be performed by them, at the Prime Contractor's expense. American Water standards can be found at the following link: https://www.amwater.com/corp/Products-Services/Military-Services/joint-base-san-antonio

b. Modification to any of CPS Energy's assets requires that an Application for Service be submitted and a Service Agreement be entered into by the Prime Contractor with CPS Energy. Work to CPS Energy's natural gas and electrical systems and equipment will be performed by the entity indicated in the CPSE/ESS and CPSE/GSS at the Prime Contractor's expense.

1.4.1.1.3 Environmental

a. All waste, soil, reusable, and recyclable material generated at the project site shall follow the requirements of Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS and 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

b. All waste and recyclable material shall be profiled. When required, waste and recyclable material shall be characterized by lab analysis

using applicable methods specified by Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS before material is profiled. Analytical Report for each characterization shall be submitted for review by the JBSA Environmental Office. Profile Sheets shall be generated for all items leaving the Installation. Profile sheets shall only be signed by a representative of the JBSA Environmental Office. Current JBSA approved TCEQ landfills for use are as follows:

(1) Covel Gardens Landfill

(2) Tessman Road Landfill

c. All waste, soil, reusable, and recyclable material shall be manifested directly to the landfill or recycling facility. Transportation to transfer stations are not allowed. All manifests shall only be signed by a representative of the JBSA Environmental Office as the Generator.

d. All costs for disposal and recycling shall be the responsibility of the Contractor.

e. All Generator copies of manifests and weight tickets shall be returned to the JBSA Environmental Office, through the Contracting Officer's Technical Representative.

1.4.1.1.3.1 Site Stabilization

If work stops at the site for greater than 14 calendar days, temporary stabilization of the site is required.

Project site final stabilization requires that perennial vegetative coverage has been established in the areas of distrubance with a sensity of at least 70%.

1.4.1.1.4 Contractor Jobsite Trailers

Where utilized, jobsite trailers shall make use of holding tanks for wastewater collection. Wastewater holding tanks shall be emptied on a regular basis to prevent wastewater overflow from the tanks. Potable water may be sourced from a nearby fire hydrant. Contractor shall utilize a backflow preventer in accordance with 01 50 00 TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS requirements when making the connection between the water line and jobsite trailer. Reference ATT-3 of Section 01 50 00 TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS for required TCEQ form. Coordination with American Water is required to operate fire hydrants.

1.4.1.1.5 Environmental Controls

Contractor shall provide adequate moisture control within the facility to prevent any mold growth while the facility's HVAC system is not fully operational. Contractor shall be responsible for any mold remediation and restoration work required as a result of lack of moisture control, at no additional expense to the Government.

1.4.1.2 Design Guidelines

1.4.1.2.1 General

a. Provide full design to complete the renovation and construction of the facility and its supporting facilities.

(1) Includes redesign and rework of the previous contractual effort that is found to be deficient or in violation of current UFC requirements and its referenced codes and standards.

(a) Most of the design work is focused on finishing the interior of the facility and build out of all facility systems.

(b) Installation of supporting facilities is included in the design work.

(c) Exterior site work is included in the design work.

(2) All excess material left behind in the facility and associated conex boxes shall be removed and properly disposed of by the contractor in accordance with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, and 02 81 00 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS. Contractor shall allow the Government to salvage components from this equipment before removal. What is not salavaged shall be properly removed by the contractor.

(3) Government will provide GFM in the following forms:

(a) LiDAR scan data of the interior of the facility that can be imported into Revit. Data will be provided after the notice to proceed has been issued.

(b) GIS data for assumed locations of site utilities, to be provided after NTP has been issued. Contractor is responsible for verifying utility locations before beginning work. Refer to ATT-10 for PDF reference of site utilities.

(c) Available as-built data. *(Appendix B)*

b. DOR shall have an active license in the State of Texas. Each design discipline shall be signed and stamped/sealed by the respective DOR that is licensed in that discipline. Qualifications of Designer of Record shall be submitted for any individual signing and stamping/sealing a discipline they are not licensed for.

(1) This project requires the services of a Qualified Fire Protection Engineer (QFPE). The QFPE shall be an individual who is a licensed professional engineer (P.E.) who has passed the fire protection engineering examination administered by the National Council of Examiners for Engineering and Surveying (NCEES) and has at least five (5) years ofrelevant fire protection engineering experience. Of the overall required experience, at least two (2) years of that experience shall have been on projects similar in size, scope, and complexity as the work described Statement of Work and specifications. Services of the QFPE shall include:

(a) Reviewing SD-02, SD-03, and SD-05 submittal packages from Division 21 and Division 28 specifications for completeness and compliance with the provisions of this contract. Working (shop) drawings and calculations must be prepared under the immediate supervision of the QFPE. The QFPE must affix their professional engineering stamp with signature to

the shop drawings, calculations, and material data sheets, indicating approval prior to submitting these items to the DFPE.

(b) Provide a letter documenting that the SD-02, SD-03, and SD-05 submittal packages from Division 21 and Division 28 specifications have been reviewed and that notates all outstanding deficiencies.

(c) Perform in-progress construction surveillance and inspections prior to installation of ceilings.

(d) Witness pre-final and final functional performance testing, and perform a final installation review. Provide a Verification of Compliant Installation letter with all required reports before final testing with Government representatives.

(e) Signing of applicable certificates under SD-07 from Division 21 and Division 28 specifications.

(2) This project requires the services of a Historic Preservation Architect, whose qualifications shall be in accordance with Section 01 32 33.00 JBSA SPECIAL PROCEDURES FOR HISTORIC TREATMENT.

(a) Comply with historical preservation requirements, to include the creation of design packages for submission to SHPO and NPS. Known as a Section 106 Review. Refer to Section 01 32 33.00 JBSA SPECIAL PROCEDURES FOR HISTORIC TREATMENT and 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD) for the minimum requirements of what shall be contained in a design package ready for Section 106 Review. Reference example of Section 106 Consultation Package Template is provided as ATT-1 of Section 01 32 33.00 JBSA SPECIAL PROCEDURES FOR HISTORIC TREATMENT.

1. Design packages submitted to SHPO and NPS shall be assumed to take 45 calendar days, after Government review period, from the time the Government submits the transmittal to the time the response is received from SHPO and NPS;

2. Only the 802 CES/CEIE Cultural Resources Office (CRO) will submit the Section 106 Review and directly interact with the coordinating agencies involved.

3. CRO will not submit any design package that does not contain the necessary details and information, and thus the 45 calendar day review time will not have been started;

4. Any design packages that are found to have an adverse effect to the historic facility shall require revision to the design to provide mitigation details, and shall also require resubmission to SHPO and NPS without financial or time penalty to the Government.

(3) This project requires the services of an individual who is

certified as a BICSI Registered Communications Distribution Designer, as required by UFC 3-580-01.

c. Design drawing's sheet files and model files shall utilize the applicable discipline designators as outlined in ERDC/ITL SR-24-3.

d. Specifications shall be created using the SpecsIntact software, while only utilizing master specifications from the United Facilities Guide Specifications (UFGS) list. UFC 1-200-01 mandates the use of UFGS. UFC 1-300-02 provides the direction for how to modify UFGS.

(1) For work specified that is not covered by an existing UFGS, a DOR created specification shall be provided and written according to the requirements in UFC 1-300-02. The newly created specification shall be numbered and titled according to latest version of Construction Specifications Institute (CSI) MasterFormat.

(2) Government specifications shall be used with the DOR created specifications to create the full submittal register in accordance with Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD).

e. Provide advanced model files to aid in the layout and construction of work specified by this project, that comprise of BIM, CAD, and GIS files.

(1) Advanced modeling shall represent at a minimum, a Level 2 maturity Level.

f. Provide life safety drawings that account for the occupancy count and space requirements shown in ATT-6 and ATT-7.

g. Design shall meet all applicable requirements of UFC 1-200-01 and its referenced codes and standards. The following list are the most notable references. This list is not all inlcusive. The DOR shall be responsible for adhering to applicable criteria not listed here.

(1) 42 USC 4151 Architectural Barriers Act
(2) UFC 1-200-02 High Performance and Sustainable Building Requirements
(3) UFC 1-300-08 Criteria for Transfer and Acceptance of DoD Real Property
(4) UFC 3-101-01 Architecture
(5) UFC 3-120-10 Interior Design
(6) UFC 3-190-06 Protective Coatings and Paints
(7) UFC 3-201-01 Civil Engineering
(8) UFC 3-301-01 Structural Engineering
(9) UFC 3-401-01 Mechanical Engineering
(10) UFC 3-410-01 Heating, Ventilating, and Air Conditioning Systems
(11) UFC 3-410-02 Direct Digital Control for HVAC and Other Building Systems
(12) UFC 3-420-01 Plumbing Systems
(13) UFC 3-501-01 Electrical Engineering
(14) UFC 3-520-01 Interior Electrical Systems
(15) UFC 3-530-01 Interior And Exterior Lighting Systems
(16) UFC 3-540-01 Engine-Driven Generator Systems for Prime and Standby Power Applications
(17) UFC 3-570-01 Cathodic Protection

(18) UFC 3-575-01 Lightning and Static Electricity Protection Systems
(19) UFC 3-580-01 Telecommunications Interior Infrastructure Planning And Design
(20) UFC 3-600-01 Fire Protection Engineering for Facilities
(21) UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
(22) UFC 4-010-06 Cybersecurity of Facility-Related Control Systems
(23) UFC 4-021-01 Design And O&M: Mass Notification Systems
(24) UFC 4-021-02 Electronic Security Systems
(25) AFMAN 32-7002 Environmental Compliance and Pollution Prevention
(26) AR 190-13 The Army Physical Security Program
(27) AR 190-51 Security of Unclassified Army Resources (Sensitive and Nonsensitive)
(28) AR 380-5 Army Information Security Program
(29) ERDC/ITL SR-23-1 A/E/C Graphics Standard, Release 2.2
(30) ERDC/ITL SR-24-3 A/E/C CAD Standard - Release 6.2
(31) ICC IBC International Building Code
(32) ICC IEBC International Existing Building Code
(33) ICC IECC International Energy Conservation Code
(34) ICC IgCC International Green Construction Code
(35) ICC IMC International Mechanical Code
(36) ICC IPC International Plumbing Code
(37) ASHRAE 62.1 Ventilation for Acceptable Indoor Air Quality
(38) ASHRAE 90.1 - IP Energy Standard for Buildings Except Low-Rise Residential Buildings
(39) NFPA 13 Standard for the Installation of Sprinkler Systems
(40) NFPA 70 National Electrical Code
(41) NFPA 101 Life Safety Code
(42) NFPA 110 Standard for Emergency and Standby Power Systems
(43) NFPA 241 Standard For Safeguarding Construction, Alteration and Demolition Operations
(44) IFS-FSH Installation Facility Standards - JBSA Sam Houston
(45) CPSE/ESS Electrical Service Standards

h. DOR, specifically the Historic Preservation Architect, shall perform site investigations during the development of the design. Periodic inspections during construction shall also be provided, to ensure compliance with contract design requirements. A DOR Inspection Report shall be provided within 3 calendar days after each insepction.

i. Conduct an on-site Charrette to gather information from Installation key stakeholders that can provide input to fully develop the design. Meeting shall be held in advance of the first required design submittal. Meeting shall include a telemeeting component to accomodate Installation stakeholders that cannot be present in-person. Results of this meeting shall be included as part of the Basis of Design. Unless requested by the Contracting Officer, non-local personnel from the Contractors team may attend this meeting through telepresence.

(1) During the meeting, include time to discuss construction waste management with the JBSA Environmental Office. Government team will provide input, as capable, to help identify possible pollution prevention and solid waste diversion opportunities.

j. DOR shall participate in all commission activities as outlined by Section 01 91 00.15 BUILDING COMMISSIONING.

1.4.1.2.1.1 Antiterrorism/Force Protection (AT/FP)

a. Provide necessary AT/FP features for the Standby Generator Yard, based on final position at the project site, in accordance with UFC 4-010-01.

b. Provide necessary AT/FP features for the Fire Pump Yard in accordance with UFC 4-010-01.

1.4.1.2.1.2 Privatized Utilities

a. When work is required to modify or extend utilities owned by American Water, a separate drawing package shall be created that only includes the portion of work relating to American Water owned utilties. Drawing set shall be included in every design submittal iteration, unless otherwise specified. A separate Design Analysis is not required, and relevant narrative information shall be included in the main Design Analysis. A specification package for American Water's portion of work is not required.

1.4.1.2.2 Hazardous Materials

a. Drawings shall use the appropriate discipline designator from ERDC/ITL SR-24-3 for the sheet that shows locations where hazardous material is present and indicate what is to be disturbed.

b. Existing HVAC hydronic piping thermal insulation is asbestos containing. All asbestos containing material shall be properly removed.

c. Select locations within the facility have identified lead based paint or lead containing paint. Refer to the available Hazmat Reports for the paint types identified. Appropriate lead controls shall be applied based on recommendations from available reports. The Government's intent is not necessarily to remove all lead-based or lead-containing paint. The most cost effective solution, as allowed by Section 02 83 00 LEAD REMEDIATION, shall be used. This means multiple remediation methods may be used to address the various locations where lead-based or lead-containing paint is located. (e.g. stabilization, enclosure, removal)

d. Due to the lack of functioning HVAC systems within the building, mold may be present. Any mold present shall be properly removed.

1.4.1.2.3 Survey/Mapping

a. Provide site survey of project limits in accordance with 01 35 13.10 00 SPECIAL PROCEDURES-SURVEYING. Survey shall include a subsurface utility survey to accurately identify locations of all known and unknown existing subsurface utilities in the area. Utility investigation shall be at minimum Quality Level B, in accordance with ASCE 38-22. Use appropriate surface geophysical methods applicable to the local soil type. Include test locations for nondestructive exposure of underground utilities to verify type, location, depth, size, condition, and material. Provide GIS data for existing utilities in accordance with 01 35 13.30 00 SPECIAL PROJECT PROCEDURES-GIS.

(1) Government's record of existing utility locations is provided in ATT-10. Locations shown are only approximate. Site

investigation, as described above, to identify all existing utilities within the project site boundary is still required.

1.4.1.2.4 Geotechnical

a. Perform a geotechnical investigation for use in the design of the foundation for the standby generator yard and the screen walls for the fire pump yard. Ensure that the resulting geotechnical report in included as part of the Design Analysis.

1.4.1.2.5 Civil

a. Provide all necessary design and information required by American Water if the water or sanitary sewer system will require modification, removal, or extension. Work to American Water owned infrastructure shall follow their standards specified in paragraph PRIVATIZED UTILITIES. Follow UFC 1-200-01 for Government owned portion of the utility lines, and apply it to the portions owned by American Water if the UFC requirements are greater than their own.

b. Utilities shall not be abandoned in-place. Where a utility line is modified or no longer needed, demolition details shall be provided noting the procedures for removal.

c. Provide site features to include:

(1) sidewalks running along Stanley Rd;

(2) sidewalks leading to the three facility entry ways facing Stanley Rd; installed to assure conformance with existing riser height of historical stairs;

(3) accessible pathway leading to the accessible entrance of the facility located on the South West side; starting from the northern adjacent handicap parking area across Stanley Rd and running along the West side of the existing driveway that runs alongside the facility;

(a) crosswalk markings on Stanley Rd leading to accessible pathway.

(4) reinstallation of paving for the bus stop shelter along Stanley Rd. Bus stop is not intended to be removed or relocated to accomplish this work;

d. Provide GIS location data in accordance with Section 01 35 13.30 00 SPECIAL PROJECT PROCEDURES-GIS for the fire water line that was installed by the previous contractual effort, from the point of connection to the water main up to the facility entrance.

1.4.1.2.6 Structural

a. Provide design for the foundation and screen wall for the standby generator yard. Screen shall be as tall as needed to assure no visibility of the generator. Install screening on three sides with opening facing North toward B2263. Provide gate on South side. Provide appropriate clearances for maintenance.

(1) Design shall be in comliance with Section 01 32 33.00 JBSA

SPECIAL PROCEDURES FOR HISTORIC TREATMENT. This work shall be fully detailed for inclusion in the Section 106 review.

b. Provide design for the foundation and screen wall to surround the existing fire pump. Screen shall be as tall as needed to assure no visibility of the modular fire pump structure. Screen shall be located between exiting PIV and existing entry landing. Install screening on three sides with gates on each of the three sides to align with fire dept connection on the West, gated opening to align with existing pump hose entry doors on the South, and gate on the East to align with existing test valves. Provide appropriate distance for access to existing electrical switch gear and meter base rack.

(1) Design shall be in comliance with Section 01 32 33.00 JBSA SPECIAL PROCEDURES FOR HISTORIC TREATMENT. This work shall be fully detailed for inclusion in the Section 106 review.

1.4.1.2.7 Architectural

a. Provide floor plan layouts that provide the functional spaces outlined by the end user's requirements in ATT-6 and ATT-7. Requested square footage of each functional space is not a fixed requirement. Given that this is an existing building footprint, the sizes of each functional space may be altered to accomodate existing conditions.

(1) It is not the intent that existing structural members, internal masonry walls, elevator shaft, south corridor, stairwells, restrooms, mechanical rooms, or electrical rooms be relocated to accommodate end user internal functional groups; nor is it the intent to remove any stud framing embedded into spray foam insulation.

(2) End User requires the installation of access control portals at each level of the facility, after each east and west end stairwells. Portals shall be designed to section off the areas where the access control doors will be installed. Exact locations of these door/wall partitions to be finalized during design. Refer to ATT-6 and ATT-7 for the current proposed locations. Locations shall also be in compliance with Section 01 32 33.00 JBSA SPECIAL PROCEDURES FOR HISTORIC TREATMENT.

(3) MEDCOM Narrative, ATT-7, makes reference to the inclusion of breakrooms as part of the overall floor plan. Breakrooms shall be located as such to minimize the extent of new plumbing and additional building structure penetrations.

(4) Existing built-in safe, located on the 1st Floor of the facility, is to remain in place and does not require new interior finishes. This space will not be occupied.

(5) Provide ABA pedestal with push button access along sidewalk leading to ABA entrance on South West side of building.

b. Provide design of Operations Center in accordance with UFC 4-010-05 and DoDM 5200.01 Vol 3. The Operations Center is considered a Special Access Program Facility (SAPF) and shall be designed to meet the requirements for Open Storage. Locate the Operations Center on the third floor of the facility. Conceptual layout is provided in ATT-7. Certain elements of the design may also be subject to historic

preservation requirements.

(1) Space shall include two entrapments for entry, as shown in the conceptual layout in ATT-7.

(2) Perimeter must meet requirements for STC 45 at a minimum. Conference rooms require a STC 50 at a minimum. Where this rating cannot be met, supplemetal sound transmission mitigations must be utilized. Refer to IC Tech Spec for a list of potential mitigations.

(3) Doors on the perimeter and interior of the Operations Center shall meet the requirements of UFC 4-010-05. Referenced UFC allows for specific types of wood or steel doors. Associated hardware requirements are also specified in the UFC, to include specifics for applicable hardware on the unprotected side of the space.

(4) Physical security requirements from UFC 4-010-05 for the windows in the space will require consultation through the Section 106 review.

(5) Provide lockable metal personal electronic device cabinets outside each entrance to the Operations Center. Cabinets must be surface mounted instead of recessed. Each cabinet shall have 36 compartments.

c. Provide design details for fire rated assemblies and locations where required.

d. Repairs to damaged windows are not part of the design effort, except as noted by the following:

(1) Oval window facing Stanley Rd, above the center building entrance, shall be fully detailed to correct its current improper style, size and installation. Design details shall specify all required details needed for compliance with the building's period of historic significance. Refer to as-built drawings for details of this window. This design information must be included in the Section 106 review.

(2) Backer rods and caulking to be provided to finish out all existing windows on the interior facing side.

(3) Any existing window framing that is damaged to the extent causing an inability to install new work surrounding it.

e. Provide design details for the replacement by recreation of exterior doors facing Stanley Rd to match the design from the building's period of historic significance. This includes the associated transom windows, double doors, frames, jambs and brick molds. Refer to as-built drawings for details of these doors. This design information must be included in the Section 106 review.

f. Provide design for a lactation room with sink and refrigerator. Final location to be determined through the design process.

g. Design shall reuse the existing KnoxBox and maintain its current installed location. Refer to other discipline sections for related

work requirements.

h. Provide design details for the fire pump yard screen walls.

(1) Design shall be in comliance with Section 01 32 33.00 JBSA SPECIAL PROCEDURES FOR HISTORIC TREATMENT. This work shall be fully detailed for inclusion in the Section 106 review. Coordinate historical preservation details with the requirements of UFC 4-010-01.

i. Provide design details for the standby generator screen walls.

(1) Design shall be in comliance with Section 01 32 33.00 JBSA SPECIAL PROCEDURES FOR HISTORIC TREATMENT. This work shall be fully detailed for inclusion in the Section 106 review. Coordinate historical preservation details with the requirements of UFC 4-010-01.

j. A breakdown of items under the purview of the Cultural Resources Office, and requiring Section 106 review, is provided below. Other DESIGN GUIDELINES subparts may refer to work that interacts with historic elements of the facility, and thus call out for its inclusion in the Section 106 review. Refer to Section 01 32 33.00 JBSA SPECIAL PROCEDURES FOR HISTORIC TREATMENT for additional information and applicable NPS Historic Preservation Briefs.

(1) Remove spray foam located within the 3 main entrances facing Stanley road, back to the original finish of the existing plaster walls. Additional removal may be required to recess conduit and junction box associated with KnoxBox. It is not the intent that existing spray foam in other areas of the building be removed.

(2) Provide repair to sections of floor leveling compound in the rear building corridor and wings. Damage appears to be limited to small sections of the corridor and South wing floor on the 1st and 3rd floors. Refer to ATT-9 for location details.

(3) Provide floor leveling compound throughout, to combat existing applied GFRP. DOR to determine how rise and run of all staircases throughout will be affected, and any transitions above 1/4 inch created throughout. Detail corrective actions needed to mitigate GFRP application to ensure proper tread height remains consistent.

(4) Metal stud framing of existing clay masonary block wall openings is allowed as long as the infill material is approprite to the wall type, and plaster overlay is of matching, in-kind material to the original fabric.

(5) CMU infill of existing clay masonry block walls is allowed as long as the plaster overlay is of matching, in-kind material to the original fabric.

(6) Existing teller window openings shall not remain visible. Leave existing openings as framed and cover with finished wall material. Any protruding elements from these openings beyond existing furred out framing shall be removed to allow for finished wall material.

(7) Remove any metal studs located within historical stairwells facing main entrances. Metal studs located within historical stairwells on ground floor, 2nd and 3rd floors may remain.

(8) Provide new railings on the side walls of staircases where missing. New railings do not have to replicate the existing railings, but instead may match the silver-colored railing already installed in the center lobby entrance on the 1st floor. New railings are to be installed at code compliant height.

(9) Any penetrations in the existing stair enclosure walls shall be patched and floated to maintain original historic volume and appearance.

(10) Provide framed walls to surround the existing ships ladders leading into the attic space. DOR to determine proper rating to create an enclosure for added personnel protection and fire safety. Door swinging outward shall be added in front of ladders for access.

(11) Provide bulkheads where ceilings drop below tops of windows. Bulkheads shall be a depth of one foot. Measurements are from interior of finished bulkhead wall surface to finished wall surface. No building systems shall penetrate the bulkheads.

(12) Refinish and reinstall Juliette balcony guardrails along South facing side of building on the 1st and 3rd floors. The existing window railings shall be cleaned; powder coated matte black. Repair exterior stucco as needed to ensure proper anchoring for reinstallation of guardrails.

(13) Existing abandoned penetrations or those created from removal of any existing surface mounted items shall be properly infilled with matching in-kind materials.

(14) Provide new louvered ventilation and screen to replace existing damaged louvres on North facing side of building, above central main entrance.

k. Provide framed walls to surround the current location of the FA/MNS panel and associated panels and boxes to create a dedicated closet. New FA/MNS panel and associated hardware to be installed in existing location within 1st floor lobby of central entrance facing Stanly. This work is under the purview of the Cultural Resources Office, and requiring Section 106 review.

(1) Wall type is allowed to utilize metal studs and gypsum board for construction. Specific material requirements must be selected to provide the appropriate fire rating to the new space.

l. Provide fire extinguisher cabinets when UFC 3-600-01 and NFPA 101 requires portable fire extinguishers. Order of preference for cabinet type is: fully-recessed, semi-recessed, surface mount. Types selected shall be based on each location selected.

1.4.1.2.8 Interiors

a. Provide SID as part of the design. Do not assume reuse of any excess material stored in the facility or the conex boxes.

b. Provide elevations for each space for the typical configurations, to include new furniture.

c. Provide an FF&E design package to meet the end user's requirements in ATT-6 and ATT-7. FF&E includes, but is not limited to, workstations, modular/system furniture, seating, tables, storage and shelving, filing, and other items identified by the Government.

(1) Purchase of FF&E is not part of the initial contract award, but must be accounted for as part of the CID. Refer to Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD) for general CID package requirements.

d. Provide design details for the layout and installation of the equipment for the breakrooms and lactation room. Refer to ATT-6 for the equipment required in these areas.

e. Where required by the space type, the following items shall be used in those spaces as they are the servicable equipment by the Installation's custodial service contract.

(1) Foam Soap Dispenser: Spartan Lite'n Foamy® 1000 mL Hand Soap Dispenser

(2) Towel Dispenser:

(a) Tork Hand Towel Roll Push Bar Dispenser; or

(b) Tolco Towel Disperser; or

(c) San Jamar Towel Dispenser

(3) Sanitary Napkin Dispenser: Bobrick Contura Series 10 in. Sanitary Napkin Dispenser

(4) Toilet Paper Dispenser:

(a) Scott In-Sight JRT Jr. Combo Bath Tissue Dispenser with Stub; or

(b) Tork Twin Jumbo Roll Toilet Paper Dispenser

f. Provide interior signage in accordance with UFC 3-120-01.

(1) Signage for fire extinguisher cabinets shall be included. Signage shall meet the requirements of NFPA 10.

1.4.1.2.9 Fire Protection

a. The scope of this project requires the submission of a Fire Protection Design Analysis. The analysis is required to be stamped/signed/sealed by a Fire Protection Engineer.

(1) Hazard level of each area is required to be determined. Do not rely on any previous determinations made.

b. Fire hydrant flow test shall be performed in accordance with NFPA 291. Report shall include the following items at a minimum:

(1) Hydrant elevations relative to the building;

(2) Hydrant number/identifier;

(3) Labeling of flowed hydrant and gauged hydrant;

(4) Calibration certificates of testing equipment;

(5) Water network diagram of the area to show system layout.

Present this information in a tabular form when multiple hydrants were flowed.

c. Fire suppression system shall be redesigned to meet the requirements and hazard levels of the new floor plans. This includes any required modifiction or deficiency correction to the wet-pipe system in the facility and dry-pipe system and its supporting equipment that serves the attic space.

(1) Existing piping with extensive amounts of surface corrosion shall be replaced.

d. The use of flexible sprinkler hose with fittings intended for direct connection to sprinklers is authorized under the condition specified by UFC 3-600-01 paragraph 9-7.6.8. Contractor and their DOR shall submit the applicable request form, located in Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD) as ATT-8, to obtain DFPE approval on the specific product(s) selection. If approved, coordinate the design of flexible sprinkler hose with the requirements of NFPA 13. If the DFPE does not approve of any submitted item, then flexible sprinkler hose shall not be utilized.

e. For the freeze protection requirment from NFPA 13, the average annual extreme minimum temperature shall be obtained from the applicable local Climate Data from ASHRAE FUN IP. Specifically the data points 4e and 5e from the applicable local Climate Data Sheet.

f. Provide portable fire extinguishers where required by UFC 3-600-01 and NFPA 101. Locate them in accordance with NFPA 10

g. Fire alarm and mass notification system shall be redesigned to meet the requirements and hazard levels of the new floor plans. No existing installed fire alarm panels shall be reused. Make the existing equipment available to the Government for salvage. Items or components not salvaged shall be properly disposed of by the contractor.

(1) MNS messages for JBSA will be provided after NTP has been issued.

(2) Placement of fire alarm and mass notification devices will require consultation through the Section 106 review. Full narrative commentary shall be provided to explain the effort to meet code requirements and historic preservation requirements, as well as documenting mitigations made.

h. Provide design to reselect materials and equipment to supplement the useable excess material from the previous contractual effort.

i. Ensure that the KnoxBox tamper switch is tied to the FA/MNS panel. Provide appropriate selections in the FA/MNS operations matrix.

1.4.1.2.10 Plumbing

a. Utility metering devices, water meter, shall be BACnet type compatible with Tridium Niagara v4 rev14 and connect through the facility's UMCS.

(1) Domestic water utility meter shall be installed on all service lines to the facility, on the Government's side of the point of demarcation with American Water's system.

b. Provide design for the domestic water (cold, hot, and recirculation), sanitary waste, and vent lines to serve the new floor plan. Where there is existing work from the previous contractual effort, design shall modify these features to meet the overall system performance requirements or code requirements.

c. Provide design for a domestic water heating system.

d. Provide design to reselect fixtures, materials, and equipment to supplement the useable excess material from the previous contractual effort.

e. Provide design for a pressure boosting system to serve the domestic water system.

f. Provide design for work to replace the existing lift stations. This work will require coordination through American Water. Refer to paragraph PRIVATIZED UTILITIES for additional requirements.

(1) Design shall consider separating the sanitary drain lines from Floors 1 through 3 and the basement so that only the basement requires the use of a lift station. Upper floors may gravity drain to the manhole that the the current lift stations discharge.

1.4.1.2.11 Mechanical

a. New HVAC equipment that utilizes refrigerant shall be selected so that the refrigerant utilized is not subject to phase out. Refer to EPA's Significant New Alternatives Policy (SNAP) Program at the following link: https://www.epa.gov/snap. Where multiple refrigerants meet this criteria, select the one with the lowest Global Warming Potential (GWP).

b. Facility level UMCS shall be BACnet type compatible with Tridium Niagara v4 rev14. It shall control the HVAC system. Design shall be in accordance with UFC 3-410-02 and UFC 4-010-06. Any existing DDC equipment shall be removed and new equipment specified.

(1) Refer to ASHRAE GUIDELINE 36 and UFC 3-410-01 for minimum requirements for Input/Output points and sequences of operation for HVAC equipment.

c. Provide design to replace all interior hydronic piping.

(1) Due to the configuration of the chilled water loop and heating water loop serving the campus, a temporary piping route will be needed to allow the campus hydronic loops to continue functioning

and serving the other facilities within the campus.

(2) The option to construct a permanent loop segment for the chilled water and heating water is allowed. In this case, branch lines from these systems to the building must account for this.

d. Provide design for the installation of hydronic booster pumps within the facility. Refer to *Appendix B* for as-built information from recent work on the campus central energy plant and the booster pumps installed in the other facilities at this campus.

e. Provide design for replacement of all air handling units (AHU), fan coil units (FCU), and DOAS units. Contractor shall allow the Government to salvage components from this equipment before removal. What is not salavaged shall be properly removed by the contractor.

(1) Recommended system replacements, based on ease of maintainability for Operations personnel, are:

(a) Dedicated Outdoor Air System (DOAS) units to handle the latent load and FCUs to handle the sensible loads; or

(b) Central AHUs serving variable air volume (VAV) boxes with reheat.

(2) Design shall modify existing duct layout to meet the requirements of the new space layout.

(3) Specific requirements for the Operations center shall be clearly detailed.

(4) Design analysis shall include all necessary sizing calculations.

(5) Ventilation air penetrations will require consultation through the Section 106 review. New penetrations for ventilation air will be heavily scrutinized by SHPO, so utilization of the existing penetration locations is highly recommended.

(6) This facility is connected to a campus chilled water and heating water loop. New system must utilize chilled water and heating water as the primary means for cooling, heating, and dehumidification.

f. Fire, smoke, and combination dampers that are selected to be the curtain type shall be selected so that it is out of the air stream.

g. Provide HVAC design for all the telecommunication rooms to meet the requirements of UFC 3-580-01. Any exterior components of these dedicated systems will require consultation through the Section 106 review.

h. Air ducts penetrating the Operations Center boundary larger than 96 square inches require physical protection installed in the air stream. Refer to UFC 4-010-05 for allowable methods. Where one of the duct dimensions measures less than 6 inches, physical protection is not required.

i. No work to the chilled water plant or heating water plant is included in the project scope. Assume connected energy plants have sufficient

capacity to serve this facility.

1.4.1.2.12 Electrical

a. Provide design and commissioning for a diesel standby generator in accordance with UFC 3-540-01, NFPA 70 Article 701, and NFPA 110 Level 2 criteria. Specify all required associated equipment to allow for proper operation and maintenance.

(1) Per AFCEC Generator Standardization Policy, new generators at JBSA shall be sourced from Cummins.

(2) Provide all applicable information required in the Generator Authorization Request form, ATT-11.

(3) New standby generator shall be designed to serve the new Operations Center. It shall also provide power to supporting building systems that serve the Operation Center to include at a minimum:

(a) Dedicated telecomm HVAC system

(b) Assume exclusion of the elevator

b. Work to the facilitiy's electrical service shall follow the requirements of CPSE/ESS. The electrical meter is owned by CPS Energy. Design that requires modification to the electrical service shall be coordinated through CPS Energy. Refer to paragraph PRIVATIZED UTILITIES for additional information.

c. Provide design as required to meet the End User requirements in ATT-6 and ATT-7; and in accordance with UFC 3-501-01, UFC 3-520-01, UFC 3-530-01, and UFC 3-540-01.

(1) Provide convienience outlets in each space, in location and quantity that allow for intended use and flexibility of the space.

d. Provide LED light fixtures for interior lighting.

e. Per UFC 3-520-01 transformers shall be specified as dry-type.

f. Provide design to reselect fixtures, materials, and equipment to supplement the useable excess material from the previous contractual effort.

g. Provide upgrade of the electrical service feeding the building and the fire pump to meet the new electrical demand calculated during design. This includes modification of the service disconnects, conduits, conductors, and other supporting elements.

(1) Conduit shall not be exposed or surface mounted to interior surfaces in occupied spaces.

(2) Route conduit underground to feed critical loads. Penetrate building below grade; conduit shall not be exposed on exterior face of building.

h. Concealment of the KnoxBox associated tamper switch wiring and conduit shall be in accordance with Section 01 32 33.00 JBSA SPECIAL

PROCEDURES FOR HISTORIC TREATMENT and applicable NPS Historic Preservation Briefs.

i. Provide design to ensure that attic space has sufficient lighting to meet code requirements. Attic space will not be a regularly occupied space.

j. Provide cathodic protection where required in accordance with UFC 3-570-01. Ensure coordination between Civil and Electrical designers takes place so that underground utility conveyance is definitized and necessary protection systems are properly detailed.

k. As part of the FF&E package, design Operations Center conference tables to include power outlet receptacles. Cabling shall run through over-floor raceway. Purchase of over-floor raceway is not part of the initial contract award, but must be include in the FF&E package.

l. Provide visual notification method to alert of the presence of non-indoctrinaed personnel that meets the requirements of UFC 4-010-05.

1.4.1.2.13 Telecommunications

a. Provide design for the NIPR network to serve the entire facility in accordance with UFC 3-580-01. All backbone and horizontal infrastructure shall be designed and specified.

(1) Cabling from a telecommunicaiton room to modular or system furniture shall be specified to be installed during installation of the furniture. Design package shall specify pathways for the future installation.

b. Provide design for a SIPR network and Secure VTC to serve the Operations Center in accordance with UFC 3-580-01, DoDM 5200.01 Vol 3, AR 190-13, AR 190-51, AR 380-5, and SIPRNET Technical Implementation Criteria (ATT-5). No other areas of the facility outside of the Operations Center require SIPR outlets.

(1) As part of the FF&E package, design Operations Center conference tables to include NIPR and SIPR outlet receptacles. Cabling shall be run through over-floor raceway. Purchase of over-floor raceway is not part of the initial contract award, but must be included in the FF&E package.

c. Installation does not make use of VoIP. Voice and data systems shall be differentiated.

(1) Cabling from a telecommunicaiton room to modular or system furniture shall be specified to be installed during installation of the furniture. Design package shall specify pathways for the future installation.

d. A minimum of two telecommunications rooms shall be required per floor.

(1) Operations Center will require at least two dedicated telecommunications rooms that are in addition to stated requirement above. Conceptual layout is provided in ATT-7.

(2) Per UFC 3-580-01, an IPS container is not required when secure telecommunications spaces are present.

(3) The Operations Center is not required to have a dedicated NIPR telecomm room within its footprint. NIPR connections can be routed from a telecomm room outside the space, that is serving the rest of the building floor.

(4) Provide heavy-duty, mechanical combination lockset for all telecomm rooms. Exception for telecomm rooms in the Operations Center that must be provided with lockset the meets the requirements of UFC 4-010-05.

(5) Telecomm rooms for CATV shall be provded as separate spaces from other telecomm rooms containing Government network equipment.

(6) Provide two (2) data outlets and two (2) voice outlets at each workstation and modular/system furniture.

e. Telecomm rooms shall be provided with equipment racks. If design determines floor space is insufficient, alternate solution can be discussed. Existing racks may be reused. Provide all required equipment rack and cabinet accessories, to include basic power distribution units (i.e. power strips) and patch panels.

(1) Entrance facility is located in the basement of the facility, along the perimeter facing Stanley Rd. It's current location shall not be changed.

f. Provide design for all telecomm pathways.

(1) Provide separation of telecomm systems in accordance with UFC 3-580-01.

(2) No cabling shall be run through air ducts. All telecomm pathways shall be dedicated and separate from other building systems.

(3) Pathways shall not be exposed or surface mounted to interior surfaces in occupied spaces.

g. All horizontal cabling for data and voice from the applicable telecomm room to the workstation shall be CAT6A. Provide CAT6A patch cords for all work stations, to include future modular/system furniture.

(1) Use of STP CAT6A shall be evaluated during design based on analysis of UFC 3-580-01 and finalized space layout. Referenced UFC requires the designer to determine if a situation has been created that would require STP CAT6A.

(2) All connections between telecomm rooms in the facility shall be designed in accordance with UFC 3-580-01.

h. Wireless access points are not part of the project scope. Cabling for any future potential wireless access points is not required.

i. Provide deign for video teleconference systems in all conference rooms, and must be inlcuded as part of the CID package. Systems shall be Cisco type, and compatible with Microsoft Teams. Purchase of video teleconference equipment is not part of the initial contract award.

(1) Provide design for A/V cabinets in all conference rooms. Purchse

of these cabinets is not part of the initial contract award, but shall be included as part of the CID package.

1.4.1.2.13.1 Security Systems

a. Provide ACS, IDS, CCTV, and CATV systems in accordance with UFC 4-021-02 and UFC 4-010-06.

(1) ACS and CCTV systems not located in the Operations Center shall be located as directed by the end user. An estimated equipment quantity is provided in ATT-7. Purchase of equipment not serving the Operations Center is not part of the initial contract award, but must be included in the FF&E package.

(2) ACS and IDS systems serving the Operations Center shall be separate from other ACS systems. Refer to conceptual layout and the estimated equipment quantity list provided in ATT-7. In addition to other applicable criteria, systems shall be designed to be in compliance with UFC 4-010-05. A list of compatible IDS systems authorized to connect to the Installation's front end will be provided after the notice to proceed has been issued. IDS installer must be Lenel certified. Any telecomm connections to this system shall be part of the telecomm scope of work.

(a) Operations Center shall be split into two sides, as shown in the conceptual layout in ATT-7. Each side is independent from an IDS perspective, and shall be monitored as such.

(b) Provide CATV outlets to this space. Exact locations to be determined during design. This is the only area of the facility that requires CATV outlets.

b. Design shall allocate space in the floor plans for each of the end user's ACS, IDS, and CCTV facility level controller hardware and supporting equipment.

c. Depending upon the final location of each piece of equipment for these systems, design details may require Section 106 review.

1.4.1.2.13.2 PA System

a. Provide design for PA system pathways. Purchase of PA system equipment is not part of the initial contract award, but must be included in the FF&E design package.

1.4.1.2.14 Other

a. Provide design details for a storage area, with woven wire partition storage cages. Cages shall be sized to be between 50 square feet and 100 square feet. Locations shall be coordinated with ATT-6 and ATT-7, and finalized during design.

1.4.1.3 Demolition

a. Deviations from the approved Section 106 review consultation package are not authorized. Where site conditions prevent construction of approved, consulted work, revised design details and supporting information shall be submitted. This supplemental consultation package will require approval by means of a Section 106 review.

1.4.1.3.1 Hazardous Materials

a. Provide abatement of all asbestos containing materials within the boundaries of the project site. Abatement of asbestos shall be in accordance with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, 02 41 00 DEMOLITION AND DECONSTRUCTION, 02 81 00 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS, and 02 82 00 ASBESTOS REMEDIATION.

b. Provide abatement/control of all lead containing materials within the boundaries of the project site. Abatement of lead shall be in accordance with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, 02 41 00 DEMOLITION AND DECONSTRUCTION, and 02 83 00 LEAD REMEDIATION.

c. Provide abatement of all mold growth within the boundaries of the project site. Abatement of mold shall be in accordance with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, 02 41 00 DEMOLITION AND DECONSTRUCTION, and 02 85 00 MOLD REMEDIATION.

1.4.1.3.2 Civil

a. Refer to Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS for requirements dealing with excess soil not able to be reused. Excess soil is required to be tested and removed from the Installation in accordance with the stated section reference. Assume that soils at the site are not contaminated.

b. Provide nondestructive exposure as required for subsurface utility investigation.

c. Utility lines specified for replacement shall not be abandoned in-place. Utilities specified for complete removal are not allowed to be abandoned in-place, per JBSA policy. Do not suggest abandoning in-place.

d. Remove portions of paved surfaces and sidewalks where required to allow for excavation.

1.4.1.3.3 Architectural

a. Provide demolition and modification as specified by the design.

b. Where removal of spray foam is required, elements that are part of the historic fabric shall have spray foam removed by dry-ice blasting, or other approved method approved through the Section 106 review, to prevent damage.

1.4.1.3.4 Fire Protection

a. Provide demolition and modification of the fire suppression and fire alarm/mass notification system to the extent specified by the design.

1.4.1.3.5 Plumbing

a. Provide demolition and modification as specified by the design.

1.4.1.3.6 Mechanical

a. All refrigerants are property of the Government. Reclaim all refrigerants and turn over to the Government. Contractor shall provide all necessary refrigernat tanks for the reclamation. Transportation of the relaimed refrigerant to the designated Government storage location shall be performed by the contractor. Refer to section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS for Government POC to coordinate refrigerant turnover.

b. Provide demolition and modification as specified by the design.

1.4.1.3.7 Electrical

a. Provide demolition and modification as specified by the design.

1.4.1.3.8 Telecommunications

a. Provide demolition and modification as specified by the design.

1.4.1.4 New Work

a. Contractor shall provide adequate moisture control within the facility to prevent any mold growth while the facility's HVAC system is not fully operational. Contractor shall be responsible for any mold remediation required as a result of lack of moisture control, at no additional expense to the Government.

b. Contractor shall provide all Testing & Balancing (TAB), Duct Air Leakage Testing (DALT), Integrated Systems Testing, and Commissioning work required.

c. Corrections to address unapproved deviations from the accepted IFC package or accepted ASIs shall be provided at no cost to the Government. Any penalties incurred from non-compliance with historical preservation requirements specified in the IFC package shall be the responsibility of the Contractor.

d. Deviations from the approved Section 106 review consultation package are not authorized. Where site conditions prevent construction of approved, consulted work, revised design details and supporting information shall be submitted. This supplemental consultation package will require approval by means of a Section 106 review.

1.4.1.4.1 Survey/Mapping

a. Provide Surveying work as required to support design, As-built creation, and Record Drawings creation.

1.4.1.4.2 Civil

a. Provide a geotechnical investigation to support foundation design.

b. Provide excavation, fill, and grading in accordance with the approved design package.

(1) Portions relating to the standby generator.

c. Provide new pavements and sidewalks in accordance with the approved

design package

d. Provide restoration of vegetation disturbed by project activities, to include contractor laydown areas.

(1) Fully establish all vegetation; and

(2) Abide by the watering restrictions set by the Installation's current Drought Restriction Stage.

1.4.1.4.3 Structural

a. Provide modification of structural features as specified by the design.

b. Provide construction of the standby generator yard's foundation and screen wall in accordance with the approved design package.

c. Provide construction of the fire pump yard's foundation and screened enclosure in accordance with the approved design package.

1.4.1.4.4 Architectural

a. Provide work in accordance with the approved design package.

b. Repairs to the exterior stucco finish are not required, except for locations where work to remove or install building attached items are specified.

1.4.1.4.5 Interiors

a. Provide work in accordance with the approved design package.

b. Procurement of items identified in the FF&E package is not part of the initial contract award.

1.4.1.4.6 Fire Protection

a. Provide work in accordance with the approved design package.

b. Fire hydrant flow test shall be performed in accordance with NFPA 291. Report shall include the following items at a minimum:

(1) Hydrant elevations relative to the building;

(2) Hydrant number/identifier;

(3) Labeling of flowed hydrant and gauged hydrant;

(4) Calibration certificates of testing equipment;

(5) Water network diagram of the area to show system layout.

Present this information in a tabular form when multiple hydrants were flowed.

1.4.1.4.7 Plumbing

a. Provide work in accordance with the approved design package.

b. Provide installation of utility meters for the following facility services, as specified in accordance with the approved design package.

(1) Domestic water service

1.4.1.4.8 Mechanical

a. Provide work in accordance with the approved design package.

1.4.1.4.9 Electrical

a. Installation of the standby generator shall be in accordance with UFC 3-540-01, NFPA 70 Article 701, and NFPA 110 Level 2 criteria.

b. Provide work in accordance with the approved design package.

c. Heating of PVC conduit, by flame or heat gun, to bend or reshape PVC conduit is prohibited. For situations requiring bending or shaping, utilize appropriate preformed elbows or sweeps. Alternative methods approved by the manufacturer and relevant codes may be presented to the Contracting Officer for consideration.

(1) Where PVC conduit has been heated, a mandrel test shall be performed to check for out-of-round conduit. Pass the mandrel through each run of pipe by pulling it by hand. Test failure shall require replacement of that segment of conduit. The mandrel must meet the pipe manufacturer's recommendations and the following requirements:

(a) Provide a mandrel that is rigid, nonadjustable, pulling rings at each end, and is engraved with the nominal pipe size and mandrel outside diameter.

(2) Where PVC conduit has been heated, a drop test shall be performed to check its structural integrity. Material must be dropped from a height of 5 feet. Formation of cracks or complete material failure shall require replacement of that segment of conduit.

1.4.1.4.10 Telecommunications

a. Provide work in accordance with the approved design package.

b. Telecommunications equipment, e.g. switches, UPS, etc., are not part of the project scope. Government will provide their own equipment.

1.4.1.4.10.1 Security Systems

a. Provide ACS, IDS, and CCTV systems in accordance with the approved design package.

(1) IDS installer shall be Lenel Certified for Intrusion Detection Systems.

1.4.1.4.11 Other

a. Provide integrated systems testing and commissioning for all work specified and in accordance with Section 01 91 00.15 BUILDING COMMISSIONING.

b. Before the standby generator can be brought onto the Installation and project site, and depending upon the size of the generator's fuel tank; proper notification to the Texas Commission on Environmental Quality may be required. Refer to Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS for information to comply with applicable requirements.

c. Provide all necessary repairs to the existing elevator and its equipment, damaged from flooding in the elevator machine room and pit. It is not the intent to replace the elevator.

1.4.2 Location

The work is located on Joint Base San Antonio Sam Houston at the General Administrative Building, Bldg 2263. The street address for this building is 2484 STANLEY RD, JBSA SAM HOUSTON, TX 78234. The exact location will be shown by the Contracting Officer.

1.5 EXISTING WORK

Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.

Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work must be in a condition equal to or better than that which existed before new work started.

1.6 LOCATION OF UNDERGROUND UTILITIES

Obtain digging permits prior to start of excavation, and comply with Installation requirements for locating and marking underground utilities. Contact local utility locating service a minimum of 14 calendar days prior to excavating, to mark utilities, and within sufficient time required if work occurs on a Monday or after a Holiday. Refer to Section 01 14 00 JBSA WORK RESTRICTIONS for additional requirements. Verify existing utility locations indicated on Contract drawings, within area of work.

Identify and mark all other utilities not managed and located by the local utility companies. Scan the construction site with dual frequency Ground Penetrating Radar (GPR), electromagnetic, or sonic equipment, and mark the surface of the ground or paved surface where existing underground utilities are discovered. Verify the elevations of existing piping, utilities,and any type of underground or encased obstruction not indicated, or specified to be removed, that is indicated or discovered during scanning, in locations to be traversed by piping, ducts, and other work to be conducted or installed. Verify elevations before installing new work closer than nearest manhole or other structure at which an adjustment in grade can be made.

1.6.1 Notification Prior to Excavation

Notify the Contracting Officer at least 15 days prior to starting excavation work. Refer to Section 01 14 00 JBSA WORK RESTRICTIONS for full list of requirements.

1.7 SALVAGE MATERIAL AND EQUIPMENT

Items designated by the Contracting Officer to be salvaged remain the property of the Government. Segregate, itemize, deliver and off-load the salvaged property at the Government designated storage area located on the Installation.

Provide a salvage plan, listing material and equipment to be salvaged, and their storage location. Maintain property control records for material or equipment designated as salvage. Provide a system for property control in the salvage plan. Store and protect salvaged materials and equipment until disposition by the Contracting Officer.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 PERFORMANCE PERIOD

Contractor shall conduct all activities within the negotiated time frame. A notional time frame is outined in the table below.

CLIN	Task No.	Task	Performance (Calendar Days)	Cumulative (Calendar Days)
		Contracting Kick-Off Meeting	-	-
0001	01	Design Kick-Off Meeting	1	1
	-	Charrette/Full Design	209	210
	02	Charrette Meeting	Per Contractor Design Schedule	-
	03	Preliminary Design (35% Design)	Per Contractor Design Schedule	-
		Government Review - 35% Design	21	-
	04	Interim Design (65% Design)	Per Contractor Design Schedule	-
		Government Review - 65% Design	21	-
	05	Final Design (95% Design)	Per Contractor Design Schedule	-
		Government Review - 95% Design	21	-
		Section 106 Review	45	-
	06	Corrected Final Design (100% Design/IFC)	Per Contractor Design Schedule	-
		Government Review - 100%/IFC Design	14	-
0002	07	Repair of B2263	546	756

CLIN	Task No.	Task	Performance (Calendar Days)	Cumulative (Calendar Days)
0003	08	Historic Repair	Concurrent with Task No. 07	-
0004	09	MEDCOM Funded - Specialized Equipment (Bid Option)	Concurrent with Task No. 07	-
0002	10	Closeout	30	786
			TOTAL PERFORMANCE: (CALENDAR DAYS)	786

ATT-1 - DoD Instruction 5200.02

ATTACHED IN APPENDIX A

ATT-2 - Army Regulation 190-13

ATTACHED IN APPENDIX A

ATT-3 - Army Regulation 190-51

ATTACHED IN APPENDIX A

ATT-4 - Army Regulation 380-5

ATTACHED IN APPENDIX A

ATT-5 - SIPR Network Technical Implementation Criteria

ATTACHED IN APPENDIX A

ATT-6 - MEDCOM Conceptual Space Layout

ATTACHED IN APPENDIX A

ATT-7 - MEDCOM Requirements

ATTACHED IN APPENDIX A

ATT-8 - Inventory List

ATTACHED IN APPENDIX A

ATT-9 - DoD Manual 5200.01 Volume 3

ATTACHED IN APPENDIX A

ATT-10 - Utility Map

ATTACHED IN APPENDIX A

ATT-11 - Generator Authorization Request

ATTACHED IN APPENDIX A

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SECTION 01 14 00

JBSA WORK RESTRICTIONS

01/26

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PART 2 PRODUCTS

PART 3 EXECUTION

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ATT-1 - Unescorted Access Request

ATT-2 - Dig Permit

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SECTION 01 14 00

JBSA WORK RESTRICTIONS
01/26

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.

JOINT BASE SAN ANTONIO

JBSANANTONIOI 31-1131	INSTALLATION ACCESS

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 51B	(2024) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT)

TMUTCD	(2025) Texas Manual on Uniform Traffic Control Devices

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD	(2023) Manual on Uniform Traffic Control Devices

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

10 CFR 150.20	Recognition of Agreement State licenses

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

List of Contact Personnel

Installation Access; G

Dig Permits; G

Utility Outage Request; G

Hot Work Permit; G

Road Closure Request; G

Radioactive Material Permit; G

1.3 SPECIAL SCHEDULING REQUIREMENTS

a. Any utility bypass must be ready for operation as approved by Contracting Officer before work is started on the applicable utility outage which would interfere with normal operation.

b. Have materials, equipment, and personnel required to perform the work at the site prior to the commencement of the work. Specific items of work to which this requirement applies include:

(1) Utility bypass switchover

(2) New utility tie-ins

c. The central energy plant will remain in operation during the entire construction period. The Contractor must conduct his operations so as to cause the least possible interference with normal operations of the activity.

d. Permission to interrupt any activity, roads, railroads, or utility service must be requested in writing prior to the desired date of interruption in accordance with the requirements of paragraph PERMITS AND REQUESTS.

e. The work under this contract requires special attention to the scheduling and conduct of the work in connection with existing operations. Identify on the construction schedule each factor which constitutes a potential interruption to operations. The following conditions apply:

(1) Outages to the central energy plant shall not exceed eight (8) hours in duration, unless otherwise approved.

(2) Outages to the central energy plant are considered major outages. Refer to paragraph UTILITY OUTAGE REQUEST for applicable processing time.

(3) Scheduling of outages to the central energy plant are further restricted by the NEC and 502 CS operations.

1.4 CONTRACTOR ACCESS AND USE OF PREMISES

1.4.1 Activity Regulations

Ensure that Contractor personnel employed on the Activity become familiar with and obey Activity regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. Wear appropriate personal protective equipment (PPE) in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. Ensure all Contractor equipment, include delivery vehicles, are clearly identified with their company name.

1.4.1.1 Subcontractors and Personnel Contacts

Provide a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an

emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

1.4.1.2 Installation Access

Non DOD persons (Contractors, vendors) requiring entry to JBSA Fort Sam Houston shall be sponsored by an authorized DBIDS registered DOD ID card holder. Refer to JBSANANTONIOI 31-1131.

Sponsors must notify the Security Forces Visitor Control Center for the installation that access is required no later than 14 calendar days prior to the requested entry date. Foreign nationals requiring installation access require an additional 14 calendar days to process the request. Sponsors or Authorizing Official must request the permit in writing or via email from a .mil address to the Visitor Control Center. An application for Unescorted Access Request form (ATT-1) will be submitted by the Sponsor or Official to the Pass and Registration Office. Contractor and vendor companies requiring access to Joint Base San Antonio shall provide the credential information for their employees to the sponsor in order to process the access.

All contractor employees shall provide the following:

a. One form of picture identification.

b. Personal identifiable information and vehicle information as required to process all Unescorted Pass Requests. Vehicle information listed below is required at a minimum:

(1) Copy of current, non-expired vehicle registration.

(2) Copy of current, non-expired vehicle insurance that lists the vehicle for which registration information is provided.

c. A memo from the construction company, on company letterhead, stating the reason for entry; contract number; project start and end date; and the location at JBSA where the jobsite is located.

Installation gate hours and availability can be found at the following weblink: https://www.jbsa.mil/Gate-Hours/

1.4.1.2.1 JBSA Sam Houston Access

Persons not in possession of a valid access credential shall enter the Installation through the following entry control points:

a. Walters Gate

b. BAMC/I-35 Gate

c. Jadwin Commercial Gate (Commercial Vehicles Only)

1.4.1.2.1.1 Prohibited Haul Routes

a. Through any housing area. Skirting the area is acceptable.

b. Through the Community Center; bounded to the north by Schofield Road, to the east by Schaffer Road/Patch Road, to the south by Wilson Street, and to the west by Stanley Road.

c. Do not travel on Stanley Road during times of troop movements.

d. Travel only on defined roads through the AMEDD Training Campus.

1.4.1.2.1.2 Gate Restrictions

All commercial Class A/B type vehicles must enter through:

a. Jadwin Commercial Gate, if closed vehicles may enter through the Walters Gate

b. BAMC/I-35 Commercial Gate, for projects located at BAMC only

c. Arrangements can be made to modify installation access protocol to allow Class A/B type vehicles through other gates for special circumstances, on a case-by-case basis. Each case requires a minimum 30 calendar day notification.

1.4.1.3 Government Housing Areas

a. Haul routes to and from project sites cannot go through housing/residential areas.

b. When working inside a housing/residential area, working hours are limited to 0800 (8 am) to 1600 (4 pm) unless otherwise approved by the Contracting Officer.

1.4.1.4 No Smoking Policy

Smoking is prohibited within and outside of all buildings on installation, except in designated smoking areas. This applies to existing buildings, buildings under construction and buildings under renovation. Discarding tobacco materials other than into designated tobacco receptacles is considered littering and is subject to fines. For areas not marked as designated smoking areas, follow guidance in DAFI48-104.

1.4.2 Emergency Response Requirements

Contractors reporting an emergency shall provide the 9-1-1 dispatcher with the following information:

a. Building number, address, or general location
b. Name
c. Phone number
d. Emergency information (cause of fire, explosion, natural gas leak, injuries, etc.)

DO NOT HANG UP THE PHONE UNTIL DIRECTED TO BY THE 9-1-1 DISPATCHER

Note: If calling 9-1-1 from a mobile phone you will be directed to the local municipality's 9-1-1 dispatcher. Request that the dispatcher transfer you to the JBSA Fort Sam Houston emergency dispatcher.

1.4.3 Working Hours

Regular working hours will consist of an 8 1/2 hour period, between 7 a.m. and 3:30 p.m., Monday through Friday, and 7 a.m. to 3:30 p.m. on Saturday

and Sunday as needed, excluding Government holidays. Work on Government holidays is allowed as long as no requests for Government inspection are scheduled on those days. Adjustments to working hours must be made in advance by notifiying the Contracting Officer as least 14 calendar days in advance.

1.4.4 Work Outside Regular Hours

Work outside regular working hours requires Contracting Officer approval. Make application 14 calendar days prior to such work to allow arrangements to be made by the Government for inspecting the work in progress, giving the specific dates, hours, location, type of work to be performed, contract number and project title. Based on the justification provided, the Contracting Officer may approve work outside regular hours. During periods of darkness, the different parts of the work must be lighted in a manner approved by the Contracting Officer. Make utility cutovers after normal working hours or on Saturdays, Sundays, and Government holidays unless directed otherwise.

Contractors shall refer to the U.S. Office of Personnel Management (OPM) website for the current list of Federal holidays and the current date of observance. Link to OPM:
https://www.opm.gov/policy-data-oversight/pay-leave/federal-holidays

1.4.5 Occupied Buildings

The Contractor shall be working around existing buildings which are occupied. Do not enter the buildings without prior approval of the Contracting Officer.

The existing buildings and their contents must be kept secure at all times. Provide temporary closures as required to maintain security as directed by the Contracting Officer.

The contractor shall coordinate with the Installation's Locksmith to swap-out existing key cores for contractor-owned construction key cores. At beneficial occupancy, all contractor-owned construction key cores shall be removed and Government key cores reinstalled. If there is a requirement for new key cores, contractor shall install the new key cores.

1.4.6 Permits and Requests

All permit requests must include at minimum the following:
a. Site Map (8" x 11" or 8" x 14"), 6 complete copies
b. Relevant 100% Construction Drawings, 6 complete copies
c. Project Name and Number
d. Contractor & Subcontractor Name
e. Brief Description of Work - Identify all buildings and/or facilities possibly affected
f. Desired Date for Work to Begin
g. Estimated Duration of Work
h. 14 calendar day advance notice minimum, unless otherwise noted
i. Contractor's Representative contact information

1.4.6.1 Dig Permits/Utility Locates

Dig Clearance coordination meeting is held in building 4197 on Mondays, from 0900 to 1000. If a Government holiday falls on a Monday, the coordination meeting will be canceled for that week, and no dig permits

will be accepted or processed for that week.

a. All permit requests shall include the following at minimum:

(1) Filled in Dig Permit form (ATT-2), 6 copies

(2) Site map, 6 copies

(3) Relevant IFC drawings, 6 copies

(4) Project name and number

(5) Contractor name

(6) Brief description of work

(7) Contractor's representative contact information

b. Digging permits must be obtained prior to any digging, drilling or any excavation work.

c. Utility Locates are available by submitting ATT-2 to the Dig Clearance meeting.Locates for American Water managed utilites are also included in that request. Privitized utility locates shall be done through 811 and San Antonio Water System (SAWS).

(1) 811 notifications shall be done by either dialing 811 or by submitting a notice through texas811.org.

(2) SAWS notifications shall be done by submitting a notice through locates.saws.org. Issues with utility locates can be submitted to locates@saws.org.

d. Contractor shall allow 14 calendar days for Government review of digging permit requests. A digging permit for a specified area of excavation expires 30 days after the issue date. The contractor shall re-apply for a new permit to perform excavation in the area if the excavation was not started within the 30-day period.

e. Permits will identify underground utilities, that have been recorded in the Government's GIS, within 5 feet of the designated area. Contractor shall be responsible for all repairs, costs, and damages due to excavating without permit or damaging an identified utility.

1.4.6.2 Utility Outage Request

a. All requests shall include the following at minimum:

(1) Filled in Outage Request form (ATT-3)

(2) Project Name and Number

(3) Description of work

(4) Identify all buildings and/or facilities possibly affected

(5) Desired date for work to begin

(6) Estimated duration of work

(7) Proof of pre-coordination with key stakeholders

(8) Contractor's representative contact information

b. Contractor shall complete and submit a written request 21 calendar days in advance of the requested utility outage, after pre-coordination has been completed, to the Contracting Officer's Technical Representative. The request shall include the utility service to be affected, proposed date, proposed time, and outage duration. Outage Request form included as ATT-3.

c. If an outage will effect multiple buildings, or effect a high profile building, or has a major impact on the mission being performed by the occupants of the building, a 60 calendar day notice will be required.

d. Contractor shall be responsible for pre-coordination with CPS Energy for any facility electrical service or gas service outage request. Contractor shall be responsible for pre-coordination with American Water for any work affecting water or sanitary sewer lines outside the respective point of demarcation. American Water requires 30 calendar days for outage coordination. Contractor shall also be responsible for pre-coordination with 502d Communications Squadron, Network Enterprise Center (NEC), Security Forces, and Army Security System Network (G-2). Contracting Officer's Technical Representative will advise on when an outage request will require coordination with these coordinators, as not all outages will affect these Government stakeholders. This coordination is separate from the Government's coordination, and must be performed prior to submission to the Contracting Officer's Technical Representative.

e. Provide the Contracting Officer's Technical Representative a copy of the Utility Outage request once all applicable pre-coordination stakeholders and Facility Managers have signed the request. Processing time does not start until these stakeholders have signed the outage request.

f. After submitting the request to the government, the contractor shall receive approval from the Government prior to performing a utility outage.

1.4.6.3 Hot Work Permit

Under no circumstances shall hot work operations start without a hot work permit.

All welding and cutting operations shall be performed in accordance with NFPA 51B. Contact the site specific JBSA Fire Department to request an AF Form 592 USAF Welding, Cutting and Brazing Permit. Ensure a copy of the AF Form 592 is located on site, and provided to the Contracting Officer's Technical Representative.

JBSA Fort Sam Houston Fire Prevention: (210) 221-2727

Permits expire in 30 days. If work will extend beyond 30 day period the contractor shall contact JBSA Fire and Emergency Services to re-issue a new permit.

1.4.6.4 Road Closure Request

a. Road closings will not be permitted without approval. To get approval for a proposed road closure contractor shall submit a traffic control plan to the Contracting Officer's Technical Representative at least 60 calendar days prior to anticipated need for closure.

b. The Contractor's traffic control plan will include each section of road that will be worked on or impacted as a result of this contract. The traffic control plan shall be in accordance with MUTCD, Part VI, and TMUTCD, Part VI.

c. Contractor shall provide traffic control signs and barricades for all road closures. At least one lane of traffic must be maintained at all times, unless otherwise directed.

1.4.6.5 Radioactive Material Permit

a. Use of radiation sources on Joint Base San Antonio requires authorization before they are brought onto the Installation. Submit required information to the Radiation Safety Office (RSO) through the Contracting Officer, who will issue the Department of the Air Force Radiation Permit (AFRP). Excludes portable machine sources of ionizing radiation including moisture density and X-Ray Fluorescence (XRF). Refer to Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS for requirements relating to the safe use of radioactive material.

(1) Installation RSO:

559 MDS
Ph: 210-292-7630
E-mail:
usaf.jbsa.559-mds.mbx.rafb-bioenvironmental-engineering@health.mil

(2) Operating Location RSO:

Algernon Johnson
Ph: 210-221-4543 / 210-221-3824
E-mail: algernon.johnson.1@us.af.mil

E-mail: 502ABW.SE.SafetyJBSA-FSH@us.af.mil

b. Applicant shall apply by letter with supporting documentation through the Installation RSO or the Operating Location RSO. . Submit the letter so that the Installation Representative receives the application at least 30 calendar days before the requested start date of the permit.

c. AFRP application shall specify start and stop dates and describe for what purposes the applicant needs the AFRP. The following information shall be submitted with the application:

(1) Brief description of proposed activities.

(2) Copy of a valid U.S. Nuclear Regulatory Commission (NRC) Form 347 material license that allows the applicant to use the source as described in the AFRP application.

(3) Copy of a valid Agreement State or Radioactive Material License (Texas Department of Health, Bureau of Radiation Control) license that allows the applicant to use radioactive material (RAM) as described in the AFRP application. Also include proof that the applicant has filed NRC Form 241, Report of Proposed Activities in Non-Agreement States, with the NRC in accordance with 10 CFR 150.20. A copy of the NRC Form 241 must accompany the TRC Form 12-1. An AFRP issued under this circumstance will be valid for no more than 180 days in any calendar year.

(4) Contractor Local Point of Contact: Name, Address, and Phone.

(5) Company Radiation Safety Officer: Name, Address, and Phone.

(6) Contracting Officer's Technical Representative: Name and Phone.

(7) Copy of the contractual clause of the Contract describing work to be performed and inclusive dates.

(8) Provide log of actual equipment usage to the Installation RSO or the Operating Location RSO..

(9) Leak test documentation for the equipment with the radioactive source(s).

(10) Site map defining the area where radioactive materials or equipment is to be used.

(11) Radiation Safety Program to include standard operating procedures, training program, and designation of the contractor's RSO.

(12) Written acknowledgement of understanding that the Installation RSO and the Operating Location RSO. will not be prevented from conducting periodic assessments and that operations will cease immediately if they are found to be unsafe by them. Statement shall be formatted as follows:

"< INSERT COMPANY NAME > recognizes that the JBSA Installation Radiation Safety Officers, or Operating Location Radiation Safety Officers are authorized to periodically conduct assessments to ensure compliance with radiation safety practices to prevent exposures to Government personnel and to prevent contamination of Government property. If deemed necessary to maintain safety, the Installation RSO or Operating Location RSO may sequester the source. Additionally, < INSERT COMPANY NAME > recognizes the authority of the Installation RSO and Operating Location RSO to suspend contractor operations believed to be unsafe. The contractor using radioactive material, and the owner of said material, are responsible for ensuring safe operations and security for their radioactive material. The Government is not liable for any costs associated with cessation of operations for safety reasons."

(13) For naturally occurring or accelerator produce radioactive material (NORM/NARM) and machine-produced ionizing radiation sources, provide a copy of the appropriate State authorization that allows the applicant to use the source as described in the AFRP application or a copy of a Radiation Safety Program that

complies with Air Force requirements.

d. All AFRPs will require applicants to remove all permitted sources from the Installation by the end of the work day. No equipment shall be stored on site, overnight.

e. Disposal of radioactive material on JBSA is strictly prohibited.

1.4.7 Utility Cutovers and Interruptions

a. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Conform to procedures required in paragraph WORK OUTSIDE REGULAR HOURS.

b. Ensure that new utility lines are complete, except for the connection, before interrupting existing service.

c. Interruption to water, sanitary sewer, storm sewer, telecommunication service, electric service, air conditioning, heating, fire alarm, compressed air, and thermal energy are considered utility cutovers pursuant to the paragraph WORK OUTSIDE REGULAR HOURS.

d. Operation of Privatized Utilities: The Contractor must not operate nor disturb the setting of control devices in the utility's system, including water, sewer, electrical, and natural gas services. The applicable System Owner will operate the control devices as required for normal conduct of the work. The Contractor must notify the applicable System Owner giving reasonable advance notice when such operation is required.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

ATT-1 - Unescorted Access Request

ATTACHED IN APPENDIX A

ATT-2 - Dig Permit

ATTACHED IN APPENDIX A

ATT-3 - Utility Outage Request

ATTACHED IN APPENDIX A

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SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS
02/26

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

View Location Map

Progress and Completion Pictures

1.3 VIEW LOCATION MAP

Submit, prior to or with the first digital photograph submittals, a sketch or drawing indicating the required photographic locations. Update as required if the locations are moved.

1.4 PROGRESS AND COMPLETION PICTURES

Photographically document site conditions prior to start of construction operations. Provide monthly, and within one month of the completion of work, digital photographs, 4032x2268x24 bit true color minimum resolution in JPEG file format showing the sequence and progress of work. Take a minimum of 25 digital photographs each week throughout the entire project from a minimum of ten different viewpoints selected by the Contractor unless otherwise directed by the Contracting Officer. Submit with the monthly invoice a set of digital photographs, through DoD SAFE, cumulative of all photos to date. Indicate photographs demonstrating environmental procedures. Provide photographs for each month in a separate monthly directory and name each file to indicate its location on the view location sketch. Also provide the view location sketch with each transmittal as a digital file. Include a date designator in file names. Photographs provided are for unrestricted use by the Government.

1.5 MINIMUM INSURANCE REQUIREMENTS

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

1.6 SUPERVISION

1.6.1 Superintendent Qualifications

Provide project superintendent with a minimum of 15 years experience in construction with at least 7 of those years as a superintendent on projects similar in size and complexity. The individual must be familiar with the requirements of EM 385-1-1 and have experience in the areas of hazard identification and safety compliance. The individual must be capable of interpreting a critical path schedule and construction drawings. The qualification requirements for the alternate superintendent are the same as for the project superintendent. The Contracting Officer may request proof of the superintendent's qualifications at any point in the project if the performance of the superintendent is in question.

1.6.2 Minimum Communication Requirements

Have at least one qualified superintendent, or competent alternate, capable of reading, writing, and conversing fluently in the English language, on the job-site at all times during the performance of Contract work. In addition, if a Quality Control (QC) representative is required on the Contract, then that individual must also have fluent English communication skills.

1.6.3 Duties

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

1.6.4 Non-Compliance Actions

The Project Superintendent is subject to removal by the Contracting Officer for non-compliance with requirements specified in the contract and for failure to manage the project to ensure timely completion. Furthermore, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders is acceptable as the subject of claim for extension of time for excess costs or damages by the Contractor.

1.7 PRECONSTRUCTION CONFERENCE

Upon completion of design and design acceptance by the government, prior to commencing any work at the site, coordinate with the Contracting Officer a time and place to meet for the Preconstruction Conference. The purpose of this conference is to discuss and develop a mutual understanding of the administrative requirements of the Contract including

but not limited to: daily reporting, invoicing, value engineering, safety, base-access, outage requests, hot work permits, schedule requirements, quality control, schedule of prices or earned value report, shop drawings, submittals, cybersecurity, prosecution of the work, government acceptance, final inspections and contract close-out. Contractor must present and discuss their basic approach to scheduling the construction work and any required phasing.

1.7.1 Attendees

Contractor attendees must include the Project Manager, Superintendent, Site Safety and Health Officer (SSHO), Quality Control Manager and major subcontractors.

1.8 REQUESTS FOR INFORMATION

Requests for information to the Government shall utilize ATT-2. Submit all RFIs as if it where a submittal in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

1.9 FACILITY TURNOVER PLANNING MEETINGS (Red Zone Meetings)

Meet with the Government to identify strategies to ensure the project is carried to expeditious closure and turnover to the Client. Start planning the turnover process at the Pre-Construction Conference meeting with a discussion of the Red Zone process and convene at regularly scheduled Red Zone Meetings beginning at approximately 75 percent of project completion. Include the following in the facility Turnover effort:

1.9.1 Red Zone Checklist

a. Contracting Officer's Technical Representative (COTR) will provide any updates to the Red Zone Checklist template (ATT-1).

b. Prior to 75 percent completion, modify the Red Zone Checklist template by adding or deleting critical activities applicable to the project and assign planned completion dates for each activity. Submit the modified Red Zone Checklist to the Contracting Officer. The Contracting Officer may request additional activities be added to the Red Zone Checklist at any time as necessary.

1.9.2 Meetings

a. Conduct regular Red Zone Meetings beginning at approximately 75 percent project completion, or three to six months prior to Beneficial Occupancy Date (BOD), whichever comes first.

b. The Contracting Officer will establish the frequency of the meetings, which is expected to increase as the project completion draws nearer. At the beginning, Red Zone meetings may be every two weeks then increase to weekly towards the final month of the project.

c. Using the Red Zone Checklist as a Plan of Action and Milestones (POAM) and basis for discussion, review upcoming critical activities and strategies to ensure work is completed on time.

d. During the Red Zone Meetings discuss with the COTR any upcoming activities that require Government involvement.

e. Maintain the Red Zone Checklist by documenting the actual completion dates as work is completed and update the Red Zone Checklist with revised planned completion dates as necessary to match progress. Distribute copies of the current Red Zone Checklist to attendees at each Red Zone Meeting.

1.10 PARTNERING

To most effectively accomplish this Contract, the Contractor and Government must form a cohesive partnership with the common goal of drawing on the strength of each organization in an effort to achieve a successful project without safety mishaps, conforming to the Contract, within budget and on schedule. The partnering team must consist of personnel from both the Government and Contractor including project level and corporate level leadership positions. Key Personnel from the supported command, end user, CE personnel, Contractor, key subcontractors and the Designer of Record are required to participate in the Partnering process.

1.10.1 Team-Led (Informal) Partnering

a. The Contracting Officer will coordinate the initial Team-Led (Informal) Partnering Session with key personnel of the project team, including Contractor and Government personnel. The Partnering Session will be co-led by the Government Construction Manager and Contractor's Project Manager.

b. The Initial Team-led Partnering session may be held concurrently with the Post-Award Kickoff meeting. Partnering sessions will be held at a location mutually agreed to by the Contracting Officer and the Contractor, typically at a conference room on-base or at the Contractor's temporary trailer.

c. The Initial Team-Led Partnering Session will be conducted and facilitated using electronic media (a video and accompanying forms) provided by Contracting Officer.

d. The Partners will determine the frequency of the follow-on sessions.

e. Participants will bear their own costs for meals, lodging and transportation associated with Partnering.

1.11 MOBILIZATION

Contractor shall mobilize to the jobsite within 30 calendar days of final site or building design approval. Mobilize is defined as having equipment AND having a physical presence of at least one person from the contractor's team on the jobsite.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

ATT-1 - RED ZONE MEETING CHECKLIST

Date:_____

Contract No.: .....
Project No. & Title: JBSF180069 Repair Multi-Svc Troop Facility, B2263
Contracting Officer: _____
Contract Administrator: _____
Government Project Manager: _____
Government Inspector: _____
Contractor: _____

Basic Contract Amount: _____
No. of Contract Mods: _____
Contract Mods Cost: _____
Estimated Final Cost: _____

Action	**Date**	**Duration**
Pre-Final Inspection		
Pre-Final Punchlist Correction		
Final Inspection		
Test & Balance (TAB)		
TAB Report Submittal		
Commissioning		
Commissioning Report Submittal		
Red-lined As-built Submittal		
Record of Equipment and Materials		
Beneficial Occupancy Date (BOD)		
Interim DD1354 Submittal		
Construction Completion		
Record Drawings Submittal		
Record Drawings Advanced Modeling Submittal		
Record Specifications Submittal		
Operation & Maintenance Manual Submittal		
Warranty Submittal		
O&M Training		
Landscape Restoration at Project Site		
Contractor Laydown Area Removal & Restoration		
Final Invoice		
Release of Claims		
DD1594 Complete*		
Final DD1354*		

* Items are the responsibility of the Government.

ATT-2 - Request For Information Form

ATTACHED IN APPENDIX A

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PROJECT SCHEDULE
01/26

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.

AACE INTERNATIONAL (AACE)

AACE 29R-03	(2011) Forensic Schedule Analysis
AACE 52R-06	(2006) Time Impact Analysis - As Applied in Construction
AACE 84R-13	(2015) Planning and Accounting for Adverse Weather

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 67-17	(2017) Schedule Delay Analysis

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1-1-11	(2017) Administration -- Project Schedules

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Project Scheduler Qualifications; G

Preliminary Project Schedule; G

Initial Project Schedule; G

Periodic Schedule Update; G

1.3 PROJECT SCHEDULER QUALIFICATIONS

Designate an authorized representative to be responsible for the preparation of the schedule and all required updating and production of reports. The Designated Project Scheduler must have prepared and maintained at least three previous construction schedules for projects of similar size and complexity to this contract, using Primavera P6.. Representative must have a comprehensive knowledge of CPM scheduling

principles and application.

PART 2 PRODUCTS

2.1 SOFTWARE

The scheduling software utilized to produce and update the schedules required herein must be capable of meeting all requirements of this specification.

2.1.1 Contractor Software

Scheduling software used by the contractor must be commercially available from the software vendor for purchase with vendor software support agreements available. The software routine used to create the required sdef file must be created and supported by the software manufacturer.

2.1.1.1 Primavera

If Primavera P6 is selected for use, provide the "xer" export file with all schedule submittals.

2.1.1.2 Other Than Primavera

Provide the native export file with all schedule submittals.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Prepare for approval a Project Schedule, as specified herein, pursuant to FAR Clause 52.236-15 Schedules for Construction Contracts. Show in the schedule the proposed sequence to perform the work and dates contemplated for starting and completing all schedule activities. The scheduling of the entire project is required. The scheduling of design and construction is the responsibility of the Contractor. Contractor management personnel must actively participate in its development. Designers, Subcontractors, and suppliers working on the project must also contribute in developing and maintaining an accurate Project Schedule. Provide a schedule that is a forward planning as well as a project monitoring tool. Use the Critical Path Method (CPM) of network calculation to generate all Project Schedules. Prepare each Project Schedule using the Precedence Diagram Method (PDM).

3.1.1 Scheduling Expectations Kickoff Meeting (SEKO)

In conjunction with the post award conference or pre construction conference the Government and the Contractor will hold a separate and distinct Scheduling Expectations Kickoff Meeting (SEKO). The intent of this meeting is for the Government to review with the contractor the requirements of the scheduling specification, communicate the Government’s expectations regarding schedule development and management, and answer any questions the Contractor may have regarding the schedule requirements.

3.2 BASIS FOR PAYMENT AND COST LOADING

The schedule is the basis for determining contract earnings during each update period and therefore the amount of each progress payment. The aggregate value of all activities coded to a contract CLIN must equal the

value of the CLIN. Match the progress payment "Pay Period Thru" date to the schedule data date.

3.2.1 Activity Cost Loading

Activity cost loading must be reasonable and without front-end loading. Activities with a negative cost loading is not allowed. Provide additional documentation to demonstrate reasonableness if requested by the Contracting Officer.

3.2.2 Cost Loading of Submittals

No costs are to be assigned to activities for the preparation, review, or approval of submittals, except as described under paragraph COST LOADING OF CLOSEOUT ACTIVITIES, paragraph AS-BUILT DRAWINGS, paragraph RECORD MODEL, DRAWINGS AND SPECIFICATIONS, design submittals, and paragraph O&M MANUALS.

3.2.3 Withholdings / Payment Rejection

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

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

3.3 PROJECT SCHEDULE DETAILED REQUIREMENTS

3.3.1 Level of Detail Required

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

3.3.2 Activity Durations

Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Non-procurement activities Original Durations (OD) are not to exceed 20 workdays or 30 calendar days.

3.3.3 Design and Permit Activities

Include design and permit activities with the necessary conferences and follow-up actions and design package submission dates. Include the design schedule in the project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. Provide a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. Also include review and correction periods associated with each item.

3.3.4 Procurement Activities

Include in the schedule activities associated with the critical submittals and their approvals, procurement, fabrication, and delivery of long lead materials, equipment, fabricated assemblies, and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over 90 calendar days.

3.3.5 Mandatory Activities

Include the following activities in the initial project schedule and all updates.

a. Submission, review and acceptance of SD-01 Preconstruction Submittals (individual activity for each).

b. Submission, review and acceptance of design packages.

c. Submission of mechanical/electrical/information systems layout drawings.

d. Long procurement activities.

e. Submission and approval of O & M manuals.

f. Submission and approval of as-built drawings.

g. Submission and approval of DD1354 data and installed equipment lists.

h. Submission and approval of testing and air balance (TAB).

i. Submission of TAB specialist design review report.

j. Submission and approval of fire protection specialist.

k. Submission and approval of Building Commissioning Plan, Controls testing plan, test data, and reports: Develop the schedule logic associated with testing and commissioning of mechanical systems to a level of detail consistent with the contract commissioning requirements. All tasks associated with building testing and commissioning will be completed prior to submission of building commissioning report and subsequent contract completion.

   Include other systems testing, if required. Include additional commissioning requirements noted elsewhere in the Contract as required in the schedule and discuss during the SEKO meeting, noted in paragraph SCHEDULING EXPECTATIONS KICKOFF MEETING (SEKO). These activities may include but are not limited to:

   (1) Air and water balancing.

   (2) Building commissioning - Functional Performance Testing.

   (3) Controls testing plan submission.

   (4) Controls testing.

   (5) Performance Verification testing.

(6) Other systems testing, as required.

l. Contractor's pre-final inspection.

m. Correction of punch list from Contractor's pre-final inspection.

n. Government's pre-final inspection.

o. Correction of punch list from Government's pre-final inspection.

p. Final inspection.

q. Submission and approval of Record Model, Drawings and Specifications.

3.3.6 Government Activities

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

3.3.7 Standard Activity Coding Dictionary

Use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11. This exact structure is mandatory. Develop and assign all Activity Codes to activities as detailed herein.

The SDEF format is as follows:

Field	Activity Code	Length	Description
1	WRKP	3	Workers per day
2	RESP	4	Responsible party
3	AREA	4	Area of work
4	MODF	6	Modification Number
5	BIDI	6	Bid Item (CLIN)
6	PHAS	2	Phase of work
7	CATW	1	Category of work
8	FOW	20	Feature of work*

*Some systems require that FEATURE OF WORK values be placed in several activity code fields. The notation shown is for Primavera P6. Refer to the specific software guidelines with respect to the FEATURE OF WORK field requirements.

3.3.7.1 Workers Per Day (WRKP)

Assign Workers per Day for all field construction or direct work activities, if directed by the Contracting Officer. Workers per day is based on the average number of workers expected each day to perform a task for the duration of that activity.

3.3.7.2 Responsible Party Coding (RESP)

Assign responsibility code for all activities to the Prime Contractor, Subcontractor(s) or Government agency(ies) responsible for performing the activity.

a. Activities coded with a Government Responsibility code include, but are not limited to: Government approvals, Government design reviews, environmental permit approvals by State regulators, Government Furnished Property/Equipment (GFP) and Notice to Proceed (NTP) for phasing requirements.

b. Activities cannot have more than one Responsibility Code. Examples of acceptable activity code values are: DOR (for the designer of record); ELEC (for the electrical subcontractor); MECH (for the mechanical subcontractor); and GOVT (for Government agencies).

3.3.7.3 Area of Work Coding (AREA)

Assign Work Area code to activities based upon the work area in which the activity occurs. Define work areas based on resource constraints or space constraints that would preclude a resource, such as a particular trade or craft work crew from working in more than one work area at a time due to restraints on resources or space. Examples of Work Area Coding include different areas within a floor of a building, different floors within a building, and different buildings within a complex of buildings. Activities cannot have more than one Work Area Code.

3.3.7.4 Modification Number (MODF)

Assign a Modification Number Code to any activity or sequence of activities added to the schedule as a result of a Contract Modification, when approved by Contracting Officer. Key all Code values to the Government's modification numbering system. An activity can have only one Modification Number Code.

3.3.7.5 Bid Item Coding (BIDI)

Assign a Bid Item Code to all activities using the Contract Line Item Number (CLIN) to which the activity belongs, even when an activity is not cost loaded. An activity can have only one BIDI Code.

3.3.7.6 Phase of Work Coding (PHAS)

Assign Phase of Work Code to all activities. Examples of phase of work are design phase, procurement phase and construction phase. Each activity can have only one Phase of Work code.

a. Code proposed fast track design and construction phases proposed to allow filtering and organizing the schedule by fast track design and construction packages.

b. If the contract specifies phasing with separately defined performance periods, identify a Phase Code to allow filtering and organizing the schedule accordingly.

3.3.7.7 Category of Work Coding (CATW)

Assign a Category of Work Code to all activities. Category of Work Codes include, but are not limited to design, design submittal, design reviews, review conferences, permits, construction submittal, procurement, fabrication, weather sensitive installation, non-weather sensitive installation, start-up, and testing activities. Each activity can have no more than one Category of Work Code.

3.3.7.8 Feature of Work Coding (FOW)

Assign a Feature of Work Code to appropriate activities based on the Definable Feature of Work to which the activity belongs based on the approved QC plan.

Definable Feature of Work is defined in Section 01 45 00 QUALITY CONTROL. An activity can have only one Feature of Work Code.

3.3.8 Contract Milestones and Constraints

Milestone activities are to be used for significant project events including, but not limited to, project phasing, project start and end activities, or interim completion dates. The use of artificial float constraints such as "zero free float" or "zero total float" are prohibited.

Mandatory constraints that ignore or effect network logic are prohibited. No constrained dates are allowed in the schedule other than those specified herein. Submit additional constraints to the Contracting Officer for approval on a case by case basis.

3.3.8.1 Project Start Date Milestone and Constraint

The first activity in the project schedule must be a start milestone titled "NTP Acknowledged," which must have a "Start On" constraint date equal to the date that the NTP is acknowledged.

3.3.8.2 End Project Finish Milestone and Constraint

The last activity in the schedule must be a finish milestone titled "End Project."

Constrain the project schedule to the Contract Completion Date in such a way that if the schedule calculates an early finish, then the float calculation for "End Project" milestone reflects positive float on the longest path. If the project schedule calculates a late finish, then the "End Project" milestone float calculation reflects negative float on the longest path. The Government is under no obligation to accelerate Government activities to support a Contractor's early completion.

3.3.8.3 Interim Completion Dates and Constraints

Constrain contractually specified interim completion dates to show negative float when the calculated late finish date of the last activity in that phase is later than the specified interim completion date.

3.3.8.3.1 Start Phase

Use a start milestone as the first activity for a project phase. Call the start milestone "Start Phase X" where "X" refers to the phase of work.

3.3.8.3.2 End Phase

Use a finish milestone as the last activity for a project phase. Call the finish milestone "End Phase X" where "X" refers to the phase of work.

3.3.9 Adverse Weather

Ensure anticipated adverse weather is accounted for in the Project Schedule. AACE 84R-13 provides methodologies for techniques in planning for adverse weather. The preferred methodology is the use of a weather calendar. If a method other than a weather calendar is proposed then discuss the reason during the SEKO meeting.

Use the following schedule of anticipated monthly non-work days due to adverse weather as the basis for establishing a "Weather Calendar" showing the number of anticipated non-workdays for each month due to adverse weather, in addition to Saturdays, Sundays and all Federal Holidays as non-work days. Data is sourced from the National Oceanic and Atmospheric Administration's (NOAA) Summary of Monthly Normals report, in accordance with AACE 84R-13. Data set is the nominal 30-year, greater than 0.10 inch precipitation amount parameter, as indicated on the Station Report for the NOAA location closest to the project site.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAYS											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
4	3	4	3	4	4	4	3	5	5	3	4

3.3.10 Calendars

Schedule activities on a Calendar to which the activity logically belongs. Develop calendars to accommodate any contract defined work period such as a 7-day calendar for Government Acceptance activities, concrete cure times, etc. Develop the default Calendar to match the physical work plan with non-work periods identified including weekends and holidays. Develop Seasonal Calendar(s) and assign to seasonally affected activities as applicable.

If a weather calendar is used its implementation and execution is to be in accordance with AACE 84R-13

3.3.11 Open Ended Logic

Only two open ended activities are allowed: the first activity "NTP Acknowledged" is to have no predecessor logic, and the last activity -"End Project" is to have no successor logic. Except as noted above all activities are to have at least a start-to-start or finish-to-start relationship with its predecessor(s) and a finish-to-finish or finish-to-start relationship with its successor(s).

Predecessor open ended logic may be allowed in a time impact analyses upon the Contracting Officer's approval.

3.3.12 Default Progress Data Disallowed

Actual Start and Finish dates must not automatically update with default mechanisms included in the scheduling software. Updating of the percent complete and the remaining duration of any activity must be independent functions. Disable program features that calculate one of these parameters from the other. Activity Actual Start (AS) and Actual Finish (AF) dates assigned during the updating process must match those dates provided in the Contractor Quality Control Reports. Failure to document the AS and AF dates in the Daily Quality Control report will result in disapproval of the Contractor's schedule.

3.3.13 Out-of-Sequence Progress

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

3.3.14 Added and Deleted Activities

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

3.3.15 Original Durations

Activity Original Durations (OD) must be reasonable to perform the work item. OD changes are prohibited unless justification is provided and approved by the Contracting Officer.

3.3.16 Leads, Lags, and Start to Finish Relationships

Lags must be reasonable as determined by the Government and not used in place of realistic original durations, must not be in place to artificially absorb or create float, or to replace proper schedule logic.

a. Leads (negative lags) are prohibited.

b. Start to Finish (SF) relationships are prohibited.

3.3.17 Retained Logic

Schedule calculations must retain the logic between predecessors and successors ("retained logic" mode) even when the successor activity(s) starts and the predecessor activity(s) has not finished (out-of-sequence progress). Software features that in effect sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied ("progress override") are not be allowed.

3.3.18 Percent Complete

Update the percent complete for each activity started, based on the realistic assessment of earned value. Activities which are complete but for remaining minor punch list work and which do not restrain the initiation of successor activities may be declared 100 percent complete to allow for proper schedule management. Budgeted cost of activity is to be reduced by the amount needed to correct deficiency. The activity referenced in paragraph COST LOADING of CLOSEOUT ACTIVITIES must have its budgeted cost increased by this amount.

3.3.19 Remaining Duration

Update the remaining duration for each activity based on the number of estimated workdays it will take to complete the activity. Remaining duration may not mathematically correlate with percentage found under paragraph entitled Percent Complete. The remaining duration for unstarted activities are not to be less than its orginal duration.

3.3.20 Cost Loading of Closeout Activities

Cost load the "Correction of punch list from Government pre-final inspection" activity(ies) not less than 1 percent of the present contract value. Activity(ies) may be declared 100 percent complete only after the Government's verification of completion and correction of all punch list work identified during Government pre-final inspection(s). No partial payment requests will be accepted.

3.3.20.1 As-Built Drawings

If there is no separate contract line item (CLIN) for as-built drawings, cost load the "Submission and approval of as-built drawings" activity not less than $35,000 or 1 percent of the present contract value, which ever is greater, up to $200,000. Activity will be declared 100 percent complete only after the Government's approval. No partial payment requests will be accepted.

3.3.20.2 O & M Manuals

Cost load the "Submission and approval of O & M manuals" activity not less than $20,000. Activity will be declared 100 percent complete only after the Government's approval of all O & M manuals. No partial payment requests will be accepted.

3.3.20.3 Record Model, Drawings and Specifications

Cost load the "Submission and approval of Record Model, Drawings and Specifications" activity not less than $17,500 or 0.5 percent of the present contract value, which ever is greater, up to $100,000. Activity will be declared 100 percent complete only after the Government's approval of all Record submittals. No partial payment requests will be accepted.

3.3.21 Early Completion Schedule and the Right to Finish Early

An Early Completion Schedule is an Initial Project Schedule (IPS) that indicates all scope of the required contract work will be completed before the contractually required completion date.

a. No IPS indicating an Early Completion will be accepted without being

fully resource-loaded (including crew sizes and manhours) and the Government agreeing that the schedule is reasonable and achievable.

b. The Government is under no obligation to accelerate work items it is responsible for to ensure that the early completion is met nor is it responsible to modify incremental funding (if applicable) for the project to meet the contractor's accelerated work.

3.4 PROJECT SCHEDULE SUBMISSIONS

Provide the submissions as described below. The data reports and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS. If the Contractor fails or refuses to furnish the information and schedule updates as set forth herein, the Contractor will be deemed not to have provided an estimate upon which a progress payment can be made.

Review comments made by the Government on the schedule(s) do not relieve the Contractor from compliance with requirements of the Contract Documents.

3.4.1 Preliminary Project Schedule Submission

Within 14 calendar days after the NTP is acknowledged, submit the Preliminary Project Schedule defining the planned operations detailed for the first 90 calendar days for approval. The approved Preliminary Project Schedule will be used for payment purposes not to exceed 90 calendar days after NTP. Completely cost load the Preliminary Project Schedule to balance the contract award CLINS shown on the Price Schedule. The Preliminary Project Schedule may be summary in nature for the remaining performance period. It must be early start and late finish constrained and logically tied as specified. The Preliminary Project Schedule forms the basis for the Initial Project Schedule specified herein and must include all of the required plan and program preparations, submissions and approvals identified in the contract (for example, Quality Control Plan, Safety Plan, and Environmental Protection Plan) as well as design activities, planned submissions of all early design packages, permitting activities, design review conference activities, and other non-construction activities intended to occur within the first 90 calendar days. Government acceptance of the associated design package(s) and all other specified Program and Plan approvals must occur prior to any planned construction activities. Activity code any activities that are summary in nature after the first 90 calendar days with Bid Item (CLIN) code (BIDI), Responsibility Code (RESP) and Feature of Work code (FOW).

3.4.2 Initial Project Schedule Submission

Submit the Initial Project Schedule for approval within 14 calendar days after notice to proceed is issued. The schedule must demonstrate a reasonable and realistic sequence of activities which represent all work through the entire contract performance period. Include in the design-build schedule detailed design and permitting activities, including but not limited to identification of individual design packages, design submission, reviews and conferences; permit submissions and any required Government actions; and long lead item acquisition prior to design completion. Also cover in the initial design-build schedule the entire construction effort with as much detail as is known at the time but, as a minimum, include all construction start and completion milestones, and detailed construction activities through the dry-in, including all activity coding and cost loading. Include the remaining construction,

including cost loading, but it may be scheduled summary in nature. As the design proceeds and design packages are developed, fully detail the remaining construction activities concurrent with the monthly schedule updating process. Constrain construction activities by Government acceptance of associated designs. When the design is complete, incorporate into the then approved schedule update all remaining detailed construction activities that are planned to occur after the dry-in milestone. No payment will be made for work items not fully detailed in the Project Schedule.

3.4.2.1 Design Package Schedule Submission

With each design package submitted to the Government, submit a fragnet schedule extracted from the then current Preliminary, Initial or Updated schedule which covers the activities associated with that Design Package including construction, procurement and permitting activities.

3.4.3 Periodic Schedule Updates

Update the Project Schedule on a regular basis, monthly at a minimum. Provide a draft Periodic Schedule Update for review at the schedule update meetings as prescribed in the paragraph PERIODIC SCHEDULE UPDATE MEETINGS. These updates will enable the Government to assess Contractor's progress. Update the schedule to include detailed construction activities as the design progresses, but not later than the submission of the final un-reviewed design submission for each separate design package. The Contracting Officer may require submission of detailed schedule activities for any distinct construction that is started prior to submission of a final design submission if such activity is authorized.

a. Update information including Actual Start Dates (AS), Actual Finish Dates (AF), Remaining Durations (RD), and Percent Complete. Updated information is subject to the approval of the Government at the meeting.

b. AS and AF dates must match the date(s) reported on the Contractor's Quality Control Report for an activity start or finish.

3.4.4 Change Schedule Updates

Provide an updated project schedule no later than 7 calendar days after, to include but not limited to, award of any contract modification; period of performance extension; or major delay.

3.4.5 Out-of-Cycle Schedule Updates

Provide an updated project schedule upon request of the Contracting Officer or Contracting Officer's Technical Representative.

3.5 SUBMISSION REQUIREMENTS

Submit the following items for the Preliminary Schedule, Initial Schedule, and every Periodic Schedule Update throughout the life of the project:

3.5.1 Electronic Scheduling Data

Provide electronic scheduling data containing the current project schedule and all previously submitted schedules in the format of the scheduling software (e.g. .xer). Also include the Narrative Report and all required

Schedule Reports. The electronic file is to identify the type of schedule (Preliminary, Initial, Update), full contract number, Data Date and schedule file name. Each schedule must have a unique file name and use project specific settings. The file naming convention shall be in conformace with 01 33 00 SUBMITTAL PROCEDURES.

3.5.2 Narrative Report

Provide a Narrative Report with each schedule submission. The Schedule Narrative Report is a "stand alone" report in PDF or Word format. Title the report "Schedule Narrative Report". Show the Report date, schedule name, and contract number on the first page. Indicate who is responsible for the schedule update and narrative report. Provide a brief description of the Project Scope. The Narrative Report is expected to communicate to the Government the thorough analysis of the schedule output and the plans to compensate for problems, either current or potential, which are revealed through that analysis. Include the following information at a minimum in the Narrative Report:

a. Identify and discuss the work scheduled to start in the next update period.

b. Describe activities along the critical path in addition to activities on the next float path after the critical path.

c. Describe current and anticipated problem areas, delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. Identify the party responsible for delay, if applicable.

d. Identify and explain why activities, based on their calculated late dates, should have either started or finished during the update period but did not.

e. Identify and discuss all schedule changes by activity ID and activity name including what specifically was changed and why the change was needed. Include at a minimum new and deleted activities, logic changes, duration changes, calendar changes, lag changes, resource changes, and actual start and finish date changes.

f. Identify and discuss out-of-sequence work.

g. Identify activities that have had a change of percentage completion. List shall show the activity ID, activity name, previous percentage complete, and new percentage complete.

h. If the longest path changes from a monthly update to the next, provide an explanation of the factors driving the change.

i. Respond to Government Schedule Review Comments from the previous update(s).

3.5.3 Schedule Reports

The format, filtering, organizing, and sorting for each schedule report will be as directed by the Contracting Officer. Typically, reports contain Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float, Actual Start Date, Actual Finish Date, and

Percent Complete. Provide the reports electronically in .pdf format. The following lists typical reports that will be requested:

3.5.3.1 Activity Report

List of all activities sorted according to activity number.

3.5.3.2 Logic Report

List of detailed predecessor and successor activities for every activity in ascending order by activity number.

3.5.3.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. List activities which have the same amount of total float in ascending order of Early Start Dates. Do not show completed activities on this report.

3.5.3.4 Earnings Report by CLIN

A compilation of the Total Earnings on the project from the NTP to the data date, which reflects the earnings of activities based on the agreements made in the schedule update meeting defined herein. Provided a complete schedule update has been furnished, this report serves as the basis of determining progress payments. Group activities by CLIN number and sort by activity number. Provide a total CLIN percent earned value, CLIN percent complete, and project percent complete. The printed report must contain the following for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Earnings to Date, Earnings this period, Total Quantity, Quantity to Date, and Percent Complete (based on cost).

3.5.3.5 Scheduling and Leveling Report

Provide a Scheduling/Leveling Report generated from the current project schedule being submitted.

3.5.4 Network Diagram

The Network Diagram is required for the Preliminary, Initial and Periodic Updates. Depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.4.1 Continuous Flow

Show a continuous flow from left to right with no arrows from right to left. Show the activity number, description, duration, and estimated earned value on the diagram.

3.5.4.2 Project Milestone Dates

Show dates on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.4.3 Critical Path

Show all activities on the critical path. The critical path is defined as the longest path.

3.5.4.4 Grouping and Sorting

Group and sort activities as directed to assist in the understanding of the activity sequence. Typically, this flow will group activities by major elements of work, category of work, work area and/or responsibility.

3.5.4.5 Cash Flow / Schedule Variance Control (SVC) Diagram

With each schedule submission, provide a SVC diagram showing 1) Cash Flow S-Curves indicating planned project cost based on projected early and late activity finish dates, and 2) Earned Value to-date.

3.6 PERIODIC SCHEDULE UPDATE

3.6.1 Periodic Schedule Update Meetings

Conduct periodic schedule update meetings for the purpose of reviewing the proposed Periodic Schedule Update, Narrative Report, Schedule Reports, and progress payment. Conduct meetings at least monthly within five days of the proposed schedule data date. Provide a computer with the scheduling software loaded and a projector which allows all meeting participants to view the proposed schedule during the meeting. The Contractor's authorized scheduler must organize, group, sort, filter, perform schedule revisions as needed and review functions as requested by the Contractor and/or Government. The Contractor scheduler must attend in person unless virtual attendance is approved by Contracting Officer. The meeting is a working interactive exchange which allows the Government and Contractor the opportunity to review the updated schedule on a real time and interactive basis. The meeting will last no longer than 8 hours. Submit schedule file and narrative to the Government a minimum of two workdays in advance of the meeting. The Contractor's Project Manager must attend the meeting with the authorized representative of the Contracting Officer. Superintendents, foremen and major subcontractors must attend the meeting as required to discuss the project schedule and work. Following the schedule update meeting, make corrections to the schedule and resubmit, following the required schedule naming convention. Include only those changes approved by the Government in the schedule review meeting. Only approved schedules may be used to generate invoices for payment.

3.6.2 Update Submission Following Progress Meeting

Submit the complete Periodic Schedule Update of the Project Schedule containing all approved progress, revisions, and adjustments, pursuant to paragraph SUBMISSION REQUIREMENTS not later than 4 workdays after the periodic schedule update meeting.

3.7 WEEKLY PROGRESS MEETINGS

Conduct a weekly meeting with the Government (or as otherwise mutually agreed to) between the meetings described in paragraph entitled PERIODIC SCHEDULE UPDATE MEETINGS for the purpose of jointly reviewing the actual progress of the project as compared to the as planned progress and to review planned activities for the upcoming two weeks. Use the current approved schedule update for the purposes of this meeting and for the

production and review of reports. At the weekly progress meeting, address the status of RFIs, RFPs, outages, closures, preparatory meetings, testing and inspections, and Submittals. Provide agenda no later than 1 calendar days prior to meeting. Provide meeting minutes no later than 2 calendar days after meeting.

3.8 REQUESTS FOR TIME EXTENSIONS

ASCE 67-17 provides delay analysis guidelines. If there is a conflict between the contract and guidance provided in ASCE 67-17, the contract will govern. Provide justification of delay to the Contracting Officer in accordance with the contract provisions and clauses for approval, within 10 calendar days of a delay occuring. Also prepare a time impact analysis for each Government request for proposal (RFP) to justify time extensions.

3.8.1 Justification of Delay

Provide a description of the event(s) that caused the delay and/or impact to the work. As part of the description, identify all schedule activities impacted. Show that the event that caused the delay/impact was the responsibility of the Government. Provide a time impact analysis that demonstrates the effects of the delay or impact on the project completion date, or interim completion date(s). Evaluate multiple impacts chronologically; each with its own justification of delay. With multiple impacts consider any concurrency of delay. A time extension and the schedule fragnet becomes part of the project schedule and all future schedule updates upon approval by the Contracting Officer.

3.8.2 Changes That Do Not Cause Delay

If it is determined that a change does not constitute a schedule time extension, a fragnet as described in paragraph FRAGMENTARY NETWORK, is to be created and inserted into the Project schedule.

3.8.3 Time Impact Analysis (Prospective Analysis)

Submit requests for time extensions based on a prospective analysis if the work involved or the impact identified has not already occurred. Where the impact is ongoing a prospective analysis may be considered. However, the Government reserves the right to require a retrospective analysis be prepared after the impact has ended.

Prepare a time impact analysis for approval by the Contracting Officer based on industry recommended practice AACE 52R-06. Utilize a copy of the last approved schedule prior to the first day of the impact or delay for the time impact analysis. If Contracting Officer determines the time frame between the last approved schedule and the first day of impact is too great, prepare an interim updated schedule to perform the time impact analysis. Unless approved by the Contracting Officer, no other changes may be incorporated into the schedule being used to justify the time impact.

3.8.4 Forensic Schedule Analysis (Retrospective Analysis)

Submit requests for time extensions based on a retrospective analysis if the work involved or the impact identified has already occurred. The analysis must account for the actual performance of both the impacted work and all other contract work in the schedule.

If a methodology is chosen from AACE 29R-03, the method must adhere to the principles identified in ASCE 67-17. If there is a conflict with the methodology chosen from AACE 29R-03 and ASCE 67-17, ASCE 67-17 will govern. Choice of methodology should be discussed prior to submission to Government.

3.8.5 Fragmentary Network (Fragnet)

Prepare a proposed fragnet for time impact analysis consisting of a sequence of new activities that are proposed to be added to the project schedule to demonstrate the influence of the delay or impact to the project's contractual dates. Clearly show how the proposed fragnet is to be tied into the project schedule including all predecessors and successors to the fragnet activities. The proposed fragnet must be approved by the Contracting Officer prior to incorporation into the project schedule.

3.8.6 Time Extension

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

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

3.8.7 Impact to Early Completion Schedule

No extended overhead will be paid for delay prior to the original Contract Completion Date for an Early Completion IPS unless the Contractor actually performed work in accordance with that Early Completion Schedule. The Contractor must show that an early completion was achievable had it not been for the impact.

3.9 FAILURE TO ACHIEVE PROGRESS

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

3.9.1 Artificially Improving Progress

Artificially improving progress by means such as, but not limited to, revising the schedule logic, modifying, or adding constraints, shortening activity durations, or changing calendars in the project schedule is prohibited. Indicate assumptions made and the basis for any logic, constraint, duration, and calendar changes used in the creation of the recovery plan. Any additional resources, manpower, or daily and weekly work hour changes proposed in the recovery plan must be evident at the work site and documented in the daily report along with the Schedule Narrative Report.

3.9.2 Failure to Perform

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

3.9.3 Recovery Schedule

Should the Contracting Officer find it necessary, submit a recovery schedule pursuant to FAR 52.236-15 Schedules for Construction Contracts.

3.10 OWNERSHIP OF FLOAT

Except for the provision given in the paragraph IMPACT TO EARLY COMPLETION SCHEDULE, float available in the schedule, at any time, belongs to the Project and is available for Contractor and Government use. This includes activity and project float. Activity float is the number of workdays that an activity can be delayed without causing a delay to the "End Project" finish milestone. Project float (if applicable) is the number of work days between the projected early finish and the "End Project" finish.

3.11 PRIMAVERA P6 MANDATORY REQUIREMENTS

Ensure Primavera P6 settings provide a schedule capable of fulfilling the requirements of the contract. The following settings are mandatory and required in all schedule submissions to the Government:

a. Activity Codes must be Project Level, not Global or EPS level.

b. Calendars must be Project Level, not Global or Resource level.

c. Activity Duration Types must be set to "Fixed Duration & Units".

d. Percent Complete Types must be set to "Physical".

e. Time Period Admin Preferences must remain the default "8.0 hr/day, 40 hr/week, 172 hr/month, 2000 hr/year". Set Calendar Work Hours/Day to 8.0 Hour days.

f. Set Schedule Option for defining Critical Activities to "Longest Path".

g. Set Schedule Option for defining progressed activities to "Retained Logic".

h. Set up cost loading using a single lump sum non-labor resource. The Price/Unit must be $1/hr, Default Units/Time must be "8h/d", and settings "Auto Compute Actuals" and "Calculate costs from units" un-selected.

i. Activity ID's must not exceed 10 characters.

j. Activity Names must have a verb-noun structure and contain the most defining and detailed description within the first 30 characters.

k. The daily ending hour for all work calendars must be the same.

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PART 1 GENERAL

1.1 REFERENCES

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

AIR FORCE CORPORATE FACILITIES STANDARDS (AFCFS)

IFS-FSH	Installation Facility Standards - JBSA Sam Houston

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI/ASSE A10.6	(2016) Safety And Health Program Requirements For Demolition Operations

NATIONAL PARK SERVICE (NPS)

NPS Hist Prop	(2017) National Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings
NPS TPS Brief 1	(2000) Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings
NPS TPS Brief 2	(1998) Repointing Mortar Joints in Historic Masonry Buildings
NPS TPS Brief 3	(2011) Improving Energy Efficiency in Historic Buildings
NPS TPS Brief 4	(1978) Roofing for Historic Buildings
NPS TPS Brief 6	(1979) Dangers of Abrasive Cleaning to Historic Buildings
NPS TPS Brief 11	(1982) Rehabilitating Historic Storefronts
NPS TPS Brief 14	(2010) Exterior Additions to Historic Buildings: Preservation Concerns
NPS TPS Brief 15	(2007) Preservation of Historic Concrete
NPS TPS Brief 16	(2023) The Use of Substitute Materials on Historic Building Exteriors
NPS TPS Brief 17	(1988) Architectural Character—Identifying

	the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character
NPS TPS Brief 18	(1988) Rehabilitating Interiors in Historic Buildings—Identifying Character-Defining Elements
NPS TPS Brief 21	(1989) Repairing Historic Flat Plaster—Walls and Ceilings
NPS TPS Brief 22	(1990) The Preservation and Repair of Historic Stucco
NPS TPS Brief 23	(1990) Preserving Historic Ornamental Plaster
NPS TPS Brief 24	(1991) Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches
NPS TPS Brief 28	(1992) Painting Historic Interiors
NPS TPS Brief 30	(1992) The Preservation and Repair of Historic Clay Tile Roofs
NPS TPS Brief 32	(1993) Making Historic Properties Accessible
NPS TPS Brief 34	(1994) Applied Decoration for Historic Interiors: Preserving Historic Composition Ornament
NPS TPS Brief 35	(1994) Understanding Old Buildings: The Process of Architectural Investigation
NPS TPS Brief 36	(1994) Protecting Cultural Landscapes: Planning, Treatment, and Management of Historic Landscapes
NPS TPS Brief 37	(Under Revision) Appropriate Methods of Reducing Lead-Paint Hazards in Historic Housing
NPS TPS Brief 39	(1996) Holding the Line: Controlling Unwanted Moisture in Historic Buildings
NPS TPS Brief 42	(2001) The Maintenance, Repair, and Replacement of Historic Cast Stone
NPS TPS Brief 43	(2004) The Preparation and Use of Historic Structure Reports
NPS TPS Brief 44	(2004) The Use of Awnings on Historic Buildings: Repair, Replacement and New Design
NPS TPS Brief 50	(2017) Lightning Protection for Historic Structures

NPS TPS Brief 51	(2024) Building Codes for Historic and Existing Buildings: Planning and Maximizing their Application
STHP Part 1	(2017) The Secretary of The Interior's Standards For The Treatment of Historic Properties With Guidelines For Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings
STHP Part 2	(2017) Standards for Restoration & Guidelines for Restoring Historic Buildings

U.S. Code (USC)

16 USC 470	National Historic Preservation Act

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Work Plan; G

Architectural Historic Treatment Specialist Qualifications; G

Schedule For Historical Work; G

Historic Items To Be Salvaged; G

Historic Preservation Work Qualifications; G

SD-11 Closeout Submittals

Salvaged Historic Materials Inventory List; G

1.3 SUMMARY

This specification covers the requirements for historic buildings and within Historic districts which require protection and special consideration when completing design and construction projects. Any building on JBSA constructed more than 45 years ago or located within a historic district must be treated as historic unless exempted by the JBSA Cultural Resources Office (CRO). Building preservation, rehabilitation (most used at JBSA), restoration, and reconstruction projects on JBSA's historic buildings requires adherence to the Secretary of Interior's Standards for Treatment of Historic Properties. Designs must utilize and incorporate the Technical Preservation Briefs available on Technical Preservation Service website: www.nps.gov. Deviation from the Treatment Standards and Technical Briefs requires review by the CRO and may be considered an adverse effect on the historic building or district. Most work on historic buildings requires consultation with the Texas State Historic Preservation Office (SHPO) and potentially the National Park Service (NPS). All adverse effects on a historic property must be

consulted and require justification of the alternatives considered and why they cannot be utilized. Examples of adverse effect include, but are not limited to, removing or replacing character defining features, whole replacement of repairable materials or features, changing materials or profiles, changing exterior finishes and colors, and work that cannot be reversed without damaging the original building materials (installing or use of spray foam insulation, waterproofing on historic masonry units, and cutting new windows and doors in masonry walls, closing/infilling of existing openings in masonry walls.

This Section includes special procedures for historic treatment in accordance with the 16 USC 470, STHP Part 1, and STHP Part 2 including, but not limited to, the following:

a. Storage and protection of existing historic materials;
b. Temporary protection of historic materials during construction;
c. Protection during application of chemicals;
d. Protection during use of heat-generating equipment;
e. Historic treatment procedures;
f. Removal of bird excrement.

This specification applies to all projects that involve Historic Buildings or Historic Sites. Refer to the NPS Hist Prop and the IFS-FSH. Consult and maintain contact with the base-level Historic Preservation offices who will provide communication and consultations with the State Historic Preservation Officer (SHPO) and National Park service (NPS), during all stages of design, demolition, and construction regarding proposed changes to properties listed on or eligible for listing on the National Register of Historic Places. Follow requirements of the 16 USC 470 and Secretary of the Interior Standards for the Treatment of Historic Properties.

a. Historical, Archaeological and Cultural Resources

Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Contracting Officer if any are identified. The Contractor shall take precautions to preserve all such resources as they existed at the time they were first identified. If during construction activities previously unidentified or unanticipated resources are discovered or found, the Contractor shall stop work immediately and notify the Contracting Officer and the 802d Cultural Resources Media team for consultation. The Contractor shall provide and install protection measures for these resources and be responsible for their preservation during the life of the contract. Protection measures will be provided by 802 CES/CEIE after consultation with the State Historic Preservation Officer (SHPO) on a case-by-case basis.

b. Artifacts

If during excavation or other construction activities previously unidentified or unanticipated resources are discovered or found, the Contractor shall stop work immediately and notify the Contracting Officer and the Contracting Officer's Technical Representative for consultation. Resources covered by this paragraph include but are not limited to any human skeletal remains or burials, artifacts; shell, bone, charcoal, or other deposits; rocks or coral alignments, paving, walls, or other constructed features, and any indication of agricultural or other human activities.

1.3.1 Preservation Briefs

The following NPS Preservation Briefs are considered applicable based on the scope of work specified in Section 01 11 00 SUMMARY OF WORK.

a. NPS TPS Brief 1

b. NPS TPS Brief 2

c. NPS TPS Brief 3

d. NPS TPS Brief 4

e. NPS TPS Brief 6

f. NPS TPS Brief 11

g. NPS TPS Brief 14

h. NPS TPS Brief 15

i. NPS TPS Brief 16

j. NPS TPS Brief 17

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l. NPS TPS Brief 21

m. NPS TPS Brief 22

n. NPS TPS Brief 23

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r. NPS TPS Brief 32

s. NPS TPS Brief 34

t. NPS TPS Brief 35

u. NPS TPS Brief 36

v. NPS TPS Brief 37

w. NPS TPS Brief 39

x. NPS TPS Brief 42

y. NPS TPS Brief 43

z. NPS TPS Brief 44

aa. NPS TPS Brief 50

ab. NPS TPS Brief 51

1.4 WORK PLAN

Submit a Work Plan that includes procedures proposed for the accomplishment of the historic work. The Work Plan procedures must provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged or recycled, dust control, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. Include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations in the Work Plan.

Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to the approval of the Contracting Officer and Historic Treatment Specialist.

1.5 DEFINITIONS

1.5.1 Existing to Remain or Retain

Existing items of construction that are not to be removed and that are not otherwise indicated to be removed and salvaged or removed and reinstalled.

1.5.2 Material in Kind

Material that matches existing materials, as much as possible, in species, cut, color, grain, and finish.

1.5.3 Preservation

To apply measures necessary to sustain the existing form, integrity, and materials of a historic property. Work may include preliminary measures to protect and stabilize the property.

1.5.4 Protect and Maintain

To remove deteriorating corrosion, reapply protective coatings, and install protective measures such as temporary guards; to provide the least degree of intervention.

1.5.5 Reconstruction

To reproduce in the exact form and detail a building, structure, or artifact as it appeared at a specific period in time.

1.5.6 Rehabilitation

To make possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

1.5.7 Remove and Reinstall

To detach items from existing construction, repair and clean them for reuse, and reinstall them where indicated.

1.5.8 Remove and Salvage

To detach items from existing construction and deliver them to the Contracting Officer ready for reuse.

1.5.9 Remove

To detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

1.5.10 Repair

To stabilize, consolidate, or conserve; to retain existing materials and features while employing as little new material as possible. Repair includes patching, piecing-in, splicing (except exposed structural), consolidating, or otherwise reinforcing or upgrading materials. Within restoration, repair also includes limited replacement in kind, rehabilitation, and reconstruction, with compatible substitute materials for deteriorated or missing parts of features when there are surviving prototypes.

1.5.11 Replace

To duplicate and replace entire features with new material in kind. Replacement includes the following conditions:

a. Duplication: Includes replacing elements damaged beyond repair or missing. Original material is indicated as the pattern for creating new duplicated elements.

b. Replacement with New Materials: Includes replacement with new material when original material is not available as patterns for creating new duplicated elements.

c. Replacement with Substitute Materials: Includes replacement with compatible substitute materials. Substitute materials are not allowed, unless otherwise indicated and approved through SHPO and NPS consultation process.

1.5.12 Restoration

To accurately depict the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and the reconstruction of missing features from the restoration period.

1.5.13 Stabilize

To apply measures designed to reestablish a weather-resistant enclosure and the structural reinforcement of an item or portion of the building while maintaining the essential form as it exists at present.

1.6 QUALITY CONTROL

1.6.1 Architectural Historic Treatment Specialist Qualifications

An Architectural firm that includes professional personnel, including supervisory personnel, with the minimum professional qualifications in

architecture, with a professional degree in Architecture plus State licensure to practice architecture, plus the following:

Historic Architecture: the minimum qualifications in historic architecture professional degree in Architecture or State licensure to practice architecture, plus one of the following:

a. At least 2 years of graduate study in architectural preservation, American Architectural History, preservation planning or closely related field; or

b. At least 10 years of full-time professional experience on historic preservation project. Such study or experience shall include detailed investigation of historic structures, preparation of historic structures research reports, and preparation of plans and specifications for historic preservation projects.

1.6.1.1 Historic Preservation Work Qualifications

a. An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent of this work as specified in each section, and that has completed a minimum of five recent projects with a record of successful in-service performance that demonstrate the firm's qualifications to perform this work.

(1) Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project.

(2) Supervisors shall be on Project site during times that historic treatment work is in progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.

(3) Worker Qualification: Persons who are experienced in historic treatment work of types they will be performing.

b. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment specialist. General selective demolition experience is not sufficient experience for historic removal and dismantling work.

c. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections.

(1) Dust and Noise Control: Include locations of proposed temporary dust- and noise- control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.

(2) Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

d. Fire Prevention Plan: Prepare a written plan as required by 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-prevention devices during each phase or process. Coordinate plan with Contractor's fire-protection equipment and requirements. Include each fire watch's training, duties, and authority to enforce fire safety.

e. Mockups: Prepare mockups of specific historic treatment procedures specified in this Section to demonstrate aesthetic effects and to set quality standards for materials and execution.

(1) Typical Removal Work: Remove typical wall area as determined by the Historic Specialist.

(2) Bird-Excrement Removal: Remove typical accumulation of bird excrement from area as required by Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

(3) Exploratory Dismantling of masonry elements: Perform dismantling in the presence of the Historic Specialist and PM.

(4) Follow the procedure specified in "Historic Removal and Dismantling" Article.

f. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.

g. Standards: Comply with ANSI/ASSE A10.6.

h. General: Review methods and procedures related to historic treatment including, but not limited to, the following:

(1) Review manufacturer's written instructions for precautions and effects of historic treatment procedures on materials, components, and vegetation.

(2) Review and finalize historic treatment construction schedule; verify availability of materials, equipment, and facilities needed to make progress and avoid delays.

(3) Review qualifications of personnel assigned to the work and assign duties.

(4) Review material application, work sequencing, tolerances, and required clearances.

i. Removal and Dismantling:

(1) Inspect and discuss condition of construction to be removed or dismantled.

(2) Review requirements of other work that relies on substrates exposed by removal and dismantling work.

(3) Typical Removal Work: Remove typical wall area as determined by the Historic Specialist and PM.

(4) Bird-Excrement Removal: Remove typical accumulation of bird excrement from area as required by 01 57 20 Environmental Protection and Historic Specialist and PM.

(5) Exploratory Dismantling of masonry elements: Perform dismantling in the presence of the Historic Specialist and PM.

1.6.2 Historic Treatment Preconstruction Conference

Conduct conference at Project site.

INFORMATIONAL SUBMITTALS

a. Construction Schedule for Historical Work: Indicate for entire project the following for each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces:

(1) Detailed sequence of historic treatment work, with starting and ending dates, coordinated with Contractor's continuing operations and other known work in progress.

(2) Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.

(3) Use of elevator and stairs.

(4) Coordination of Contractor's work and tenants continuing occupancy of portions of existing building and of tenants' partial occupancy of completed Work.

(5) Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use. Do not use such equipment without Contractor's professional engineer's certification that the structure can support the imposed loadings without damage.

b. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.

c. Historic Treatment Program: Submit before work begins.

d. Fire Prevention Plan: Submit before work begins.

e. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged.

1.7 STORAGE AND PROTECTION OF HISTORIC MATERIALS

1.7.1 Removed and Salvaged Historic Materials

a. Clean salvaged historic items.

b. Pack or crate items after cleaning. Identify contents of containers.

c. Store items in a secure area until delivery, in accordance with 02 42 91 REMOVAL AND SALVAGE OF HISTORIC CONSTRUCTION MATERIALS.

d. Transport items to the designated storage area as directed.

e. Protect items from damage during transport and storage.

f. Protect items from damage during transport and storage.

1.7.2 Removed and Reinstalled Historic Materials

a. Clean and repair historic items to functional condition adequate for intended reuse.

b. Pack or crate items after cleaning and repairing. Identify contents of containers.

c. Pack or crate items after cleaning and repairing. Identify contents of containers.

d. 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.

1.7.3 Existing Historic Materials to Remain

Protect construction indicated to remain against damage and soiling during historic treatment. When permitted, items may be removed to a suitable, protected storage location during historic treatment and cleaned and reinstalled in their original locations after historic treatment operations are complete.

1.7.4 Storage and Protection

When removed from their existing location, store historic materials within a weathertight enclosure where they are protected from wetting by rain, snow, or ground water, and temperature variations. Secure stored materials to protect from theft.

1.8 PROJECT-SITE CONDITIONS

1.8.1 Exterior Cleaning and Repairing

Proceed with the work only when forecasted weather conditions are favorable. Perform cleaning and rinsing of the exterior only during daylight hours.

a. Wet Weather: Do not attempt repairs during rainy or foggy weather. Do not apply primer, paint, putty, or epoxy when the relative humidity is above 80 percent. Do not remove exterior elements of structures when rain is forecast or in progress.

b. Do not perform exterior wet work when the air temperature is below 40 deg F.

c. Do not begin cleaning, patching, or repairing when there is any likelihood of frost or freezing.

d. Do not begin cleaning when either the air or the surface temperature is below 45 deg F unless approved means are provided for maintaining a

45 deg F temperature of the air and materials during, and for 48 hours subsequent to, cleaning.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 PROTECTION

Comply with manufacturer's written instructions for precautions and effects of products and procedures on adjacent building materials, components, and vegetation. Ensure that supervisory personnel are present when work begins and during its progress.

3.1.1 Temporary Protection of Historic Materials During Construction

a. Protect existing materials during installation of temporary protections and construction. Do not deface or remove existing materials.

b. Attachments of temporary protection to existing construction shall be approved prior to installation.

3.1.2 Landscaping

Protect landscape work adjacent to or within work areas as follows:

a. Provide barriers to protect tree trunks.

b. Bind spreading shrubs.

c. Use coverings that allow plants to breathe and remove coverings at the end of each day. Do not cover plant material with a waterproof membrane for more than 8 hours at a time.

d. Set scaffolding and ladder legs away from plants.

3.1.3 Existing Drains

Prior to the start of work or any cleaning operations, test drains and other water removal systems to ensure that drains and systems are functioning properly. Notify the Contracting Officer immediately of drains or systems that are stopped or blocked. Do not begin Work of this Section until the drains are in working order.

a. Provide a method to prevent solids including stone or mortar residue from entering the drains or drain lines. Clean out drains and drain lines that become blocked or filled by sand or any other solids because of work performed under this Contract.

b. Protect storm drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.2 PROTECTION DURING APPLICATION OF CHEMICALS

Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm or

damage resulting from applications of chemical cleaners and paint removers.

3.2.1 Adjacent Surfaces

Cover adjacent surfaces with materials that are proven to resist chemical cleaners selected for Project unless chemicals being used will not damage adjacent surfaces. Use covering materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.

3.2.1.1 Windy Conditions

Do not clean surfaces during winds of sufficient force to spread cleaning solutions to unprotected surfaces.

3.2.1.2 Waste Disposal

Waste disposal shall be in accordance with section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS and section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Dispose of runoff from chemical operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors. Neutralize and collect alkaline and acid wastes and dispose of.

3.3 PROTECTION DURING USE OF HEAT-GENERATING EQUIPMENT

Comply with the following procedures while performing work with heat-generating equipment, including welding, cutting, soldering, brazing, paint removal with heat, and other operations where open flames or implements utilizing heat are used:

a. Obtain a hot work permit in accordance with Section 01 14 00 JBSA WORK RESTRICTIONS operations involving use of open-flame or welding equipment.

   (1) Notification shall be given for each occurrence and location of work with heat generating equipment.

b. As far as practical, use heat-generating equipment in shop areas or outside the building.

c. Before work with heat-generating equipment commences, furnish personnel to serve as a fire watch (or watches) for location(s) where work is to be performed.

d. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.

e. Remove and keep the area free of combustibles, including, rubbish, paper, waste, etc., within area of operations.

   (1) If combustible material cannot be removed, provide fireproof blankets to cover such materials.

f. Where possible, furnish and use baffles of metal or gypsum board to

prevent the spraying of sparks or hot slag into surrounding combustible material.

g. Prevent the extension of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.

h. Inspect each location of the day's work not sooner than 30 minutes after completion of operations to detect hidden or smoldering fires and to ensure that proper housekeeping is maintained.

3.4 HISTORIC TREATMENT PROCEDURES

The principal aim of preservation work is to halt the process of deterioration and stabilize the item's condition, unless otherwise indicated. Repair is required where specifically indicated. The following procedures shall be followed:

a. Retain as much existing material as possible; repair and consolidate rather than replace.

b. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.

c. Use reversible processes wherever possible.

d. Use traditional replacement materials and techniques. New work shall be distinguishable to the trained eye, on close inspection, from old work.

e. Record the work before the procedure with preconstruction photos and during the work with periodic construction photos.

3.4.1 Changes in Existing Material

Obtain review and written approval in the form of a Supplemental Instruction from the JBSA Cultural Resources Office (CRO) before making changes or additions to construction or removing historic materials.

Notify the Contracting Officer of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion. Do not proceed with the work in question until directed, as SHPO consultation may be required.

3.4.2 Acceptable Cleaning Levels

When cleaning, match samples of existing materials that have been cleaned and identified for acceptable cleaning levels. Avoid overcleaning to prevent damage to existing materials during cleaning.

3.4.3 New or Replacement Materials

Identify new or replacement materials and features with inconspicuous, permanent marks to distinguish them from original materials. Record the legend of identification marks and the locations of these marks on Record Drawings.

3.4.4 Reused Features

Where Work requires existing features to be removed, cleaned, and reused, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

3.4.5 Missing Features

Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to the approval of the Contracting Officer and Historic Treatment Specialist.

3.5 REMOVAL OF GUANO

Before disturbing accumulated bird guano, consult with an occupational medicine physician, industrial hygienist, and authorities having jurisdiction to determine acceptable removal procedures and appropriate protective measures for personnel.

3.5.1 Pretreatment

Treat guano before removal as required by authorities having jurisdiction:

a. Prior to removal, dampen excrement to prevent it from becoming airborne.

b. Use only nonmetallic tools (plastic spatulas and brushes with natural fiber or nylon bristles, or their equivalent) to remove excrement.

c. Collect removed excrement and legally disposed of off site.

d. Perform bird excrement removal work from the outside of the building with windows and other openings in the building closed.

ATT-1 - Consultation Package Template

ATTACHED IN APPENDIX A

-- End of Section --

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SECTION 01 33 00

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01/26

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SECTION 01 33 00

SUBMITTAL PROCEDURES
01/26

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Submittal Information

The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

Units of weights and measures used on all submittals are to be the same as those used in the contract drawings.

1.1.2 Project Type

The Contractor and the Designer of Record (DOR), if applicable, are to check and approve all items before submittal and stamp, sign, and date indicating action taken. Proposed deviations from the contract requirements are to be clearly identified. Include within submittals items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals.

1.1.3 Submission of Submittals

Schedule and provide submittals requiring Government approval before acquiring the material or equipment covered thereby. Pick up and dispose of samples not incorporated into the work in accordance with manufacturer's Safety Data Sheets (SDS) and in compliance with existing laws and regulations.

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

Submittal requirements are specified in the technical sections. Examples and descriptions of submittals identified by the Submittal Description (SD) numbers and titles follow:

SD-01 Preconstruction Submittals

Submittals that are required prior to or at the start of construction (work) or the next major phase of the construction on a multiphase contract.

Government approved Division 01 preconstruction submittals that are required prior to or commencing with the start of work must be submitted within 30 calendar days of contract award unless specified elsewhere in

the specifications. Contractor approved Division 01 submittals that are required prior to or commencing with the start of work must be submitted within 45 calendar days of contract award unless specified elsewhere in the specifications.

Preconstruction Submittals include schedules and a tabular list of locations, features, and other pertinent information regarding products, materials, equipment, or components to be used in the work.

Certificates Of Insurance

Surety Bonds

List Of Proposed Subcontractors

List Of Proposed Products

Baseline Network Analysis Schedule (NAS)

Submittal Register

Schedule Of Prices Or Earned Value Report

Accident Prevention Plan

Work Plan

Quality Control (QC) plan

Environmental Protection Plan

SD-02 Shop Drawings

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

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

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

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-05 Design Data

Design calculations, mix designs, analyses or other data pertaining to a part of work.

Design submittals, design substantiation submittals and extensions of

design submittals.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. Unless specified in another section, testing must have been within three years of date of contract award for the project.

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

Report that includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports

Daily logs and checklists

Final acceptance test and operational test procedure

SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that the product, system, or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a manufacturer, supplier, installer or Subcontractor through Contractor. The document purpose is to further promote the orderly progression of a portion of the work by documenting procedures, acceptability of methods, or personnel qualifications.

Confined space entry permits

Text of posted operating instructions

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and (SDS)concerning impedances, hazards and safety precautions.

SD-10 Operation and Maintenance Data

Data provided by the manufacturer, or the system provider, including manufacturer's help and product line documentation, necessary to maintain and install equipment, for operating and maintenance use by facility personnel.

Data required by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

Data incorporated in an operations and maintenance manual or control

system.

SD-11 Closeout Submittals

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

Submittals required for Guiding Principle Validation (GPV) or Third Party Certification (TPC).

Special requirements necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

1.2.2 Approving Authority

Office or designated person authorized to approve the submittal.

1.2.3 Work

As used in this section, on-site and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction. In exception, excludes work to produce SD-01 submittals.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Submittal Register; G

1.4 SUBMITTAL CLASSIFICATION

1.4.1 Government Approved (G)

Government approval is required for any variations from the Solicitation or the Accepted Proposal and for other items as designated by the Government.

Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, submittals are considered to be "shop drawings."

1.4.2 Design-Build Submittal Classifications

1.4.2.1 Designer of Record Approved (D)

Designer of Record (DOR) approval is required for extensions of design; critical materials; any variations from the Solicitation, the Accepted Proposal, or the completed design; equipment whose compatibility with the entire system must be checked; and other items as designated by the Contracting Officer. Provide the Government with the number of copies

designated hereinafter of all DOR approved submittals. The Government may review any or all Designer of Record approved submittals for conformance with the Solicitation, the Accepted Proposal, and the completed design. The Government will review all submittals designated as varying from the Solicitation or Accepted Proposal, as described below. Provide design submittals in accordance with Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD). Generally, list design submittals under SD-05 Design Data.

1.4.2.2 Government Conformance Review of Design (C)

The Government will review all intermediate and final design submittals for conformance with the technical requirements of the Solicitation. Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD) covers the design submittal and review process in detail. Review will be only for conformance with the applicable codes, standards, and contract requirements. Design data includes the design documents described in Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD).

1.4.2.3 Designer of Record Approved/Government Conformance Review (R)

1.4.2.3.1 Variations from the Accepted Design

DOR approval and the Government's concurrence are required for any proposed variation from the accepted design that still complies with the contract before the Contractor is authorized to proceed with material acquisition or installation. If necessary to facilitate the project schedule, before official submission to the Government, the Contractor and the DOR may discuss with the Contracting Officer's Representative a submittal proposing a variation. However, the Government reserves the right to review the submittal before providing an opinion. In any case, the Government will not formally agree to or provide a preliminary opinion on any variation without the DOR's approval or recommended approval. The Government reserves the right to reject any design, variation that may affect furniture, furnishings, equipment selections, or operational decisions that were made, based on the reviewed and concurred design.

1.4.2.3.2 Substitutions

Unless prohibited or otherwise provided for elsewhere in the contract, where the Accepted Proposal named products, systems, materials or equipment by manufacturer, brand name, model number, or other specific identification, and the Contractor desires to substitute a manufacturer or model after award, submit a requested substitution for Government concurrence. Include substantiation, through identifying information and the DOR's approval, that the substitute meets the contract requirements and that it is equal in function, performance, quality, and salient features to that in the accepted contract proposal. If the contract otherwise prohibits substitutions of equal named products, systems, materials or equipment by manufacturer, brand name, model number or other specific identification, the request is considered a "variation" to the contract. Variations are discussed below in paragraphs: "DESIGNER OF RECORD APPROVED/GOVERNMENT APPROVED" and VARIATIONS.

1.4.2.4 Designer of Record Approved/Government Approved (A)

In addition to the above-stated requirements for proposed variations to the accepted design, both DOR and Government Approval and, where applicable, a contract modification are required before the Contractor is authorized to proceed with material acquisition or installation for any

proposed variation to the contract (the Solicitation or the Accepted Proposal), that constitutes a change to the contract terms. The Government reserves the right to accept or reject any such proposed variation.

1.4.3 For Information Only

Submittals not requiring Government approval will be for information only. For Design-build construction all submittals not requiring DOR or Government approval will be for information only. Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, they are not considered to be "shop drawings."

1.4.4 Sustainability Reporting Submittals (S)

Submittals for Guiding Principle Validation (GPV) or Third Party Certification (TPC) are indicated with an "S" designation. These submittals are for information only and for use as specified in Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING.

Schedule submittals for these items throughout the course of construction as provided; do not wait until closeout.

1.5 PREPARATION

1.5.1 Transmittal Form

Use the ENG Form 4025-ALT (ATT-1) transmittal form for submitting Government-approved and information-only submittals. Submit in accordance with the instructions on the reverse side of the form. These forms or similar forms will be furnished to the Contractor. Do not use contractor generated versions of any form. Properly complete this form by filling out all the heading blank spaces and identifying each item submitted. Exercise special care to ensure proper listing of the specification paragraph and sheet number of the contract drawings pertinent to the data submitted for each item.

1.5.1.1 Transmittal Email Formatting

All emails transmitted to the Government shall be structured, at a minimum, as outlined here.

TO	
CC	*If Contracting or the CES team is not the direct recipient of the email, they shall be included here.*
SUBJECT	*CONTRACT #* / JBSF180069 / RPR B2263 / *Topic*
BODY	

SIGNATURE BLOCK	*Shall Contain at a Minimum:* *Name* *Title* *Contractor Info* *Email* *Phone No.*

1.5.2 Identifying Submittals

The Contractor's Quality Control Manager must prepare, review and stamp submittals, including those provided by a subcontractor, before submittal to the Government.

Identify submittals, except sample installations and sample panels, with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal form. Mark each copy of each submittal identically, with the following:

a. Project title and location

b. Construction contract number

c. Dates of the drawings and revisions

d. Name, address, and telephone number of Subcontractor, supplier, manufacturer, and any other Subcontractor associated with the submittal.

e. Section number of the specification by which submittal is required

f. Submittal description (SD) number of each component of submittal

g. For a resubmission, add alphabetic suffix on submittal description, for example, submittal 18 would become 18A, to indicate resubmission

h. Product identification and location in project.

1.5.3 Submittal Format

1.5.3.1 Format of SD-01 Preconstruction Submittals

When the submittal includes a document that is to be used in the project, or is to become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

Provide data in the unit of measure used in the contract documents.

1.5.3.2 Format for SD-02 Shop Drawings

Provide shop drawings not less than 8 1/2 by 11 inches nor more than 30 by 42 inches, except for full-size patterns or templates. Prepare drawings to accurate size, with scale indicated, unless another form is required. Ensure drawings are suitable for reproduction and of a quality to produce clear, distinct lines and letters, with dark lines on a white background.

a. Include the nameplate data, size, and capacity on drawings. Also include applicable federal, military, industry, and technical society

publication references.

b. Dimension drawings, except diagrams and schematic drawings. Prepare drawings demonstrating interface with other trades to scale. Use the same unit of measure for shop drawings as indicated on the contract drawings. Identify materials and products for work shown.

Submit an electronic copy of drawings in PDF format and native electronic format.

1.5.3.2.1 Drawing Identification

Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph IDENTIFYING SUBMITTALS.

Number drawings in a logical sequence. Each drawing is to bear the number of the submittal in a uniform location next to the title block. Place the Government contract number in the margin, immediately below the title block, for each drawing.

1.5.3.3 Format of SD-03 Product Data

Present product data submittals for each section. Include a table of contents, listing the page and catalog item numbers for product data.

Indicate, by prominent notation, each product that is being submitted; indicate the specification section number and paragraph number to which it pertains.

1.5.3.3.1 Product Information

Supplement product data with material prepared for the project to satisfy the submittal requirements where product data does not exist. Identify this material as developed specifically for the project, with information and format as required for submission of SD-07 Certificates.

Provide product data in units used in the Contract documents. Where product data are included in preprinted catalogs with another unit, submit the dimensions in contract document units, on a separate sheet.

1.5.3.3.2 Standards

Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.5.3.3.3 Data Submission

Collect required data submittals for each specific material, product, unit of work, or system into a single submittal that is marked for choices, options, and portions applicable to the submittal. Mark each copy of the product data identically. Partial submittals will not be accepted for expedition of the construction effort.

Submit the manufacturer's instructions before installation.

1.5.3.4 Format of SD-04 Samples

1.5.3.4.1 Sample Characteristics

Furnish samples in the following sizes, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately the same size as specified:

a. Sample of Equipment or Device: Full size.

b. Sample of Materials Less Than 2 by 3 inches: Built up to 8 1/2 by 11 inches.

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

d. Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.

e. Sample Volume of Nonsolid Materials: Pint. Examples of nonsolid materials are sand and paint.

f. Color Selection Samples: 2 by 4 inches. Where samples are specified for selection of color, finish, pattern, or texture, submit the full set of available choices for the material or product specified. Sizes and quantities of samples are to represent their respective standard unit.

g. Sample Panel: 4 by 4 feet.

h. Sample Installation: 100 square feet.

1.5.3.4.2 Sample Incorporation

Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples are to be in undamaged condition at the time of use.

Recording of Sample Installation: Note and preserve the notation of any area constituting a sample installation, but remove the notation at the final clean-up of the project.

1.5.3.4.3 Comparison Sample

Samples Showing Range of Variation: Where variations in color, finish, pattern, or texture are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle

of range. Mark each unit to describe its relation to the range of the variation.

When color, texture, or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

1.5.3.5 Format of SD-05 Design Data

Provide design data and certificates in accordance with the requirements for SD-02 Shop Drawings.

1.5.3.6 Format of SD-06 Test Reports

By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

1.5.3.7 Format of SD-07 Certificates

Provide design data and certificates on 8 1/2 by 11 inch paper.

1.5.3.8 Format of SD-08 Manufacturer's Instructions

Present manufacturer's instructions submittals for each section. Include the manufacturer's name, trade name, place of manufacture, and catalog model or number on product data. Also include applicable federal, military, industry, and technical-society publication references. If supplemental information is needed to clarify the manufacturer's data, submit it as specified for SD-07 Certificates.

Submit the manufacturer's instructions before installation.

1.5.3.8.1 Standards

Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.5.3.9 Format of SD-09 Manufacturer's Field Reports

By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

1.5.3.10 Format of SD-10 Operation and Maintenance Data (O&M)

Comply with the requirements specified in Section 01 78 23 OPERATION AND MAINTENANCE DATA for O&M Data format.

1.5.3.11 Format of SD-11 Closeout Submittals

When the submittal includes a document that is to be used in the project or is to become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

Provide data in the unit of measure used in the contract documents.

1.5.4 Source Drawings for Shop Drawings

1.5.4.1 Source Drawings

The entire set of source drawing files (DWG) will not be provided to the Contractor. Request the specific Drawing Number for the preparation of shop drawings. Only those drawings requested to prepare shop drawings will be provided. These drawings are provided only after award.

1.5.4.2 Terms and Conditions

Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction data for the referenced project. Any other use or reuse is at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor must make no claim, and waives to the fullest extent permitted by law any claim or cause of action of any nature against the Government, its agents, or its subconsultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities, or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic source drawing files are not construction documents. Differences may exist between the source drawing files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic source drawing files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. The Contractor is responsible for determining if any conflict exists. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished source drawing files, the signed and sealed construction documents govern. Use of these source drawing files does not relieve the Contractor of the duty to fully comply with the contract documents, including and without limitation the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction data related to this contract, remove all previous indication of ownership (seals, logos, signatures, initials and dates).

1.5.5 Electronic File Format

Provide submittals in electronic format, with the exception of material samples required for SD-04 Samples items. Compile the submittal file as a single, complete document, to include the Transmittal Form described within, and also separately attach the native files which were used to create PDF. The attached files should include the original digital files

used to create the submittal. Name the electronic submittal file specifically according to its contents, and coordinate the file naming convention with the Contracting Officer. Electronic files must be of sufficient quality that all information is legible. Use PDF as the electronic format, unless otherwise specified or directed by the Contracting Officer. Generate PDF files from original documents with bookmarks so that the text included in the PDF file is searchable and can be copied. If documents are scanned, optical character resolution (OCR) routines are required. Index and bookmark files exceeding 30 pages to allow efficient navigation of the file. When required, the electronic file must include a valid electronic signature or a scan of a signature.

E-mail electronic submittal documents smaller than 10MB to an e-mail address as directed by the Contracting Officer. Provide electronic documents over 10 MB through the electronic file sharing system DOD SAFE Web Application located at the following website: https://safe.apps.mil/.

1.5.5.1 Filename Formatting

All electronic files transmitted to the Government shall use the file naming structure as outlined here, regardless of medium in which it is transported.

a. FORMAT:
   (1) {TYPE}_{#}_{DESCRIPTION}_(DATE)
   (2) {TYPE}_{DESCRIPTION}_(DATE)
   (3) {DATE}_{DESCRIPTION}
   (4) {DESCRIPTION}_(DATE)

b. TERMS:

   (1) TYPE - Enter the submittal type.
   (2) # - Enter the numbered iteration of the submittal type.
   (3) DESCRIPTION - Short hand description of the topic of the file.
   (4) DATE - Formatted as *YYYYMMDD* or *MMMYYYY*.

c. BRACKET LEGEND:

   (1) { } - Terms surrounded by curly brackets are required.
   (2) ( ) - Terms surrounded by parenthesis are optional.

d. TYPE CODES:

   (1) *AF3000* - To be used for the Material Submittal Transmittal Form.
   (2) *RFI* - To be used for Requests For Information.
   (3) *AF3064* - To be used for the Contract Progress Schedule attached to Payment Requests.
   (4) *AF3065* - To be used for the Contract Progress Report attached to Payment Requests.
   (5) *UAR* - To be used for Unescorted Pass Requests.

e. EXAMPLES:
   (1) AF3000_001_35% Design ..... **FORMAT 1**
   (2) RFI_01_As-Builts ..... **FORMAT 1**
   (3) AF3064_01_OCT2023 ..... **FORMAT 2**
   (4) UAR_CPS Energy_20230704 ..... **FORMAT 2**
   (5) 20230214_Concrete Strength Test ..... **FORMAT 3**
   (6) 35% Drawings ..... **FORMAT 4**

1.6 QUANTITY OF SUBMITTALS

1.6.1 Number of SD-01 Preconstruction Submittal Copies

Unless otherwise specified, submit one sets of administrative submittals.

1.6.2 Number of SD-02 Shop Drawing Copies

Submit electronic copies of submittals of shop drawings requiring review and approval by a QC organization in accordance with the requirements of this specification.

The following submittals shall include a hardcopy in the sizes and quantity shown:

a. Design Complete (100%) Drawings, once approved

   (1) ANSI D, 1 copy

   (2) ANSI B, 2 copies

b. Design Complete (100%) Specifications, once approved

   (1) Bound, 8.5 x 11 inch, color, 1 copy

c. Architect s Supplemental Instruction (ASI), as needed

   (1) ANSI D, 1 copy

   (2) ANSI B, 2 copies

   (3) Specs, 8.5 x 11 inch, color, 1 copy

d. Shop Drawings, once approved

   (1) ANSI D, 1 copy

   (2) ANSI B, 2 copies

1.6.3 Number of SD-03 Product Data Copies

Submit electronic copies of submittals of product data requiring review and approval by a QC organization or the Contracting Officer in accordance with the requirements of this specification.

1.6.4 Number of SD-04 Samples

a. Submit two samples, or two sets of samples showing the range of variation, of each required item. One approved sample or set of samples will be retained by the approving authority and one will be returned to the Contractor.

b. Submit one sample panel or provide one sample installation where directed. Include components listed in the technical section or as directed.

c. Submit one sample installation, where directed.

d. Submit one sample of nonsolid materials.

1.6.5 Number of SD-05 Design Data Copies

Submit in compliance with quantity requirements specified for shop drawings.

1.6.6 Number of SD-06 Test Report Copies

Submit in compliance with quantity and quality requirements specified for shop drawings, other than field test results that will be submitted with QC reports.

1.6.7 Number of SD-07 Certificate Copies

Submit in compliance with quantity requirements specified for shop drawings.

1.6.8 Number of SD-08 Manufacturer's Instructions Copies

Submit in compliance with quantity requirements specified for shop drawings.

1.6.9 Number of SD-09 Manufacturer's Field Report Copies

Submit in compliance with quantity and quality requirements specified for shop drawings other than field test results that will be submitted with QC reports.

1.6.10 Number of SD-10 Operation and Maintenance Data Copies

Submit two hard copies of O&M data to the Contracting Officer after approval.

1.6.11 Number of SD-11 Closeout Submittals Copies

Submit electronic copies of submittals of closeout data requiring review and approval by a QC organization in accordance with the requirements of this specification.

The following submittals shall include a hardcopy in the sizes and quantity shown:

a. Record Drawings, once approved

(1) ANSI B, 2 copies

b. Final Approved Shop Drawings

(1) ANSI B, 2 copies

c. Warranty Management Plan

(1) 8.5 x 11 inch, color, 1 copy

1.7 INFORMATION ONLY SUBMITTALS

Submittals without a "G" designation must be certified by the QC manager and submitted to the Contracting Officer for information-only. Provide information-only submittals to the Contracting Officer a minimum of 14

calendar days prior to the Preparatory Meeting for the associated Definable Feature of Work (DFOW). Approval of the Contracting Officer is not required on information only submittals. The Contracting Officer will mark "receipt acknowledged" on submittals for information and will return only the transmittal cover sheet to the Contractor. Normally, submittals for information only will not be returned. However, the Government reserves the right to return unsatisfactory submittals and require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe. For Design-Build construction, the Government will retain one copy of information-only submittals.

1.8 PROJECT SUBMITTAL REGISTER

An initial Project Submittal Register showing items of equipment and materials for when submittals are required by the specifications is provided as ATT-2.

1.8.1 Submittal Management

Prepare and maintain a submittal register, as the work progresses. Do not change data that is output in columns (c), (d), (e), and (f) as delivered by Government; retain data that is output in columns (a), (g), (h), and (i) as approved. As an attachment, provide a submittal register showing items of equipment and materials for which submittals are required by the specifications. This list may not be all-inclusive and additional submittals may be required. Maintain a submittal register for the project in accordance with the requirements of this Section. The Government will provide the initial submittal register in electronic format with the following fields completed, to the extent that will be required by the Government during subsequent usage.

Column (c): Lists specification section in which submittal is required.

Column (d): Lists each submittal description (SD Number. and type, e.g., SD-02 Shop Drawings) required in each specification section.

Column (e): Lists one principal paragraph in each specification section where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting the project requirements.

Thereafter, the Contractor is to track all submittals by maintaining a complete list, including completion of all data columns and all dates on which submittals are received by and returned by the Government.

1.8.2 Design-Build Submittal Register

The Designer of Record develops a complete list of submittals during design and identify required submittals in the specifications, and use the

list to prepare the Submittal Register. The list may not be all inclusive and additional submittals may be required by other parts of the contract. Complete the submittal register and submit it to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. Coordinate the submit dates and need dates with dates in the Contractor prepared progress schedule. Submit monthly or until all submittals have been satisfactorily completed, updates to the submittal register showing the Contractor action codes and actual dates with Government action codes. Revise the submittal register when the progress schedule is revised and submit both for approval.

1.8.3 Preconstruction Use of Submittal Register

Submit the submittal register. Include the QC plan and the project schedule. Verify that all submittals required for the project are listed and add missing submittals. Coordinate and complete the following fields on the register submitted with the QC plan and the project schedule:

Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for the approving authority to receive submittals.

Column (h) Contractor Approval Date: Date that Contractor needs approval of submittal.

Column (i) Contractor Material: Date that Contractor needs material delivered to Contractor control.

1.8.4 Contractor Use of Submittal Register

Update the following fields with each submittal throughout the contract.

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (j) Action Code (k): Date of action used to record Contractor's review when forwarding submittals to QC.

Column (l) Date submittal transmitted.

Column (q) Date approval was received.

1.8.5 Approving Authority Use of Submittal Register

Update the following fields:

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (l) Date submittal was received.

Column (m) through (p) Dates of review actions.

Column (q) Date of return to Contractor.

1.8.6 Action Codes

1.8.6.1 Contractor Action Codes

DESIGN BUILD SUBMITTALS		
Submittal Classifications shown in UFGS Sections	Submittal Classification	Corresponding SpecsIntact Submittal Register Code which is populated in the SI Submittal Register. Software Limitations: (The software shows one character delineation in the SpecsIntact Submittal Register)
G	Submittal requires Government Approval	G
BLANK	Submittal is For Information Only(FIO)	BLANK
DA	Submittal requires Designer of Record Approval	D
CR	Submittal requires Government Conformance Review	C
DA/CR	Submittal requires Designer of Record Approval and Government Conformance Review	R
DA/GA	Submittal requires Designer of Record Approval and Government Approval	A

1.8.7 Delivery of Copies

Submit an updated electronic copy of the submittal register to the Contracting Officer with each invoice request. Provide an updated Submittal Register monthly regardless of whether an invoice is submitted.

1.9 VARIATIONS

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

1.9.1 Considering Variations

Discussion of variations with the Contracting Officer before submission of a variation submittal will help ensure that functional and quality requirements are met and minimize rejections and resubmittals. For variations that include design changes or some material or product substitutions, the Government may require an evaluation and analysis by a licensed professional engineer hired by the contractor.

Specifically point out variations from contract requirements in a transmittal letter. Failure to point out variations may cause the Government to require rejection and removal of such work at no additional cost to the Government.

1.9.2 Proposing Variations

When proposing variation, deliver a submittal, clearly marked as a "VARIATION" to the Contracting Officer, with documentation illustrating the nature and features of the variation including any necessary technical submittals and why the variation is desirable and beneficial to Government. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

The Contracting Officer will indicate an approval or disapproval of the variation request; and if not approved as submitted, will indicate the Government's reasons therefore. Any work done before such approval is received is performed at the Contractor's risk.

Specifically point out variations from contract requirements in a transmittal letter. Failure to point out variations may cause the Government to require rejection and removal of such work at no additional cost to the Government.

Check the column "variation" of ENG Form 4025-ALT for submittals that include variations proposed by the Contractor. Set forth in writing the reason for any variations and note such variations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted variations.

1.9.3 Warranting that Variations are Compatible

When delivering a variation for approval, the Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

1.9.4 Review Schedule Extension

In addition to the normal submittal review period, a period of 14 calendar days will be allowed for the Government to consider submittals with variations.

1.10 SCHEDULING

Schedule and submit concurrently product data and shop drawings covering component items forming a system or items that are interrelated. Submit pertinent certifications at the same time. No delay damages or time extensions will be allowed for time lost in late submittals. Allow an additional 7 calendar days for review and approval of submittals for refrigeration and HVAC control systems.

a. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. The Contractor is responsible for additional time required for Government reviews resulting from required resubmittals. The review period for each resubmittal is the same as for the initial submittal.

b. Submittals required by the contract documents are listed on the submittal register. If a submittal is listed in the submittal register but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but that have been omitted from the register or marked "N/A."

c. Resubmit the submittal register and annotate it monthly with actual submission and approval dates. When all items on the register have been fully approved, no further resubmittal is required.

Contracting Officer review will be completed within 21 calendar days after the date of submission, unless noted otherwise elsewhere.

1.10.1 Government Reviewed Design

The Government will review design submittals for conformance with the technical requirements of the Solicitation. Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD) covers the design submittal and review process in detail. Government review is required for variations from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the DOR's design documents do not include enough detail to ascertain contract compliance. The Government may, but is not required to, review extensions of design such as structural steel or reinforcement shop drawings.

1.11 GOVERNMENT APPROVING AUTHORITY

When the approving authority is the Contracting Officer, the Government will:

a. Note the date on which the submittal was received.

b. Review submittals for approval within the scheduling period specified and only for conformance with project design concepts and compliance with contract documents.

c. Identify returned submittals with one of the actions defined in paragraph REVIEW NOTATIONS and with comments and markings appropriate for the action indicated.

Upon completion of review of submittals requiring Government approval, stamp and date submittals. All copies of the submittal will be retained by the Contracting Officer and no copies of the submittal will be returned to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be identified and returned, as described above.

1.11.1 Review Notations

Submittals will be returned to the Contractor with the following notations:

a. Submittals marked "approved" or "accepted" authorize proceeding with the work covered.

b. Submittals marked "approved as noted" or "approved, except as noted, resubmittal not required," authorize proceeding with the work covered provided that the Contractor takes no exception to the corrections.

c. Submittals marked "not approved," "disapproved," or "revise and resubmit" indicate incomplete submittal or noncompliance with the contract requirements or design concept. Resubmit with appropriate changes. Do not proceed with work for this item until the resubmittal is approved.

d. Submittals marked "not reviewed" indicate that the submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.

e. Submittals marked "receipt acknowledged" indicate that submittals have been received by the Government. This applies only to "information-only submittals" as previously defined.

1.12 DISAPPROVED SUBMITTALS

Make corrections required by the Contracting Officer. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications, give notice to the Contracting Officer as required under the FAR clause titled CHANGES. The Contractor is responsible for the dimensions and design of connection details and the construction of work. Failure to point out variations may cause the Government to require rejection and removal of such work at the Contractor's expense.

If changes are necessary to submittals, make such revisions and resubmit in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

1.13 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals is not to be construed as a complete check, and indicates only that the design, general method of construction, materials, detailing, and other information appear to meet the Solicitation and Accepted Proposal.

Approval or acceptance by the Government for a submittal does not relieve the Contractor of the responsibility for meeting the contract requirements or for any error that may exist, because under the Quality Control (QC) requirements of this contract, the Contractor is responsible for ensuring information contained with in each submittal accurately conforms with the requirements of the contract documents.

After submittals have been approved or accepted by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.14 APPROVED SAMPLES

Approval of a sample is only for the characteristics or use named in such approval and is not be construed to change or modify any contract requirements. Before submitting samples, provide assurance that the materials or equipment will be available in quantities required in the project. No change or substitution will be permitted after a sample has been approved.

Match the approved samples for materials and equipment incorporated in the work. If requested, approved samples, including those that may be damaged in testing, will be returned to the Contractor, at its expense, upon completion of the contract. Unapproved samples will also be returned to the Contractor at its expense, if so requested.

Failure of any materials to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make as that material. The Government reserves the right to disapprove any material or equipment that has previously proved unsatisfactory in service.

Samples of various materials or equipment delivered on the site or in place may be taken by the Contracting Officer for testing. Samples failing to meet contract requirements will automatically void previous approvals. Replace such materials or equipment to meet contract requirements.

1.15 WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made unless all required DOR approvals or required Government approvals have been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information-only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.16 CERTIFICATION OF SUBMITTAL DATA

Certify the submittal data as follows: "I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

_____NAME OF CONTRACTOR _____ SIGNATURE OF CONTRACTOR"

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

ATT-1 - ENG Form 4025-ALT

ATTACHED IN APPENDIX A

ATT-2 - Submittal Register

ATTACHED IN APPENDIX A

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SECTION 01 33 16.00 30

DESIGN DATA (DESIGN AFTER AWARD)
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PART 1 GENERAL

1.1 SUMMARY

After award, develop the accepted proposal into the completed design, as described herein. Use a collaborative, integrated design process for all stages of project delivery with comprehensive performance goals for site development, energy, water, material selection, indoor environmental quality, and waste diversion. Ensure incorporation of these goals in project delivery. Consider all stages of the building lifecycle, including deconstruction, rehabilitation, re-purposing, or demolition.

1.2 REFERENCES

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI C12.1	(2024) Electric Meters - Code for Electricity Metering

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 38-22	(2022) Standard Guideline for Investigating and Documenting Existing Utilities

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC	(2024) International Building Code
ICC IEBC	(2024) International Existing Building Code
ICC IECC	(2024) International Energy Conservation Code
ICC IgCC	(2024) International Green Construction Code
ICC IMC	(2024) International Mechanical Code
ICC IPC	(2024) International Plumbing Code

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 19005-3	(2012) Document Management -- Electronic Document File Format for Long-Term Preservation -- Part 3: Use of ISO 32000-1 with Support for Embedded Files (PDF/A-3)

ISO 19115-1	(2014) Geographic Information -- Metadata -- Part 1: Fundamentals
ISO 32000-1	(2008) Document Management -- Portable Document Format -- Part 1: PDF 1.7

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 1	(2024) Fire Code
NFPA 13	(2025; TIA 25-5) Standard for Installation of Sprinkler Systems
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

NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS)

NBIMS-US	(V3) National BIM Standard - United States
NCS	(V6) United States National CAD Standard

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements
EM 1110-1-2909	(2012) Engineering and Design -- Geospatial Data and Systems
ERDC/ITL SR-23-1	(2023) A/E/C Graphics Standard, Release 2.2
ERDC/ITL SR-24-3	(2024) A/E/C CAD Standard - Release 6.2

TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT)

TMUTCD	(2025) Texas Manual on Uniform Traffic Control Devices

U.S. DEPARTMENT OF DEFENSE (DOD)

DODI 8500.01	(2014; with Change 1, 2019) Cybersecurity
UFC 1-200-01	(2022; with Change 4, 2024) DoD Building Code
UFC 1-200-02	(2020; Change 3, 2025) High Performance and Sustainable Building Requirements
UFC 1-300-02	(2025) Unified Facilities Guide Specifications (UFGS) Format Standard
UFC 3-101-01	(2020; with Change 4, 2024) Architecture
UFC 3-401-01	(2025; with Change 1, 2026) Mechanical Engineering

UFC 3-410-01	(2025; with Change 1, 2026) Heating, Ventilating, and Air Conditioning Systems
UFC 3-410-02	(2018; with Change 2, 2021) Direct Digital Control for HVAC and Other Building Control Systems
UFC 3-420-01	(2021) Plumbing Systems
UFC 3-490-06	(2018; with Change 1, 2021) Elevators
UFC 3-530-01	(2023; with Change 1, 2023) Interior And Exterior Lighting Systems
UFC 3-540-01	(2014; with Change 4, 2026) Engine-Driven Generator Systems for Prime and Standby Power Applications
UFC 3-570-01	(2016; with Change 1, 2019) Cathodic Protection
UFC 3-580-01	(2024) Information and Communications Technology Infrastructure Planning and Design
UFC 3-600-01	(2016; with Change 6, 2021) Fire Protection Engineering for Facilities
UFC 3-810-01	(2025) Environmental Engineering for Facility Construction
UFC 4-010-01	(2018; with Change 3, 2024) DoD Minimum Antiterrorism Standards for Buildings
UFC 4-010-06	(2023) Cybersecurity of Facility-Related Control Systems
UFC 4-023-03	(2009; with Change 4, 2024) Design of Buildings to Resist Progressive Collapse

UL SOLUTIONS (UL)

UL 508A	(2018; Reprint Jun 2025) UL Standard for Safety Industrial Control Panels

1.3 DEFINITIONS

1.3.1 Designer of Record (DOR)

Professional Registered members of the Contractor’s Design-Build team that check, approve, sign, date, and certify, prior to submitting the deliverables to the Government, that the D-B design submittals comply with the contract requirements.

The DOR's stamp, sign, and date each design drawing and other design deliverables under their responsible discipline at each design submittal stage. The DOR(s) are responsible for maintaining the integrity of the design and for compliance with the contract requirements through construction and documentation of the as-built condition by coordination,

review and approval of extensions of design, material, equipment and other construction submittals, review and approval or disapproval of requested deviations to the accepted design or to the contract, coordination with the Government of the above activities, and by performing other typical professional design responsibilities.

1.3.2 Government Furnished Material (GFM)

Government material that may be incorporated into, or attached to, an end item to be delivered under a contract or which may be consumed in the performance of a contract. It includes, but is not limited to, raw and processed material, parts, components, assemblies, and small tools and supplies.

1.3.3 Advanced Modeling

A subset of geospatial technologies as defined in EM 1110-1-2909 to include BIM, CIM, GIS, and CAD. Advanced Modeling is comprised of models and drawings that form a digital representation of the project, or part thereof, that are comprised of model elements with facility data.

1.3.4 Model Element

A self-contained graphical element with a unique identification that is used to populate a model, and whose behavior and properties are defined by facility/site data and software processes. Model elements can represent a physical entity, such as a pump, a concrete wall, or a utility vault and range from the simple to the complex and can be custom modified.

1.3.5 USACE Minimum Modeling Matrix (M3)

The USACE Minimum Modeling Matrix (M3) describes the minimum modeling and data requirements by defining the level of development (LOD) and element grade.

1.3.6 Facility Data

Non-graphical data attached to surface and subsurface components for both building and site model elements that describe various facility characteristics such as parametric values that drive physical sizes, material definitions (e.g. wood, metal), manufacturer data, industry standards (e.g. AISC steel properties), location, and project identification numbers. Facility data can also define supplementary physical entities that are not shown graphically in the model, such as the system of a duct, hardware on a door, content of conduit, site surface, alignment, levee, channel or transformer properties.

1.3.7 Industry Foundation Class (IFC)

IFC are a standard and file format used for the exchange of model elements and data; see https://technical.buildingsmart.org/standards/ifc/. In the context of this section, IFC does not mean "Issued For Construction."

1.3.8 Model Uses

A Model Use is a method or strategy of applying modeling during a facility's life cycle to achieve one or more specific objectives. Reference NBIMS-US for the definitive list of Model Uses and definitions.

1.3.9 USACE BIM/CIM Platform Configuration Standards - Templates, Workspaces, Catalogs, and Environments

1.3.9.1 USACE Revit Templates

The USACE Revit templates are discipline specific and include family content pertinent to that discipline. The templates share standard symbology such as annotation families, line styles, and text styles. The templates include pre-defined shared parameters.

1.3.10 USACE CAD/BIM Technology Center

The USACE CAD/BIM Technology Center hosts all standard content for USACE. This content can be accessed through the CAD/BIM Technology Center website, .

1.3.11 Charrette

Contractor led meeting. Meetings shall be conducted in-person, but also include a telemeeting component. The purpose of the Charrette is for the Contractor to meet with the stakeholders. This is the opportunity for the Contractor to go over the project with key stakeholders, interview, and coordinate with the them. It also recommended for your sub-contractors to attend.

1.3.12 Comment Review Conference

Contractor led meeting after receiving government comments for each design submittal. Meetings shall be conducted in-person, but also include a telemeeting component. Telemeeting shall be held through a service compatible with Government networks. Contractor is to consolidate, track, and review government comments to determine concurrence, non-concurrence, or more information is needed. The results of these meetings shall be incorporated into the next design submittals.

1.3.13 Preliminary (35%) Design

This submittal represents approximately 35% of the design effort and shall be of sufficient detail to show how the users' functional and technical requirements will be met, indicate the designer's approach to the solution of technical problems, and show compliance with design criteria or provide justification for noncompliance.

The 35% Design shall consist of at a minimum:

a. 35% Design Drawings

b. 35% Design Specifications
Note: List of initial specifications expected to be needed based on the project requirements. Full specification pages not required to be included at this design stage.

c. 35% Design Analysis & Calculations
Note: Preliminary calculations are what is expected at this design stage.

1.3.14 Interim (65%) Design

This submittal is intended to insure that funding limitations are not being exceeded; that the drawings, design analysis, and specifications are

proceeding in a timely manner; and that the design criteria are being correctly interpreted. The Interim (65%) Design submittal shall be representative of a 65% complete design, at a minimum, from the DOR and shall meet the design expectations per 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD).

The 65% Design shall consist of at a minimum:

a. 65% Design Drawings with a **95% complete sheet index list** (even if sheets are place holders, they shall be listed and marked as such)

b. 65% Design Specifications, using SpecsIntact
Note: Specifications shall have tailoring options chosen and non-applicable text red-lined, with revision history shown. Only minor tailoring decisions that require further Government coordination shall remain. Combined PDF shall be generated/published in accordance with ATT-8.

c. 65% Design Analysis & Calculations
Note: Design Analysis shall be updated to include full design calculations. Design Analysis shall also include any required investigative reports needed for design

The following items must be submitted with the 65% submittal if not already submitted: Design Quality Control Plan, Design and Code Checklist, Contractor Laydown, Traffic Study, Geotechnical Report, Topographical Survey, Paving Plan, SWPPP, and Haul Road Plan. It is highly encouraged to submit these items before the 65% submittal.

1.3.15 Final (95%) Design

This submittal **represents a 100% complete design** with the exception of the incorporation of any review comments resulting from the review of the submittal. Government review comments from the 65% Design shall meet the design expectations per 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD).

The 95% Design shall consist of at a minimum:

a. Annotated 65% review comments, must show original comment and response/action

b. 95% Design Drawings

d. 95% Design Specifications, using SpecsIntact, Combined PDF
Note: Specifications shall be fully tailored, while still showing all revision history. Combined PDF shall be generated/published in accordance with ATT-8.

e. 95% Design Analysis & Calculations
Note: Design Analysis shall be updated to capture any changes to the design approach or design solution

1.3.16 Design Complete (100%)

This submittal represents a complete design (design analysis, specifications, and drawings). Government review comments from the 95% Design shall be fully incorporated into this submittal. Drawings, specifications, and design analysis shall be stamped/signed/sealed by the DOR.

`The 100% Design shall consist of at a minimum:

a. Annotated 95% review comments; must show original comment and response/action

b. 100% Design Drawings

d. 100% Design Specifications, using SpecsIntact
Note: Combined PDF shall be generated/published with a Table of Contents at the beginning of the specification package and include bookmarks with section numbers. Electronic version shall be published in color. Specifications should now only show project specific text. Combined PDF shall be generated/published in accordance with ATT-8.

e. 100% Design Analysis & Calculations

f. Submittal Register

The following items must be submitted with the 100% submittal if not already submitted yet: Accident Prevention Plan, Contractor Quality Control Plan, Construction Site Plan, all pre-construction Environmental submittals, Integrated Solid Waste Management Plan, and any other outstanding pre-construction submittals. It is highly encouraged to submit these items before the 100% submittal. It shall also include any Environmental Permit, TCEQ Permit, Dig Permit, and any other applicable permits.

1.4 ORDER OF PRECEDENCE

In the event of a conflict or inconsistency between any of the requirements within the Contract, precedence is applied:

a. Any portions of the accepted proposal which both conform to and exceed the requirements of the solicitation.

b. The provisions of the solicitation.

c. All other provisions of the accepted proposal.

d. Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, and equipment installation drawings. These are "deliverables" under the contract are not part of the contract itself. Design products must conform to all provisions of the contract, in the order of precedence.

1.5 PRECONSTRUCTION ACTIVITIES

1.5.1 Design Quality Control Plan

Submit a Design Quality Control Plan in accordance with Section 01 45 00 QUALITY CONTROL before design may proceed.

1.5.2 Meetings and Conferences

1.5.2.1 Post Award Conference

The Government will conduct a post award conference, as soon as possible after Contract award, coordinated with issuance of the notice to proceed (NTP). Participation by the Contractor and major subcontractor representatives is mandatory. All designers need not attend this first

meeting. The government will provide an agenda, meeting goals, meeting place, and meeting time to participants prior to the meeting.

As a minimum the following will be addressed during the conference: determination and introduction of contact person and their authorities; contract administration requirements; discussion of expected project progress processes; and coordination of subsequent meeting.

a. The government will introduce the Government project delivery team members, facility users, facility command representatives, and installation representatives.

b. Introduce key personal, major subcontractors and other needed staff.

c. Define expectations and duties of each participant.

d. Develop a meeting roster with complete contact information including name, office, project role, phone, mailing and physical address, and e-mail address for distribution to all participants. Also, provide minutes of the meeting to all participants.

1.5.2.2 Initial Design Conference

After Contract award, conduct the initial design conference, and provide a record of the meeting. All Designers of Record must participate in the conference. The primary purpose of the meeting is to make sure any needs are assigned and due dates established, as well as points of contact identified. The initial design conference must be scheduled and conducted at the project installation prior to initiation of significant preliminary design development, although it is recommended that the partnering process be initiated at the time of or before the initial design conference. Limit any design work conducted after award and prior to this conference to site work.

1.5.2.3 Charrette Conference

Within [30] calendar days of the notice to proceed, conduct a charrette conference, and provide a record of the meeting. All Designers of Record must participate in the conference. The primary purpose of the meeting is to conduct interviews with key stakeholders from the Government and applicable third-party entities operating on JBSA. Meetings shall be conducted [in-person, but also include a telemeeting component][through telemeeting]. A meeting agenda shall be provided a minimum of 14 calendar days in advance of the proposed meetings date(s). Agenda must outline the planned discussion topics and the timeframe anticipated to discuss that topic.

1.5.2.4 Advanced Modeling Kick-Off Meeting

Conduct an Advanced Modeling Kick-Off Meeting prior to submission of the Advanced Modeling PxP, within 45 days after Notice to Proceed. Required meeting attendance includes, at a minimum, the DOR, the design drawing and modeling specialist and the Geographic District BIM Manager or delegate.

The intent of this meeting is to coordinate the expectations for the Advanced Modeling PxP.

1.5.2.5 Advanced Modeling PxP Demonstration Meeting

Within 30 days after the acceptance of the Advanced Modeling PxP and M3, conduct a demonstration to review the Plan for clarification, and to verify the functionality of planned Model technology workflow and processes. If modifications are required, complete the modifications and resubmit the Advanced Modeling PxP performing a subsequent demonstration for Government acceptance.

1.5.2.6 Pre-Construction Conference

Before starting any construction activities, jointly conduct an administrative conference with the Government to discuss any outstanding requirements and to review local installation requirements. It is possible there will be multiple Pre-Construction Conferences based on the configuration of the design packages. Provide minutes of the meeting(s) to all participants.

1.6 SUBMITTALS

Government Acceptance or Approval does not remove responsibility from the Contractor for their actions or liability.

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Advanced Modeling Project Execution Plan (PxP); C

Design Quality Control Plan; G

Initial Design Conference

Preconstruction Conference

DCM Procedures; G

Submittal Register; G

SD-05 Design Data

Design and Code Checklists; C

Preliminary (35%) Design Package; R

Sustainable Design; C

Flexible Sprinkler Request; G

Interim (65%) Design Package; R

Building Rendering

Interior And Exterior Building Finishes Scheme; G

Furniture, Fixtures & Equipment; G

Conference Documentation

Final (95%) Design Package; R

Design Complete (100%) Package; C

Architect’s Supplemental Instruction (ASI), As Needed; R

SD-11 Closeout Submittals

DD Form 1354; A

1.7 DESIGN QUALITY CONTROL

1.7.1 Design And Code Checklists

Develop and utilize appropriate discipline-specific checklists during the design and quality control of each submittal. Submit these completed checklists with each design submittal, as applicable, as part of the project documentation. See Section 01 45 00 QUALITY CONTROL and paragraph FIRE PROTECTION AND LIFE SAFETY CODE REVIEW for a sample Fire Protection and Life Safety Code Review checklist.

1.7.2 Advanced Modeling Project Execution Plan (PxP)

Develop an Advanced Modeling Project Execution Plan ("Plan" or "PxP") documenting mandatory and Contractor-elected BIM Uses, analysis technologies and workflows. Submit the PxP within 45 days after issuance of Notice to Proceed.

Use the ADVANCED MODELING PROJECT EXECUTION PLAN (PxP) Template (ATT-) to develop an acceptable Plan and update to include platforms and processes to meet the requirements of the project.

1.7.2.1 M3 Template

Use the M3 Template (ATT-7) and submit as part of the Advanced Modeling PxP.

1.7.2.2 Model Uses

Mandatory Model Uses are predefined in the Project Execution Plan (PxP) and cannot be modified. Identify additional elected Model Uses in the PxP.

1.8 DELIVERY, STORAGE, AND HANDLING

1.8.1 Electronic Design Submittal

Provide identical copies of discs for approval, for each submittal required. Provide quantities and sizes indicated in Section 01 33 00 SUBMITTAL PROCEDURES.

1.8.1.1 Malicious Content

Scan all electronic files for malicious viruses using commercially available scanning program that is routinely updated to identify and remove current virus threats.

1.8.1.2 Storage Media

Provide project data through DoD SAFE in accordance with Section 01 33 00 SUBMITTAL PROCEDURES. When separation of the submittal is required separate deliverables through multiple DoD SAFE drop-offs. Document any deviations in the PxP for approval by the Contracting Officer.

1.8.2 Advanced Model File Packaging

Execute the following actions for all design drawing and modeling files:

1.8.2.1 Autodesk Revit, Civil3D, AutoCAD

a. Purge unused

b. Audit

c. Compress

1.8.3 PDF File Packaging

Utilize PDF file format in accordance with ISO 32000-1 and ISO 19005-3. Provide files from original sources, text-searchable, and saved in "Standard" (uncompressed) resolution whenever possible.

1.8.3.1 Bookmarking

a. Bookmark drawing submittal PDF sets to include one Parent Bookmark per Discipline and one Child Bookmark per sheet within each Discipline. Format Parent Bookmarks as "Discipline" (e.g. Architectural). Format Child Bookmarks as "Sheet ID Sheet Title" (e.g. A-101 First Floor Plan).

b. Bookmark specification submittal PDF sets using the SpecsIntact Print Processing PDF Print/Publish feature, combining processed sections into one PDF document.

c. Bookmark design analysis and calculation submittal PDF sets to include one Parent Bookmark per design analysis section and one Child Bookmark per major paragraph per section. Format Parent Bookmarks as "Section" (e.g. Architectural). Format Child Bookmarks as "major paragraph designation Sheet Title" (e.g. 2.1 Primary Facility Functions).

1.8.3.2 Hyperlinking

Hyperlink all reference annotation symbology (e.g. section cut symbology, detail callout symbology, elevation callout symbology) to the sheet referenced by the annotation.

1.8.4 Hardcopy Design Submittal

Print hard copy submittals directly from the electronically packaged PDF files. Provide quantities and sizes as indicated in Section 01 33 00 SUBMITTAL REQUIREMENTS.

The Designer(s) of Record stamps and signs the original full size hard copy sheets as Released For Construction. Provide distribution from this set.

PART 2 PRODUCTS

2.1 GOVERNMENT FURNISHED MATERIALS

The Government will provide Advanced Modeling files as GFM for use in design development. Develop and maintain the information and level of detail contained in the GFM in the Project design, as required by this Contract.

The Contractor has the option of preparing their own Advanced Modeling files in the formats prescribed as a basis for design, design drawings, and interim design submittals. If so, maintain the same level of detail, properties, and functionality in the models that is prescribed in this specification.

2.1.1 GFM Handover

The Government will provide the GFM at the Design Kick-Off Meeting.

2.1.2 GFM File Formats

GFM are provided in the following file formats:

2.1.2.1 Government Furnished BIM

The GFM includes Autodesk Revit.

2.1.2.2 Government Furnished CAD

The GFM includes Autodesk AutoCAD.

2.1.3 Advanced Modeling Completion and Quality

The Government makes no guarantee that the BIM/CIM models, GIS data, CAD files and Facility Data provide the level of completeness or quality required for a submittal. Develop or update files and data to completely and correctly represent the as-built conditions of the facility and the site.

However, use of any Government Furnished BIM,CIM and GIS for creation of contract submittals is at the Contractor's own risk. Any quality control issues discovered in the GFM do not absolve the Contractor from submitting contract compliant deliverables as described in this and other specifications.

2.1.4 Data Loss, Corruption, and Error

Use of GFM files is at the Contractor's risk. Verify data integrity upon receipt and request a replacement if necessary.

Any adjustment of file structure, format, or software version required to make GFM compatible with computer systems and/or software is the responsibility of the Contractor.

2.2 ADVANCED MODELING DOCUMENTS

Provide all of the following documents with each design submittal.

2.2.1 Submitted Files List

Provide list of all submitted electronic files including a description, directory, and file name for each file submitted. Identify which files have been produced from the Model and Facility Data. For all Sheet files, include a list of the sheet titles and sheet numbers.

2.2.2 Advanced Modeling Submittal Checklist

Complete the BIM/CIM Advanced Modeling Submittal Checklist (ATT-5) and include with each submittal.

2.2.3 Advanced Modeling Electronic Files

Include all Advanced Modeling files associated with the contract scope of work.

2.2.3.1 Industry Foundation Class (IFC) Coordination View

Provide an IFC Coordination View for all deliverables. Provide exported property set data for all IFC supported named building elements. Submit all IFC models in the IFC2x3 Coordination View V2.0 schema.

2.2.3.2 Quality Control (QC) Reports

As a minimum, include the following reports:

2.2.3.2.1 Model Standards Checks and Reports

Provide QC checks demonstrating adherence to the NCS v6.0 BIM Implementation section. Identify and report non-compliant elements and submit a corrective action plan. Provide the Government with detailed justification and request Government acceptance for any non-compliant elements that the Contractor proposes to be allowed to remain in the Model. Verify the following for the Model(s) and Facility Data set:

a. No undefined, incorrectly defined, or duplicated elements.

a. No errors when opening.

c. No broken Links, References, or X-References.

d. Minimized extraneous information.

e. Content uses the coordinate system defined in the approved PxP.

f. Models share a common alignment point.

g. For a Design Complete or Record Submittal; no unloaded Links, References, or X-References exist.

2.2.3.2.2 Graphics Standards Checks and Report

Provide QC checks on all graphic deliverables demonstrating that the fonts, dimensions, symbology and other construction document formatting are compliant with the requirements of this specification. Identify and report non-compliant content.

2.2.3.2.3 CAD Standards Checks and Report

Provide QC checks on CAD Output demonstrating that filenames, sheet borders, layer/level names, and symbology are compliant with the requirements of this specification. Identify and report non-compliant content.

2.2.3.2.4 Interference Management (3D Coordination) Checks and Report

Execute Interference Management checks and provide a summary of the results noting total hard interferences (e.g., mechanical vs. structural, or mechanical vs. mechanical, overlaps in the same location) and soft interferences (e.g., conflicts regarding equipment clearance, service access, fireproofing, insulation, code space requirements).

2.2.3.2.5 Additional Parameters

Additional QC parameters as deemed appropriate for the Project may be developed and documented in the Advanced Modeling PxP.

2.2.4 Advanced Modeling Re-Submittals

If components of an Advanced Modeling submittal are rejected, provide the following for each Advanced Modeling Re-Submittal, in addition to re-submittal information required by Section 01 33 00 SUBMITTAL PROCEDURES:

a. Re-submit all components required under paragraph ADVANCED MODELING PACKAGE, including a new Advanced Modeling Checklist and updated content in response to Government comments.

b. Provide a copy of all Government review comments.

c. Provide a response to each Government review comment for back check.

2.3 DESIGN DRAWINGS

From advanced model files, produce design drawings that describe the scope of the Contract for all required submittals including all interim and final deliverables.

2.3.1 Electronic Drawing Files

Provide electronic drawing files in PDF format for each project drawing in the design set.

2.3.2 Drawing Index

Provide an index of drawings sheet as part of the drawing set, and an electronic table of all drawings submitted. Include the electronic file name, the sheet reference number, the sheet number, and the sheet title containing the data for each drawing.

2.3.3 Shop Drawings Used as Design Drawings

Design drawings may be prepared similar to shop drawings to minimize construction submittals after the Design Complete Submittals. Prepare and submit with the design drawings, appropriate connection, fabrication, layout, and product specific drawings.

2.3.3.1 Drawing Format For Shop Drawings Used as Design Drawings

Use the Contractor-originated drawings as the basis for the record drawings. Conform shop drawings included as design documents with the same drawing requirements such as drawing format, sheet size, layering, lettering, and title block used in design drawings.

2.3.3.2 Identification of Shop Drawings Used as Design Drawings

Indicate which shop drawings are being submitted as design drawings in the transmittal letter.

2.3.4 Seal on Documents

Sign, date and seal all Contractor-originated design drawings by the registered architect or the registered engineer of the respective discipline, who shall be registered in the State of Texas. This is the seal of the Designer of Record for that drawing. Application of the electronic seal and signature accepts responsibility for the work shown thereon.

2.4 SPECIFICATIONS

Provide a Contractor-originated design specification that, in conjunction with the drawings, demonstrates compliance with materials, equipment, execution, and field quality control requirements of the RFP and accepted proposal.

2.4.1 Specifications Format

Utilize the Unified Facility Guide Specifications (UFGS) current at the time of Contract award. Process the specifications with the SpecsIntact software package.

a. Edit and expand the appropriate specifications to ensure that all project design requirements, current code requirements, and regulatory requirements are met. Design specifications may be prepared that include manufacturer specific data and catalog cuts in lieu of non-proprietary, descriptive specifications. Clearly identify, where appropriate, specific products chosen to meet the contract requirements (i.e., manufacturers' brand names and model numbers or similar product information).

b. Note that the UFGS are based on design-bid-build contracting and will require editing to apply to a design-build project. For instance, they assume that the Government will approve most submittals, whereas in design-build, the DOR has that action, unless this solicitation requires Government approval for specific submittals.

c. Organize project sections not based on UFGS in accordance with CSI MasterFormat and UFC 1-300-02.

2.4.2 Identification of Manufacturer's Product Data Used as Specifications.

Provide complete and legible catalog cut sheets, product data, installation instructions, operation and maintenance instructions, warranty, and certifications for products and equipment for which final material and equipment choices have been made. Indicate, by prominent notation, each product that is being submitted including optional

manufacturer's features, and indicate where the product data shows compliance with the Contract requirements.

2.4.3 Specifications Packaging

Provide specifications to include the following:

a. Cover sheet and project table of contents.

b. Specification sections, each section with a table of contents.

c. Manufacturer's Product Data. If providing as attachments to the applicable specification section, incorporate as attachment reference within the section and section table of contents.

2.4.4 Specification Deliverable

Submit a bundled specification package in PDF format for each design package. Deliverable shall be generated by following the instructions in ATT-1. Also, submit the source files, in the processing system format, used to create the PDF.

2.5 DESIGN ANALYSIS

Prepare, organize, and present a design analysis that will document the general parameters, functional and technical requirements, design objectives, design assumptions, and provides design calculations applicable to a project's design. Organize the design analysis into three parts; **Part 1 - General Description**; **Part 2 - Design Requirements and Provisions**; and **Part 3 - O&M Provisions**.

The design analysis states the purpose, authorization, applicable criteria and the project description for the project, and provides a summary of the factors influencing the choice of the civil, environmental, architectural, structural, mechanical, electrical, communications, fire protection, physical security systems, HTRW, and sustainable design features used in the project along with an indication of how the initial costs and life cycle costs were factored into final selections. In the final design analysis clearly and succinctly include:

a. An introductory description of the project concepts that addresses the salient points of the design.

b. An orderly and comprehensive documentation of criteria and rationale for system selection, supported by life cycle cost analysis.

c. The identification of any necessary licenses and permits that are anticipated to be required as a part of the design and/or construction process.

d. Identify all applicable codes and criteria and highlight specific requirements within these codes and criteria for critical issues in the facility design.

e. Required calculations as specified and as needed to support the design.

f. Clearly identify "Sustainable Design" features that address high performance and sustainable building (HPSB) concepts as required by UFC 1-200-02. Sustainable design documentation must support Guiding

Principles Validation requirements in Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING to include HPSB.

g. Clearly identify "Antiterrorism" requirement and document the antiterrorism and force protection features as required by UFC 4-010-01.

2.5.1 Design Requirements and Provisions

Include subparts for each major design discipline and basic project design requirements for each discipline that justify and validate design decisions to include, but not limited to: life cycle cost effectiveness, JBSA restrictions on operation and maintenance

2.5.1.1 Civil

Include soil analysis and survey data, site design, site improvements, planting and landscaping, paving, grading and drainage, water, waste-water and soil treatment, contaminant containment, utilities systems analysis and design, and provisions for airfields, ports and railroads, if required.

2.5.1.2 Environmental

Include an impact assessment checklist covering air, water and noise effects from the project and construction; worker health and safety; HTRW remediation cleanup and action levels; transportation and disposal regulation requirements; quality control for chemical sampling/analysis; wetlands determination (tidal and nontidal); special wildlife, plant, and endangered species considerations; ground water, waterway and floodplain protection assessment; pollution prevention control requirements; and design measures to be implemented (i.e., construction site sediment and erosion control requirements by Federal, state and local governments); and hazardous material management, natural and cultural resources, and environmental permits.

2.5.1.3 Architectural

Include space allowance, functional layout, unique features, interior design ,furniture planning, signage, accessibility, security, air barriers, energy conservation and sustainable design to include site analysis focusing on orientation, space-mass composition, materials used and details with respect to image, safety, maintenance and cost effectiveness and historical context.

2.5.1.4 Structural

Include foundation, structural, seismic, hardened structure,nuclear radiation and blast protection systems analysis and design.

2.5.1.5 Mechanical

Include heating, ventilation and air conditioning systems, refrigeration, plumbing, elevators and cranes, energy conservation, pollution control, noise and vibration control, heating and chilled water distribution, gas distribution, fuel storage and dispensing, and process systems design.

2.5.1.6 Electrical

Include power generation, transmission and distribution systems, lighting (interior and exterior), voice and video communications, intrusion

detection, utilities monitoring control systems (UMCS), cathodic protection, lightning and static electricity protection systems analysis and design, aviation lighting, and electromagnetic protection.

2.5.1.7 Fire Protection and Life Safety

Include building construction, exit requirements, fire extinguishing systems, fire protection water supplies, surge analysis, and alarm and detection systems analysis and design.

2.5.1.8 Physical Security

Include fencing, vaults, protective lighting, security systems, locks, arms rooms, controlled substances, entrances, guard facilities, classified material, patrol roads, clear zones, restricted areas, surveillance, penetration resistance, and ATFP requirements.

2.5.1.9 Cybersecurity

Cybersecurity shall be addressed as required per PART 3 paragraph CYBERSECURITY.

2.5.2 Operations and Maintenance (O&M) Provisions

Identify design provisions made to enhance and to reduce the cost of operating and maintaining the facility when completed. Identify any special safety considerations or occupational health related considerations that may affect operation and maintenance activities as a result of the final design.

2.5.3 Design Analysis Packaging

2.5.3.1 Assembly and Identification

Assemble design analysis in a single volume with a table of contents if possible. Include a cover page in the basis of design for each discipline indicating the project title and locations, contract number, table of contents, and tabbed separations or bookmarks for quick reference. At a minimum tab or bookmark for each discipline.

2.5.4 Calculations

Place the signature and seal of the designer of record responsible for the work on the cover page of the calculations for the respective design discipline.

PART 3 EXECUTION

3.1 DESIGN SUBMITTALS

Include all deliverable products and associated support documents described in Part 2 of this specification with each design submittal and as listed below.

a. Preliminary (35%) Design Package

(1) Drawings

(a) Combined PDF

(b) CAD files in conformance with this specification and section 01 35 13.20 00 SPECIAL PROJECT PROCEDURES-CAD

(2) Specification List

(3) Design Analysis & Calculations

(4) Fire Protection Design Analysis

b. Interim (65%) Design Package

(1) Drawings

(a) Combined PDF

(b) CAD files in conformance with this specification and section 01 35 13.20 00 SPECIAL PROJECT PROCEDURES-CAD

(c) GIS files in conformance with this specification and section 01 35 13.30 00 SPECIAL PROJECT PROCEDURES-GIS

(d) BIM files in conformance with this specification

(2) Specifications

(a) Combined PDF, color

(b) SEC files

(3) Design Analysis & Calculations

(4) Fire Protection Design Analysis

c. Final (95%) Design Package

(1) Drawings

(a) Combined PDF

(b) CAD files in conformance with this specification and section 01 35 13.20 00 SPECIAL PROJECT PROCEDURES-CAD

(c) GIS files in conformance with this specification and section 01 35 13.30 00 SPECIAL PROJECT PROCEDURES-GIS

(d) BIM files in conformance with this specification

(2) Specifications

(a) Combined PDF, color

(b) SEC files

(3) Design Analysis & Calculations

(4) Fire Protection Design Analysis

(5) Submittal Register

d. Design Complete (100%) Package

(1) Drawings

(a) Combined PDF

(b) CAD files in conformance with this specification and section 01 35 13.20 00 SPECIAL PROJECT PROCEDURES-CAD

(c) GIS files in conformance with this specification and section 01 35 13.30 00 SPECIAL PROJECT PROCEDURES-GIS

(d) BIM files in conformance with this specification

(e) Hard copy plots, in size and quantity stated in Section 01 33 00 SUBMITTAL PROCEDURES

(2) Specifications

(a) Combined PDF, color

(b) SEC files

(c) Hardcopy color print, bound, in quantity stated in Section 01 33 00 SUBMITTAL PROCEDURES

(3) Design Analysis & Calculations

(4) Fire Protection Design Analysis

(5) Submittal Register

e. Architect’s Supplemental Instruction (ASI)

(1) Drawings

(a) Combined PDF

(b) CAD files in conformance with this specification and section 01 35 13.20 00 SPECIAL PROJECT PROCEDURES-CAD

(c) GIS files in conformance with this specification and section 01 35 13.30 00 SPECIAL PROJECT PROCEDURES-GIS

(d) BIM files in conformance with this specification

(e) Hard copy plots, in size and quantity stated in Section 01 33 00 SUBMITTAL PROCEDURES

(2) Specifications

(a) Combined PDF, color

(b) SEC files

(c) Hardcopy color print, bound, in quantity stated in Section 01 33 00 SUBMITTAL PROCEDURES

(3) Design Analysis & Calculations

(4) Fire Protection Design Analysis

(5) Submittal Register

3.2 DESIGN SUBMITTALS PHASES

The stages of design submittals described below define requirements with respect to process and content. Determine how to best plan and execute the design and review process for the project, within the parameters listed below. As a minimum, provide at least one interim design submittal, at least one final design submittal before construction of a design package may proceed, and at least one Design Complete submittal that documents the accepted design.

3.2.1 Preliminary (35%) Design Package

Submit a preliminary design for review, representing a design effort that shall be of sufficient detail to show how the end users' functional and technical requirements will be met, indicate the designer's approach to the solution of technical problems, and show compliance with design criteria. This is not necessarily a hold point for the design process; the Contractor may designate the preliminary design submittal as a snapshot and proceed with design development at its own risk. Refer to paragraph PRELIMINARY DESIGN REQUIREMENTS for additional requirements.

After acceptance of the preliminary design package, revise the design package to incorporate the comments generated and resolved, perform and document a back-check review and submit the interim design package.

3.2.1.1 Preliminary Design Development Management

Maintain a fully functional configuration management system as described herein to track design revisions, regardless of whether or not there is a need for a formal preliminary design development review.

3.2.2 Interim (65%) Design Package

Submit a single interim design for review, representing a complete package with all design disciplines. This is not necessarily a hold point for the design process; the Contractor may designate the interim design submittal(s) as a snapshot and proceed with design development at its own risk. Refer to paragraph INTERIM DESIGN REQUIREMENTS for additional requirements.

After acceptance of the interim design package, revise the design package to incorporate the comments generated and resolved, perform and document a back-check review and submit the final design package.

3.2.2.1 Interim Design Development Management

Maintain a fully functional configuration management system as described herein to track design revisions, regardless of whether or not there is a need for a formal interim design development review.

3.2.2.2 Fast-Tracking

Exterior site work can be submitted as fast-track design submittals,

separate from the rest of the design. Contractor is not required to utilize the fast-track option.

Identify the project elements that will be fast-tracked in the Design Quality Control Plan.

3.2.2.3 Over-the-Shoulder Progress Review

To facilitate a streamlined design-build process, the Government and the Contractor may agree to one-on-one review or small group reviews, on-line, or at the Contractor's design offices or other agreed location, when practicable to the parties. Coordinate such reviews to minimize or eliminate disruptions to the design process. Due to limits on project funding, utilize the maximum virtual teaming methods. Facilitate these reviews with electronic format data transfer and collaboration. Through the partnering process, find ways to facilitate the quality assurance process and to facilitate meeting or bettering the design-build schedule.

3.2.2.4 Interim Design Development Review Waiver

The Government may agree to shorten or waive the formal interim design development review period for design package(s) if an effective, mutually agreeable partnering procedure is established and implemented for regular (e.g., weekly) over-the shoulder review. During the course of the procedure, keep the Government reviewers fully informed of the progress, contents, design intent, design documentation, and other pertinent factors of the design package.

3.2.3 Final (95%) Design Package

After acceptance of the interim design package, revise the design package to incorporate the comments generated and resolved, perform and document a back-check review and submit the final design package. Refer to paragraph FINAL DESIGN REQUIREMENTS for additional requirements.

3.2.4 Design Complete (100%) Package

After the final design submission and review conference for a design package, revise the design package to incorporate the comments generated and resolved in the final review conferences, perform and document a back-check review and submit the final, design complete documents, which represents released for construction documents. Refer to paragraph DESIGN COMPLETE CONSTRUCTION DOCUMENTS REQUIREMENTS for additional requirements.

3.3 DESIGN PLATFORM AND FILE FORMATS

Design the project using the systems and platforms defined below:

3.3.1 BIM

The BIM submittal format is Autodesk Revit Version 2022. Provide the BIM submittals as fully operable, compatible, and editable within the native BIM/CIM tools.

3.3.2 CIM

The CIM submittal format is Autodesk Civil 3D. Provide the CIM submittals as fully operable, compatible, and editable within the native BIM/CIM tools.

3.3.3 GIS

Submit all GIS data in Environment Systems Research Institute's (ESRI) ArcGIS File Geodatabase, in compliance with SDSFIE and appropriate ISO 19115-1 metadata. Email 802CES.CENME.GEOBASE@us.af.mil for current version.

3.3.4 CAD

3.3.4.1 Native CAD Authoring Content

All content produced through CAD authoring software outside of any object/element based BIM or CIM platform must be compliant with ERDC/ITL SR-23-1 and ERDC/ITL SR-24-3. Refer to Section 01 35 13.20 00 SPECIAL PROJECT PROCEDURES-CAD for the template files.

3.3.4.2 CAD Extracted From BIM/CIM Authoring Platforms

Provide editable CAD sheet files extracted from the BIM or CIM files. CAD content exported from a BIM or CIM modeling platform must comply with ERDC/ITL SR-23-1 and ERDC/ITL SR-24-3.

3.4 ADVANCED MODELING REQUIREMENTS

3.4.1 BIM and CIM Modeling Requirements

3.4.1.1 Minimum Modeling Requirements

Model to the requirements of the M3 (ATT-4) as identified in the approved Advanced Modeling PxP.

3.4.1.2 Graphics and Layer Standards

a. All content produced with object/element based BIM and CIM authoring software platforms must be compliant with ERDC/ITL SR-23-1.

b. All content produced with layer-centric BIM or CIM authoring software must be compliant with ERDC/ITL SR-24-3 and ERDC/ITL SR-23-1.

3.4.1.3 USACE Platform Configuration Standards

Revit Template, attached as ATT-6.

3.4.1.4 Classification

Include Facility Data referencing one or more classification system(s) identified in the M3 for all modeled elements.

3.4.1.5 Space/Room Data

In the model, include spatial data defining actual net square footage and data to develop the room finish schedule, including room names and numbers. Include program information to verify design space against programmed space, using this information to validate area quantities.

3.4.1.6 BIM Coordinate System

a. Coordinate System: UTM

b. Zone (for State Plane or UTM): 14N

c. Horizontal Units of Measure: US Survey Feet

d. Vertical Units of Measure: Feet

e. Horizontal Datum: NAD 83/2011

f. Vertical Datum: NAVD 88

3.4.1.7 CIM Coordinate System

a. Coordinate System: State Plane

b. Zone (for State Plane or UTM): Texas

c. Horizontal Units of Measure: US Survey Feet

d. Vertical Units of Measure: Feet

e. Horizontal Datum: NAD 83/2011

f. Vertical Datum: NAVD 88

3.4.1.8 Modeling Schedules

Comply with the NCS BIM Implementation section, part "2.4 Schedules." Produce schedules from, and link to, the Facility/Site Data within the Model. Document any exceptions in the PxP and submit for review.

3.4.1.9 Details and Enlarged Sections

Comply with the NCS BIM Implementation section, part "3.2 Model Coordination and Delivery." Derive all details and enlarged sections necessary for construction from the Model when possible. For those details and enlarged sections not derived directly from the Model, verify that geometry and data depicting the details and enlarged sections are consistent with Model elements. Details with significant drafted content such as 'standard' and 'typical' details cannot contradict the model and must utilize the model as an underlay when possible for the purposes of verification and coordination. Three dimensional, isometric, and section isometric details derived from the model are preferred. Create details and enlarged sections that are not derived from the Model using native authoring tools within the Model or be embedded within the Model.

3.4.1.10 Drawing Indices

Comply with the NCS BIM Implementation section, part "2.3 Sheet Organization." Where BIM authoring platform supports it, derive drawing indices from a model-driven schedule.

3.4.2 GIS

3.4.2.1 Minimum Modeling Requirements

Provide final geo-referenced GIS database of the new building footprint, and site surface and subsurface features that exist outside the building footprint(s) out to the project extents compliant with current SDSFIE

Adaptation.

Collect GIS georeferenced data pertaining to location and attribute data of subsurface utilities obtained at the time of project site excavation. Include the collection of elevation (Z) values in all data collection for underground utilities.

3.4.2.2 GIS Coordinate System

a. Coordinate System: Texas State Plane, UTM meters

b. Zone (for State Plane or UTM): South Central Zone (4204)

c. Horizontal Datum: NAD 83/2011; shall comply with Corps of Engineers 3rd Order, Class I standards

d. Vertical Datum: NAVD 88

e. Horizontal Units of Measure: US Survey Feet

f. Vertical Units of Measure: Feet

3.4.2.3 Standard GIS Database SDSFIE Adaptation

Use the Standard GIS Database SDSFIE Adaptation provided by the Installation Geospatial Support Office to produce the GIS deliverables required under this contract.

3.4.3 CAD

All content produced through layer-centric CAD authoring software outside of any object/element based BIM or CIM platform must be compliant with ERDC/ITL SR-24-3 and ERDC/ITL SR-23-1.

Refer to Section 01 35 13.20 00 SPECIAL PROJECT PROCEDURES-CAD for the template files.

3.5 DESIGN CONFIGURATION MANAGEMENT (DCM)

3.5.1 Procedures

Develop and maintain effective, DCM procedures to control and track all revisions to the design documents subsequent to the Interim Design Submission and continuing through submission of the As-Built documents. After the final design is accepted, this process provides control of and documents revisions to the accepted design (See Special Contract Requirement: Deviating From the Accepted Design). Submit the DCM procedures within the Design Quality Control Plan.

a. Include authorities and concurrences in the DCM system to authorize revisions, including documentation as to why the revision is required.

b. An internal system may be used with interactive Government concurrences or the Government's "Dr Checks Design Review and Checking System" may be used.

c. Make the DCM data available to the Government reviewers at all times.

3.5.2 Tracking Design Review Comments

Although an internal system for overall design configuration management is allowed, use the DrChecks Design Review and Checking System to initiate, respond to, resolve and track Government design review comments.

The Government will set up the project in DrChecks. Throughout the design process parties enter, track, and back-check comments using the DrChecks system. Designers of Record annotate comments timely and specifically to indicate exactly the action to be taken or why the action is not required. After the design review conference and prior to the next design submittal for the package, the DORs annotate those comments that require DOR action or design revision to show how and where it has been addressed in the design documents. These procedures are part of the required design configuration management plan. Flag comments considered critical by the conference participants.

3.5.2.1 DrChecks Initial Account Set-Up

Identify a contact person within the office to act as the administrator for all Contractor personnel, including subcontractors, that will be accessing the PROJNET Dr Checks system. Through the Contracting Officer, coordinate with the Project Manager and the District PROJNET administrator for system access, system instruction and comment process instructions.

PROJNET contains an introductory file and other tutorial material that can be accessed once user accounts have been established. Upon log in, select Portals/User Documentation.

3.5.2.2 DrChecks Review Comments

Annotate and resolve all comments prior to the next submittal. Include the DrChecks comments and responses in the design analysis for record in the next design submittal for the package.

a. Upon review of comments prior to the design review conference, the DOR(s) evaluate the comments. Include exactly what action will be taken or why action is not required.

b. After the review conference, the DOR(s) formally respond to each applicable comment in DrChecks a second time, prior to the next submittal, clearly indicating what action was taken and what drawing/spec/analysis changed. Designers of Record are encouraged to directly contact reviewers to discuss and agree to the formal comment responses rather than relying only on DrChecks and review meetings to discuss comments. With the next design submittal, reviewers will back-check answers to the comments against the new submittal, in addition to reviewing additional design work.

c. Clearly annotate in DrChecks those comments that require effort outside the requirements of the contract. Do not proceed with work outside the contract until a modification to the contract is properly executed.

3.6 DISCIPLINE DESIGN REQUIREMENTS

Provide design deliverables that include drawings, specifications, and design analysis for the part of design that the Contractor considers ready for review. All design deliverables shall comply with the applicable

requirements of UFC 1-200-01 and its references, ICC IBC, ICC IEBC, ICC IECC, ICC IgCC, ICC IMC, ICC IPC, NFPA 1, NFPA 70, and the additional requirements stated in this solicitation.

a. Drawings: Include comments from any previous design conferences incorporated into the documents to provide an interim design for the feature of work submitted.

b. Specifications: Provide specifications to ensure that all project design features are addressed, meeting current code requirements, and regulatory requirements. Use the track changes feature (redlines) to facilitate review of additions and deletions.

c. Design Analysis: Prepare and present design analysis under the authority of the DOR, with calculations necessary to substantiate and support all design documents submitted. Address design substantiation required by the applicable codes and references.

d. Building Rendering: Provide a draft color computer rendering with the final design submittal of the building exterior. Include a view of the entire building in perspective rendering, to encompass ground elevation of the building. After Government review and acceptance, provide a final rendering, including the following:

(1) Two ANSI C size (17 x 22) color prints, framed in a black colored frame and matted behind glass with project title underneath the print.

(2) One image file in JPG format sent through DoD SAFE for those in the submittal distribution list.

3.6.1 Environmental

Design projects in accordance with applicable requirements of the local regulatory agency with jurisdiction over the Installation and the criteria in UFC 3-810-01; whichever is more stringent.

Provide design in accordance with the following criteria precedence:

a. Federal regulations required for installations in the United States, U.S. Territories, and U.S. Possessions governed by U.S. law

b. Department of Defense Policies

c. Department of Defense Component specific Facility Criteria (FC)

d. State and local regulations for the project location

e. EM 385-1-1 Safety and Health Requirements

f. Final Governing Standards (FGS)

g. Protection of natural resources and minimization of potential environmental impacts

3.6.2 Geotechnical Investigations and Reports

Perform additional geotechnical investigations, as necessary, to determine the conditions for the actual locations of footings, other foundations and

site paving features and other site features.

Submit a final geotechnical evaluation report, prepared by the licensed geotechnical engineer, along with the first foundation design submittal. Make this information available as early as possible during the over-the-shoulder progress review process.

a. Summarize the subsurface conditions and provide recommendations for the design of appropriate utilities, foundations, floor slabs, retaining walls, embankments, and pavements.

b. Include compaction requirements for fill and backfill under buildings, sidewalks, other structures and open areas.

c. Recommend foundation systems to be used, allowable bearing pressures for footings, lateral load resistance capacities for foundation systems, elevations for footings, grade beams, slabs, etc.

d. Provide an assessment of post-construction settlement potential including total and differential.

e. Provide recommendations regarding lateral earth pressures (active, at-rest, passive) to be used in the design of retaining walls. Include the recommended spectral accelerations and Site Class for seismic design along with an evaluation of any seismic hazards and recommendations for mitigation, if required.

f. Include calculations to support the recommendations for bearing capacity, settlement, and pavement sections.

g. Include supporting documentation for all recommended design parameters such as Site Class, shear strength, earth pressure coefficients, friction factors, subgrade modulus, California Bearing Ratio (CBR).

h. Provide earthwork recommendations, expected frost penetration, expected groundwater levels, recommendations for dewatering and groundwater control and the possible presence of any surface or subsurface features that may affect the construction of the project such as sinkholes, boulders, shallow rock, old fill, old structures, soft areas, or unusual soil conditions.

i. Include pH tests, salinity tests, resistivity measurements, etc., required to design corrosion control and grounding systems.

j. Include the raw field data.

3.6.2.1 Inconsistency with the Preliminary Soils Information

Arrange a meeting with the Government subsequent to completion and evaluation of the site specific geotechnical exploration to outline any differences encountered that are inconsistent with the Government provided preliminary soils information. Clearly outline differences which require changes in the foundation type, or pavement and earthwork requirements from that possible and contemplated using the Government furnished preliminary soils investigation, which result in a change to the design or construction.

3.6.2.2 Vehicle Pavements

Provide flexible and rigid pavement designs, as applicable for the project, including design CBR and modulus of subgrade reaction and the required compaction effort for subgrades and pavement layers. Also, provide information on the types of base course materials available in the area and design strengths.

3.6.2.3 Certification

With the professional geotechnical engineer consultant, certify in writing that the design of the project has been developed consistent with the Contractor's final geotechnical report. Submit the certification, stamped by the consulting professional geotechnical engineer, with the first design submission. If revisions are made to the initial design submission, provide a new certification with the final design submission.

3.6.3 Civil Site and Utilities Design Contents

Include the following in the interim design for the site and utilities. This list is not intended to limit the contractor from providing different or additional information as needed to support the design presented.

a. Storm drainage design

b. Pavement design in coordination with the geotechnical investigation report.

c. Location and vicinity maps

d. Removal and/or relocation plan

e. Layout plan

f. Grading and drainage plan

g. Utility Plan: Identify and locate water lines, sanitary sewer lines, force mains, industrial waste lines, and other subsurface utility features in accordance with ASCE 38-22 at the Quality Level identified in Section 01 11 00 SUMMARY OF WORK

h. Road and parking area profiles

i. Utility Profiles: Indicate invert elevations of all drainage structures, manholes, storm drainpipe with size and invert elevations, ground profile, and new or existing structures or utilities crossing the new utilities.

j. Civil details sheet

k. Concrete Joint Plan: Provide a joint layout plan for each concrete apron, hardstands, road, pavement, etc

l. Erosion and Sediment Control Plan

m. Landscape, planting and turfing

n. Site specific civil calculations

3.6.3.1 Temporary Traffic Control

Provide temporary traffic control plan sheets in accordance with TMUTCD for any of the following situations:

a. Full roadway closure

b. Partial roadway closure

c. Pedestrian pathway obstruction

3.6.4 Structural Systems

3.6.4.1 General

a. Identify all loads to be used for design.

b. Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

c. Calculations for all principal roof, floor, and foundation members and bracing and secondary members.

d. Drawings showing principal members for roof and floor framing plans as applicable.

e. Foundation plan showing main foundation elements where applicable.

f. Typical sections for roof, floor, and foundation conditions.

g. Complete seismic analyses for all structural, mechanical, electrical, architectural, and building features as dictated by the seismic zone in which the facility is being constructed.

h. Identify the program name, source, and version used for computer generated calculations. Provide input data, including loads, loading diagrams, node diagrams, and documentation to illustrate the design. On the schematic models used for input,t show, as a minimum, nodes/joints, element/members, materials/properties, and all loadings; induced settlements/deflections; and a list of load combinations. Include an output listing for maximum and minimum stresses, forces, and deflections for each element, and the reactions for each loading case and combination.

i. Fully coordinate and integrate the overall structural design between two different or interfacing construction types, such as modular and stick-built or multistory, stacked modular construction. Provide substantiation of structural, consolidation/settlement analysis, etc., as applicable, through the interfaces.

3.6.4.2 Anti-Terrorism/Force Protection (ATFP)

Provide a design narrative and calculations where applicable, demonstrating compliance with each of the 22 standards in UFC 4-010-01, which includes Design of Buildings to Resist Progressive Collapse (use the most recent version of UFC 4-023-03, regardless of references to any specific version in UFC 4-010-01).

a. Where sufficient standoff distance is not being provided, show calculations for blast resistance of the structural system and building envelope. Show complete calculations for members subjected to ATFP loads, e.g., support members of glazed items (jambs, headers, sills) connections of windows to support members and connections of support members to the rest of the structure.

b. For three story and higher buildings, provide calculations to demonstrate compliance with progressive collapse requirements.

3.6.5 Architectural

Provide a project design that meets the criteria and requirements identified in UFC 3-101-01. Consider architectural compatibility with the local environment, functional requirements, economy of construction, energy conservation, interior and exterior details, and life cycle costs. Optimize special functionality, aesthetics, material quality, and maintainability of operations to meet intended functional requirements in the final design.

Include the following in the basis of design as needed to sufficiently describe the project design.

a. DesiComposite Floor Plans, floor plans, roof plans showing slope, exterior elevations, reflected ceiling plans, building sections and cross sections indicating floor to floor heights and wall sections which clearly delineate materials systems.

b. Interior building elevations, enlarged details, door details, window details, enlarged toilet plans and details, enlarged stairway plans and details.

c. Door and window schedules, finish schedules, hardware schedules, special signage and graphic requirements and all required built-in casework and equipment.

d. Life safety analysis and life safety plans showing the location of all fire rated partitions, fire rated doors, egress pathways and exits.

e. Air Barrier System: air barrier system plans and details (i.e. window flashing details, penetration in air barrier details, door flashing details, roofing /ceiling barrier interface details).

f. Composite floor plan showing all pre-wired workstations.

g. Comprehensive Interior Design Package, which includes Structural Interior Design (SID) and Furniture, Fixtures, and Equipment (FF&E) Design packages.

3.6.6 Interior Design

3.6.6.1 Structural Interior Design (SID) Requirements

Structural Interior Design includes all interior and exterior building related elements and components generally part of the building itself, such as wall finishes, ceilings finishes, floor coverings, marker/bulletin boards, blinds, signage, built in casework and all exterior building finishes. Develop the SID in conjunction with the furniture footprint.

3.6.6.1.1 Format and Schedule

a. Prepare and submit for approval an interior and exterior building finishes scheme for an interim design submittal. Conduct a meeting between the DOR and the appropriate Government officials to discuss the finish schemes prior to preparation of the schemes to be presented. Present original sets of the schemes to reviewers at an interim design conference.

b. At the conclusion of the interim phase, after resolutions to the comments have been agreed upon between DOR and Government reviewers, the Contractor may proceed to final design with the interior finishes scheme presented.

c. Submit the SID information and samples in letter size format using three ring binders with pockets on the inside of the cover. When there are numerous pages with thick samples, use more than one binder. Large D ring binders are preferred to O-ring binders. Use page protectors that are strong enough to keep pages from tearing out. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Maximum spread for fold out items is 25-1/2 inches. Provide cover and spine inserts sheets identifying the document as "Structural Interior Design" package. Include the project title and location, project number, Contractor/A/E name and phone number(s), submittal stage and date.

d. Design submittal requirements include, but are not limited to:

(1) Narrative of the Structural Interior Design Objectives: Include a narrative in the SID that discusses the building related finishes. Include topics that relate to base standards, life safety, sustainable design issues, aesthetics, durability and maintainability, discuss the development and features as they relate to the occupants requirements and the building design.

(2) Interior Color Boards

(a) Identify and key each item item on the color boards to the contract documents to provide a clear indication of how and where each item will be used. Arrange finish samples to the maximum extent possible by room type in order to illustrate room color coordination. Label all samples on the color boards with the manufacturer's name, patterns and colors name and number. Key or code samples to match key code system used on contract drawings.

(b) Material and finish samples indicating true pattern, color and texture. Provide photographs or colored photocopies of materials or fabrics to show large overall patterns in conjunction with actual samples to show the actual colors. Provide finish samples large enough to show a complete pattern or design where practical.

(c) Color boards include, but are not limited to, original color samples of

1. All walls finishes and ceiling finishes, including corner guards, acrylic wainscoting and wall guards/chair rail finishes.
2. All tile information, including tile grout color and tile patterns.

3. All flooring finishes, including patterns.
4. All door, door frame finishes and door hardware.
5. All signage, wall base, toilet partitions, locker finishes and operable/folding partitions and trim.
6. All millwork materials and finishes (cabinets, counter tops)
7. All window frame finishes and window treatments (sills, blinds)

(d) Color board samples reflect all actual finish textures, patterns and colors required as specified. Patterned samples sized to adequately show pattern and its repeat if a repeat occurs.

(3) Exterior Color Boards

(a) Prepare exterior finishes color boards in similar format as the interior finishes color boards, for presentation to the reviewers during an interim design conference. Provide original color samples of all exterior finishes including but not limited to the following:

All Roof Finishes
All Brick and Cast Stone Samples
All Exterior Insulation and Finish Samples
All Glass Color Samples
All Exterior Metals Finishes
All Window & Door Frame Finishes
All Specialty Item Finishes, including trim

(b) Identify each item on the exterior finishes color boards and key to the building elevations to provide a clear indication of how and where each item will be used.

3.6.6.1.2 Structural Interior Design Documents

Indicate the placement of extents of SID material, finishes and colors on related drawings and detail to define all interior work. The following is a list of minimum requirements:

3.6.6.1.2.1 Finish Color Schedule

Provide finish color schedule(s) in the contract documents. Provide a finish code, material type, manufacturer, series, and color designations. Key the finish code to the color board samples and drawings.

3.6.6.1.2.2 Interior Finish Plans

Indicate wall and floor patterns and color placement, material transitions and extents of interior finishes. Include a finish material/color board, presenting a physical representation of material selections.

3.6.6.1.2.3 Furniture Footprint Plans

Provide furniture footprint plans showing the outline of all freestanding and systems furniture for coordination of all other disciplines.

3.6.6.1.2.4 Interior Signage

Include interior signage plans or schedules showing location and quantities of all interior signage. Key each interior sign to a quantitative list indicating size, quantity of each type and signage text.

3.6.6.1.2.5 Interior Elevations, Sections and Details

Indicate material, color and finish placement.

3.6.6.2 Furniture, Fixtures and Equipment (FF&E) Requirements

This paragraph provides instructions, requirements, and responsibilities for the design of the Furniture, Fixtures, and Equipment (FF&E) package.

3.6.6.2.1 Scope and Design Requirements

FF&E design is the selection, layout, specification and documentation of furniture. This furniture includes but is not limited to:

Freestanding	seating, tables, file cabinets, desks and workstations, wood casegoods, storage cabinets, bookcases
Furniture Systems	
Non-Mission Unique Equipment	residential refrigerators, industrial shelving, workbenches
Accessories	lamps, artificial plants, trash receptacles, re-cycle containers, artwork

3.6.6.2.1.1 Project Requirements

Interview appropriate Government personnel to discuss and coordinate furniture and equipment requirements prior to development of the FF&E. This information includes the number of personnel to occupy the building, job functions and related furniture/office equipment to support the job function, room functions, rank and grade, and any applicable Army facility standards.

3.6.6.2.1.2 Design Direction

Design the FF&E package concurrently with the facility design. Limit the use of manufacturer representatives or dealers to providing specification and cost information only. Coordinate the FF&E package with the following:

a. Interior finish selections and generic furniture footprint plans developed as part of the Structural Interior Design (SID).

b. Building electrical outlets, switches, J-boxes, communication outlets and connections, and lighting as appropriate.

c. Other building features such as architectural elements, thermostats, location of TV's, and mission unique equipment (MUE).

d. Locate furniture in front of windows only if the top of the item falls below the window and unless otherwise noted, do not attach furniture including furniture systems to the building.

e. If a project has SIPRNET and/or NIPRNET, coordinate furniture layout with SIPRNET and NIPRNET separation requirements. Take special note of any Network Enterprise Center (NEC) requirements regarding the location of secure (SIPRNET) surface mounted conduit or raceways with associated clearances, wall drops, and wall lock boxes in order to coordinate with the location of desks and workstations that are to have SIPRNET accessibility. Verify that access required by NEC for SIPRNET box and conduit is provided. Coordinate with the User if there are any other types of secure cabling (classified networks) requirements for the project such as J-WIC's, and coordinate furniture and building location, separation and accessibility requirements with NEC.

f. Base executive wood casegoods on the facility type and rank of end user. Typically this is limited to command suites or to those areas specified by the Installation POC and, when applicable, Installation Design Guide for FF&E's.

3.6.6.2.2 Acquisition and Procurement

3.6.6.2.2.1 Mission Unique Equipment

Identify locations on the FF&E drawings of known MUE items for space planning purposes. MUE includes, but is not limited to, items such as:

Most commercial appliances
Fitness equipment
IT equipment (photocopiers, printers, etc.)
AV equipment (projectors, smart boards, flat screen display monitors, AV racks, AV carts)
Floor safes
Shredders
Clocks

3.6.6.2.2.2 Sources

a. Utilize GSA Schedule manufacturers and products in selection of FF&E for this project. Open market sources can be specified when an item is not available on GSA Schedule, minimize use ($3,000 per line item/$25,000 per contract) and do not specify without written

justification. Make a concerted effort to exclude items with proprietary features which would prevent competition.

b. Specify furnishings from within a manufacturer's family wherever possible while ensuring aesthetic, quality and functionality are not compromised. For example: Steelcase, Turnstone, Brayton International, Metro, and Vecta are all Steelcase companies. Each alternate should also be specified from a manufacturer's family of furniture, example: first set of alternates would be specified from Knoll's family of furniture and the second from Herman Miller family of furniture. Select office furniture, including case goods, tables, storage, and seating, that is compatible in style, finish and color.

c. It is acceptable to make selections from other than a manufacturer's family of furniture where costs are not reasonable for particular items, some items are not available or appropriate for the facility, or the items are not on GSA Schedule. If this occurs, specify product from an open line that is accessible by numerous dealerships.

d. See paragraph SUBMITTAL COMPONENTS for Product Data Sheet alternate manufacturer requirements.

3.6.6.2.3 Format and Submittal Requirements

Provide the design package in letter size format using three-ring binders with pockets on the inside of the cover. Provide project binder cover and spine inserts sheets identifying the document as "Furniture, Fixtures & Equipment" package and include the project name and location, Contractor/AE name and phone number(s), submittal phase and date. Include a footer on all text documents that lists the project name, location, date and submittal phase. See paragraph SUBMITTAL COMPONENTS on Color Boards for additional requirements. Use more than one binder when there are numerous pages with thick samples. Large D-ring binders are preferred to O-ring binders. Use color board material that is strong enough to keep pages from tearing out. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Fold out items may have a maximum spread of 25-1/2 inches. Produce drawings in an 11 x 17 inch format size. See paragraph DESIGN SUBMITTAL PROCEDURE for the number of copies required.

3.6.6.2.3.1 Interim Submittal

Include the following:

a. Design Narrative

b. Product Data Sheet

c. Drawings - Composite Furniture, Area Plans and Workstation Typicals

d. Color Boards

e. Cost Estimate

3.6.6.2.3.2 Final Submittal

Provide a final FF&E that includes any changes made as a result of interim review comments. Include the following:

a. Design Narrative

b. Product Data Sheet

c. Drawings - Composite Furniture, Area Plans and Workstation Typicals and Electrical and Communication Plans

d. Color Boards

e. Cost Estimate

3.6.6.2.3.3 Design Complete Submittal

Provide a design complete submittal that includes any changes made as a result of final review comments. Provide documents upon completion of the final architectural submittal or ten months prior to the contract completion date (whichever comes first), to ensure adequate time for furniture acquisition.

a. Design Narrative

b. Product Data Sheet

c. Drawings - Composite Furniture, Area Plans and Workstation Typicals and Electrical and Communication Plans

d. Color Boards

e. Cost Estimate

f. Include the following for furniture purchase in one of the Installation's copies:

(1) Disc 1: CAD drawings in the same format as the facility design. Provide all files, including any reference files, needed to view complete drawings.

(2) Disc 2

(a) All documents in PDF format including 11 x 17 inch drawings. Color boards are not required.

(b) Excel file of the cost estimate.

(3) Binder with paper copies of all FF&E components. Include binder cover and spine inserts with project information. Color boards are not required.

3.6.6.2.4 Submittal Components

Individually code all FF&E items. Use this code and cross-reference to all components of the FF&E.

3.6.6.2.4.1 Narrative of Interior Design Objectives

Provide a narrative description of the furniture, to include functional, safety and ergonomic considerations, durability, sustainability, aesthetics, and compatibility with the building design. Include the name and contact information for the DOR.

3.6.6.2.4.2 Product Data Sheet

Prepare one Product Data Sheet for each item specified in the design including typical workstations. This form identifies all information required to order each individual item. Include the following on the order form:

a. Item Code (example: C1, T1)

b. Item Name (example: Desk Chair, Training Table)

c. Manufacturer

d. Design Series

e. Model Number

f. GSA Information (FSC Group, contract number, expiration date)

g. Overall Dimensions

h. Finishes:

(1) Paint color, wood species and finish, and plastic laminate. In addition to the manufacturer's furniture wood finish information that is provided, provide the manufacturer name, pattern name and manufacturer's identification number of a wood-patterned plastic laminate which can be used as a reference control sample for bidding purposes on all items that require wood components or veneer.

(2) Fabric name and number, minimum Wyzenbeek Abrasion Test double rubs. Code to fabric samples on color boards. Use upholstery that is not proprietary to one furniture manufacturer, but accessible by multiple furniture manufacturers. Non-proprietary fabric includes, but is not limited to, textile manufacturer's fabrics that have been graded into furniture manufacturers fabric grades and are available through a manufacturer's GSA Schedule.

i. Quantity:

(1) Item location by room number and room name

(2) Quantity per room

(3) Total Quantity

j. Alternate Manufacturers: Provide 2 alternates for the major items that include, but are not limited to, desks and workstations, wood casegoods, furniture systems, seating, and tables. Supply alternates that are available on GSA Schedule and meet the requirements of the product data sheet. Provide manufacturer name, product series and model number for each alternate manufacturer.

k. Furniture Item Illustration: Provide a high quality illustration for each furnishing item specified in the package. The illustration can be a photograph or a line drawing.

l. Product Description: Provide non-proprietary, project specific salient characteristics for the item specified. In general this includes, but is not limited to:

(1) Functional features

(2) Style (aesthetics): narrative description of the item's appearance

(3) Sustainable design attributes

(4) Construction: construction materials and methods that relate to minimum quality standards required

(5) Testing requirements: BIFMA, etc.

(6) Ergonomic features and ranges

(7) Minimum warranty

(8) List any critical dimensions to include any maximum/minimum dimensions

m. For projects with furniture systems also provide the following minimum requirements information in the Product Description:

(1) Type of furniture systems (panel, stacking panels, spine wall, desk based system, or a combination)

(2) Minimum panel noise reduction coefficient (NRC)

(3) Minimum panel sound transfer coefficient (STC)

(4) Minimum flame spread and smoke development

(5) UL testing for task lighting and electrical system

(6) Panel widths and heights and their locations (this may be done on the drawings)

(7) Worksurface types and sizes (this may be done on the drawings)

(8) Type of storage components (lateral files, pedestals, overhead storage, shelving, tower storage)

(9) Worksurface edge type

(10) Varying panel/cover finish materials and locations (locations may be shown on the drawings)

(11) Keyboard requirements

(12) Lock and keying requirements

(13) Accessory components (examples: tack boards, marker boards, monitor arms, paper management, task lighting)

(14) Electrical and communication raceway requirement; type, capacity and location (base, beltline, below and/or above beltline)

(15) Locations of communication cables (base, beltline, below and/or above beltline, top channel)

(16) Types of electrical outlets required; including dedicated circuits

(17) Types of communication jacks (provided and installed by others)

(18) Locations of electrical outlets and communication jacks (this may be done on the drawings)

(19) Type of cable (examples: Cat. 6 (UTP and STP), fiber optic) system needs to support (provided and installed by others)

n. Special instructions for procurement ordering and/or installation (if applicable)

3.6.6.2.4.3 Drawings

a. Coordinate all drawings developed as part of the FF&E interior design with the generic furniture floor plans provided and approved as part of the project construction drawings. Reflect any changes in size, quantity, or location of FF&E items during the FF&E design, from that shown on the construction drawing generic furniture plans, in the construction drawings.

b. Do not provide manufacturer specific information such as product names and numbers on construction drawings Provide non-proprietary drawings.

c. Accurately reflect the proposed space planning and location of all FF&E items. Incorporate all applicable life safety codes and ABA/ADA requirements in space planning based on building type and utilization.

d. Although not included or specified as part of the FF&E design package, show and identify the location and approximate sizes for all Mission Unique (MUE) furnished equipment that will occupy floor space. This includes but is not limited to such items as photocopiers, printers, vending machines, kitchen equipment, etc. Clearly label MUE on the drawings.

e. Include, the following as a minimum:

(1) Composite Furniture Plans: Scaled drawings indicating location of all furniture and equipment to clearly illustrate overall space planning concept and intent.

(2) Area Furniture Plans: Scaled drawings showing detailed placement for each furniture, equipment, or accessory item. Provide a key plan identifying location in the building the area is located.

(a) Identify all FF&E items by code on the area plan. Include a legend on each sheet listing all item codes and names.

(b) Provide critical dimensions to include open office area aisle widths, and workstation spline wall centerline dimension to building walls.

(c) Identify all mission unique equipment by item code and/or name and as not in contract (NIC). In addition, identify construction contractor provided equipment that has a significant footprint

that will influence the location and arrangement of the FF&E furnishings items specified for this project.

(3) Workstation Typical Plans: Large scaled plans and elevations/isometrics showing workstation typical configurations which clearly identify major workstation components to include but not be limited to panels, storage, worksurfaces, accessories (monitor arms, keyboard trays, etc), and task lighting. Include location of all electrical and communication outlets, indicate height on panel by note or symbol.

(4) Electrical and Communication Plans: In order to facilitate and coordinate connectivity to the FF&E, also include copies of the building electrical and communications plans from the construction drawing set.

3.6.6.2.4.4 Color Boards

Accurately reflect the furniture fabric and finish patterns, textures and colors selected for the project. Provide samples of all finishes and fabrics indicated on the Product Data Sheet for each FF&E item.

Provide samples of sufficient size to adequately portray the pattern, color, and texture of the material. Photographic reproductions are prohibited. Label and cross-reference all samples to the furniture plans and Product Data Sheet. Arrange and group furniture finishes on the color boards corresponding to rooms or areas. Color boards include, but are not limited to, paint, plastic laminate, fabric, and wood finish (include plastic laminate reference control sample).

3.6.6.2.4.5 Cost Estimate

Base the cost estimate on GSA Schedules and organize by item code and name. Include separate line items for general contingency, installation, freight charges and any other related costs. Use installation and freight quotes from vendors in lieu of a percentage allowance when available. An estimate developed by a furniture dealership may be provided as support information for the estimate, but has to be separate from the DOR developed spreadsheet estimate.

a. Verification of Quantity: Ensure that quantity counts for each item matches between the product data sheet, plans and cost estimate.

b. Signature Block: Include a written statement at the bottom of the cost estimate that states all pricing is based on GSA Schedules. Provide a line for a government POC signature.

3.6.6.2.5 Furniture Specifications

Individually code all FF&E items. Use and cross-reference this code to all components of the FF&E.

3.6.6.2.5.1 Construction

a. Specify modesty or back panels on freestanding desks and workstations located against walls as a fixed 1/2 or 1/3 partial height panel, or a hinged panel. Coordinate fixed panel heights with the electrical and data outlet mounting heights shown on the construction drawings to provide direct access to these outlets.

b. Unless otherwise noted, provide lockable desks and workstations, filing cabinets and storage. Key all locks within a one person office the same; key all one person offices within a building differently. If an office or open office area has more than one workstation, key all the workstations differently, but key all locks within an individual workstation the same.

c. Use light-emitting diode (LED)/solid state lighting where task lighting is required in furniture.

3.6.6.2.5.2 Finishes and Upholstery

Keep placement of furniture systems panel fabric accent colors to a minimum.

Specify seating upholstery that meets Wyzenbeek Abrasion Test, 55,000 minimum rubs. Specify upholstery and finish colors and patterns that help hide soiling.

3.6.6.2.5.3 Sustainability

For all designs provided regardless of facility type, make every effort to implement all aspects of sustainability, including sustainable materials and products acquisition, to the greatest extent possible, where life cycle cost effective, for all the selections made in the FF&E package in accordance with UFC 1-200-02 requirements.

3.6.6.2.5.4 Furniture Systems

Minimize the number of workstation typicals including parts and pieces required to assist in future reconfiguration and inventorying.

3.6.6.2.5.5 Seating

a. Specify appropriate chair casters and glides for the floor finish where the seating is located.

b. Provide task seating that supports a minimum of 300 pounds.

c. Select ergonomic desk chairs with casters, waterfall front, swivel, tilt, variable back lock, adjustable back height or adjustable lumbar support, pneumatic seat height adjustment, seat depth adjustment, 7-11 inch arm height adjustment above the seat, and padded, contoured upholstered seat and back. Provide desk chairs with an adjustable seat height range of 4 1/2 inches, range to include 16-1/2 - 20 inches.

d. In heavy use lounge, waiting and reception areas provide seating with arms that are non-upholstered or upholstered with wood arm caps.

3.6.6.2.5.6 Training Tables

Provide reconfigurable, moveable and storable training tables. Specify power and data requirements, dollies, flip-top and modesty panels as required.

3.6.6.2.6 Warranties

Specify manufacturer's performance guarantees or warranties that include

parts, labor and transportation as follows:

Furniture System, unless otherwise noted	10 year minimum
Furniture System Task Lights	2 year minimum, excluding bulbs
Furniture System Fabric	3 year minimum
Metal Desks and Workstations	12 year minimum
Seating, unless otherwise noted	10 year minimum
Ergonomic Task Seating 24/7	10 year minimum
Seating Mechanisms and Pneumatic Cylinders	10 years
Ergonomic Task Seating Fabric (includes 24/7 seating)	5 years minimum
Tables, unless otherwise noted	10 year minimum
Table Mechanisms	5 year minimum
Table Ganging Device	1 year minimum
Wood Casegoods, Files and Storage	10 year minimum
Wood Framed Seating	10 year minimum
Wood Seating Fabric	3 years minimum
Items not listed above	1 year minimum

3.6.7 Plumbing Systems

a. List all references used in the design including Government design documents and industry standards.

b. Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

c. Detail calculations for systems such as sizing of domestic hot water heater and piping; natural gas piping; LP gas piping and tanks; fuel oil piping and tanks.

d. Show locations and general arrangement of plumbing fixtures and major equipment.

e. Plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Include natural gas (and meter as required), LP gas, fuel oil and other specialty systems as applicable.

f. Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required.

g. When the geotechnical report indicates expansive soils are present, indicate in the first piping design submittal how piping systems will be protected against damage or backfall/backflow due to soil heave (from penetration of slab to the 5 foot building line).

3.6.7.1 Utility Metering

Provide utility metering in accordance with the following requirements. See the Statement of Work for additional specific requirements.

a. Domestic Water - Advanced meter reading system compatible water metering solutions rely on accurately scaled output pulses, properly sized components according to peak demand, and peak pulse rates to eliminate the risk of saturating the receiving device ensuring the loss-less delivery of accurate gas pulse data into the system.

(1) Meter Requirements:

(a) Pulse kit must be able to produce a two-wire (Form A) pulse output via exterior rated RS485 cable in conduit.

(b) Meter or attached pulse kit must include a visual register or dial.

(c) Meter assemblies shall include upstream bronze wye strainers.

(d) Meter labels shall be white on black phenolic.

(2) Installation Guidelines:

(a) Surge protection is required on all communication cabling extending from the exterior to the interior of a facility.

(b) Surge suppression devices shall be installed within 3 feet of the cable entering the facility. Devices shall be easily accessible and labeled to aide in location during future troubleshooting efforts.

(c) Surge protection devices shall be Power over Ethernet compatible and housed within a lockable enclosure that allows space for a proper cable bend radius.

b. All translation devices and accumulators require lockable enclosures and dedicated power outlets.

3.6.8 HVAC Systems

3.6.8.1 Design Analysis

Provide complete design calculations for mechanical systems. Include computations for sizing equipment, compressed air systems, air duct design, and U-factors for ceilings, roofs and exterior walls and floors.

Employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation is required. Based on the results of calculations, provide a complete list of the materials and equipment proposed with the manufacturer's published cataloged product installation specifications and roughing-in data.

3.6.8.2 Mechanical Floor Plans

On the floor plans, show all principle architectural features of the building which affect the mechanical design. Also show the following:

Room designations
Mechanical legend and applicable notes
Location and size of all ductwork and piping
Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards)
Pre-Fabricated Paint Spray Booth
Paint Preparation Area
Exhaust fans and specialized exhaust systems
Thermostat location
Location of all air handling equipment
Air balancing information
Flue size and location
Piping diagram for forced hot water system (if used)

3.6.8.3 Equipment Schedule

Providee complete equipment schedules. Include the following in the Schedule:

Capacity
Electrical characteristics
Efficiency (if applicable)
Manufacturer's name
Optional features to be provided
Physical sizes
Minimum maintenance clearances

3.6.8.4 Details

Provide construction details, sections, elevations, etc., only where

required for clarification of methods and materials of design.

3.6.8.5 Controls

Submit complete HVAC controls equipment schedules, sequences of operation, wiring and logic diagrams, Input/Output Tables, equipment schedules, and all associated information. See the Statement of Work for additional specific requirements. Refer to ASHRAE GUIDELINE 34 and UFC 3-410-01 for minimum requirements for Input/Output points and sequences of operation for HVAC equipment.

3.6.9 Fire Protection and Life Safety

Provide plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Working plans and all other materials submittal must meet NFPA 13 requirements, with respect to required minimum level of detail. Include the following types of information:

a. The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways.

b. The location and coverage of any fire detection systems.

c. The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.).

d. The location of any other major fire protection equipment.

e. Indicate any hazardous areas and their classification.

f. Schedule describing the internal systems with the following information:

(1) Fire hazard and occupancy classifications
(2) Building construction type
(3) L/sec per square meter GPM/square foot sprinkler density
(4) Area of operation

3.6.9.1 Fire Protection/Suppression Analysis

a. Include building code analysis and basis of design for sprinkler and other suppression systems.

b. An FPE must perform all fire protection analyses. Provide the fire protection engineer's qualifications.

c. List all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.

d. Classification of each building in accordance with fire zone, building floor areas and height and number of stories.

e. Discussion and description of required fire protection requirements including extinguishing equipment, detection equipment, alarm equipment and water supply. Interface alarm and detection equipment to requirements of Electronic Systems.

f. Plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Include the following types of information:

(1) The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, and exit passageways.

(2) The location and coverage of any fire detection systems

(3) The location and coverage of any fire suppression systems (e.g. sprinkler risers, standpipes)

(4) The location of any other major fire protection equipment

(5) Indicate any hazardous areas and their classification

g. Schedule describing the internal systems with the following information: fire hazard and occupancy classifications; building construction type;L/second/square meter GPM/square foot sprinkler density; area of operation and other as required.

h. Provide hydraulic calculations based on water flow test for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. Include copies of water flow testing done to certify the available water source.

i. Meet NFPA 13 requirements with respect to required minimum level of detail on working plans and all other submitted materials.

j. When flexible sprinkler hose with fittings for direct connection to sprinklers is desired to be used, a request shall be submitted for approval by the DFPE. Utilize the Flexible Sprinkler Request form attached to this section specification.

3.6.9.2 Fire Protection and Life Safety Code Review

Use the information outlined in the document associated with this section at https://www.wbdg.org/dod/ufgs/ufgs-01-33-16-00-10 to provide the minimum requirement for development of Fire Protection and Life Safety Code submittals for all building projects. Additional and supplemental information may be used to further develop the code review. Insert N/A after criteria, which may be "not applicable".

3.6.10 Electrical Systems

3.6.10.1 Design Analysis

Include lighting calculations to determine maintained foot-candle levels, electrical load analysis and calculations, voltage drop calculations, electrical short circuit and protective device coordination analysis and calculations, and arc fault calculations.

3.6.10.2 Utility Metering

Provide electric utility metering in accordance with the following requirements. See the Statement of Work for additional specific requirements.

a. Meter Requirements:

(1) Meter shall meet accuracy class 0.2 requirements at a minimum, in accordance with ANSI C12.1.

(2) Current transformers shall meet the accuracy class of their associated electrical meter onboard memory at a minimum.

(3) Onboard Ethernet communications, 10/100 base with RJ45 connector or receptacle.

(4) Modbus/TCP communication protocol is required.

(5) Front display with ability to display all measured values.

(6) Minimum of one (1) external RS485 serial communications port.

(7) Minimum of two inputs that shall count pulses from other devices.

(8) Enclosure shall be designed and constructed in accordance with UL 508A.

(a) Meter enclosure must be ISO 9000 certified.

(b) Meter enclosure shall include a UL-label on interior door.

(9) Meter and enclosure when combined shall contain:

(a) Stand-alone, step-down transformer compatible with the system voltage that is being monitored, with a secondary voltage of 95-120V.

(b) 24V – 30W DC stand-alone DC power supply for external devices.

(c) Input/output terminal blocks.

b. Installation Guidelines:

(1) Meter enclosures shall be installed in interior locations, located 5 feet above finished floor level, and as close to the main distribution panel as possible. All metering device labels shall be white on black phenolic no smaller than 1 inch x 3 inch.

(2) Meter installations shall include the installation of new, properly sized, split or solid core current transformers. Rope-style or Rogowski current transformers are not authorized.

(a) Existing non fuctional current transformers are to be removed if possible. If removal is not possible, existing non functional current transformers must be shorted out.

(3) If current transformer or voltage tap installation method includes disturbing the bonds of existing cables or wiring within the gear, before and after IR scans shall be performed before removing and after torqueing the connections to ensure the integrity of the conductor bonds.

(4) Current transformers shall be insulated.

(5) Meter enclosures shall include fused, finger safe voltage disconnects and current transformer shorting blocks. Instructions explaining how to operate the current transformer shorting blocks must be visible inside each meter enclosure.

(6) The meter must not require utility outages for servicing.

(7) The current transformer shorting block ground wires must be installed on the load side.

(8) Meters shall have control power regardless of breaker position.

(9) All meter enclosures shall be fed by a load break 3-pole fusible disconnect switch that is external of the meter assembly. This safety disconnect switch shall be marked “Meter Disconnect NOT Service Equipment”.

(10) New electric meter supply voltages shall be acquired by means of voltage taps from the bus or system breakers for the voltage system that the advanced meter reading system is monitoring. Insulation piercing connectors are not an approved method and energized electrical work will not be permitted.

(11) Electric meters with connected gas or water meter inputs shall have two internal registers configured; one for a raw pulse count and one for a weighted pulse count based on the scaling of the connected gas or water meter. Ensure that scaling ratios configured into the electric meter are accurate.

(12) Metering devices must be enclosed in a lockable NEMA 4 or NEMA 4X enclosure.

(13) Meter shall be connected via CAT 6A cable to a data receptacle in the space. If no data rectacle is available, work shall include a new data drop and receptacle from the communications room to the space.

c. All translation devices and accumulators require lockable enclosures and dedicated power outlets.

3.6.10.3 Floor Plan

On the floor plans show all principle architectural features of the building which will affect the electrical design. Also show the following on the floor plan:

(1) Room designations
(2) Electrical legend and applicable notes
(3) Lighting fixtures, properly identified
(4) Switches for control of lighting
(5) Receptacles
(6) Location and designation of panelboards. Plans should clearly indicate type of mounting required (flush or surface) and be reflected accordingly in specifications.
(7) Service entrance (conduit and main disconnect)
(8) Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or

connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

3.6.10.4 Building Riser Diagram

From pad-mounted transformer to unit load center panelboard indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

3.6.10.5 Load Center Panelboard Schedule(s)

Indicate the following information in the schedule(s):

(1) Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting
(2) Branch Circuit Designations
(3) Load Designations
(4) Circuit Breaker Characteristics (Number of Poles, Trip Rating, AIC Rating)
(5) Branch Circuit Connected Loads (AMPS)
(6) Special Features

3.6.10.6 Lighting Fixture Schedule

Indicate the following information in the schedule:

(1) Fixture Designation
(2) General Fixture Description
(3) Number and Type of Lamp(s)
(4) Type of Mounting
(5) Special Features

3.6.10.7 Details

Provide construction details, sections, elevations only where required for clarification of methods and materials of design.

3.6.11 Telecommunications and Security

Provide details as required by UFC 3-580-01.

3.6.11.1 ATFP

Provide details as required by UFC 4-010-01.

3.6.11.2 Cybersecurity

Control systems (including stand alone systems from an Energy Management Control System) shall be planned, designed, acquired, executed and maintained in accordance with DODI 8500.01 and as required by Individual Service Implementation Policy. Cybersecurity Design shall be coordinated with 502 CEG, 502 CES, 802 CES, and 902 CES and shall meet local requirements as well as the following:

a. Applicable Division 25 specifications
b. UFC 3-401-01
c. UFC 3-410-01
d. UFC 3-410-02

e. UFC 3-420-01
f. UFC 3-490-06
g. UFC 3-530-01
h. UFC 3-540-01
i. UFC 3-570-01
j. UFC 3-580-01
k. UFC 3-600-01
l. UFC 4-010-06
m. AFI 32-1023 section 4.2.1.15
n. ATT-2 - Master FRCS RMF Controls

3.6.12 Specialty Equipment

3.6.12.1 Elevators

a. List of criteria codes, documents and design conditions used.

b. List of any required permits and registrations for construction of items of special mechanical systems and equipment.

c. Description of the proposed control system.

d. Description, approximate capacity and location of any special mechanical equipment for elevators.

3.6.12.2 Corrosion Control and Prevention Systems

Provide a report clearly describing structures, systems or components in soil or water to be protected. Describe methods proposed for protection of each. The report must be stamped by the licensed corrosion engineer or NACE specialist with the first design submission.

The designer must be qualified to engage in the practice of corrosion control of buried or submerged metallic surfaces. Either accreditation or certification by the National Association of Corrosion Engineers (NACE) as a NACE Accredited Corrosion Specialist or a NACE certified Cathodic Protection Specialist, or a registered professional engineer with a minimum of five years experience in corrosion control and cathodic protection is required.

3.6.12.3 POL Tanks

Installation of underground storage tanks and vaulted aboveground storage tanks are not authorized on JBSA. All notifications to the Texas Commission on Environmental Quality for tank installations and registrations will be made by the JBSA Environmental Office with contractor provided information.

3.7 PRELIMINARY DESIGN REQUIREMENTS

At least one preliminary design submittal, review and review conference is required for each design package. Additional preliminary design conferences may be scheduled, as needed, to assure continued Government concurrence with the design work. Include the preliminary submittal review periods and conferences in the Section 01 32 01.00 30 PROJECT SCHEDULE and indicate in periodic schedule updates what part of the design work is at what percentage of completion.

3.7.1 Submission Review

After receipt of an Preliminary Design submission, the Government requires 21 calendar days after receipt of the submission to review and comment on the preliminary design submittal.

a. For each preliminary design review submittal, the Contracting Officer will furnish a single consolidated, validated set of comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the Contract.

b. The Government reserves the right to reject design document submittals if comments are deemed significant.

c. Furnish disposition of all comments, in writing, through DrChecks. If there are technical disagreements with any comments, clearly outline, with justification, the reasons for disagreement and noncompliance within five calendar days after receipt of these comments.

d. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the Contracting Officer in writing immediately.

3.8 INTERIM DESIGN REQUIREMENTS

At least one interim design package, review and review conference is required for each design package (except that the Contractor may, upon Government approval, skip the interim design submission and proceed directly to final design of the sitework and utilities package). Additional interim design conferences or over-the-shoulder reviews may be scheduled, as needed, to assure continued Government concurrence with the design work. Include the interim submittal review periods and conferences in the Section 01 32 01.00 30 PROJECT SCHEDULE and indicate in periodic schedule updates what part of the design work is at what percentage of completion. See also paragraph INTERIM DESIGN DEVELOPMENT REVIEW WAIVER for a waiver to the formal interim design review.

3.8.1 Submission Review

After receipt of an Interim Design submission, the Government requires 21 calendar days after receipt of the submission to review and comment on the interim design submittal.

a. For each interim design review submittal, the Contracting Officer will furnish a single consolidated, validated set of comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the Contract.

b. The Government reserves the right to reject design document submittals if comments are deemed significant.

c. Furnish disposition of all comments, in writing, through DrChecks. If there are technical disagreements with any comments, clearly outline, with justification, the reasons for disagreement and noncompliance

within five calendar days after receipt of these comments.

d. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the Contracting Officer in writing immediately.

3.8.2 Interim Review Conference

Hold an Interim Review conference for each design submittal at either the installation or as agreed upon as part of the partnering process. Attendees include, at a minimum, the DOR(s) involved in development of the design submittal. Schedule the conference to take place the week after the receipt of the comments. Notify the Contracting Officer of any comments that with concurrence would require further design development.

For smaller fast-track packages that involve only a few reviewers, the parties may agree to alternative conferencing methods, such as teleconferencing, or televideo, where available, as determined through Partnering.

3.8.3 Conference Documentation

3.8.3.1 Minutes and Comment Process

Provide meeting minutes within two work days after the conference adjourns, and enter final resolution of all comments into DrChecks. Include copies of comments, annotated with comment action agreed on, with the minutes.

a. Resolve issues remaining open after the conference adjourns by immediate follow-on action to close the issue within 30 calendar days.

b. Incorporate comments as agreed upon during the conference.

3.8.3.2 Availability

In order to facilitate the Government code and contract conformance reviews, identify, track resolution of, and maintain all comments and action items generated during the design review process. Make this available to the designers and reviewers prior to the subsequent design reviews.

3.9 FINAL DESIGN REQUIREMENTS

Provide final design packages that consist of 100 percent complete drawings, specifications, submittal register, design analyses for Government review and acceptance.

a. Include any permits required by the contract for each package submitted.

b. In order to expedite the final design review, prior to the conference, ensure that the design configuration management data and all review comment resolutions are up-to-date.

c. Perform independent technical reviews and back-checks of previous comment resolutions, as required by Section 01 45 00 QUALITY CONTROL.

3.9.1 Submission Review

After receipt of an Final Design submission, the Government requires 21 calendar days after receipt of the submission to review and comment on the preliminary design submittal. Design review is separate from the Section 106 review. A Section 106 review requires 45 calendar days after completion of the design review, assuming the final design is accepted by the Government.

a. For each final design review submittal, the Contracting Officer will furnish a single consolidated, validated set of comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the Contract.

b. The Government reserves the right to reject design document submittals if comments are deemed significant.

c. Furnish disposition of all comments, in writing, through DrChecks. If there are technical disagreements with any comments, clearly outline, with justification, the reasons for disagreement and noncompliance within five calendar days after receipt of these comments.

d. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the Contracting Officer in writing immediately.

3.9.2 Design Drawings

Submit drawings complete with all contract requirements incorporated into the documents to provide a 100 percent design for each package submitted. In addition to all native Advanced Modeling files, provide separate electronic files in a PDF format.

3.9.2.1 Geo-Referenced Data

Capture geo-referenced coordinates of all changes that will be made to the existing site (facility footprint, utility line installations and alterations, roads, parking areas, etc) as a result of this contract.

Close-out requirements at the as-built stage, require final geo-referenced GIS Database of the new facility along with all exterior modifications. The Government will incorporate this data set into the Installation's GIS Masterplan or Enterprise GIS System. See also, Section 01 78 00 CLOSEOUT SUBMITTALS.

3.9.3 Design Analysis

Provide a design analysis with calculations necessary to validate and support all design work submitted. Expand and advance calculations and information presented in the interim design stage to the current level of design. The responsible DOR(s) stamp, sign and date the design analysis.

3.9.4 Specifications

Provide specifications 100 percent complete and in final form.

3.9.5 Submittal Register

Provide an updated, cumulative submittal register with each design package that identifies the design and construction submittals required by that design package. The submittal register shall be generated by SpecsIntact using the instructions in ATT-1. File shall be in XLSX format.

3.9.6 Preparation of DD Form 1354 (Transfer of Real Property)

This form itemizes the types, quantities and costs of various equipment and systems that comprise the project, for the purpose of transferring the new construction project from the Corps Construction Division to the Installation's inventory of real property. The Government will furnish the Contractor's design manager a DD Form 1354 checklist to use to produce a draft Form 1354. Submit the completed checklist and prepared draft Form DD 1354 with the 100 percent design. The Government will use these documents to complete interim and final DD 1354s for turnover of a portion or all of the construction project.

3.10 DESIGN COMPLETE CONSTRUCTION DOCUMENT REQUIREMENTS

After the Final Design Submission and Review Conference, revise the design documents for the design package to incorporate the comments generated and resolved in the final review conference. Perform and document a back-check review and submit the final, design complete package. The deliverable includes all documentation and supporting design analysis in final form, as well as the final review comments, disposition and the back-check. As part of the quality assurance process, the Government may perform a review of the released for construction documentation. Promptly correct any errors or omissions found during the Government review.

3.10.1 Submission Review

After receipt of an Design Complete submission, the Government requires 14 calendar days after receipt of the submission to review and comment on the preliminary design submittal.

a. For each design complete review submittal, the Contracting Officer will furnish a single consolidated, validated set of comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the Contract.

b. The Government reserves the right to reject design document submittals if comments are deemed significant.

c. Furnish disposition of all comments, in writing, through DrChecks. If there are technical disagreements with any comments, clearly outline, with justification, the reasons for disagreement and noncompliance within five calendar days after receipt of these comments.

d. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the Contracting Officer in writing immediately.

3.11 ACCEPTANCE AND RELEASE FOR CONSTRUCTION

After acceptance of the Design Complete Construction Document(s) the Contracting Officer will allow construction to start for that design package.

Government review and acceptance of design submittals is for contract conformance only and does not relieve the Contractor from responsibility to fully adhere to the requirements of the contract, including the Contractor's accepted proposal, or limit the Contractor's responsibility of design as prescribed under Special Contract Requirement: "Responsibility of the Contractor for Design" or limit the Government's rights under the terms of the contract. The Government reserves the right to rescind inadvertent acceptance of design submittals containing contract deviations not separately and expressly identified in the submittal for Government consideration and approval.

ATT-1 - SpecsIntact Guidance for Contractors

ATTACHED IN APPENDIX A

ATT-2 - Master FRCS RMF Controls

ATTACHED IN APPENDIX A

ATT-3 - Advanced Modeling PXP Template

ATTACHED IN APPENDIX A

ATT-4 - Minimum Modeling Matrix (M3)

ATTACHED IN APPENDIX A

ATT-5 - Advanced Modeling PXP Submittal Review Checklist

ATTACHED IN APPENDIX A

ATT-6 - Revit 2020 Template

ATTACHED IN APPENDIX A

ATT-7 - M3 Revit

ATTACHED IN APPENDIX A

ATT-8 - JBSA FLEXIBLE SPRINKLER REQUEST FORM

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ATT-1 - HPSB Checklist

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SUSTAINABILITY REQUIREMENTS AND REPORTING
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PART 1 GENERAL

1.1 REFERENCES

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

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE)

HPSB Guiding Principles	(2016) Guiding Principles for Sustainable Federal Buildings and Determining Compliance with the Guiding Principles for Sustainable Federal Buildings

INTERNATIONAL CODE COUNCIL (ICC)

ICC IgCC	(2024) International Green Construction Code

U.S. DEPARTMENT OF AGRICULTURE (USDA)

FSRIA 9002	Farm Security and Rural Investment Act Section 9002 (USDA BioPreferred Program)

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-200-02	(2020; Change 3, 2025) High Performance and Sustainable Building Requirements
UFC 3-210-10	(2023) Low Impact Development
UFC 3-600-01	(2016; with Change 6, 2021) Fire Protection Engineering for Facilities

U.S. DEPARTMENT OF ENERGY (DOE)

Energy Star	(1992; R 2006) Energy Star Energy Efficiency Labeling System (FEMP)

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

40 CFR 247	Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2 SUMMARY

This section includes requirements for Sustainability documentation and reporting submittals per the federally mandated High Performance and Sustainable Building (HPSB) or HPSB "Guiding Principles" (GP), in accordance with UFC 1-200-02 High Performance and Sustainable Building Requirements, and other identified requirements.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Sustainability Action Plan; G

SD-05 Design Data

Final Design High Performance and Sustainable Building Checklist; G

Final Design Sustainability eNotebook; G

SD-11 Closeout Submittals

Final High Performance and Sustainable Building Checklist; G

Final Sustainability eNotebook; G

Amended Final Sustainability eNotebook; G

Amended Final High Performance and Sustainable Building Checklist; G

1.4 GUIDING PRINCIPLES VALIDATION (GPV)

Provide the following sustainability activities and documentation to verify achievement of HPSB Guiding Principles Validation (GPV):

a. Analysis of each Guiding Principle Requirement and how project complies. Include final government approved narrative(s) in the HPSB Checklist submittal. Multiple checklists indicate multiple buildings that require individual HPSB Checklist tracking.

b. No changes to the HPSB Checklist are allowed without approval from the Contracting Officer, in accordance with Section 01 33 00 SUBMITTAL REQUIREMENTS. Immediately bring to the attention of the Contracting Officer any project changes that impact meeting the approved HPSB Guiding Principles Requirements for this project. Demonstrate the change will not increase the life-cycle cost and maintains or improves the building performance.

c. Documentation of all work required to incorporate the applicable HPSB Guiding Principles requirements indicated on the HPSB Checklist and in this contract, including all "S" submittals.

d. Sustainability Action Plan.

e. Design and construction related documentation for the project Sustainability eNotebook and keep updated with regularly-scheduled Construction Quality Control Meetings. Include design and construction related documentation containing the following components:

(1) HPSB Checklist(s)

(2) Sustainability Action Plan

(3) Documentation illustrating HPSB Guiding Principles Requirements compliance, including "S" submittals

1.4.1 Sustainability Action Plan

Include the following information in the Sustainability Action Plan:

a. Analysis of each HPSB Guiding Principles Requirement and how project will comply. Final government approved narrative(s) must be included in the HPSB Checklist submittal.

b. Name and contact information for: Contractor's Point of Contact (POC) ensuring sustainability goals are accomplished and documentation is assembled. For TPC that include on-site visit by third party representative, provide list of required attendees.

c. Indoor Air Quality plan.

1.4.2 Calculations

Provide all design data, calculations, product data, labels and product certifications required in this specification to demonstrate compliance with the HPSB Guiding Principles Requirements.

1.5 SUSTAINABILITY SUBMITTALS

Provide HPSB Checklist and other documentation in the Sustainability eNotebook to indicate compliance with the sustainability requirements of the project.

1.5.1 High Performance Sustainable Building (HPSB) Checklist

Provide construction documentation that provides proof of, and supports compliance with, the completed HPSB Checklist.

1.5.1.1 HPSB Checklist Submittals

Submit updated HPSB Checklist with each Sustainability eNotebook submittal. Include the final HPSB Checklist(s) with the interim DD1354 Real Property Record Submittal.

1.5.2 "S" Submittals for Sustainability Documentation

"S" submittals are the sustainability documentation requirements cited in the various sections of this contract. Submit the GPV sustainability documentation required in this section as "S" submittals in all affected UFGS Sections.

a. Highlight GPV compliance data in "S" submittal.

b. Add "S" submittals to the Sustainability eNotebook only after submittal approval, and bookmark them as required in paragraph SUSTAINABILITY ENOTEBOOK below.

c. Ensure all approved "S" submittals are included in each Sustainability

eNotebook submittal.

1.5.3 Sustainability eNotebook

The Sustainability eNotebook is an electronic organizational file that serves as a repository for all required sustainability submittals. To support documentation of compliance with an approved HPSB checklist, provide and maintain a comprehensive and current Sustainability eNotebook. Include all required data in Sustainability eNotebook, to support full compliance with the HPSB Guiding Principles Requirements, including:

a. HPSB checklist

b. Sustainability Action Plan

c. Calculations

d. Labels

e. "S" submittals

1.5.3.1 Sustainability eNotebook Format

Provide Sustainability eNotebook in the form of an Adobe PDF file; bookmark each HPSB Guiding Principles Requirement and sub-bookmark at each document. Match format to HPSB Guiding Principles numbering system indicated herein. Maintain up-to-date information, such as spreadsheets, templates, with each current submittals.

Contracting Officer may deduct from the monthly progress payment accordingly if Sustainability eNotebook information is not current and on track per project goals.

1.5.3.2 Sustainability eNotebook Submittal Schedule

Provide Sustainability eNotebook Submittals at the following milestones of the project:

a. Final Design Sustainability eNotebook

Submit updated Sustainability eNotebook with updated Final Design High Performance and Sustainable Building Checklist with the final design, in accordance with Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD). If issues relating to achieving the sustainability goals of the project are subsequently identified, identify reasons and mitigation from DOR, and resubmit to the Contracting Officer for approval.

b. Construction Quality Control Meetings.

Provide up-to-date GP documentation in the Sustainability eNotebook for each meeting.

c. Final Sustainability eNotebook

Submit updated Sustainability eNotebook with updated Final High Performance and Sustainable Building Checklist, in accordance with Section 01 33 00 SUBMITTAL PROCEDURES at Beneficial Occupancy Date

(BOD). Final progress payment retainage may be held by Contracting Officer until Final Sustainability construction phase documentation is complete.

d. Amended Final Sustainability eNotebook

Amend and resubmit the Amended Final Sustainability eNotebook with Amended Final High Performance and Sustainable Building Checklist, to include post-occupancy corrections, updates, and requirements. Final progress payment retainage may be held by Contracting Officer until amended final sustainability documentation is complete. Submit the Amended Final Sustainability eNotebook Submittal on DVDs to the Contracting Officer no later than 30 days after final GP determination.

1.6 DOCUMENTATION REQUIREMENTS

a. Incorporate each of the following HPSB Guiding Principles requirements into project and provide documentation that proves compliance with each listed requirement. Items below are organized by HPSB Guiding Principles. For life-cycle cost analysis requirements, one document with all analyses is acceptable, with Contracting Officer approval.

b. For each of the following paragraphs that require the use of products listed on Government-required websites, provide documentation of the process used to select products, or process used to determine why listed products do not meet project performance requirements.

1.6.1 Integrated Design Process

For the submittal documentation below, demonstrate compliance with UFC 1-200-02.

1.6.1.1 Design Submittal Documentation

a. List the sustainability integrated design team, and a description of their roles in all stages of a project's planning and delivery:

(1) Include Contractor's Sustainability Coordinators; Architecture and Engineering disciplines involved on the project, and the DOR in charge of the overall project and each discipline; Construction Subcontractors and the company representatives that align with each architectural and engineering discipline, Planning, Public Works, Environmental Specialist and other appropriate installation personnel.

(2) Describe their roles and responsibilities and plan-of-action for how each team member will be involved to achieve the project sustainability requirements, and how the Contractor will coordinate with Government personnel.

(3) Maintain an up-to-date list with descriptions throughout the project.

b. Provide narratives that:

(1) Indicate performance goals for siting, energy, water, materials, and indoor environmental quality along with other comprehensive design goals and ensures incorporation of these goals throughout

the design and life cycle of the building.

(2) Demonstrate integration of the goals into design and construction.

(3) Demonstrate collaboration with other providers, such as Commissioning Authority.

1.6.2 Commissioning (Cx)

Develop and incorporate Commissioning requirements into the documents, in accordance with Section 01 91 00.15 BUILDING COMMISSIONING.

1.6.3 Optimize Energy Performance

For the submittal documentation below, demonstrate compliance with UFC 1-200-02.

1.6.3.1 Design Submittal Documentation

a. Narrative that provides a summary of:

(1) The decision-making process leading to the selection of at least three energy-efficient solutions (for each system contributing to the energy footprint of the building) to be analyzed; and the selected design solution(s)

1.6.4 Energy Efficient Products

Provide only energy-using products that are Energy Star rated or have Federal Energy Management Program (FEMP) recommended efficiency. Where Energy Star or FEMP recommendations have not been established, provide most efficient products that are life-cycle cost-effective. Provide only energy using products that meet FEMP requirements for low standby power consumption. Energy efficient products can be found at: https://www.energy.gov/eere/femp/federal-energy-management-program and http://www.energystar.gov/.

For construction submittal documentation, provide proof that product is labeled energy efficient and complies with the cited requirements.

1.6.5 Building-level Power Metering

Provide building-level meters for electricity, natural gas, and steam where applicable.

1.6.5.1 Design Submittal Documentation

Provide design drawings that highlight meter locations on the site.

1.6.5.2 Construction Submittal Documentation

Provide manufacturer's data validating compatibility with base-wide system and component advanced meter requirements.

1.6.6 Indoor Water Use

Provide Construction Documentation proof that fixtures are labeled EPA WaterSense, for products available with EPA WaterSense labeling; for all other fixtures, proof they comply with EPA WaterSense efficiency

requirements.

1.6.7 Indoor Water Metering

Provide building-level meters for potable water use. Provide the requirements cited in the following paragraphs:

1.6.7.1 Design Submittal Documentation

Provide design drawings that highlight meter locations on the site.

1.6.7.2 Construction Submittal Documentation

Provide manufacturer's data validating compatibility with base-wide system and component advanced meter requirements.

1.6.8 Stormwater Management

Develop and incorporate stormwater requirements into the documents. Submit design and construction documentation required by UFC 3-210-10 and Service processes, as proof of this tracking requirement.

1.6.9 Ventilation and Thermal Comfort

For the submittal documentation below, demonstrate compliance with UFC 1-200-02.

1.6.9.1 Design Submittal Documentation

Provide design drawings and calculations that demonstrate HVAC systems and the building envelope have been designed to meet the requirements.

1.6.10 Moisture Control

Provide the following:

1.6.10.1 Design Submittal Documentation

Provide drawings of building envelope details and HVAC humidity controls.

1.6.10.2 Construction Submittal Documentation

Ensure construction materials are separated and protected in accordance with other sections in this contract document, with adequate humidity controls during construction. In accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA, includes plan for ongoing building moisture control.

Coordinate with the moisture control requirements of Section 01 45 00 QUALITY CONTROL.

1.6.11 Reduce Volatile Organic Compounds (VOC) (Low-Emitting Materials)

Meet the requirements of Table 3-1 at the end of this specification.

For Construction submittal documentation, provide certifications or labels that demonstrate compliance with cited requirements, based on the attached TABLE 3-1.

1.6.12 Indoor Air Quality During Construction

Prior to construction, create indoor air quality plan. Develop and implement an IAQ construction management plan during construction and flush building air before occupancy.

For new construction and for renovation of unoccupied existing buildings, meet the requirements of ICC IgCC 1001.3.1.5 (10.3.1.4) Indoor Air Quality (IAQ) Construction Management. Provide moisture control to prevent mold growth.

Provide documentation showing that after construction ends and prior to occupancy, HVAC filters were replaced and building air was flushed out in accordance with the cited standard.

1.6.13 Recycled Content

Comply with 40 CFR 247. Refer to: https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program for assistance identifying products cited in 40 CFR 247. Selected products must comply with non-proprietary requirements of the Federal Acquisition Regulation and must meet performance requirements.

1.6.13.1 Construction Submittal Documentation

a. Provide manufacturers' documents stating the recycled content by material, or written justification for claiming one of the exceptions allowed on the cited website.

b. Substitutions: Submit for Government approval for proposed alternative products or systems that provide equivalent performance and appearance and have greater contribution to project recycled content requirements. For all such proposed substitutions, submit with the Sustainability Action Plan accompanied by product data demonstrating equivalence.

c. In order to complete compliance with FAR 52.223-9 Estimate of Percentage of Recovered Material Content for EPA Designated Items, refer to submittal requirement for recycled/recovered material content in Section 01 78 00 CLOSEOUT SUBMITTALS.

1.6.14 Bio-Based Products

Provide products and materials composed of the highest percentage of bio-based materials (including rapidly renewable resources and certified sustainably harvested products), consistent with FSRIA 9002 USDA BioPreferred Program, to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user and when available at a reasonable cost. Use only supplies and materials of a type and quality that conform to applicable specifications and standards.

Comply with FSRIA 9002 USDA BioPreferred Program. Refer to www.biopreferred.gov for the product categories and BioPreferred Catalog. Selected products must comply with non-proprietary requirements of the Federal Acquisition Regulation and must meet performance requirements. Provide the following documentation:

a. USDA BioPreferred label for each product; for bio-based products used

on project but not listed with BioPreferred program, provide bio-based content and percentage.

b. In order to complete compliance with FAR 52.223-1 Biobased Product Certification, refer to submittal requirement for biobased products in Section 01 78 00 CLOSEOUT SUBMITTALS, paragraphs CERTIFICATION OF EPA DESIGNATED ITEMS and CERTIFICATION OF USDA DESIGNATED ITEMS.

1.6.15 Waste Material Management (Recycling – Design)

For the submittal documentation below, demonstrate compliance with UFC 1-200-02.

For design submittal documentation, provide drawing showing an appropriately sized and placed dedicated storage area for recyclables.

1.6.16 Waste Material Management (Recycling – Construction)

Divert demolition and construction debris in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

1.6.17 Address Climate Change Risk

For design submittal documentation, provide narrative of decisions for design associated with scoped requirements.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 SUSTAINABILITY COORDINATION

Provide sustainability focus and coordination at all meetings to achieve sustainability goals. Coordinate meeting requirements with other UFGS Sections meeting requirements in this project. Ensure the designated sustainability professional responsible for GP documentation participates in these meetings to coordinate documentation completion. Review GP sustainability requirements, HPSB Checklist documentation, Sustainability Action Plan, and completeness status of Sustainability eNotebook at the following meetings:

a. Pre-Construction Conference

b. Construction Quality Control Meetings

Refer to Section 01 30 00 ADMINISTRATIVE REQUIREMENTS for Post Award Meetings.

c. Post Award Meeting

d. Design Quality Assurance Meetings

e. Design Complete Review Meetings

Conduct review no later than 60 days after final design complete submission and identify any outstanding issues that affect correct completion of all documentation requirements, and actions that will

achieve requirements. Conduct corrective actions.

f. Facility Turnover Meetings

Conduct review no later than 60 days before final turnover and identify any outstanding issues that affect correct completion of all documentation, and actions that will achieve requirements. Conduct corrective actions prior to turnover, to ensure all requirements are achieved.

3.2 TABLE 3-1 VOLATILE ORGANIC COMPOUNDS (VOC) (LOW EMITTING MATERIALS) REQUIREMENTS

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements

Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)

MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	EMISSIONS REQUIREMENTS
Adhesives and Sealants	**CDPH/EHLB/Standard method V1.1 (California Section 01350)** (Use "office" or "classroom" space limits for all applications)	or	Adhesives (carpet, resilient, wood flooring; base cove; ceramic tile; drywall and panel; primers) Sealants (acoustical; firestop; HVAC Air duct; primers) Caulks	**SCAQMD Rule 1168** (Use "other" category for HVAC duct sealant) (for firestop adhesive, UFC 3-600-01 overrides conflicting requirements)
			Aerosol adhesives	**Section 3 of Green Seal Standard GS-36** (except: cleaners, solvent cements, and primers used with plastic piping and conduit in plumbing, fire suppression, and electrical systems; HVAC air duct sealants when the application space air temp is less than 40 F (4.5 C).

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)				
MATERIAL CATEGORY	**EMISSIONS REQUIREMENT**		**MATERIALS WITH ADDED VOC REQUIREMENT**	**EMISSIONS REQUIREMENTS**
Paints and Coatings	**CDPH/EHLB/Standard method V1.1 (California Section 01350)** (Use "office" or "classroom" space limits for all applications)	or	Flat and nonflat, nonflat high-gloss, specialty, basement specialty, fire-resistive, floor, low-solids, rust preventative, wood, reflective wall coatings; concrete/masonry sealers; primers; sealers; undercoaters; shellacs (clear and opaque); stains; varnishes; conjugated oil varnish; lacquer; clear brushing lacquer	**Green Seal Standard GS-11**

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)				
MATERIAL CATEGORY	**EMISSIONS REQUIREMENT**		**MATERIALS WITH ADDED VOC REQUIREMENT**	**EMISSIONS REQUIREMENTS**
Paints and Coatings	**CDPH/EHLB/Standard method V1.1 (California Section 01350)** (Use "office" or "classroom" space limits for all applications)	or	Concrete curing compounds; dry fog, faux finishing, graphic arts (sign paints), industrial maintenance, mastic texture, metallic pigmented, multicolor, recycled coatings; pretreatment wash primers, reactive penetrating sealers; specialty primers, wood preservatives, and zinc primers	**California Air Resources Board (CARB) Suggested Control Measure for Architectural Coatings** or **SCAQMD Rule 1113r**
Paints and Coatings	**CDPH/EHLB/Standard method V1.1 (California Section 01350)** (Use "office" or "classroom" space limits for all applications)	or	High-temperature coatings; stone consolidants; swimming-pool coatings; tub- and tile-refining coatings; and waterproofing membranes	**California Air Resources Board (CARB) Suggested Control Measure for Architectural Coatings**

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)				
MATERIAL CATEGORY	**EMISSIONS REQUIREMENT**		**MATERIALS WITH ADDED VOC REQUIREMENT**	**EMISSIONS REQUIREMENTS**
Floor Covering Materials	For carpet, all locations: **CDPH/EHLB/Standard Method V1.1 (California Section 01350)** or label for **Section 9** of **CDPH/EHLB/Standard Method V1.1 (California Section 01350)**		none	none
Insulation	**CDPH/EHLB/Standard method V1.1** (California Section 01350) (Use "office" or "classroom" space limits for all applications)		none	none
Composite Wood, Wood Structural Panel, and Agrifiber Products, no added urea-formaldehyde resins including laminating adhesives for composite wood and agrifiber assemblies - particleboard, medium density fiberboard (MDF), wheatboard, strawboard, panel substrates, door cores	Third-party certification (approved by CARB) of **California Air Resource Board's (CARB) regulation**, Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products	or	none	**CDPH/EHLB/Standard method V1.1** (California Section 01350) (Use "office" or "classroom" space limits for all applications) (except: Structural panel components such as plywood, particle board, wafer board, and oriented strand board identified as "EXPOSURE 1," "EXTERIOR," or "HUD-APPROVED" are considered acceptable for interior use.)

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)				
MATERIAL CATEGORY	**EMISSIONS REQUIREMENT**		**MATERIALS WITH ADDED VOC REQUIREMENT**	**EMISSIONS REQUIREMENTS**
Office Furniture Systems and Seating installed prior to occupancy	**ANSI/BIFMA X7.1 ANSI/BIFMA X7.1:** (95-percent of installed office furniture system workstations and seating units) **Section 7.6.2 of ANSI/BIFMA e3** (50-percent of office furniture system workstations and seating units)		none	none
Ceiling and Wall assemblies and systems including: acoustical treatments; ceiling panels and tiles; tackable wall panels and coverings; wall coverings; wall and ceiling paneling and planking	**CDPH/EHLB/Standard method V1.1 (California Section 01350)** (Use "office" or "classroom" space limits for all applications)		none	none

ATT-1 - HPSB Checklist

ATTACHED IN APPENDIX A

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SPECIAL PROJECT PROCEDURES-SURVEYING
01/26

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-1-1002	(2012) Survey Markers and Monumentations
EM 1110-1-1005	(2007) Control and Topographic Surveying
ERDC/ITL SR-24-3	(2024) A/E/C CAD Standard - Release 6.2

AIR FORCE CORPORATE FACILITIES STANDARDS (AFCFS)

IFS-FSH	Installation Facility Standards - JBSA Sam Houston

CITY OF SAN ANTOINO (COSA)

SA-UDC	Unified Development Code https://www.sanantonio.gov/DSD/Resources/Codes

1.2 JBSA PUBLICATIONS

Prior to use verify with government that most recent publication is available for the IFS-FSH, SA-UDC and the ERDC/ITL SR-24-3.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Verification Statement; G

SD-05 Design Data

GIS Files; R

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 TOPOGRAPHIC, PLANIMETRIC, AND UTILITY SURVEYS

3.1.1 Surveying Engineering Manuals

The contractor shall accomplish the survey in accordance with the following:

a. EM 1110-1-1002

b. EM 1110-1-1005

3.1.2 Kick Off Meeting

The contractor shall coordinate and conduct a kick-off meeting prior to the initiation of the field survey. The purpose of the meeting is to ensure a mutual understanding among the contractor and the Government Agents of the survey requirements, deliverables, and submittals. At a minimum, the participants from the contractor shall include the Survey Manager and Survey Chief, one of which is a Registered Professional Land Surveyor (RPLS).

3.1.3 Control Points

Using control points provided by the government and as set as needed by the contractor, the contractor shall layout horizontal and vertical control in the survey area. JBSA uses a localized scale factor for all survey work at all JBSA installation locations. Email 802CES.CENME.GEOBASE@us.af.mil for the current scale factor, coordinate of record, and procedures.

3.1.3.1 Temporary Control Points

The Contractor shall establish additional temporary semi-permanent control points (rebar w/cap) set in inter visible pairs, as needed with a minimum of one pair in locations that will remain usable for construction layout. The contractor shall record data in field books, including setups, backsights, measure ups, shot numbers, and shot descriptions.

3.1.3.2 Additional Permanent Control

If required, the Contractor shall establish additional permanent control in accordance with ATT-2, essentially a ‘type G” monument as described in EM1110-1-1002 – for 3rd order work.

3.1.3.3 Monument Control

All control points set, temporary, semi-permanent, or permanent shall have a completed Monument Control Sheet and will be required upon final submission. (form attached)

3.1.4 Topographic Information File

The contractor shall acquire field topographic points to be used for 1-inch equals 30-feet scale mapping with a 1-foot contour interval. Density of field elevations shall show all breaks in grade, changes in terrain, and physical features. The contractor shall provide a topographic survey in the form of a three-dimensional AutoCAD 2018 .dwg file named ******-V-SP.dwg. The file shall contain breaklines and a triangulated

irregular network (TIN) composed of topologically correct nodes, edges, and triangles at their correct elevations and any other data required to create an accurate digital terrain model. Spot elevations in the file shall be placed as a block with attributes, with the insertion point being the location of the shot, the block shall be provided by the government. The contractor shall record data in field books including setups, backsights, measure ups, shot numbers, shot descriptions or other data as necessary to fully record the data, conditions, adjustments, and methods of the survey.

3.1.5 Planimetric Data

The contractor shall survey all improvements and generate planimetric data, including but not limited to: surface type for roads (paved and unpaved), parking lots (paved and unpaved), curbs, sidewalks, trails (paved or unpaved), bridges (including deck and low chord elevations), buildings and other structures, fences, handrails, retaining walls, headwalls, catch basins, utilities, manholes, utility poles, signs and all other man made physical features. For buildings or structures, provide the type of structure, number of stories or floors, and building number. The contractor shall acquire planimetric information to be used for 1-inch equals 30-feet scale mapping. Planimetric features shall be placed at zero elevation.

3.1.6 Existing Utilities

The contractor shall survey all utilities as described in the following sections. All field tied utilities shall be placed into the ******-V-SP.dwg AutoCAD file, on the appropriate layer for that entity. All horizontal and vertical control established for ties shall be shown as a symbol with annotation. All symbols utilized shall conform to A/E/C CAD Standard Release 6.1 and shall be identified on the drawings. All line styles, layer names, symbols, and template files shall be obtained from the government by email request to 802CES.CENME.GEOBASE@us.af.mil.

3.1.6.1 Water

Locate all valves, standpipes, regulators, and other features. Locate all fire hydrants. Provide size of pipe and distance above ground. Provide elevations at the top of valve cover and the elevation of the valve, and top of all other feature elements.

3.1.6.2 Sanitary Sewer

Locate all manholes and provide top of rim elevation along with an invert elevation of all pipes connected to the manhole; identify type, size, and direction of each pipe extending from the manhole. Locate all cleanouts. For sanitary sewer lines that extend outside the primary survey area, locate the next manholes along the line, upstream and downstream, and provide the top of rim elevation and invert of pipes extending from the manhole.

3.1.6.3 Storm Drainage

Locate manholes and all other storm drainage structures such as culverts, headwalls, catch basins, and clean-outs. Provide top of manhole, catch basin elevation, or other structure, along with an invert elevation of all pipes connected to a manhole or catch basin and bottom elevation; identify type, size, and direction of each pipe extending from

the manhole. Provide type, size, and invert elevation for all culverts. For storm drain lines that extend outside the primary survey area, locate the next storm drain structure along the line, upstream and downstream, and provide the top of structure elevation and invert of pipes extending from the structure.

3.1.6.4 Electrical and Communications Equipment

Specific data to be collected includes; pole height, type of pole, class of wood poles (if applicable), number of cross arms, direction, type (electrical or communication) and number of wires; low wire elevation at each pole; number and type of lights on poles, and quantity and rating for pole mounted transformers. In addition, collect data on manholes, manhole sizes, pullboxes, handholes, and top and bottom elevations. Collect the number and location of ducts entering manholes, pullboxes, and handholes, and provide their invert elevations. Indicate location of the ducts exiting the structure within the survey limits. Provide number of cables in each duct and indicate size and type of cable.

3.1.6.5 Gas

Locate all valves, meters, and gas line markers. Provide elevations at the top of valve cover and the elevation of the valve, and top of all other features elements.

3.1.6.6 Photographs

The contractor shall take digital photographs of all electrical and communications equipment including poles, manholes, and transformers. Photographs of the manholes shall show the interior of the manhole, showing the ducts and lines that extend from the manhole. The contractor shall take photographs of any downstream and upstream culvert including headwalls. The contractor shall take photographs looking downstream and upstream from the culvert headwalls. Photographs shall be keyed to collected data and key information placed in the drawing, to show general location and direction of shot.

3.1.6.7 Non Field Tied Utilities

Utilities that cannot be field tied shall be illustrated in electronic file format utilizing the following descending order of accuracy: As-Built, GIS, or Base Map and shall reside in separate model files, or, alternatively, a layer suffix may be used, xxxx-A (As-Built), xxxx-G (GIS), xxxx-M (other map) and reside in a single model file.

3.1.7 Survey Scale Factor

JBSA uses a localized scale factor for all survey work. Contact 802CES.CENME.GEOBASE@us.af.mil for a copy of the Geodetic Control Network Adjustment Factor Report. In general, all survey work shall meet the following Technical Requirements:

a. Horizontal Control: Texas State Plane (Grid), South Central Zone (4204), NAD 83; shall comply with Corps of Engineers 3rd Order, Class I standards.

b. Vertical Control: NAVD 88; will comply with Corps of Engineers 3rd Order

c. Measurements: All measurements will be collected using an electronic data collector; all elevations will be measured at hundredths-of-feet (0.00)

d. The Combined Scale Factor, for all non boundary survey work on the base, that shall be used is 0.99983000 (nearest 100,000th) with the inverse being 1.00017.

1) To convert from Grid to Surface, multiply Grid coordinate by 1.00017.

2) To convert from Surface to Grid, multiply Surface coordinate by 0.99983000

e. Unit of Measure: U.S. Survey Feet

f. Map scale: 1-inch equals 30-feet

g. Contour interval: 1-foot

h. Metadata: Federal Geodetic Data Committee (FGDC) standards. The following link contains information and tools for metadata: http://www.fgdc.gov/metadata

i. CADD Standard: AutoCAD (current release); A/E/C Release 6.1 standards compliant, as modified by section 3.3 of this specification.

j. CADD files shall be produced in Texas State Plane (Surface) and/or Texas State Plane (GRID)

3.1.8 Government Furnished Material

The government will furnish the following material:

a. Location map of area to be surveyed

b. Network Control Points and procedures

c. Block library

d. Template Files

e. Utility maps – not in coordinate system and may be paper, scanned, or CAD files.

f. Control Monument form

3.2 DELIVERABLE FORMAT AND MEDIA

The draft and final survey data shall be submitted either on a DVD or CD, and through DoD SAFE, with a transmittal letter accompanying each submittal.

3.3 COMPLETE SURVEY SUBMITTAL PACKAGE

a. GIS Files in ESRI file geodatabase format. Email 802CES.CENME.GEOBASE@us.af.mil for current version meeting requirements of Section 01 35 13.30 00.

b. All DESIGN COMPLETE, FINAL, and INTERIM review plans shall include CAD files, in AutoCAD drawing format, per Section 01 35 13.20 00.

c. Metadata as required by Executive Order 12906, containing as a minimum the metadata elements defined in the Content Standard for Digital Geospatial Metadata (CSDGM). A sample of the type and desired format is shown in ATT-1.

3.3.1 AutoCAD Files

AutoCAD files will include metadata, control points, topographic, planimetric, and data. The files shall follow the Layer name, and Linetype, of the template files. Lineweights and colors may be adjusted as desired to produce the desired print. Attribute information (text) for each utility shall be placed in the graphics file. All work shall conform to Section 01 35 13.20 00.

3.3.2 Form

Completed Control Monument Form for all control points (ATT-2).

3.3.3 Raw Data and Computations

The contractor shall furnish the government computer output of unadjusted bearings, azimuths, distances, and coordinates of all traverse points. The error of closure, both azimuth and positions, shall be shown. The final data will be adjusted by the compass method and display the adjusted bearings, distances, and coordinates of all points surveyed. The contractor shall provide a final list of coordinates for all points. All level lines shall be reduced and adjusted in accordance with accepted procedures and practices. All computations shall be arranged in a sequential and understandable order with notes when appropriate so a review can be made with minimum reconstruction.

3.3.4 Field Books

Field books shall be neat, legible, and sequential. Each field book shall have an index; the index shall also display the serial number and type of instruments used. The field books will also display the names of crew members and date at the beginning of each day. All print and sketches shall be dark enough to produce legible photocopies. There is to be a maximum of one (1) horizontal setup per page. Field books shall also be scanned into a PDF file.

3.3.5 Digital Photos

Digital photographs shall be clearly marked and identified by point shot. The numbers of the photographs must match the shot number in the AutoCAD file and the shot number in the field book.

3.3.6 Verification Statement

A statement will be signed and dated by the Survey Chief, Quality Control Manager, Survey Manager, and Company Principal attesting that the survey was completed in accordance with requirements.

3.3.7 Transmittal Letter

A transmittal letter will accompany each submittal.

3.3.8 Listed Items

All items listed in Complete Submittal Package plus a letter describing how comments were addressed and/or corrected.

ATT-1 - Metadata Sample

ATTACHED IN APPENDIX A

ATT-2 - Monument Construction

ATTACHED IN APPENDIX A

-- End of Section --

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01/26

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ATTACHMENTS:

ATT-1 - CAD Review Checklist

ATT-2 - JBSA CAD Template

-- End of Section Table of Contents --

SECTION 01 35 13.20 00

SPECIAL PROJECT PROCEDURES-CAD
01/26

PART 1 GENERAL

1.1 REFERENCES

U.S. ARMY CORPS OF ENGINEERS (USACE)

ERDC/ITL SR-23-1 (2023) A/E/C Graphics Standard, Release 2.2

ERDC/ITL SR-24-3 (2024) A/E/C CAD Standard - Release 6.2

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-05 Design Data

Drawing Submittals; R

CAD Review Checklist; G

1.3 PURPOSE

This specification provides the Joint Base San Antonio (JBSA) requirements for drawing submittals and interpretation of ERDC/ITL SR-24-3 and ERDC/ITL SR-23-1. The specification provides various clarifications that may alter the meaning of certain statements in the documents and shall take precedence over those documents. If there is any doubt by the Contractor as to requirements, the contractor shall submit Requests for Information (RFIs) in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 DRAWING SUBMITTALS

Drawing submittals required by this project shall be in accordance with this specification and others to the extent they apply to drawing submittals. The Contractor shall provide complete sheet files along with all model files referenced into these sheet files. For example, if a final design consists of 40 hardcopy sheets, then a minimum of 40 CAD sheet files and all external reference files (e.g. model CAD files, image files, etc.) used for the 40 sheets shall be provided. Each submittal shall also include ATT-1. Refer to ATT-2 for templates to be used in the creation of all CAD files.

3.1.1 ASSOCIATED FILES

The Contractor shall provide all associated files used in the production of drawings (i.e. plot styles, line types, external references, etc.) and be fully functional to reproduce submitted drawings. The preferred method of transmitting CAD files is to use the AutoCAD "eTransmit" command. The resultant transmittable file shall be transmitted using the DoD Safe system.

3.1.2 METADATA/SUPPORTING FILES

Include metadata, control points, topographic, planimetric, and any additional supporting data.Include other native formats if used - (i.e. MS Word, Excel, Access, Microstation, etc.). Contact the 802d CES PM for current versions required.

3.2 A/E/C COMPUTER-AIDED DESIGN (CAD) STANDARD

The comments in this sub-part pertain to the paragraph in the ERDC/ITL SR-24-3 as identified by REF:.

3.2.1 REF: 1.6 TARGET SYSTEMS

The target system for JBSA is AutoCAD 2020. The contractor's choice of software for internal production is not limited. However, the contractor shall ensure that CAD files shall be provided in the Joint Base San Antonio target CAD system drawing format (.dwg). The Contractor shall ensure that delivered CAD digital files and data (e.g., base files, reference files, block libraries) are compatible with the Government's target CAD systems and operating systems, and adhere to the standards and requirements specified herein.

NOTE: *The term "compatible" means that data are in native digital format (i.e. .dwg , .pdf, .docx, .xlsx, etc.) and can be accessed directly by the target CAD system without translation, proxy errors, pre-processing, or post processing of the digital data files. It is the responsibility of the Contractor to ensure this level of compatibility.*

3.2.2 REF: 2.1.2 FILE ACCURACY (UNITS)

Drawings shall be in imperial units at a 1:1 scale and either in Architectural or decimal feet as appropriate. Generally, Architectural type drawings are inch units (example: 5 feet 3 inches) while Civil drawings shall be in decimal feet (example: 5.25 feet).

3.2.3 REF:2.1.4 ORIGIN (GLOBAL)

The global origin for drawings shall be 0,0,0

3.2.4 REF: 2.2.1.2 SHEET FILES

Sheet Files shall be created through use of the Sheet Set Manager in AutoCAD or in like manner. The sheet file is created by attaching model files in the "model" space of the AutoCAD sheet file. The exception is the Border sheet model which is attached in the 'Paper space' of the AutoCAD sheet file and then a view port is created in the paper space to view the model below.

3.2.5 REF: 2.4.1 PROJECT CODE

Special characters shall not be used in model filenaming.

3.2.6 REF: 2.4.2 MODEL FILE NAMING CONVENTION

The final field, listed as "User Definable" shall be sequence number in form of 0001, 0002. If the Contractor wishes to use other definable code, it must be submitted and approved in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

3.2.7 REF: 3.1 PRESENTATION GRAPHICS

Any reference throughout this chapter to any relationship between color and plotted linewieght is not applicable. Sheet files, model files, and other supporting files shall be set to plot with a named plotstyle and shall use aecstdbandw.stb as the pen table for use. This file is included in the sample files provided with the project.

3.2.8 REF: 3.2 TEXT

The only text font that shall be used is arial. Specialty fonts or shapefiles shall not be used for text, including logos.

3.2.9 REF: 4.1 LEVEL/LAYER NAMING CONVENTIONS

Only the layer names in the provided templates shall be used. Any additional layers the Contractor wishes to use shall be submitted as an RFI.

3.2.10 REF: 4.2.1 LEVEL/LAYER ASSIGNMENT TABLES

These tables are good for reference and in understanding the entity / layer relationships. The CONTRACTOR is not held the color, lineweights, or linetypes in these tables or templates. The intention is that the contractor produces the drawings in such a manner as needed to clearly convey the information. Layer names and descriptions are the guiding anchors in these tables and templates.

3.2.11 REF: 5.2 SYMBOLOGY RESOURCES

The supplied symbology should be used to the maximum extent possible. If the contractor needs additional or modified symbology, the new symbology shall be submitted and approved as an RFI. General construct requirements are that the insertion point for new symbols shall be 0,0,0 with all properties set to 'bylayer', and shall not have a mix of 'bylayer', 'byblock', or direct assigned entities.

3.2.12 REF: 5.2 LINE STYLES

Only those line types supplied with the templates shall be used.

3.3 A/E/C GRAPHICS STANDARD, V2.2

The comments in this sub-part pertain to the paragraph in the ERDC/ITL SR-23-1 as identified by REF:.

3.3.1 REF 2.1.1 SHEET SIZES

The ANSI size 'D' sheet shall be used for drawings unless otherwise requested and approved. Additionally, only the border sheets provided by JBSA with the template files shall be used.

3.3.2 REF 2.1.7 DESIGNER IDENTIFICATION BLOCK

This block contains the Agency (802 CES) emblem and is only removed if the sheet must be sealed and signed. This is the location for the P.E. or Architect Seal or Stamp and signature.

3.3.3 REF 2.1.9 MANAGEMENT BLOCK

This block is divided into a LEFT and RIGHT side. On the LEFT side Top is the OWNER: information contains the JBSA information and shall not be altered. On the LEFT side Bottom is the DESIGN FIRM and is as stated in the standard.

The right side does not follow the guide in layout. The layout is not to be changed, the text is to be altered to fit the project. It has an area titled DRAWING CODE that is to be used by the contractor/designer for their use and may be used to record a 'project number' according to their schema.

3.3.4 REF 2.1.10 PROJECT IDENTIFICATION

This block does not use the layout from the guide. It is self explanatory

3.3.5 REF 2.1.11 SHEET IDENTIFICATION

This block does not use the layout from the guide. It is self explanatory, but does contains some additional data. The Project Number refers to the Government provide Project Code, and has information for the sheet number sequencing.

3.3.6 REF 2.2 COVER SHEET

Our cover sheet uses a different layout and is self explanatory

3.3.7 REF: 4.2.3.4 BACK REFERENCING

Back referencing is generally not required, if used the method shown in this standard is the only method to be used.

3.3.8 REF 4.3.1.1 NEW WORK VS DEMOLITION WORK

Demolition plans shall show existing work at a 60% or 70% screen and actual demolition at 100%

3.3.9 REF 4.3.1.2 NEW WORK VS EXISTING WORK

Screen shall be 60% to 70% vice 20% to 60%.

3.3.10 REF 5.1.5 FONT

ARIAL is the only font to be used (for text or dimensions), and may be in the various states as needed to clearly convey the information, (regular, Bold, underline, Italic, etc)

ATT-1 - CAD Review Checklist

ATTACHED IN APPENDIX A

ATT-2 - JBSA CAD Template

ATTACHED IN APPENDIX A

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SECTION 01 35 13.30 00

SPECIAL PROJECT PROCEDURES-GIS
01/26

PART 1 GENERAL

1.1 REFERENCES

FEDERAL GEOGRAPHIC DATA COMMITTEE (FGDC)

FGDC-STD	Federal Geographic Data Committee Standards https://www.fgdc.gov/standards

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-05 Design Data

GIS Files; R

Survey Data; R

1.3 FILE FORMAT

All DESIGN COMPLETE, FINAL, and INTERIM review plans shall include native format files, i.e. GIS file geodatabase. Email 802CES.CENME.GEOBASE@us.af.mil for current version, native format documents (*.docx, *.xlsx) and PDF files of same.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GIS FILES

Varying Text size for like items shall be avoided, Rule of thumb - final printable layouts must be readable by the unaided eye.

Our data set is in WGS 1984 UTM Zone 14N (meters). For any questions contact 802CES.CENME.GEOBASE@us.af.mil. In general, all work shall meet the following Technical Requirements:

3.1.1 Horizontal Control

WGS 1984 UTM Zone 14N (meters); will comply with Corps of Engineers 3rd Order, Class I standards.

3.1.2 Vertical Control

NAVD 88; will comply with Corps of Engineers 3rd Order

3.1.3 Measurements

All measurements will be collected using an electronic data collector; all elevations will be measured at hundredths-of-feet (0.00)

3.1.4 Unit of Measure

U.S. Survey Feet

3.1.5 Map Scale

Any ArcMap .mxd files or ArcGIS Pro Project files will maintain a readable (un-aided) text size when the layout is printed at it's formatted scale.

3.1.6 Contour Interval

1-foot

3.1.7 Metadata

FGDC-STD, refer to the following link that contains information and tools for metadata: http://www.fgdc.gov/metadata

3.1.8 CADD Standard

If the final deliverable is in CAD standard follow Section 01 35 13.20 00 SPECIAL PROJECT PROCEDURES-CAD. If the final deliverable is specified elsewhere as UTM, follow this Section 01 35 13.30 00 and contact 802CES.CENME.GEOBASE@us.af.mil for any further requirements.

3.2 GOVERNMENT FURNISHED ITEMS

The government will furnish the following material:

a. Location map of area covered by the contract

b. Network Control Points

c. A file geodatabase containing the minimum required data attributes, known feature classes, and other data requirements. Feature classes may or may not contain up to date data and attributes may or may not be populated. The contractor shall be responsible for field verifying all data and making corrections as necessary to meet contract work requirements.

d. Template Files

e. Utility maps - not in coordinate system and may be paper, scanned, or CAD files.

f. Geodetic Control Form

3.3 DELIVERABLE FORMAT AND MEDIA

3.3.1 Survey Data

The draft and final survey data shall be submitted either on a DVD or CD and a transmittal letter shall accompany each submittal. Survey information shall be compliant with Section 01 35 13.10 00 SPECIAL PROJECT PROCEDURES-SURVEYING.

3.3.2 Format

GIS FILES in ESRI file geodatabase format. Email 802CES.CENME.GEOBASE@us.af.mil for current version.

3.4 TITLE BLOCKS

All and any title-blocks used for final map layout must contain the information "Joint Base San Antonio" and may contain the Installation location (e.g. Fort Sam Houston). The phrase "Joint Base San Antonio" must be equal in size or larger than the Installation location.

3.5 FINAL PRINTS

Final deliverable prints shall be color on heavy bond.

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ATT-3 - ENG Form 6213 Critical Lift Plan

ATT-4 - ENG Form 6282

ATT-5 - ENG Form 6293

ATT-6 - ENG Form 3394

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SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS
03/26

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 HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 52.2	(2025) Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ANSI/ASSP A10.34	(2021) Protection of the Public on or Adjacent to Construction Sites
ANSI/ASSP A10.44	(2020) Control of Energy Sources (Lockout/Tagout) for Construction and Demolition Operations

ASTM INTERNATIONAL (ASTM)

ASTM D6245	(2012) Using Indoor Carbon Dioxide Concentrations to Evaluate Indoor Air Quality and Ventilation
ASTM D6345	(2010) Standard Guide for Selection of Methods for Active, Integrative Sampling of Volatile Organic Compounds in Air
ASTM F855	(2020) Standard Specifications for Temporary Protective Grounds to Be Used on De-energized Electric Power Lines and Equipment

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 1048	(2016) Guide for Protective Grounding of Power Lines
IEEE C2	(2023) National Electrical Safety Code

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

ANSI/ISEA Z89.1	(2014; R 2019) American National Standard for Industrial Head Protection

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 51B	(2024) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
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 70E	(2024) Standard for Electrical Safety in the Workplace
NFPA 241	(2022; ERTA 22-1) Standard for Safeguarding Construction, Alteration, and Demolition Operations

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

ANSI/SMACNA 008	(2007) IAQ Guidelines for Occupied Buildings Under Construction, 2nd Edition

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

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

10 CFR 20	Standards for Protection Against Radiation
29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.1000	Air Contaminants
29 CFR 1926	Safety and Health Regulations for Construction
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
CPL 2.100	(1995) Application of the Permit-Required Confined Spaces (PRCS) Standards, 29 CFR 1910.146

1.2 DEFINITIONS

The following definitions are for the convenience of the reader. If there is a referenced document in the text of this specification section, that is the document that should define terms for that paragraph. If further clarification is needed, contact the Contracting Officer.

1.2.1 Site Safety and Health Officer (SSHO)

A Contractor Employee that is responsible for overseeing and ensuring implementation of the prime Contractor's Safety and Occupational Health (SOH) program according to the Contract, EM 385-1-1, applicable federal, state, and local requirements.

1.2.1.1 Level One SSHO

A designated employee with full-time SOH responsibility that meets and follows the requirements of EM 385-1-1.

1.2.1.2 Level Two SSHO

A designated employee with Level Two SSHO responsibility that meets and follows the requirements of EM 385-1-1. Level Two SSHOs cannot be assigned to projects that have a residual Risk Assessment Code (RAC) of high or extremely high.

1.2.1.3 Level Three SSHO

A designated Qualified Person or Competent Person with SOH responsibility that meets and follows the requirements of EM 385-1-1. Level 3 SSHOs cannot be assigned to projects that have a residual RAC of high or extremely high.

1.2.1.4 Alternate SSHO

An employee that meets the definition of the contract-required level SSHO, but is not the primary SSHO.

1.2.2 Competent Person (CP)

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

1.2.3 Qualified Person (QP)

The QP is a person designated in writing, who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problems related to the subject matter, the work, or the project.

1.3 SUBMITTALS

Government Acceptance or Approval does not remove responsibility from the Contractors for their actions or liability.

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G

Final IAQ Management Plan; S

Indoor Air Quality (IAQ) Management Plan; G

SD-06 Test Reports

Accident Reports; G

LHE Inspection Reports

Monthly Exposure Reports; G

SD-07 Certificates

Crane Operators/Riggers

Activity Hazard Analysis (AHA); G

Certificate of Compliance

Hot Work Permit

License Certificates

Portable Gauge Operations Planning Worksheet; G

Radiography Operation Planning Work Sheet; G

Standard Lift Plan; G

Critical Lift Plan; G

1.4 PUBLIC HEALTH EMERGENCIES

In the event of a declared public health emergency, follow safety precautions as required by the Occupational Safety and Health Administration (OSHA) www.osha.gov, the Centers for Disease Control and Prevention (CDC) www.cdc.gov, and as required by federal, state and local requirements.

1.5 MONTHLY EXPOSURE REPORTS

Provide a Monthly Exposure Report by the fifth of each month for the previous month. This report is a compilation of employee-hours worked each month for all site workers, both Prime and subcontractor. Failure to submit the report may result in retention of up to 10 percent of the progress payment.

1.6 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this Contract, comply with the most recent edition of USACE EM 385-1-1, and the following federal, state, and local laws, ordinances, criteria, rules and regulations at the date of the Solicitation for this Contract. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements govern.

1.7 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

1.7.1 Site Safety and Health Officer (SSHO)

1.7.1.1 Qualifications of SSHO

All SSHOs will have met the training, experience requirements identified in the EM 385-1-1 and this Contract.

1.7.1.2 Duties of SSHO

All SSHOs will carry out the roles and responsibilities as identified in this Contract and the EM 385-1-1. All SSHOs will be designated on an ENG Form 6282 (ATT-4), provided by the Contracting Officer. Superintendent, QC Manager, and SSHO are subject to dismissal if their required duties are not being effectively carried out. If either the Superintendent, QC Manager, or SSHO are dismissed, project work will be stopped and will not be allowed to resume until a suitable replacement is approved and the above duties are again being effectively carried out.

1.7.1.3 Safety Meetings

Conduct safety meetings to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade), establish safe working procedures for anticipated hazards, and provide pertinent Safety and Occupational Health (SOH) training and motivation. Conduct meetings at least once a month for all supervisors at the project location. The SSHO, supervisors, or foremen must conduct meetings at least once a week for the trade workers. Document meeting minutes to include the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Maintain documentation on-site and furnish copies to the Contracting Officer on request. Notify the Contracting Officer of all scheduled meetings 7 calendar days in advance.

1.7.2 Roles and Responsibilities of Prime Contractor and SSHO

The Prime Contractor and SSHO must ensure that the requirements of all applicable OSHA and EM 385-1-1 are met for the project. The Prime Contractor must ensure an SSHO or an equally qualified Alternate SSHO(s) is at the worksite at all times to implement and administer the Contractor's safety program and Government accepted Accident Prevention Plan. If the required SSHO has to temporarily (that is, up to 24 hours / 1 day) leave the site of work due to unforeseen or emergency situations, a Level One, Two, or Three SSHO may be used in the interim and must be on the site of work at all times when work is being performed.

If the SSHO must be off-site for a period longer than 24 hours / 1 day, a qualified alternate that meets the contract requirements must be onsite.

a. Prime contractor must ensure all SSHOs:

(1) Are designated on an ENG Form 6282 (ATT-4).

(2) Meet minimum training and experience requirements identified in EM 385-1-1.

(3) Execute roles and responsibilities identified in EM 385-1-1.

1.7.3 Additional Requirements

The Level Two SSHO must not serve as the Quality Control Manager. The Level Two SSHO must not serve as the Superintendent.

1.7.4 Contract Site Safety And Health Officer(s)(SSHOs) Minimum Requirements

Provide a minimum of one Level Two SSHO that meets the requirements of EM 385-1-1 for this project.

1.7.5 Competent Person for Confined Space Entry

Provide a CP for Confined Space Entry who meets the requirements of EM 385-1-1 and herein. The CP for Confined Space Entry must supervise the entry into each confined space in accordance with EM 385-1-1.

1.7.6 Preconstruction Conference

a. Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the preconstruction conference. This includes the project superintendent, Site Safety and Occupational Health Officer, quality control manager, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).

b. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the Contract. This list of proposed AHAs will be reviewed and an agreement will be reached between the Contractor and the Contracting Officer as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, and Government review of AHAs to preclude project delays. The creation of the APP and Schedule will be created after being given Notice to Proceed.

c. Deficiencies in the submitted APP, identified during the Contracting Officer's review, must be corrected, and the APP re-submitted for review prior to the start of construction. Work is not permitted to begin until an APP is established that is acceptable to the Contracting Officer.

1.8 ACCIDENT PREVENTION PLAN (APP)

1.8.1 Accident Prevention Plan (APP)Design

Provide a site-specific Accident Prevention Plan (APP), including Activity Hazard Analyses (AHA), in accordance with EM 385-1-1, ENG Form 6293 (ATT-5), for the design team to follow during site visits and investigations. For subsequent visits, update the plan if there are changes in the personnel who will be attending, or the tasks to be performed. Submit the APP for review and acceptance by the Government at least 14 calendar days prior to the start of the design field work after being given Notice to Proceed. Field work must not begin until the design APP is accepted by the Contracting Officer. Prior to the start of construction incorporate the Design APP into the Construction APP so that one site specific APP exists for the project and submit to the Contracting Officer for acceptance.

If the design scope includes borings or other subsurface investigations, include in the APP the type of field investigation and verification techniques, such as visual, local utility locating service scanning and third party subcontractor scanning, potholing, or hand digging within two feet of a known utility that will be required. Mark underground utilities before starting any ground-disturbing actions. Notify the Contracting Officer 15 days prior to the start of soil borings or sub-surface investigations.

1.8.2 Accident Prevention Plan(APP)Construction

Submit the Accident Prevention Plan (APP) for review and acceptance by the Government at least 15 calendar days prior to the start unless otherwise specified by Section 01 33 00 SUBMITTAL PROCEDURES, after being given Notice to Proceed. A competent person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1, ENG Form 6293 (ATT-5), and herein. The APP must be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP must interface with the Contractor's overall safety and occupational health program referenced in the APP in the applicable APP element, and made site-specific. Describe the methods to evaluate past safety performance of potential subcontractors in the selection process. Also, describe innovative methods used to ensure and monitor safe work practices of subcontractors. The Government considers the Prime Contractor to be the "controlling employer" for all worksite safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the Contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP must be signed in accordance with the APP and ENG Form 6293 Accident Prevention Plan Worksheet. The SSHO must provide and maintain the APP and a log of signatures by each subcontractor foreman, attesting that they have read and understand the APP, and make the APP and log available on-site to the Contracting Officer. If English is not the foreman's primary language, the Prime Contractor must provide an interpreter.

Work cannot proceed without an accepted APP. Once reviewed and accepted by the Contracting Officer, the APP and attachments will be enforced as part of the Contract. Disregarding the provisions of this Contract or the accepted APP is cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Continuously review and amend the APP, as necessary, throughout the life of the Contract. Changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and Quality Control Manager. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered. Should any severe hazard exposure (i.e., imminent danger) become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate and remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ANSI/ASSP A10.34), and the environment.

1.8.3 Names and Qualifications

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

a. Names and qualifications (resumes including education, training, experience and certifications) of site safety and health personnel designated to perform work on this project to include the designated Site Safety and Health Officer and other competent and qualified personnel to be used. Specify the duties of each position.

b. As a minimum, designate and submit qualifications of Competent Persons (CP) for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; and personal protective equipment and clothing to include selection, use and maintenance. Designate and submit qualifications for additional CPs as applicable to the work performed under this Contract.

1.8.4 Plans

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

1.8.4.1 Lead, Cadmium, and Chromium Compliance Plan

Identify the safety and health aspects of work involving lead, cadmium and chromium, and prepare in accordance with Section 02 83 00 LEAD REMEDIATION.

1.8.4.2 Asbestos Hazard Abatement Plan

Identify the safety and health aspects of asbestos work, and prepare in accordance with Section 02 82 00 ASBESTOS REMEDIATION.

1.8.4.3 Site Demolition Plan

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

1.9 ACTIVITY HAZARD ANALYSIS (AHA)

Before beginning each activity, task or Definable Feature of Work (DFOW) involving a type of work presenting hazards not experienced in previous project operations, or where a new work crew or subcontractor is to perform the work, the Contractor(s) performing that work activity must prepare an AHA. AHAs must be developed by the Prime Contractor, subcontractor, or supplier performing the work, and provided for Prime Contractor review and approval before submitting to the Contracting Officer. AHAs must be signed by the SSHO, Superintendent, QC Manager and the subcontractor Foreman performing the work. Format the AHA in accordance with EM 385-1-1 or as directed by the Contracting Officer. Submit the AHA for review in accordance with the requirements of Section 01 33 00 SUBMITTAL PROCEDURES, prior to the start of each activity task, or DFOW. The Government reserves the right to require the Contractor to revise and resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

AHAs must identify competent persons required for phases involving high risk activities, including confined entry, crane and rigging, excavations, trenching, electrical work, fall protection, and scaffolding.

1.9.1 AHA Management

Review the AHA list periodically (at least monthly) at the Contractor supervisory safety meeting, and update as necessary when procedures, scheduling, or hazards change. Use the AHA during daily inspections by the SSHO to ensure the implementation and effectiveness of the required safety and health controls for that work activity.

1.9.2 AHA Signature Log

Each employee performing work as part of an activity, task or DFOW must review the AHA for that work and sign a signature log specifically maintained for that AHA prior to starting work on that activity. The SSHO must maintain a signature log on site for every AHA. Provide employees whose primary language is other than English, with an interpreter to ensure a clear understanding of the AHA and its contents.

1.10 SITE SAFETY REFERENCE MATERIALS

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

1.11 EMERGENCY MEDICAL TREATMENT

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

1.12 NOTIFICATIONS AND REPORTS

1.12.1 Accident Notification

Notify the Contracting Officer in accordance with the EM 385-1-1 Accident Reporting Timeline.

Table
Accident Reporting Required Timeline

Accident Type	Notify CO or COR	Complete Final Accident Report on ENG 3394 (ATT-6) and provide to CO
Fatality, in-patient hospitalization, amputation, eye loss, or property damage over $600,000.	Immediately, no later than (NLT) 8 Hours	Within 7 Days
All other accidents and near misses	Immediately, no later than (NLT) 24 Hours	Within 7 Days

Within notification include Contractor name; Contract title; type of

Contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (for example, type of construction equipment used and PPE used). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted. Assist and cooperate fully with the Government's investigation(s) of any accident or near miss.

1.12.2 Accident Reports

a. Conduct an accident investigation for recordable injuries and illnesses, property damage, and near misses as defined in EM 385-1-1, to establish the root cause(s) of the accident. All accidents are reportable, regardless of whether or not it is recordable. Provide the report to the Contracting Officer within 7 calendar days of the accident. The Contracting Officer will provide copies of any required or special forms.

b. Near Misses: Near miss reports are considered positive and proactive Contractor safety management actions.

1.12.3 LHE Inspection Reports

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

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

1.12.4.1 Certificate of Compliance

Provide a Certificate of Compliance for LHE entering an activity under this Contract and in accordance with Section 16-7 of the EM 385-1-1. Post certifications on the crane. Certifications of the Crane Operators/Riggers shall be included.

1.12.4.2 Pre-Lift Plans

Develop either a Standard Lift Plan (SLP) or Critical Lift Plan (CLP) as required in accordance with EM 385-1-1. Utilize the Standard Lift Plan ENG Form 6203 (ATT-2) for routine crane lifts and use the Critical Lift Plan ENR Form 6213 (ATT-3) for non-routine crane lifts requiring more detailed planning and additional safety precautions, as defined by Section 16-2j of the EM 385-1-1. Comply with load testing requirements in accordance with EM 385-1-1. Submit lift plans to the Contracting Officer for approval within 15 calendar days in advance of planned standrad lifts or 30 calendar days in advance of planned critical lifts. In addition, Critical Lift Plans are required for the following:

a. When working around energized power lines where the work will get closer than the minimum clearance distance in EM 385-1-1 Table 16-1.

b. For lifts with anticipated binding conditions.

c. When erecting cranes.

d. Lifts of personnel.

1.13 HOT WORK PERMIT

1.13.1 Permit and Personnel Requirements

Submit and obtain a written permit prior to performing "Hot Work" (i.e., welding or cutting) or operating other flame-producing/spark producing devices, from the the installation's local Fire Department. A permit is required from the Explosives Safety Office for work in and around where explosives are processed, stored, or handled. Contractors are required to meet all criteria before a permit is issued. Provide at least two 20 pound 4A:20 BC rated extinguishers for normal "Hot Work". The extinguishers must be current inspection tagged, and contain an approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch must be trained in accordance with NFPA 51B and remain on-site for a minimum of 1 hour after completion of the task or as specified on the hot work permit.

When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency services phone number. Report any fire, no matter how small, to the responsible Fire Department immediately.

1.13.2 Work Around Flammable Materials

Obtain permit approval from a NFPA Certified Marine Chemist, or Certified Industrial Hygienist for "Hot Work" within or around flammable materials (such as fuel systems or welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, or vaults) that have the potential for flammable or explosive atmospheres.

Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to within acceptable limits must be used and maintained in accordance with manufacturer's instruction and supplemented by exceptions noted in EM 385-1-1.

1.14 RADIATION SAFETY REQUIREMENTS

Submit License Certificates, employee training records, and Leak Test Reports for radiation materials and equipment to the Contracting Officer and Radiation Safety Office (RSO) for all specialized and licensed material and equipment proposed for use on the construction project (excludes portable machine sources of ionizing radiation including moisture density and X-Ray Fluorescence (XRF)). Maintain on-site records whenever licensed radiological materials or ionizing equipment are on Government property.

Protect workers from radiation exposure in accordance with 10 CFR 20, ensuring any personnel exposures are maintained As Low As Reasonably Achievable.

1.14.1 Radiography Operation Planning Work Sheet

Submit a Gamma and X-Ray Radiography Operation Planning Work Sheet to Contracting Officer 14 days prior to commencement of operations involving radioactive materials or radiation generating devices. For portable machine sources of ionizing radiation, including moisture density and XRF,

use and submit the Portable Gauge Operations Planning Worksheet instead. The Contracting Officer will review the submitted worksheet and provide questions and comments.

Contractors must use primary dosimeters process by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory.

1.14.2 Site Access and Security

Coordinate site access and security requirements with the Contracting Officer for all radiological materials and equipment containing ionizing radiation that are proposed for use on a government facility. For gamma radiography materials and equipment, a Government escort is required for any travels on the Installation. The Government authorized representative will meet the Contractor at a designated location outside the Installation, ensure safety of the materials being transported, and will escort the Contractor for gamma sources onto the Installation, to the job site, and off the Installation. For portable machine sources of ionizing radiation, including moisture density and XRF, the Government authorized representative will meet the Contractor at the job site.

Provide a copy of all calibration records, and utilization records for radiological operations performed on the site.

1.14.3 Loss or Release and Unplanned Personnel Exposure

Loss or release of radioactive materials, and unplanned personnel exposures must be reported immediately to the Contracting Officer, RSO, and Base Security Department Emergency Number.

1.14.4 Site Demarcation and Barricade

Properly demark and barricade an area surrounding radiological operations to preclude personnel entrance, in accordance with EM 385-1-1, Nuclear Regulatory Commission, and Applicable State regulations and license requirements, and in accordance with requirements established in the accepted Radiography Operation Planning Work Sheet.

Do not close or obstruct streets, walks, and other facilities occupied and used by the Government without written permission from the Contracting Officer.

1.14.5 Security of Material and Equipment

Properly secure the radiological material and ionizing radiation equipment at all times, including keeping the devices in a properly marked and locked container, and secondarily locking the container to a secure point in the Contractor's vehicle or other approved storage location during transportation and while not in use. While in use, maintain a continuous visual observation on the radiological material and ionizing radiation equipment. In instances where radiography is scheduled near or adjacent to buildings or areas having limited access or one-way doors, make no assumptions as to building occupancy. Where necessary, the Contracting Officer will direct the Contractor to conduct an actual building entry, search, and alert. Where removal of personnel from such a building cannot be accomplished and it is otherwise safe to proceed with the radiography, position a fully instructed employee inside the building or area to prevent exiting while external radiographic operations are in process.

1.14.6 Transportation of Material

Comply with 49 CFR 173 for Transportation of Regulated Amounts of Radioactive Material. Notify Local Fire authorities and the site Radiation Safety Officer (RSO) of any Radioactive Material use.

1.14.7 Schedule for Exposure or Unshielding

Actual exposure of the radiographic film or unshielding the source must not be initiated until after 5 p.m. on weekdays.

1.14.8 Transmitter Requirements

Adhere to the base policy concerning the use of transmitters, such as radios and cell phones. Obey Emissions control (EMCON) restrictions.

1.15 CONFINED SPACE ENTRY REQUIREMENTS

Confined space entry must comply with EM 385-1-1, 29 CFR 1926, 29 CFR 1910, and Directive CPL 2.100. Any potential for a hazard in the confined space requires a permit system to be used.

1.15.1 Rescue Procedures and Coordination with Local Emergency Responders

Develop and implement an on-site rescue and recovery plan and procedures. The rescue plan must not rely on local emergency responders for rescue from a confined space.

1.16 CONSTRUCTION INDOOR AIR QUALITY (IAQ) MANAGEMENT PLAN

Submit an IAQ Management Plan in accordance with the requirements of Section 01 33 00 SUBMITTAL PROCEDURES no later than after design completion. Revise and resubmit Plan as required by the Contracting Officer. Make copies of the final plan available to all workers on site. Include provisions in the Plan to meet the requirements specified below and to ensure safe, healthy air for construction workers and building occupants. Submit Final IAQ Management Plan for inclusion in the Sustainability eNotebook, in accordance with Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING.

1.16.1 Requirements During Construction

Provide for evaluation of indoor Carbon Dioxide concentrations in accordance with ASTM D6245. Provide for evaluation of volatile organic compounds (VOCs) in indoor air in accordance with ASTM D6345. Use filters with a Minimum Efficiency Reporting Value (MERV) of 8 in permanently installed air handlers during construction.

1.16.1.1 Control Measures

Meet or exceed the requirements of ANSI/SMACNA 008 to help minimize contamination of the building from construction activities. The five requirements of this manual which must be adhered to are described below:

a. HVAC protection: Isolate return side of HVAC system from surrounding environment to prevent construction dust and debris from entering the duct work and spaces.

b. Source control: Use low emitting paints and other finishes, sealants,

adhesives, and other materials as specified. When available, cleaning products must have a low VOC content and be non-toxic to minimize building contamination. Utilize cleaning techniques that minimize dust generation. Cycle equipment off when not needed. Prohibit idling motor vehicles where emissions could be drawn into building. Designate receiving/storage areas for incoming material that minimize IAQ impacts.

c. Pathway interruption: When pollutants are generated use strategies such as 100 percent outside air ventilation or erection of physical barriers between work and non-work areas to prevent contamination.

d. Housekeeping: Clean frequently to remove construction dust and debris. Promptly clean up spills. Remove accumulated water and keep work areas dry to discourage the growth of mold and bacteria. Take extra measures when hazardous materials are involved.

e. Scheduling: Control the sequence of construction to minimize the absorption of VOCs by other building materials.

1.16.1.2 Moisture Contamination

a. Remove accumulated water and keep work dry.

b. Use dehumidification to remove moist, humid air from a work area.

c. Do not use combustion heaters or generators inside the building.

d. Protect porous materials from exposure to moisture.

e. Remove and replace items which remain damp for more than a few hours.

1.16.2 Requirements After Construction

After construction ends and prior to occupancy, conduct a building flush-out or test the indoor air contaminant levels. Flush-out must be a minimum 2 weeks with MERV-13 filtration media as determined by ASHRAE 52.2 at 100 percent outside air. Air contamination testing must be consistent with EPA's current Compendium of Methods for the Determination of Air Pollutants in Indoor Air. After building flush-out or testing and prior to occupancy, replace filtration media. Filtration media must have a MERV of 13 as determined by ASHRAE 52.2.

1.17 SEVERE STORM PLAN

In the event of a severe storm warning, the Contractor must comply with the applicable Storm Plan and:

a. Secure outside equipment and materials and place materials that could be damaged in protected areas.

b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.

c. Ensure that temporary erosion controls are adequate.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 CONSTRUCTION AND OTHER WORK

Comply with EM 385-1-1, NFPA 70, NFPA 70E, NFPA 241, the APP, the AHA, Federal and State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

PPE is governed in all areas by the nature of the work the employee is performing. Use personal hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks. Safety glasses must be worn or carried/available on each person. Mandatory PPE includes:

a. Head Protection that meets ANSI/ISEA Z89.1

b. Long Pants

c. Appropriate Safety Footwear

d. Appropriate Class Reflective Vests

3.1.1 Worksite Communication

Employees working alone in a remote location or away from other workers must be provided an effective means of emergency communications (i.e., cellular phone, two-way radios, land-line telephones or other acceptable means). The selected communication must be readily available (easily within the immediate reach) of the employee and must be tested prior to the start of work to verify that it effectively operates in the area/environment. Develop an employee check-in/check-out communication procedure to ensure employee safety.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this Contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint, and hexavalent chromium, are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials. Low mercury lamps used within fluorescent lighting fixtures are allowed as an exception without further Contracting Officer approval. Notify the Radiation Safety Officer (RSO) prior to excepted items of radioactive material and devices being brought on base.

3.1.3 Unforeseen Hazardous Material

Contract documents identify materials such as PCB, lead paint, and friable and non-friable asbestos and other OSHA regulated chemicals (i.e.,

29 CFR 1910.1000). If material(s) that may be hazardous to human health upon disturbance are encountered during demolition, repair, renovation, or construction operations. Stop that portion of work and notify the Contracting Officer immediately. Within 21 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification.

3.2 UTILITY OUTAGE REQUIREMENTS

Apply for utility outages in accordance with Section 01 14 00 JBSA WORK RESTRICTIONS. The request must include the location of the outage, utilities being affected, duration of outage, any necessary sketches, a description of the means to fulfill energy isolation requirements in accordance with EM 385-1-1, and other items required by Section 01 14 00 JBSA WORK RESTRICTIONS. In accordance with EM 385-1-1, where outages involve Government or Utility personnel, coordinate with the Government on all activities involving the control of hazardous energy.

These activities include, but are not limited to, a review of Hazardous Energy Control Program (HECP) and HEC procedures, as well as applicable Activity Hazard Analyses (AHAs). In accordance with EM 385-1-1 and NFPA 70E, work on energized electrical circuits must not be performed without prior Government authorization. Government permission is considered through the permit process and submission of a detailed AHA. Energized work permits are considered only when de-energizing introduces additional or increased hazard or when de-energizing is infeasible.

3.3 OUTAGE COORDINATION MEETING

After the utility outage request is approved, and prior to beginning work on the utility system requiring shut-down, conduct a pre-outage coordination meeting in accordance with EM 385-1-1. This meeting must include the Prime Contractor, the Prime and subcontractors performing the work, the Contracting Officer, and the Installation representative. All parties must fully coordinate HEC activities with one another. During the coordination meeting, all parties must discuss and coordinate on the scope of work, HEC procedures (specifically, the lock-out/tag-out procedures for worker and utility protection), the AHA, assurance of trade personnel qualifications, identification of competent persons, and compliance with HECP training in accordance with EM 385-1-1. Clarify when personal protective equipment is required during switching operations, inspection, and verification.

3.4 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1, 29 CFR 1910, ANSI/ASSP A10.44, NFPA 70E.

3.4.1 Safety Preparatory Inspection Coordination Meeting with the Government or Utility

For electrical distribution equipment that is to be operated by Government or Utility personnel, the Prime Contractor and the subcontractor performing the work must attend the safety preparatory inspection coordination meeting, which will also be attended by the Contracting Officer's Representative, and required by EM 385-1-1. The meeting will occur immediately preceding the start of work and following the completion

of the outage coordination meeting. Both the safety preparatory inspection coordination meeting and the outage coordination meeting must occur prior to conducting the outage and commencing with lockout/tagout procedures.

3.4.2 Lockout/Tagout Isolation

Where the Government or Utility performs equipment isolation and lockout/tagout, the Contractor must place their own locks and tags on each energy-isolating device and proceed in accordance with the HECP. Before any work begins, both the Contractor and the Government or Utility must perform energy isolation verification testing while wearing required PPE detailed in the Contractor's AHA and required by EM 385-1-1. Install personal protective grounds, with tags, to eliminate the potential for induced voltage in accordance with EM 385-1-1.

3.4.3 Lockout/Tagout Removal

Upon completion of work, conduct lockout/tagout removal procedure in accordance with the HECP. In accordance with EM 385-1-1, each lock and tag must be removed from each energy isolating device by the authorized individual or systems operator who applied the device. Provide formal notification to the Government (by completing the Government form if provided by Contracting Officer's Representative), confirming that steps of de-energization and lockout/tagout removal procedure have been conducted and certified through inspection and verification. Government or Utility locks and tags used to support the Contractor's work will not be removed until the authorized Government employee receives the formal notification.

3.5 FALL PROTECTION PROGRAM

Establish a fall protection program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify roles and responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures in accordance with EM 385-1-1.

3.5.1 Fall Protection Equipment and Systems

Enforce use of personal fall protection equipment and systems designated (to include fall arrest, restraint, and positioning) for each specific work activity in the Site Specific Fall Protection and Prevention Plan and AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1.

Provide personal fall protection equipment, systems, subsystems, and components that comply with EM 385-1-1 and 29 CFR 1926.

3.5.1.1 Additional Personal Fall Protection Measures

In addition to the required fall protection systems, other protective measures such as safety skiffs, personal floatation devices, and life rings, are required when working above or next to water in accordance with EM 385-1-1. Personal fall protection systems and equipment are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall protection systems are required when operating other equipment such as scissor lifts. The need

for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, travel, or while performing work.

3.5.1.2 Personal Fall Protection Equipment

Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. The use of body belts is not acceptable. Harnesses must have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Snap hooks and carabineers must be self-closing and self-locking, capable of being opened only by at least two consecutive deliberate actions and have a minimum gate strength of 3,600 lbs in all directions. Use webbing, straps, and ropes made of synthetic fiber. The maximum free fall distance when using fall arrest equipment must not exceed 6 feet, unless the proper energy absorbing lanyard is used. Always take into consideration the total fall distance and any swinging of the worker (pendulum-like motion), that can occur during a fall, when attaching a person to a fall arrest system. Equip all full body harnesses with Suspension Trauma Preventers such as stirrups, relief steps, or similar in order to provide short-term relief from the effects of orthostatic intolerance in accordance with EM 385-1-1.

3.6 USE OF EXPLOSIVES

Explosives must not be used or brought to the project site without prior written approval from the Contracting Officer. Such approval does not relieve the Contractor of responsibility for injury to persons or for damage to property due to blasting operations.

Storage of explosives, when permitted on Government property, must be only where directed and in approved storage facilities. These facilities must be kept locked at all times except for inspection, delivery, and withdrawal of explosives.

3.7 ELECTRICAL

Perform electrical work in accordance with EM 385-1-1.

3.7.1 Electrical Work

As described in EM 385-1-1, electrical work is to be conducted in a de-energized state unless there is no alternative method for accomplishing the work. In those cases obtain an energized work permit from the Contracting Officer. The energized work permit application must be accompanied by the AHA and a summary of why the equipment/circuit needs to be worked energized. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Attach temporary grounds in accordance with ASTM F855 and IEEE 1048. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator is allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method.

When working in energized substations, only qualified electrical workers

are permitted to enter. When work requires work near energized circuits as defined by NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety footwear, insulating gloves and electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA. Ensure that each employee is familiar with and complies with these procedures and 29 CFR 1910.

3.7.2 Qualifications

Electrical work must be performed by QP with verifiable credentials who are familiar with applicable code requirements. Verifiable credentials consist of State, National and Local Certifications or Licenses that a Master or Journeyman Electrician may hold, depending on work being performed, and must be identified in the appropriate AHA. Journeyman/Apprentice ratio must be in accordance with State, Local requirements applicable to where work is being performed.

3.7.3 Arc Flash

Conduct a hazard analysis/arc flash hazard analysis whenever work on or near energized parts greater than 50 volts is necessary, in accordance with NFPA 70E.

All personnel entering the identified arc flash protection boundary must be QPs and properly trained in NFPA 70E requirements and procedures. Unless permitted by NFPA 70E, no Unqualified Person is permitted to approach nearer than the Limited Approach Boundary of energized conductors and circuit parts. Training must be administered by an electrically qualified source and documented.

3.7.4 Grounding

Ground electrical circuits, equipment and enclosures in accordance with NFPA 70 and IEEE C2 to provide a permanent, continuous and effective path to ground unless otherwise noted by EM 385-1-1.

3.7.5 Testing

Temporary electrical distribution systems and devices must be inspected, tested and found acceptable for Ground-Fault Circuit Interrupter (GFCI) protection, polarity, ground continuity, and ground resistance before initial use, before use after modification and at least monthly. Monthly inspections and tests must be maintained for each temporary electrical distribution system, and signed by the electrical CP or QP.

ATT-1 - ENG Form 6209 CoC for LHE

ATTACHED IN APPENDIX A

ATT-2 - ENG Form 6203 Standard Lift Plan

ATTACHED IN APPENDIX A

ATT-3 - ENG Form 6213 Critical Lift Plan

ATTACHED IN APPENDIX A

ATT-4 - ENG Form 6282

ATTACHED IN APPENDIX A

ATT-5 - ENG Form 6293

ATTACHED IN APPENDIX A

ATT-6 - ENG Form 3394

ATTACHED IN APPENDIX A

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SOURCES FOR REFERENCE PUBLICATIONS
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PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization (e.g., ASTM B564 Standard Specification for Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

AACE INTERNATIONAL (AACE)
726 East Park Avenue #180
Fairmont, WV 26554 USA
Ph: 304-296-8444
Fax: 304-291-5728
Internet: https://web.aacei.org/

AIR FORCE CORPORATE FACILITIES STANDARDS (AFCFS)
Internet: https://afcfs.wbdg.org/

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)
2311 Wilson Blvd, Suite 400
Arlington, VA 22201
Ph: 703-524-8800
Internet: http://www.ahrinet.org

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
555 12th Street NW, Suite 1000
Washington, DC 20004
Ph: 202-624-5800
Fax: 202-624-5806
E-Mail: info@aashto.org
Internet: https://www.transportation.org/

AMERICAN COLLEGE OF RADIOLOGY (ACR)
1891 Preston White Dr.
Reston, VA 20191
Ph: 703-648-8900
E-mail: info@acr.org
Internet: https://www.acr.org/

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (AIHA)
3141 Fairview Park Dr, Suite 360
Falls Church, VA 22042
Tel: 703-849-8888
Fax: 703-207-3561
E-mail: infonet@aiha.org
Internet https://www.aiha.org/

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
1899 L Street, NW,11th Floor
Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
E-mail: info@ansi.org
Internet: https://www.ansi.org/

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Reston, VA 20191
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Email: customercare@asce.org
Internet: https://www.asce.org/

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)
180 Technology Parkway NW
Peachtree Corners, GA 30092
Ph: 404-636-8400 or 800-527-4723
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Internet: https://www.ashrae.org/

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)
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Ph: 847-699-2929
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AMERICAN WATER WORKS ASSOCIATION (AWWA)
6666 W. Quincy Avenue
Denver, CO 80235 USA
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Fax: 303-347-0804
Internet: https://www.awwa.org/

ASSOCIATED AIR BALANCE COUNCIL (AABC)
1015 18th St. NW Suite 603
Washington, DC 20036
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Fax: 202-315-0285
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Internet: https://www.aabc.com/

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 610-832-9500
Fax: 610-832-9555

E-mail: service@astm.org
Internet: https://www.astm.org/

CITY OF SAN ANTOINO (COSA)
100 Military Plaza
San Antonio, TX 78205
Ph: 210-207-6000
Internet: https://www.sa.gov/Home

COMPRESSED GAS ASSOCIATION (CGA)
8484 Westpark Drive Suite 220
McLean, Virginia 22102
Ph: 703-788-2700
Fax: 703-961-1831
E-mail: cga@cganet.com
Internet: https://www.cganet.com/

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE)
722 Jackson Place
Washington DC 20506
Internet: https://www.whitehouse.gov/administration/ceq

CPS ENERGY (CPSE)
P.O. Box 1771
San Antonio, TX 78296
Ph: 210-353-HELP
E-mail: mscs@cpsenergy.com
Internet: https://www.cpsenergy.com/

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
445 and 501 Hoes Lane
Piscataway, NJ 08854-4141
Ph: 732-981-0060 or 800-701-4333
Fax: 732-981-9667
E-mail: onlinesupport@ieee.org
Internet: https://www.ieee.org/

INSTITUTE OF INSPECTION, CLEANING, AND RESTORATION CERTIFICATION (IICRC)
IICRC Global Resource Center
4043 S. Eastern Ave.
Las Vegas, NV 89119
Ph: 844-464-4272
E-mail: Marketing@iicrcnet.org
Internet: https://www.iicrc.org/

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)
800 Place Victoria
PO Box 113
Montréal, Quebec, H4Z 1M1
Ph: 514-390-6726 or 800-716-6326
Fax: 514-874-9659
E-mail: custserv@iata.org
Internet: https://www.iata.org/

INTERNATIONAL CODE COUNCIL (ICC)
200 Massachusetts Ave, NW Suite 250
Washington, DC 20001

Ph: 800-786-4452 or 888-422-7233
Fax: 202-783-2348
E-mail: order@iccsafe.org
Internet: https://www.iccsafe.org/

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
ISO Central Secretariat
BIBC II
Chemin de Blandonnet 8
CP 401 - 1214 Vernier, Geneva
Switzerland
Ph: 41-22-749-01-11
E-mail: central@iso.ch
Internet: https://www.iso.org

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)
1101 Wilson Blvd, Suite 1425
Arlington, VA 22209-1762
Ph: 703-525-1695
Fax: 703-528-2148
Internet: https://safetyequipment.org/

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)
8575 Grovemont Circle
Gaithersburg, MD 20877
Ph: 301-977-3698
Fax: 301-977-9589
Internet: http://www.nebb.org

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
1 Batterymarch Park
Quincy, MA 02169-7471
Ph: 800-344-3555
Fax: 800-593-6372
Internet: https://www.nfpa.org

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)
Patriots Plaza 1
395 E Street, SW, Suite 9200
Washington, DC 20201
Ph: 800-232-4636
Fax: 513-533-8347
Internet: https://www.cdc.gov/niosh/

NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS)
1090 Vermont Avenue NW, Suite 700
Washington, DC 20005-4950
Ph: 202-289-7800
Fax: 202-289-1092
Internet: http://www.wbdg.org

NATIONAL PARK SERVICE (NPS)
National Park Service
1849 C Street, NW
Washington, DC 20240
Ph: 202-208-6843
Internet: https://www.nps.gov/

NAVY AND MARINE CORPS PUBLIC HEALTH CENTER (NMCPHC)
620 John Paul Jones Circle, Suite 1100
Portsmouth, VA 23708-2103
Ph: 757-953-0700
Internet: https://www.med.navy.mil/sites/nmcphc/Pages/Home.aspx

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
4201 Lafayette Center Drive
Chantilly, VA 20151-1219
Ph: 703-803-2980
Fax: 703-803-3732
Internet: https://www.smacna.org/

STATE OF TEXAS ADMINISTRATIVE CODE (TAC)
109 Brazos St
Austin, TX 78701
Ph: 512-463-5561
Fax: 512-463-5569
Email: secretary@sos.texas.gov
Internet: https://www.sos.state.tx.us/index.shtml

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)
12100 Park 35 Circle
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Ph: 800-687-4040
Email: info@tceq.texas.gov
Internet: https://www.tceq.texas.gov/

TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT)
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Internet: http://uscode.house.gov/

U.S. DEFENSE LOGISTICS AGENCY (DLA)
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Document Automation and Production Service (DAPS)
Building 4/D
700 Robbins Avenue
Philadelphia, PA 19111-5094
Ph: 215-697-6396 - for account/password issues
Internet: https://assist.dla.mil/online/start/; account registration required
Obtain Unified Facilities Criteria (UFC) from:
Whole Building Design Guide (WBDG)

National Institute of Building Sciences (NIBS)
1090 Vermont Avenue NW, Suite 700
Washington, DC 20005
Ph: 202-289-7800
Fax: 202-289-1092
Internet: https://www.wbdg.org/dod/ufc

U.S. DEPARTMENT OF ENERGY (DOE)
1000 Independence Avenue Southwest
Washington, D.C. 20585
Ph: 202-586-5000
Fax: 202-586-4403
E-mail: The.Secretary@hq.doe.gov
Internet: https://www.energy.gov/

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)
HUD User
P.O. Box 23268
Washington, DC 20026-3268
Ph: 800-245-2691 or 202-708-3178
TDD: 800-927-7589
Fax: 202-708-9981
E-mail: helpdesk@huduser.gov
Internet: https://www.huduser.gov

U.S. DEPARTMENT OF TRANSPORTATION (DOT)
1200 New Jersey Ave., SE
Washington, DC 20590
Ph: 202-366-4000
Internet: https://www.transportation.gov/

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
1200 Pennsylvania Avenue, N.W.
Washington, DC 20004
Ph: 202-564-4700
Internet: https://www.epa.gov
--- Some EPA documents are available only from:
National Technical Information Service (NTIS)
5301 Shawnee Road
Alexandria, VA 22312
Ph: 703-605-6060 or 1-800-363-2068
Fax: 703-605-6880
TDD: 703-487-4639
E-mail: info@ntis.gov
Internet: https://www.ntis.gov/

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Ph: 202-512-1800 or 866-512-1800
Bookstore: 202-512-0132
Internet: https://www.gpo.gov/

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

-- End of Section --

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SECTION 01 45 00

QUALITY CONTROL

01/26

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SECTION 01 45 00

QUALITY CONTROL
01/26

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM C1077	(2025a) Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM D3666	(2016) Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D3740	(2019) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E90	(2023) Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
ASTM E329	(2025a) Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
ASTM E543	(2021) Standard Specification for Agencies Performing Non-Destructive Testing

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements
ER 1110-3-12	(2021) Military Engineering and Design Quality Management

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program. Include all associated costs in the applicable Pricing Schedule item.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S"

classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G

Additional Requirements For Design Quality Control (DQC) Plan; G

SD-05 Design Data

Design Quality Control

Discipline-Specific Checklists

Design Quality Control Documentation (DQCD)

SD-06 Test Reports

Verification Statement

SD-07 Certificates

Certificate Of Readiness; G

1.4 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system that complies with FAR 52.246-12 Inspection of Construction. QC is comprised of plans, procedures, and organization necessary to produce an end product that complies with the Contract requirements. The QC system covers all design and construction operations, both onsite and offsite, and must be keyed to the proposed design and construction sequence. The Quality Control Manager, Superintendent, Site Safety and Health Officer (SSHO), and all on-site supervisors are responsible for the quality of work and are subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the Contract. The Quality Control Manager must maintain a physical presence at the work site at all times and is the primary individual responsible for all quality control.

1.5 QUALITY CONTROL (QC) PROGRAM REQUIREMENTS

Establish and maintain a QC program as described in this section. This QC program is a key element in meeting the objectives of the Commissioning Process (Cx). The QC program consists of a QC Organization, QC Plan, QC Plan Meeting(s), a Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review and approval, testing, completion inspections, QC certifications, independent Special Inspections in accordance with Section 01 45 35 SPECIAL INSPECTIONS, and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations that comply with the requirements of this Contract. The QC program must cover on-site and off-site work and be keyed to the work sequence. No construction work or testing may be performed unless the QC Manager is on the work site. The QC Manager must report to an officer of the firm and not be subordinate to the Project Superintendent or the Project Manager. The QC Manager, Project Superintendent and Project Manager must work together effectively.

Although the QC Manager is the primary individual responsible for quality control, all individuals will be held responsible for the quality of work on the job.

1.5.1 Meetings

1.5.1.1 Quality Control Plan Meeting

Prior to submission of the QC Plan, the Contractor may request a meeting with the Contracting Officer to discuss the QC Plan requirements of this Contract.

The purpose of this meeting is to develop a mutual understanding of the QC Plan requirements prior to plan development and submission and to agree on the Contractor's list of Definable Feature of Work (DFOW).

1.5.1.2 Coordination and Mutual Understanding Meeting

After the Post Award Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, meet with the Contracting Officer and discuss the Contractor's quality control system. During the meeting, a mutual understanding of the system details must be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting will be prepared by the QC Manager and signed by the Contractor, the Architect/Engineer (A/E), and the Government. Provide a copy of the signed minutes to all attendees. At a minimum the Coordination and Mutual Understanding Meeting must be repeated when a new QC Manager is appointed. There can be other occasions when subsequent conferences will be called by either party to reconfirm mutual understandings or address deficiencies in the CQC system or procedures which can require corrective action by the Contractor.

1.5.1.2.1 Purpose

The purpose of this meeting is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, design intent, Cx in accordance with Section 01 91 00.15 BUILDING COMMISSIONING, environmental requirements and procedures, coordination of activities to be performed, Special Inspections, and the coordination of the Contractor's management, production, and QC personnel. At the meeting, the Contractor must explain in detail how three phases of control will be implemented for each DFOW, as well as how each DFOW will be affected by each management plan or requirement as listed below:

a. Waste Management Plan.

b. Procedures for noise and acoustics management.

c. Environmental Protection Plan.

d. Environmental regulatory requirements.

e. Cx Plan requirements in accordance with Section 01 91 00.15 BUILDING COMMISSIONING.

f. Special Inspections.

g. Indoor Air Quality (IAQ) Management Plan.

1.5.1.2.2 Coordination of Activities

Coordinate activities included in various sections to assure efficient and orderly installation of each component. Coordinate operations included under different sections that are dependent on each other for proper installation and operation. Schedule construction operations with consideration for indoor air quality as specified in the IAQ Management Plan. Coordinate Special Inspections.

1.5.1.2.3 Attendees

As a minimum, the Contractor's personnel required to attend include an officer of the firm, the Project Manager, Project Superintendent, QC Manager, Alternate QC Manager, QC Specialists, Special Inspector, Commissioning Provider (CxC), Environmental Manager, and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities must have a principal of the firm at the meeting.

1.5.1.3 Quality Control (QC) Meetings

After the start of construction, conduct weekly QC meetings led by the QC Manager at the work site with the Project Superintendent, the QC Specialists, the Special Inspector, CxC, and the other personnel as necessary. The QC Manager is to prepare the minutes of the meeting and provide a copy to the Contracting Officer within 2 working days after the meeting. The Contracting Officer may attend these meetings. As a minimum, accomplish the following at each meeting:

a. Review the minutes of the previous meeting.

b. Review the schedule and the status of work and deficiencies/rework. Review the most current approved schedule (in accordance with schedule specification) and the status of work and deficiencies/rework.

c. Review the status of submittals and Request For Information (RFIs).

d. Review the work to be accomplished in the next 3 weeks as defined by the schedule section paragraph WEEKLY PROGRESS MEETINGS in Section 01 32 01.00 30 PROJECT SCHEDULE and all documentation required for that work.

e. Review Testing Plan and Log including status of tests performed since last QC Meeting.

f. Resolve QC and production problems. Discuss status of pending change orders.

g. Address items that may require revising the QC Plan.

h. Review Accident Prevention Plan (APP) and effectiveness of the safety program.

i. Review environmental requirements and procedures.

j. Review Environmental Management Plan.

k. Review Waste Management Plan.

l. Review the status of training completion.

m. Review Cx Plan and progress. Review Issues Log and resolution.

n. Review IAQ Management Plan.

1.5.2 Contractor Quality Control (CQC) Plan

Submit no later than 30 days after receipt of notice to proceed, the CQC Plan proposed to implement the requirements FAR 52.246-12 Inspection of Construction. Design and Construction will be permitted to begin only after acceptance of the CQC Plan and other Contract requirements. Design work is not permitted to start prior to approval of a Design Quality Control Plan.

1.5.2.1 Content of Contractor Quality Control (CQC) Plan

Provide a CQC Plan, prior to start of construction that includes a table of contents, with major sections identified, pages numbered sequentially, and that documents the proposed methods and responsibilities for accomplishing quality control during the construction of the project. The CQC Plan must at a minimum include the following sections:

a. A description of the quality control organization and acknowledgment that the CQC staff will implement the three phase control system for all aspects of the work specified.

b. An organizational chart showing the quality control organization with individual names and job titles and lines of authority up to an executive of the company at the home office.

c. NAMES AND QUALIFICATIONS: Names and qualifications, in resume format, (including position titles and durations for qualifying experiences) for each person in the QC organization. Include the Construction Quality Management (CQM) for Contractors course certifications for the QC personnel as required by the paragraph CONSTRUCTION QUALITY MANAGEMENT TRAINING.

d. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL: Duties, responsibilities, and authorities of each person in the QC organization.

e. OUTSIDE ORGANIZATIONS: A listing of outside organizations, such as architectural and consulting engineering firms, that will be employed by the Contractor and a description of the services these firms will provide.

f. APPOINTMENT LETTERS: Letters signed by an officer of the firm appointing the QC Manager and Alternate QC Manager, Design Quality Control Manager, CxC, and stating that they are responsible for implementing and managing the QC program as described in this Contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of control, and their authority to stop work that is not in compliance with the Contract. Letters of direction are to be issued by the QC Manager to all other QC Specialists or quality control representatives outlining their duties, authorities, and responsibilities. Include

copies of the letters in the QC Plan.

g. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER: Procedures for reviewing, approving, scheduling, and managing submittals, including those of subcontractors, designers of record, consultants, architect-engineers (AE), offsite fabricators, suppliers, and purchasing agents. Provide the name(s) of the person(s) in the QC organization authorized to review and certify submittals prior to approval. Provide the initial submittal of the Submittal Register as specified in Section 01 33 00 SUBMITTAL PROCEDURES.

h. TESTING LABORATORY INFORMATION: Testing laboratory information required by the paragraph ACCREDITATION REQUIREMENTS, as applicable.

i. TESTING PLAN AND LOG: A Testing Plan and Log that includes the tests required, associated feature of work required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.

j. Procedures to complete design and construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected. This phase is performed prior to beginning work on each definable feature of work, after all required plans, documents, materials are approved, and after copies are at the work site.

k. Reporting procedures, including proposed reporting formats.

l. Procedures for submitting and reviewing design changes/variations prior to submission to the Contracting Officer.

m. LIST OF DEFINABLE FEATURES: A Definable Feature of Work (DFOW) is a task that is separate and distinct from other tasks and has control requirements and work crews unique to that task. A DFOW is identified by different trades or disciplines, or it is work by the same trade in a different environment. A DFOW is by definition any item or activity on the construction schedule, and the schedule specification provides direction regarding how the DFOWs are to be structured. Include in the list of DFOWs for all activities on the Construction Schedule. Provide separate DFOWs in the Network Analysis Schedule for each design development stage and submittal package. Although each section of the specifications can generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. Identify the specification section number and schedule activity ID for each DFOW listed. The DFOW list will be reviewed in coordination with the construction schedule and agreed upon during the Coordination of Mutual Understanding Meeting.

n. PROCEDURES FOR PERFORMING AND TRACKING THE THREE PHASES OF CONTROL: Identify procedures used to ensure the three phases of control to manage the quality on this project. For each Definable Feature of Work (DFOW), a Preparatory and Initial phase checklist will be filled out during the Preparatory and Initial phase meetings. Conduct the Preparatory and Initial Phases and meetings with a view towards obtaining quality construction by planning ahead and identifying potential problems for each DFOW.

o. Coordinate scheduled work with Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and

the Special Inspections Project Manual. Where the applicable code issued by the International Code Council (ICC) calls for inspections by the Building Official, the Contractor must include the inspections in the Quality Control Plan and must perform the inspections required by the applicable ICC. The Contractor must perform these inspections using independent qualified inspectors. Include the Special Inspections Project Manual requirements in the QC Plan.

p. PROCEDURES FOR COMPLETION INSPECTION: Procedures for identifying and documenting the completion inspection process. Include in these procedures the responsible party for punch out inspection, pre-final inspection, and final acceptance inspection.

q. TRAINING PROCEDURES AND TRAINING LOG: Procedures for coordinating and documenting the training of personnel required by the Contract.

r. ORGANIZATION AND PERSONNEL CERTIFICATIONS LOG: Procedures for coordinating, tracking and documenting all certifications required for entities such as subcontractors, testing laboratories, suppliers, and personnel. The QC Manager will ensure that certifications are current, appropriate for the work being performed, and will not lapse during any period of the Contract that the work is being performed.

1.5.2.2 Additional Requirements for Design Quality Control (DQC) Plan

The following additional requirements apply to the DQC Plan:

a. Submit and maintain a DQC Plan as an effective quality control program which assures that all services required by this Contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents must be technically reviewed by competent, independent reviewers identified in the DQC Plan. The same element that produced the product may not perform the Technical Review. Correct errors and deficiencies in the design documents prior to submitting them to the Government.

b. Include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific Contract period. Schedule must include sufficient detail to identify all major design tasks, including those that control the flow of work. Include review and correction periods associated with each item. Schedule must be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, submit a revised schedule reflecting the change within 7 calendar days.

c. Include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. Submit at each design phase as part of the project documentation these completed discipline-specific checklists. ER 1110-3-12 provides some useful information in developing checklists.

d. Implement the DQC Plan by a Design Quality Control Manager who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated and who coordinates work with and reports to the Contracting Officer via the QC Manager. Notify the Contracting Officer, in writing, of the name of the individual and the name of an alternate person assigned to the position.

e. Provide Quality Control Documentation procedures such as QC review sets and QC comments to demonstrate that cross checking of all engineering disciple's design drawings and specifications has taken place. The QC review documentation must exhibit a checking process of the design documents for completeness, accuracy, and constructability.

f. Names of the individuals, including their respective firm names, who will be serving as the Designer of Record (DOR) in their respective design discipline.

g. A statement of Life Safety and Fire Protection Features Inspections and Testing must be prepared by the Fire Protection DOR. Examples of life safety and fire protection features include, but are not limited to, water distribution systems including fire pumps and fire hydrants, fire resistive assemblies such as fire rated walls/partitions, through -penetration firestop systems, spray-applied fireproofing of structural components, fire alarm and detection systems, fire suppression and standpipe systems, means of egress components, emergency and exit lighting fixtures. The plan must include a listing of the individuals, approved agencies or firms that will be retained for conducting the required inspections and tests accompanied by a description of individual inspector's experience, and a copy of all required certifications.

(1) Comprehensive list of systems, components or features to be inspected and tested.

(2) Description of performance verification testing activities for each system or component.

(3) Procedures and schedules for functional performance tests of all systems requiring functional testing.

1.5.3 Acceptance of the Quality Control (QC) and Design Quality Control (DQC) Plan

The Contracting Officer's acceptance of the Contractor QC Plan and Design Quality Control Plan is required prior to the start of design and construction. The Contracting Officer reserves the right to require changes in the QC and DQC Plan and operations as necessary, including removal or addition of personnel, to ensure the specified quality of work. The Contracting Officer reserves the right to interview any member of the QC and DQC organization at any time to verify the submitted qualifications. All QC and DQC organization personnel are subject to acceptance by the Contracting Officer. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the Contract.

1.5.4 Notification of Changes

Notify the Contracting Officer, in writing, in advance of any proposed changes in the QC Plan or changes to the QC organization personnel. Proposed changes are subject to acceptance by the Contracting Officer.

1.5.5 Special Inspections

Perform all required Special Inspections per Section 01 45 35 SPECIAL INSPECTIONS, the statement of Special Inspections and the Schedule of

Special Inspections.

1.6 QUALITY CONTROL (QC) ORGANIZATION

1.6.1 Personnel Requirements

The requirements for the CQC organization are a Site Safety and Health Officer (SSHO), QC Manager, a Design Quality Manager, and enough qualified personnel to ensure safety and Contract compliance. The SSHO reports directly to a senior project (or corporate) official independent from the QC Manager. The SSHO will also serve as a member of the CQC Staff Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly. The CQC staff always maintains a presence at the site during progress of the work and have complete authority and responsibility to take any action necessary to ensure Contract compliance. The CQC staff will be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly complete and furnish all letters, material submittals, shop drawing submittals, schedules, and all other project documentation to the CQC organization. The CQC organization is responsible for always maintaining these documents and records at the site, except as otherwise acceptable to the Contracting Officer.

1.6.2 Quality Control (QC) Manager

1.6.2.1 Duties

Provide a QC Manager at the work site to implement and manage the QC program. The QC Manager must be employed by the Prime Contractor. The only duties and responsibilities of the QC Manager are to manage and implement the QC program on this Contract. The QC Manager must attend the QC Plan Meetings,Coordination and Mutual Understanding Meeting, conduct the QC meetings,perform the three phases of control except for those phases of control designated to be performed by QC Specialists, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this Contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by the QC Specialists, testing laboratory personnel and any other inspection and testing personnel required by this Contract. The QC Manager is the manager of all QC activities. The QC manager is responsible for notifying the Special Inspector of activities which require their review. The QC manager is responsible for coordinating the Special Inspection activities, see paragraph CONTRACTOR'S QUALITY CONTROL (QC) MANAGER, in Section 01 45 35 SPECIAL INSPECTIONS. The QC manager is responsible for the quality control for Secure Space perimeter construction.

1.6.2.2 Qualifications

The QC Manager must possess at least a Bachelor's degree in engineering, architecture, or construction management, with a minimum of 15 years construction experience as a Project Superintendent, QC Manager, Project Manager, Project Engineer or Construction Manager on similar size and type construction Contracts which included the major trades that are part of this Contract. The individual must have at least 7 years experience as a QC Manager. The individual must be familiar with the requirements of EM 385-1-1 and have experience in the areas of hazard identification, safety compliance, and sustainability.

The QC Manager and all members of the QC organization must be capable of reading, writing, and conversing fluently in the English language.

1.6.2.3 Construction Quality Management Training

In addition to the above experience and education requirements, the QC Manager, Alternate QC Manager, Superintendent, QC Specialist, and DQCM must have completed the CQM for Contractors course. If the QC Manager does not have a current certification, obtain the CQM for Contractors course certification within 90 days of award. This course is periodically offered by the Naval Facilities Engineering Systems Command and the Army Corps of Engineers.

The Construction Quality Management Training certificate expires after 5 years. If the QC Manager's certificate has expired, retake the course to remain current.

1.6.3 Organizational Changes

Maintain the QC staff with personnel as required by the specification section at all times. When it is necessary to make changes to the QC staff, revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

1.6.4 Design Quality Control (DQC) Manager

The DQC Manager must be a member of the QC organization, must coordinate actions with the QC Manager, and must not be subordinate to the Project Superintendent or the Project Manager. The DQC Manager may also act as the CxC if all CxC qualifications are met.

1.6.4.1 Qualifications

a. A minimum of 5 years experience as a design Architect or Engineer on similar size and type designs / or design-build Contracts. Provide education, experience, and management capabilities on similar size and type Contracts.

b. Be a registered professional engineer or architect with an active registration. Provide proof of registration as part of the resume submittal package.

1.6.4.2 Responsibilities

a. Be responsible for the design integrity, professional design standards, and all design services required.

b. Be a member of the DOR firm but may not be the DOR or the person stamping and approving final construction drawings or approving submittals.

c. Be responsible for development of the design portion of the QC Plan, incorporation and maintenance of the approved Design Schedule, and the preparation of DQC Reports and minutes of all design meetings.

d. Participate in the Post Award Kick-Off, all design planning meetings, design presentations, partnering, and QC meetings.

e. Be cognizant of and assure that all design documents on the project have been developed in accordance with the Contract.

f. Provide Design Quality Control Documentation (DQCD) which indicates design coordination of the engineering disciplines. Submit DQCD with the Interim, Final, and Design Complete submittals.

g. Certify and sign statement on each invoice that all work to be paid to the DOR under the invoice has been completed in accordance with the Contract requirements.

h. Prepare weekly DQC Reports that document the work the design team accomplished that week.

i. Coordinate all training requirements with the QC and in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

1.6.5 Alternate Quality Control (QC) Manager Duties and Qualifications

Designate an alternate for the QC Manager at the work site to serve in the event of the designated QC Manager's absence. The qualification requirements for the Alternate QC Manager must be the same as for the QC Manager.

1.6.6 Designer of Record (DOR) Qualifications

The DOR must be a registered design professional, retained by the Prime Contractor, responsible for the overall design and review of submittal documents prepared by others. The DOR is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws in the State of Texas. The DOR cannot serve as the DQC Manager.

1.6.7 Commissioning

Commissioning (Cx) is a systematic, quality-focused process for delivery of a project focusing on verifying and documenting all commissioned systems and assemblies are installed, tested, and operating as they were planned and designed to meet the project requirements. The Quality Control requirements outlined in this specification section are key in supporting the objectives of the Cx process, specifically coordinating testing, documenting, and verifying proper system operation. Properly executed the Quality Control support of Cx ensures timely execution of necessary tasks to deliver the fully commissioned and operating systems in coordination with the overall construction and project schedule.

Provide Cx in addition to the quality control requirements of this section and not as a substitute for quality control requirements. The QC Manager is responsible for carrying out the three phases of control while ensuring the functional performance and integrated systems tests are coordinated with the Cx provider as required for each system to be commissioned.

1.6.7.1 Certificate of Readiness

The QC Manager must issue a Certificate of Readiness for Government approval for each system to be commissioned. Schedule Functional Performance Tests for each system only after the Certificate of Readiness has been approved by the Government for the system. The Certificate of Readiness certifies that all required inspections have been completed and

deficiencies that were identified through any prior review, inspection, or test activity have been corrected before the start of Functional Performance Tests. Refer to Cx requirements in Section 01 91 00.15 BUILDING COMMISSIONING for a list of systems to be commissioned and detailed requirements for the Cx provider.

1.6.8 Quality Control (QC) Specialists

Provide a separate QC Specialist at the work site for each of the areas as listed in the Matrix listed below, who must assist and report to the QC Manager and who may perform production related duties but must be allowed sufficient time to perform their assigned quality control duties. These individuals or specialized technical companies are employees of the Prime or subcontractor including Designer of Record (DOR). A single person can cover more than one area provided that the single person is qualified to perform quality control activities in each designated and that workload allows. QC Specialists must be physically present at the work site with frequency as indicated in the Experience Matrix below, to participate in the QC Meetings, perform the three phases of control, including participation in Preparatory and Initial Phase meetings, and to perform and document Follow-up inspections as an extension of the QC Manager for each definable feature of work in their area of responsibility. QC Specialist must assist and be present for training events, and Critical System Acceptance inspections by the Government. Qualification, experience, Area of Responsibility, and frequency of QC surveillance are provided in Matrix listed herein.

Experience Matrix		
1. Area	**2-1. Qualification** **2-2. Experience**	**3-1. Area of Responsibility** **3-2. Frequency**
Electrical	2-1. Graduate Electrical Engineer with 2-2. 2 years related experience or person 5 years of experience supervising electrical features of work in the field with a construction company	3-1. Area of Responsibility: As directed by the DOR 3-2. Frequency of QC surveillance and inspection will be reoccurring during installation for the applicable definable feature of work and including final inspection.

Structural	2-1. Graduate Civil Engineer (with Structural Track or Focus) or Construction Manager with 2-2. 2 years experience or person 5 years of experience supervising structural features of work in the field with a construction company	3-1. Area of Responsibility: As directed by the DOR 3-2. Frequency of QC surveillance and inspection will be reoccurring during installation for the applicable definable feature of work and including final inspection.
Architectural	2-1. Registered Architect in the state of Texas, and 2-2. 2 years of graduate study in architectural preservation, American Architectural History, preservation planning or closely related field; and 10 years of full-time professional experience on historic preservation projects	3-1. Area of Responsibility: Historic Preservation 3-2. Frequency of QC surveillance and inspection will be reoccurring during installation for the applicable definable feature of work and including final inspection.
Concrete, Pavements and Soils	2-1. Materials Technician 2-2. 2 years experience for the appropriate area	3-1. Area of Responsibility: As directed by the DOR 3-2. Frequency of QC surveillance and inspection will be reoccurring during installation for the applicable definable feature of work and including final inspection.

Testing, Adjusting and Balancing (TAB) Personnel	2.1. TAB Team Field Leader must be a member of AABC or an experienced technician of the firm certified by the NEBB 2-2. 3 years experience immediately preceding this Contract	3-1. Area of Responsibility: HVAC system 3-2. Frequency of QC surveillance and inspection will be reoccurring during installation for the applicable definable feature of work and including final inspection.
Roofing Manufacturer's Technical Representative	2-1. Installation and testing of roofing systems 2-2. 5 years experience minimum	3-1. Area of Responsibility: Repairs to existing clay tile roof 3-2. Frequency of QC surveillance and inspection will be reoccurring during installation for the applicable definable feature of work and including final inspection.
Telecommunications	2-1. Installation of NIPR and SIPR systems 2-2. 3 years of experience	3-1. Area of Responsibility: Telecommunications systems 3-2. Frequency of QC surveillance and inspection will be reoccurring during installation for the applicable definable feature of work and including final inspection.

Low-Voltage Specialties/ESS	2-1. Installation of IDS 2-2. Installer must be Lenel certified	3-1. Area of Responsibility: Systems serving the Operations Center 3-2. Frequency of QC surveillance and inspection will be reoccurring during installation for the applicable definable feature of work and including final inspection.
Fire Protection QC Specialist (FPQC)	Note: See paragraph FIRE PROTECTION QC SPECIALIST (FPQC)	Note: See paragraph FIRE PROTECTION QC SPECIALIST (FPQC)

1.6.8.1 Fire Protection QC Specialist (FPQC)

Provide a Fire Protection Quality Control Specialist (FPQC) within the QC organization to perform quality control related activities as specified herein on fire protection and life safety systems installed under this Contract.

1.6.8.1.1 Qualifications

The FPQC must have the following qualifications:

a. Be a registered Professional Engineer (P.E.) licensed by the State of Texas, having passed the National Council of Examiners for Engineering and Surveying (NCEES) examination specifically in the discipline of Fire Protection Engineering.

b. Have a minimum of 5 years of Fire Protection Engineering experience on projects of similar relevance and complexity to the fire protection work specified under this Contract.

c. Other than the contractual obligations with the Prime Contractor, the FPQC must have no other business relationship (i.e., employee, owner, partner, operating officer, distributor, salesman, technical representative, family relationship, or financial investment) with the Prime Contractor or subcontractors.

d. Be employed by an independent engineering firm or company or be the Fire Protection Engineer on the Prime Contractor's Design-Build team. The firm may identify multiple, to a maximum of five, licensed Fire Protection Engineers for the performance of the duties under this Contract but must submit the names and qualifications for Government approval for all individuals identified prior to them performing any work under this Contract. These individuals may not be substituted without prior approval from the Contracting Officer.

1.6.8.1.2 Responsibilities

FPQC duties and responsibilities:

a. Assist in the development of the QC Plan including the Testing Plan and Log and executing the three phases of control for work involving the installation and testing of fire protection and life safety systems as an extension of the QC Manager.

b. Participate in project QC Meetings. Participate in Preparatory and Initial Phase meetings and perform and Follow-up inspections for work involving the installation and testing of fire protection and life safety systems.

c. Review and certify that all submittals pertaining to fire protection and life safety systems are complete and accurate prior to submission to the Government for surveillance. Forward each submittal reviewed by the FPQC to the Government for surveillance within 10 working days of FPQC certification. The FPQC Specialist is responsible for ensuring submittals are complete and accurate and all corrections have been made prior to submission to the Government. The Government reserves the right to reject any submittal that has not first been reviewed and certified by the FPQC and so marked, in writing, attesting to such review and completeness of the submittal.

d. The Government reserves the right to reject any submittal or construction that is not in compliance to Contract. Government reviews do not relieve the Contractor responsibility for providing adequate quality control measures and do not constitute or imply acceptance of Contract variation.

e. Perform construction surveillance in accordance with the Schedule of Fire Protection System Inspections produced by the DOR. Construction surveillance includes but is not limited to performing periodic on-site inspections during construction at specified milestones, performing a pre-final inspection of installed systems and witnessing functional testing; and participating and documenting in an on-site final acceptance inspection of fire protection and life safety systems with the Government FPE.

f. Document inspection results on a FPQC report prepared each day inspections are performed. The report must include a description of the visual inspection or observation performed, a written summary of findings, a conclusion on compliance with the Contract documents, and signature of the FPQC Specialist. In person inspection must be documented via photo (.jpeg), and optionally by video (.mp4). Video/photographic documentation must include before and after conditions and physical measurements. Forward the FPQC daily report to the QC Manager who must include the report with the submission of their daily QC Report to the Government each day. Every site visit by the FPQC must be documented on a FPQC daily report.

1.6.8.1.3 Schedule of Fire Protection System Inspections

A schedule, prepared by the Fire Protection DOR, which lists each of the required visual inspections and observations required by the FPQC. The schedule shall be provided by the DOR.

1.6.8.2 Quality Control (QC) for Secure Space Perimeter Construction

1.6.8.2.1 Periodic (Follow-Up Phase) Inspections

Once construction begins, perform periodic inspections of Secure Space identified in the Contract drawings at least once every 2 weeks. Increase frequency to weekly inspections within 30 days of planned acceptance testing. Coordinate periodic inspections with the appointed Government Site Security Manager (SSM) responsible for ensuring the assembly meets the requirements for accreditation. Inspections must verify that construction and materials comply with the Contract documents, the description of the assembly in the ASTM E90 Factory Report for acoustical testing, and the approved submittals. Focus inspections on the construction of the sound rated assemblies, perimeter penetrations, perimeter doors, electronic security system, man-bar installation, and inspection ports. Document periodic inspections in Daily QC Reports.

1.6.8.2.2 Preliminary Inspection

The Government and QC Manager will perform a joint preliminary inspection of the Secure Space after construction of the assembly is complete to verify compliance with the design requirements and other Contract documents. The Contracting Officer and the appointed Government SSM will participate in the preliminary inspection. Provide the Contracting Officer a minimum 14 calendar days notification in advance of the preliminary inspection.

As a result of the preliminary inspection, prepare a Secure Space punch list with deficiencies identified. Include with the punch list the estimated date by which the deficiencies will be corrected. Document the preliminary inspection in the Daily QC Report and attach the punch list. Notify the Contacting Officer when deficiencies are corrected. Deficiencies from the Preliminary Inspection must be corrected prior to scheduling the Final Acceptance Inspection.

1.6.8.2.3 Acceptance Testing for Sound Attenuation

Perform acceptance testing for sound transmission loss of sound rated door assemblies as required in Section 08 34 73 SOUND CONTROL DOOR ASSEMBLIES and Section 09 29 00 GYPSUM BOARD for sound rated assemblies. Acceptance testing must be performed during the preliminary inspection. The Contracting Officer and the appointed Government SSM must witness acceptance testing. Deficiencies identified during acceptance testing must be included in the Secure Space punch list and corrected prior to the final acceptance inspection.

1.6.8.2.4 Acceptance Testing for Electronic Security Systems

Perform acceptance testing for Electronic Security Systems in accordance with Section 28 08 10 ELECTRONIC SECURITY SYSTEM ACCEPTANCE TESTING. Acceptance testing must be performed during the preliminary inspection. The Contracting Officer and the appointed Government SSM must witness acceptance testing. Deficiencies identified during acceptance testing must be included in the Secure Space punch list and corrected prior to the Final Inspection.

1.6.8.2.5 Final Inspection

Perform a final inspection of the Secure Space after required testing has

been successfully completed as part of the preliminary inspection and all punch list items corrected. Testing is not permitted during the final inspection. QC Manager and Superintendent must attend the final inspection and Government attendees will include the Contracting Officer and appointed Government SSM. Request a final inspection by the Contracting Officer a minimum of 14 calendar days in advance.

1.6.9 Special Inspector

The Special Inspector (SI) must be an independent third party hired directly by the Prime Contractor. The SI must not be a company employee of the Contractor or any subcontractor performing the work to be inspected. The qualifications of the SI are defined in Section 01 45 35 SPECIAL INSPECTION.

1.7 SUBMITTAL AND DELIVERABLES REVIEW AND APPROVAL

Procedures for submission, review and approval of submittals are described in Section 01 33 00 SUBMITTAL PROCEDURES. Procedures must include field verification of relevant dimensions and component characteristics by the QC organization prior to submittal being sent to the Contracting Officer. The CQC organization is responsible for certifying that all submittals and deliverables are in compliance with the Contract. When Section 01 91 00.15 BUILDING COMMISSIONING are included in the Contract, the submittals required by those sections have to be coordinated with Section 01 33 00 SUBMITTAL PROCEDURES to ensure adequate time is allowed for each type of submittal required.

1.8 THREE PHASES OF CONTROL

CQC enables the Contractor to ensure that the construction, including that of subcontractors and suppliers, complies with the requirements of the Contract. At least three phases of control must be conducted by the QC Manager to adequately cover both on-site and off-site work for each definable feature of the construction work as follows:

1.8.1 Preparatory Phase

Document the results of the preparatory phase actions by separate minutes prepared by the QC Manager and attach to the daily CQC report. Instruct applicable workers as to the acceptable level of workmanship required to meet Contract specifications.

Notify the Contracting Officer at least 2 business days in advance of each preparatory phase meeting. The meeting will be conducted by the QC Manager and attended by the QC Specialists, the Project Superintendent, the CxC, the Special Inspector, and the foreman responsible for the DFOW. When the DFOW will be accomplished by a subcontractor, that subcontractor's foreman must attend the preparatory phase meeting. This phase is performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. Perform the following prior to beginning work on each DFOW:

a. Review each paragraph of the applicable specification sections, reference codes, and standards. Make available during the prepatory inspection a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field. Maintain and make available in the field for use by Government

personnel until final acceptance of the work.

b. Review the Contract drawings.

c. Verify that field measurements are as indicated on construction or shop drawings or both before confirming product orders, to minimize waste due to excessive materials.

d. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required.

e. Review the testing plan and ensure that provisions have been made to provide the required QC testing.

f. Examine the work area to ensure that the required preliminary work has been completed and complies with the Contract and ensure any deficiencies/rework items in the preliminary work have been corrected and confirmed by the Contracting Officer.

g. Review coordination of product/material delivery to designated prepared areas to execute the work.

h. Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data and are properly stored.

i. Check to assure that all materials and equipment have been tested, submitted, and approved.

j. Discuss specific controls to be used, construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFOW. Ensure any portion of the plan requiring separate Contracting Officer acceptance has been approved.

k. Review the APP and appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met, and that required Safety Data Sheets (SDS) are submitted.

l. Review the Cx requirements in accordance with Section 01 91 00.15 BUILDING COMMISSIONING and ensure all preliminary work items have been completed and documented.

m. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

n. Discuss schedule and execution of the initial control phase and confirmation or construction quality compliance.

o. Review Special Inspections required by Section 01 45 35 SPECIAL INSPECTION, the Statement of Special Inspections and the Schedule of Special Inspections.

1.8.2 Initial Phase

Notify the Contracting Officer at least 2 business days in advance of each

initial phase. When construction crews are ready to start work on a DFOW, conduct the initial phase with the QC Specialists, the Project Superintendent, the Special Inspector, and the foreman responsible for that DFOW. Observe the initial segment of the DFOW to ensure that the work complies with Contract requirements. Document the results of the initial phase in the daily CQC Report and in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site when acceptable levels of specified quality are not being met. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases. Perform the following for each DFOW:

a. Check work to ensure that it is in full compliance with Contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full Contract compliance. Verify required control inspection and testing comply with the Contract.

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

d. Resolve any workmanship issues.

e. Ensure that testing is performed by the approved laboratory.

f. Check work procedures for compliance with the APP and the appropriate AHA to ensure that applicable safety requirements are met.

g. Review project specific work plans (i.e., Cx, HAZMAT Abatement, Stormwater Management) to ensure all preparatory work items have been completed and documented.

h. Coordinate scheduled work with Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and the Schedule of Special Inspections.

1.8.3 Follow-Up Phase

Perform the following for on-going DFOW daily, or more frequently as necessary, until the completion of each DFOW. The Final Follow-Up for any DFOW will clearly note in the daily report the DFOW is completed, and all deficiencies/rework items have been completed in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST. Each DFOW that has completed the Initial Phase and has not completed the Final Follow-up must be included on each daily report. If no work was performed on that DFOW for the period of that daily report, it must be so noted. Document all Follow-Up activities for DFOWs in the daily CQC Report:

a. Ensure the work including control testing complies with Contract requirements until completion of that particular work feature. Record checks in the CQC documentation.

b. Maintain the quality of workmanship required.

c. Ensure that testing is performed by the approved laboratory.

d. Ensure that deficiencies/rework items are being corrected. Conduct

final follow-up checks and correct all deficiencies prior to the start of additional features of work which may be affected by the deficient work.

e. Do not build upon nor conceal non-conforming work.

f. Assure manufacturers' representatives have performed necessary inspections if required and perform safety inspections.

g. Review the Cx requirements in accordance with Section 01 91 00.15 BUILDING COMMISSIONING.

h. Coordinate scheduled work with Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and the Schedule of Special Inspections.

1.8.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same DFOW if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a DFOW has not started within 45 days of the initial preparatory meeting or has resumed after 45 days of inactivity, or if other problems develop.

1.8.5 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least 14 calendar days prior to the start of the preparatory and initial phases.

1.8.6 Deficiency/Rework Items List

The QC Manager must maintain a list of work that does not comply with the Contract, identifying what items need to be corrected, the activity ID number associated with the item, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected.

The QC Manager reviews the list at each weekly QC Meeting:

a. There is no requirement to report a deficiency/rework item that is corrected the same day it is discovered.

b. No successor task may be advanced beyond the preparatory phase meeting until all deficiencies/rework items have been cleared by the QC Manager and concurred with by the Contracting Officer. This must be confirmed as part of the Preparatory Phase activities.

c. Attach a copy of the "Deficiency/Rework Items List" to the last daily CQC Report of each month.

d. The Contractor is responsible for including those items identified by the Contracting Officer.

e. All deficiencies/rework items must be confirmed as corrected by the QC Manager, and concurred by the Contracting Officer, prior to commencement of any completion inspections per paragraph COMPLETION INSPECTIONS unless specifically exempted by the Contracting Officer.

f. Non-Compliance with these requirements is grounds for removal in accordance with paragraph ACCEPTANCE OF THE QUALITY CONTROL (QC) and DESIGN QUALITY CONTROL (DQC) PLAN.

g. All delays, concurrent or related to failure to manage, monitor, control, and correct deficiencies/rework items are entirely the responsibility of the Contractor and can not be made the subject, or any component of any request for additional time or compensation.

1.9 TESTING

Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to Contract requirements. Upon request, furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and acceptance tests when specified. Procure the services of an U.S. Army Corps of Engineers approved testing laboratory. Perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with Contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all test documentation requirements, have been prepared.

e. Record results of all tests taken, both passing and failing on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test. If approved by the Contracting Officer, actual test reports are submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated results in nonpayment for related work performed and disapproval of the test facility for this Contract.

1.9.1 Accreditation Requirements

Construction materials testing laboratories must be accredited by a laboratory accreditation authority and must submit a copy of the Certificate of Accreditation and Scope of Accreditation. The laboratory's scope of accreditation must include the appropriate ASTM standards (ASTM E329, ASTM C1077, ASTM D3666, ASTM D3740, ASTM E543) listed in the technical sections of the specifications. Laboratories engaged in Hazardous Materials Testing must meet the requirements of OSHA and EPA. The policy applies to the specific laboratory performing the actual testing, not just the Corporate Office.

1.9.2 Laboratory Accreditation Authorities

All testing laboratories must be validated by the USACE Material Testing Center (MTC) for the tests to be performed. Information on the USACE MTC with web-links to both a list of validated testing laboratories and for the laboratory inspection request for can be found at:

https://mtc.erdc.dren.mil

1.9.3 Capability Check

The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract. Laboratories utilized for testing soils, concrete, asphalt, and steel must meet criteria detailed in ASTM D3740 and ASTM E329.

1.9.3.1 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge equal to the liquidated damages amount to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the Contract amount due the Contractor.

1.9.4 Test Results

Cite applicable Contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify the Contracting Officer immediately. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results must be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager.

1.10 COMPLETION INSPECTIONS

1.10.1 Punch-Out Inspection

Near the completion of all work or any increment thereof, established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings, specifications, and Contract. Include in the punch list any remaining items on the "Deficiency/Rework Items List", that were not corrected prior to the Punch-Out Inspection as approved by the Contracting Officer in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST. Include within the punch list the estimated date by which the deficiencies will be corrected. Provide a copy of the punch list to the Contracting Officer.

The QC Manager, or staff, must make follow-on inspections to ascertain that all deficiencies have been corrected. All punch list items must be confirmed as corrected by the QC Manager and concurred by the Contracting Officer. Once this is accomplished, notify the Government that the facility is ready for the Government "Pre-Final Inspection".

1.10.2 Pre-Final Inspection

The Government and QC Manager will perform this inspection to verify that the facility is complete and ready to be occupied. A Government

"Pre-Final Punch List" will be documented by the QC Manager as a result of this inspection. The QC Manager will ensure that all items on this list are corrected and concurred by the Contracting Officer prior to notifying the Government that a "Final" inspection with the Client can be scheduled. All items noted on the "Pre-Final" inspection must be corrected and concurred by the Contracting Officer in a timely manner and be accomplished before the Contract completion date for the work, or any increment thereof, if the project is divided into increments by separate completion dates unless exceptions are directed by the Contracting Officer.

1.10.3 Final Acceptance Inspection

Notify the Contracting Officer at least 14 calendar days prior to the date a final acceptance inspection can be held. State within the notice that all items previously identified on the pre-final punch list will be corrected and acceptable, along with any other unfinished Contract work, by the date of the final acceptance inspection. The Contractor must be represented by the QC Manager, the Project Superintendent, and others deemed necessary. Attendees for the Government will include the Contracting Officer, other Government QA personnel, and personnel representing the Client. Failure of the Contractor to have all Contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause entitled "Inspection of Construction."

1.11 QUALITY CONTROL (QC) CERTIFICATIONS

1.11.1 Contractor Quality Control (CQC) Report Certification

Contain the following statement within the CQC Report: "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used, and work performed during this reporting period is in compliance with the Contract drawings and specifications to the best of my knowledge, except as noted in this report."

1.11.2 Completion Certification

Upon completion of work under this Contract, the QC Manager must furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract." Provide a copy of this final QC Certification for completion to the preparer of the Operation & Maintenance (O&M) documentation.

1.11.3 Invoice Certification

Furnish a certificate to the Contracting Officer with each payment request, signed by the QC Manager, attesting that as-built drawings are current, coordinated and attesting that the work for which payment is requested, including stored material that the Contracting Officer has allowed to be billed for, complies with Contract requirements.

1.12 DOCUMENTATION AND INFORMATION FOR THE CONTRACTING OFFICER

Maintain current and complete records of on-site and off-site QC program operations and activities.

Prior to commencing work on construction, the Contractor must obtain a copy set of the current report forms. The report forms will consist of

the Contractor Quality Control (CQC) Report, CQC Report (Continuation Sheet), Contractor Production Report, Contractor Production Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Testing Plan and Log, and Rework Items List. Unless otherwise provided by the Contracting Officer, Contractor may use the forms provided as related material located at https://www.wbdg.org/dod/ufgs/ufgs-01-45-00.

1.12.1 Construction Documentation

Reports are required for each day that work is performed and must be attached to the Contractor Quality Control Report prepared for the same day. Maintain current and complete records of on-site and off-site QC program operations and activities. Reports are required for each day work is performed. Account for each calendar day throughout the life of the Contract.

The Project Superintendent and the QC Manager must prepare and sign the Contractor Production and CQC Reports, respectively. Every space on the forms must be filled in. Use N/A if nothing can be reported in one of the spaces. The reporting of work must be identified by terminology consistent with the construction schedule. In the "Remarks" sections of the reports, enter pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered, a record of visitors to the work site, quality control problem areas, deviations from the QC Plan, construction deficiencies encountered, and meetings held. For each entry in the report(s), identify the Schedule Activity No. that is associated with the entered remark.

1.12.2 Quality Control Activities

CQC and Contractor Production reports will be prepared daily to maintain current records providing factual evidence that required quality control activities and tests have been performed. Include in these records the work of subcontractors and suppliers on an acceptable form that includes, as a minimum, the following information:

a. The name and area of responsibility of the Contractors and any subcontractors.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When a Network Analysis Schedule (NAS) is used, identify each item of work performed each day by NAS activity number.

d. Control phase activities performed. Preparatory, and Initial phase Checklists associated with the DFOW referenced to the construction schedule. Follow-up phase activities identified to the DFOW. If testing or specific QC Specialist activities are associated with the Follow-up phase activities for a specific DFOW note this and include those reports.

e. Test and control activities performed with results and references to specifications and drawings requirements. Identify the control phase (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action in accordance with the paragraph

DEFICIENCY/REWORK ITEMS LIST.

f. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications and drawings requirements.

g. Submittals and deliverables reviewed, with Contract reference, by whom, and action taken.

h. Offsite surveillance activities, including actions taken.

i. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

j. Instructions given/received and conflicts in plans and specifications.

k. Provide documentation of design quality control activities. For independent design reviews, provide, as a minimum, identification of the team and their review comments, responses and the record of resolution of the comments.

1.12.3 Verification Statement

Indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. Cover both conforming and deficient features and include a statement that equipment and materials incorporated in the work and workmanship comply with the Contract.

Furnish the original and one copy of these records in report form to the Government by 10:00 AM the next working day after the date covered by the report. As a minimum, prepare and submit one report for every 7 days of no work and on the last day of a no work period. All calendar days need to be accounted for throughout the life of the Contract. The first report following a day of no work will be for that day only. Reports need to be signed and dated by the QC Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the QC Manager Report.

1.12.4 Reports from the Quality Control (QC) Specialist(s)

Document inspection results on a QC specialist report prepared each day work is performed in their area of responsibility. The report must include a description of the visual inspection or observation performed, a written summary of findings, a conclusion on compliance with the Contract documents, and signature of the QC Specialist. In person inspections must be documented with Video/photographs. Video/photographic documentation of deficiencies must include before and after conditions and physical measurements, as necessary. Forward the QC daily report to the QC Manager who must include the report with the submission of their daily QC Report to the Government each day. Every site visit by the QC Specialist must be documented on a QC Specialist daily report.

1.12.5 Quality Control Validation

Establish and maintain the following in an electronic folder. Divide folder into a series of tabbed sections as shown below. Ensure folder is updated at each required progress meeting.

a. CQC Meeting minutes in accordance with paragraph QUALITY CONTROL (QC) MEETINGS.

b. All completed Preparatory and Initial Phase Checklists, arranged by specification section, further sorted by DFOW referenced to the construction schedule. Submit each individual Phase Checklist the day the phase event occurs as part of the CQC daily report.

c. All milestone inspections, arranged by Activity Number referenced to the construction schedule.

d. An up-to-date copy of the Testing Plan and Log with supporting field test reports, arranged by specification section referenced to the DFOW to which individual reports results are associated. Individual field test reports will be submitted within 2 working days after the test is performed in accordance with the paragraph QUALITY CONTROL ACTIVITIES.

e. Copies of all Contract modifications, arranged in numerical order. Also include documentation that modified work was accomplished.

f. An up-to-date copy of the paragraph DEFICIENCY/REWORK ITEMS LIST.

g. Cx documentation in accordance with Section 01 91 00.15 BUILDING COMMISSIONING.

h. Special Inspection reports.

i. Upon commencement of Completion Inspections of the entire project or any defined portion, maintain up-to-date copies of all punch lists issued by the QC staff to the Contractor and subcontractors and all punch lists issued by the Government in accordance with the paragraph COMPLETION INSPECTIONS.

1.12.6 Testing Plan and Log

As tests are performed, the CxC and the QC Manager will record on the "Testing Plan and Log" the date the test was performed and the date the test results were forwarded to the Contracting Officer. Attach a copy of the updated "Testing Plan and Log" to the last daily CQC Report of each month. Provide a copy of the final "Testing Plan and Log" to the preparer of the Operation & Maintenance (O&M) documentation.

1.12.7 As-Built Drawings

The QC Manager must ensure the as-built drawings, required by Section 01 78 00 CLOSEOUT SUBMITTALS are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. The as-built drawings document commences with the QC Manager ensuring all amendments, or changes to the Contract prior to Contract award are accurately noted in the initial document set creating the accurate baseline of the Contract prior to any work starting. Ensure each deviation has been identified with the appropriate modifying documentation (e.g., PC No., Modification No., Request for Information No.). The QC Manager or QC Specialist assigned to an area of responsibility must initial each revision. Upon completion of work, the QC Manager will furnish a certificate attesting to the accuracy of the as-built drawings prior to submission to the Contracting Officer.

1.13 NOTIFICATION ON NON-COMPLIANCE

The Contracting Officer will notify the Contractor of any detected non-compliance with the Contract. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, is deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders will be made the subject of a claim for extension of time for excess costs or damages by the Contractor.

1.14 DELIVERY, STORAGE, AND HANDLING

Designate receiving/storage areas for incoming material to be delivered according to installation schedule and to be placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. Store and handle materials in a manner as to prevent loss from weather and other damage. Keep materials, products, and accessories covered and off the ground, and store in a dry, secure area. Prevent contact with material that may cause corrosion, discoloration, or staining. Protect all materials and installations from damage by the activities of other trades.

PART 2 PRODUCTS

Not Used

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SECTION 01 50 00

TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
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PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C511	(2017; R 2021) Reduced-Pressure Principle Backflow Prevention Assembly

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 241	(2022; ERTA 22-1) Standard for Safeguarding Construction, Alteration, and Demolition Operations

TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT)

TMUTCD	(2025) Texas Manual on Uniform Traffic Control Devices

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD	(2023) Manual on Uniform Traffic Control Devices

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Site Plan; G

Traffic Control Plan; G

Haul Road Plan; G

Contractor Computer Cybersecurity Compliance Statements; G

Contractor Temporary Network Cybersecurity Compliance Statements; G

SD-06 Test Reports

Backflow Preventer Tests

SD-07 Certificates

Backflow Tester Certification

Backflow Preventers Certificate of Full Approval

1.3 CONSTRUCTION SITE PLAN

Prior to the start of work, submit for Government approval a site plan showing the locations and dimensions of temporary facilities (including layouts and details, equipment and material storage area (onsite and offsite), and access and haul routes, avenues of ingress/egress to the fenced area and details of the fence installation. Identify any areas which may have to be graveled to prevent the tracking of mud. Indicate if the use of a supplemental or other staging area is desired. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

1.4 BACKFLOW PREVENTERS CERTIFICATE

1.4.1 Backflow Tester Certificate

Prior to testing, submit to the Contracting Officer certification issued by the State or local regulatory agency attesting that the backflow tester has successfully completed a certification course sponsored by the regulatory agency. Tester must not be affiliated with a company participating in other phases of this Contract.

1.4.2 Backflow Prevention Training Certificate

Submit a certificate recognized by the State or local authority that states the Contractor has completed at least 10 hours of training in backflow preventer installations. The certificate must be current.

1.5 DOD CONDITION OF READINESS (COR)

DOD will set the Condition of Readiness (COR) based on the weather forecast for sustained winds 50 knots (58 mph) or greater. Contact the Contracting Officer's Technical Representative for the current COR setting.

Monitor weather conditions a minimum of twice a day and take appropriate actions according to the approved Emergency Plan in the accepted Accident Prevention Plan, EM 385-1-1 Emergency Plan requirements and the instructions below.

Unless otherwise directed by the Contracting Officer, comply with:

a. Condition FOUR (Sustained winds of 58 mph or greater expected within

72 hours): Normal daily jobsite cleanup and good housekeeping practices. Collect and store in piles or containers scrap lumber, waste material, and rubbish for removal and disposal at the close of each work day. Maintain the construction site including storage areas, free of accumulation of debris. Stack form lumber in neat piles less than 3.3 feet high. Remove all debris, trash, or objects that could become missile hazards. Review requirements pertaining to "Condition THREE" and continue action as necessary to attain "Condition FOUR" readiness. Contact Contracting Officer's Technical Representative for weather and COR updates and completion of required actions.

b. Condition THREE (Sustained winds of 58 mph or greater expected within 48 hours): Maintain "Condition FOUR" requirements and commence securing operations necessary for "Condition ONE" which cannot be completed within 18 hours. Cease all routine activities which might interfere with securing operations. Commence securing and stow all gear and portable equipment. Make preparations for securing buildings. Reinforce or remove formwork and scaffolding. Secure machinery, tools, equipment, materials, or remove from the jobsite. Expend every effort to clear all missile hazards and loose equipment from general base areas. Contact Contracting Officer's Technical Representative for weather and COR updates and completion of required actions. Review requirements pertaining to "Condition TWO" and continue action as necessary to attain "Condition THREE" readiness.

c. Condition TWO (Sustained winds of 58 mph or greater expected within 24 hours): Secure the jobsite, and leave Government premises.

d. Condition ONE. (Sustained winds of 58 mph or greater expected within 12 hours): Contractor access to the jobsite and Government premises is prohibited.

1.6 CYBERSECURITY DURING CONSTRUCTION

{For Reference Only: This subpart (and its subparts) relates to AC-18, SA-3, CCI-00258.} Meet the following requirements throughout the construction process.

1.6.1 Contractor Computer Equipment

Contractor owned computers may be used for construction. When used, contractor computers must meet the following requirements:

1.6.1.1 Operating System

The operating system must be an operating system currently supported by the manufacturer of the operating system. The operating system must be current on security patches and operating system manufacturer required updates.

1.6.1.2 Anti-Malware Software

The computer must run anti-malware software from a reputable software manufacturer. Anti-malware software must be a version currently supported by the software manufacturer, must be current on all patches and updates, and must use the latest definitions file. All computers used on this project must be scanned using the installed software at least once per day.

1.6.1.3 Passwords and Passphrases

The passwords and passphrases for all computers must be changed from their default values. Passwords must be a minimum of eight characters with a minimum of one uppercase letter, one lowercase letter, one number and one special character.

1.6.1.4 Contractor Computer Cybersecurity Compliance Statements

Provide a single submittal containing completed Contractor Computer Cybersecurity Compliance Statements for each company using contractor owned computers. Contractor Computer Cybersecurity Compliance Statements must use ATT-1. Each Statement must be signed by a cybersecurity representative for the relevant company.

1.6.2 Temporary IP Networks

Temporary contractor-installed IP networks may be used during construction. When used, temporary contractor-installed IP networks must meet the following requirements:

1.6.2.1 Network Boundaries and Connections

The network must not extend outside the project site and must not connect to any IP network other than IP networks provided under this project or Government furnished IP networks provided for this purpose. Any and all network access from outside the project site is prohibited.

1.6.3 Government Access to Network

Government personnel, as defined, prescribed, and identified by the Contracting Officer, must be allowed to have complete and immediate access to the network at any time in order to verify compliance with this specification. If there is a Government agency responsible for network access, identify that agency.

1.6.4 Temporary Wireless IP Networks

In addition to the other requirements on temporary IP networks, temporary wireless IP (WiFi) networks must not interfere with existing wireless network and must use WPA2 security. Network names (SSID) for wireless networks must be changed from their default values.

1.6.5 Passwords and Passphrases

The passwords and passphrases for all network devices and network access must be changed from their default values. Passwords must be a minimum 8 characters with a minimum of one uppercase letter, one lowercase letter, one number and one special character.

1.6.6 Contractor Temporary Network Cybersecurity Compliance Statements

Provide a single submittal containing completed Contractor Temporary Network Cybersecurity Compliance Statements for each company implementing a temporary IP network. Contractor Temporary Network Cybersecurity Compliance Statements must use the template ATT-2. Each Statement must be signed by a cybersecurity representative for the relevant company. If no temporary IP networks will be used, provide a single copy of the Statement

indicating this.

PART 2 PRODUCTS

2.1 TEMPORARY SIGNAGE

2.1.1 Bulletin Board

Prior to the commencement of work activities, provide a clear weatherproof covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the Contract, Wage Rate Information poster, Safety and Health Information as required by EM 385-1-1 and other information approved by the Contracting Officer. Coordinate requirements herein with 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. Locate the bulletin board at the project site in a conspicuous place easily accessible to all employees, and in location as approved by the Contracting Officer.

2.1.2 Project Identification Signs

The requirements for the signs, their content, and location are as specified in Section 01 58 00 PROJECT IDENTIFICATION. Erect signs within 15 calendar days after receipt of the notice to proceed. Correct the data required by the safety sign daily, with light colored metallic or non-metallic numerals.

2.1.3 Warning Signs

Post temporary signs, tags, and labels to give workers and the public adequate warning and caution of construction hazards according to the EM 385-1-1. Attach signs to the perimeter fencing every 150 feet warning the public of the presence of construction hazards. Signs must require unauthorized persons to keep out of the construction site. Correct the data required by safety signs daily. Post signs at all points of entry designating the construction site as a hard hat area.

2.2 TEMPORARY TRAFFIC CONTROL

2.2.1 Haul Roads

Construct access and haul roads necessary for proper prosecution of the work under this Contract in accordance with EM 385-1-1. Construct with suitable grades and widths; avoid sharp curves, blind corners, and dangerous cross traffic. Submit haul road plan for approval. Provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, must be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and haul roads are subject to approval by the Contracting Officer. Lighting must be adequate to assure full and clear visibility for full width of haul road and work areas during any night work operations.

2.2.2 Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas. Barricades are required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Securely place barricades clearly

visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

2.3 FENCING

Provide fencing along the construction site and at all open excavations and tunnels to control access by unauthorized personnel. Safety fencing must be highly visible to be seen by pedestrians and vehicular traffic. All fencing must meet the requirements of EM 385-1-1. Remove the fence upon completion and acceptance of the work.

To block public view of the construction, enclose the project work area and Contractor lay-down area with a 8 ft high chain link fence and gates with dark green, UV light resistant, plastic fabric mesh netting (similar to tennis court or other screening).

2.3.1 Polyethylene Mesh Safety Fencing

Temporary safety fencing must be a high visibility orange colored, high density polyethylene grid, a minimum of 48 inches high and maximum mesh size of 2 inches. Fencing must extend from the grade to a minimum of 48 inches above the grade and be tightly secured to T-posts spaced as necessary to maintain a rigid and taut fence. Fencing must remain rigid and taut with a minimum of 200 pounds of force exerted on it from any direction with less than 4 inches of deflection.

2.3.2 Chain Link Panel Fencing

Temporary panel fencing must be galvanized steel chain link panels 6 feet high. Multiple fencing panels may be linked together at the bases to form long spans as needed. Each panel base must be weighted down using sand bags or other suitable materials in order for the fencing to withstand anticipated winds while remaining upright. Fencing must remain rigid and taut with a minimum of 200 pounds of force exerted on it from any direction with less than 4 inches of deflection.

2.3.3 Post-Driven Chain Link Fencing

Temporary post-driven fencing must be galvanized chain link fencing 6 feet high supported by an tightly secured to galvanized steel posts driven below grade. Fence posts must be located on minimum 10 foot centers. Posts may be set in various surfaces such as sand, soil, asphalt or concrete as necessary. Chain link fencing must remain rigid and taut with a minimum of 200 pounds of force exerted on it from any direction with less than 4 inches of deflection. Completely remove fencing and posts at the completion of construction and restore surfaces disturbed or damaged to its original condition. Locate and identify underground utilities prior to setting fence posts. Equip fence with a lockable gate. Gate must remain locked when construction personnel are not present.

2.4 TEMPORARY WIRING

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

2.5 BACKFLOW PREVENTERS

Certificate of Full Approval from FCCCHR List, University of Southern

California, attesting that the design, size and make of each backflow preventer has satisfactorily passed the complete sequence of performance testing and evaluation for the respective level of approval. Certificate of Provisional Approval is not acceptable.

Reduced pressure principle type conforming to the applicable requirements AWWA C511. Provide backflow preventers complete with 150 pound flanged cast iron, ductile iron, bronze, or brass mounted gate valve, 304 stainless steel or bronze internal parts.

PART 3 EXECUTION

3.1 EMPLOYEE PARKING

Construction Contract employees must park privately owned vehicles in an area designated by the Contracting Officer. Employee parking must not interfere with existing and established parking requirements of the Government installation.

3.2 AVAILABILITY AND USE OF UTILITY SERVICES

3.2.1 Temporary Utilities

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

3.2.2 Payment for Utility Services

a. The Government will make all reasonably required utilities available from existing outlets and supplies, as specified in the Contract. Unless otherwise provided in the Contract, the amount of each utility service consumed will be charged to or paid at prevailing rates charged by the utility provider or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. Carefully conserve utilities furnished without charge.

b. Reasonable amounts of the following utilities will be made available at the following rates:

Utility Services			
	Cost ($) per	Unit	Notes
Electricity	Contact CPS Energy	kWh	Billed directly to Contractor by CPS Energy.
	0		If utilizing power from the facility.
Potable Water	0	MGAL	Rate applicable only if provided thru Installation point of connection.
Natural Gas	Contact CPS Energy	CCF	Billed directly to Contractor by CPS Energy.

Utility Services			
Sanitary Sewer	0	MGAL	Rate applicable only if provided thru Installation point of connection.

c. The point at which the Government will deliver such utilities or services and the quantity available is as indicated by the Contracting Officer's Technical Representative. Pay all costs incurred in connecting, converting, and transferring the utilities to the work. Make connections, including providing backflow-preventing devices on connections to domestic water lines; providing meters if directed by Privatized Utility Owner; providing meters and providing transformers; and make disconnections.

d. The Contractor must provide their own utilities if not utilizing existing services within the project site.

3.2.3 Meters and Temporary Connections

Provide and maintain necessary temporary connections, distribution lines, and meter bases required to measure the amount of each utility used for the purpose of determining charges.

3.2.4 Advance Deposit

An advance deposit for utilities will be as required by the utility provider.

3.2.5 Final Meter Reading

Before completion of the work and final acceptance of the work by the Government, notify the Contracting Officer, in writing, 14 calendar days before termination is desired. The utility provider will take a final meter reading, disconnect service, and remove the meters. Contractor shall then remove all the temporary distribution lines, meter bases, and associated appurtenances. Pay all outstanding utility bills before final acceptance of the work by the Government.

3.2.6 Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities in accordance with EM 385-1-1. Locate the facilities behind the construction fence or out of the public view. Clean units and empty wastes at least once a week or more frequently into a municipal, district, or station sanitary sewage system, or remove waste to a commercial facility. Obtain approval from the system owner prior to discharge into a municipal, district, or commercial sanitary sewer system. Penalties or fines associated with improper discharge will be the responsibility of the Contractor. Coordinate with the Contracting Officer and follow station regulations and procedures when discharging into the station sanitary sewer system. Maintain these conveniences at all times. Include provisions for pest control and elimination of odors. Government toilet facilities will not be available to Contractor's personnel.

3.2.7 Communications

Make arrangements and pay all costs for telephone and internet facilities

desired.

3.2.8 Fire Protection

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

3.3 TRAFFIC PROVISIONS

3.3.1 Maintenance of Traffic

a. Conduct operations in a manner that will not close a thoroughfare or interfere with traffic on railways or highways except with written permission of the Contracting Officer, as in accordance with 01 14 00 JBSA WORK RESTRICTIONS and provide a Traffic Control Plan for Government approval detailing the proposed controls to traffic movement for approval. The plan must be in accordance with State and local regulations, MUTCD, Part VI, and TMUTCD, Part VI. Make all notifications and obtain all permits required for modification to traffic movements outside the Installation's jurisdiction. Contractor may move oversized and slow-moving vehicles to the worksite provided requirements of the highway authority have been met.

b. Conduct work so as to minimize obstruction of traffic, and maintain traffic on at least half of the roadway width at all times. Obtain approval from the Contracting Officer prior to starting any activity that will obstruct traffic.

c. Provide, erect, and maintain, at Contractor's expense, lights, barriers, signals, passageways, detours, and other items, that may be required by the Life Safety Signage, overhead protection authority having jurisdiction.

d. Provide cones, signs, barricades, lights, or other traffic control devices and personnel required to control traffic. Do not use foil-backed material for temporary pavement marking because of its potential to conduct electricity during accidents involving downed power lines.

3.3.2 Protection of Traffic

Maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment the work, and the erection and maintenance of adequate warning, danger, and direction signs, will be as required by the State and local authorities having jurisdiction. Provide self-illuminated (lighted) barricades during hours of darkness. All personnel working in roadways will wear brightly-colored vests or other high visibility apparel in accordance with EM 385-1-1. Protect the traveling public from damage to person and property. Minimize the interference with public traffic on roads selected for hauling material to and from the site. Investigate the adequacy of existing roads and their allowable load limit. Contractor is responsible for the repair of damage to roads caused by construction operations.

3.3.3 Rush Hour Restrictions

Do not interfere with the peak traffic flows preceding and during normal operations without notification to and approval by the Contracting Officer.

3.3.4 Dust Control

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

3.4 REDUCED PRESSURE BACKFLOW PREVENTERS

Provide an approved reduced pressure backflow prevention assembly at each location where the Contractor taps into the Government potable water supply.

Perform backflow preventer tests using test equipment, procedures, and certification forms conforming to those outlined in the latest edition of the Manual of Cross-Connection Control published by the FCCCHR Manual. Texas Commission on Environmental Quality's (TCEQ) form to record the results of the testing is provided as ATT-3. Test and tag each reduced pressure backflow preventer upon initial installation (prior to continued water use) and yearly thereafter. Tag must contain the following information: make, model, serial number, dates of tests, results, maintenance performed, and signature of tester. Record test results on certification forms conforming to requirements cited earlier in this paragraph.

3.5 CONTRACTOR'S TEMPORARY FACILITIES

Contractor-owned or -leased trailers must be identified by Government assigned numbers. Size and location of the number will comply with Installation requirements. Apply the number to the trailer within 14 calendar days of notification, or sooner, if directed by the Government.

Contractor is responsible for security of their property. Provide adequate outside security lighting at the temporary facilities. Trailers must be anchored to resist high winds and meet applicable state or local standards for anchoring mobile trailers. Coordinate anchoring with EM 385-1-1. The Contract Clause entitled "FAR 52.236-10, Operations and Storage Areas" and the following apply:

3.5.1 Administrative Field Offices

Provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

In the event a new building is constructed for the temporary project field office, it must be a minimum 12 feet in width, 16 feet in length and have a minimum of 7 feet headroom. Equip the building with approved electrical wiring, at least one double convenience outlet and the required switches and fuses to provide 110-120 volt power. Provide a work table with stool, desk with chair, two additional chairs, and one legal size file cabinet that can be locked. The building must be waterproof, supplied with a heater, have a minimum of two doors, electric lights, a telephone, a battery-operated smoke detector alarm, a sufficient number of adjustable

windows for adequate light and ventilation, and a supply of approved drinking water. Provide approved sanitary facilities. Screen the windows and doors and provide the doors with deadbolt type locking devices or a padlock and heavy-duty hasp bolted to the door. Door hinge pins must be non-removable. Arrange the windows to open and to be securely fastened from the inside. Protect glass panels in windows by bars or heavy mesh screens to prevent easy access. In warm weather, provide air conditioning capable of maintaining the office at 50 percent relative humidity and a room temperature 20 degrees F below the outside temperature when the outside temperature is 95 degrees F. Unless otherwise directed by the Contracting Officer, remove the building from the site upon completion and acceptance of the work. In the event that acceptance of work is in advance of the current period of performance, removal shall occur no later than the end of the last day of the contract period of performance.

3.5.2 Quality Control Manager Records and Field Office

Provide on the jobsite an office with approximately 100 square feet of useful floor area for the exclusive use of the QC Manager. Provide a weathertight structure with adequate heating and cooling, toilet facilities, lighting, ventilation, a 4 by 8 foot plan table, a standard size office desk and chair, computer station, and working communications facilities. Provide either a 1,500 watt radiant heater and a window-mounted air conditioner rated at 9,000 Btus minimum or a window-mounted heat pump of the same minimum heating and cooling ratings. Provide a door with a cylinder lock and windows with locking hardware. Make utility connections. Locate as directed. File quality control records in the office and make available at all times to the Government. After completion of the work, remove the entire structure from the site.

3.5.3 Storage Area

Construct a temporary chain link fence around trailers and materials. Include privacy screening so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Refer to paragraph FENCING for additional fence construction requirements. Do not place or store trailers, materials, or equipment outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the installation boundaries. Trailers, equipment, or materials must not be open to public view with the exception of those items which are in support of ongoing work on the current day. Do not stockpile materials outside the fence in preparation for the next day's work. Park mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment within the fenced area at the end of each work day.

Keep fencing in a state of good repair and proper alignment. If the Contractor elects to traverse grassed or unpaved areas which are not established roadways with construction equipment or other vehicles, cover the grassed or unpaved areas with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation must be at the Contractor's discretion.. Mow and maintain grass located within the boundaries of the construction site for the duration of the project. Grass and vegetation along fences, structures, under trailers, and in areas not accessible to mowers must be edged or trimmed neatly.

3.5.4 Supplemental Storage Area

Upon request, and pending availability, the Contracting Officer will designate another or supplemental area for the use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but will be within the installation boundaries. Maintain the area in a clean and orderly fashion and secured if needed to protect supplies and equipment. Utilities will not be provided to this area by the Government.

3.5.5 Appearance of Trailers

a. Trailers must be roadworthy and comply with all appropriate state and local vehicle requirements. Trailers which are rusted, have peeling paint or are otherwise in need of repair will not be allowed on Installation property. Trailers must present a clean and neat exterior appearance and be in a state of good repair.

b. Maintain the temporary facilities. Failure to do so will be sufficient reason to require their removal at the Contractor's expense.

3.5.6 Safety Systems

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

3.5.7 Weather Protection of Temporary Facilities and Stored Materials

Take necessary precautions to ensure that roof openings and other critical openings in the building are monitored carefully. Take immediate actions required to seal off such openings when rain or other detrimental weather is imminent, and at the end of each workday. Ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.

3.5.7.1 Building and Site Storm Protection

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

3.6 PLANT COMMUNICATIONS

Whenever the individual elements of the plant are located so that operation by normal voice between these elements is not satisfactory, install a satisfactory means of communication, such as telephone or other suitable devices and make available for use by Government personnel.

3.7 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, and before commencement of work, furnish and erect temporary project safety fencing at the work site. Maintain the safety fencing during the life of the Contract and, upon completion and acceptance of the work, remove from the work site.

3.8 CLEANUP

Remove construction debris, waste materials, packaging material and the like from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways must be cleaned away. Store all salvageable materials resulting from demolition activities within the fenced area described above or at the supplemental storage area. Neatly stack stored materials not in trailers, whether new or salvaged.

3.9 RESTORATION OF STORAGE AREA

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

ATT-1 - Cybersecurity Compliance Statement

ATTACHED IN APPENDIX A

ATT-2 - Network Cybersecurity Complaince Statement

ATTACHED IN APPENDIX A

ATT-3 - Form TCEQ-20700

ATTACHED IN APPENDIX A

-- End of Section --

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TEMPORARY ENVIRONMENTAL CONTROLS
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PART 1 GENERAL

1.1 REFERENCES

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

COMPRESSED GAS ASSOCIATION (CGA)

CGA P-1	(2022) Standard for Safe Handling of Compressed Gases in Containers; 13th Edition

STATE OF TEXAS ADMINISTRATIVE CODE (TAC)

25 TAC 296	Texas Asbestos Health Protection
30 TAC 106	Permits by Rule
30 TAC 116	Control of Air Pollution by Permits for New Construction or Modification
30 TAC 210	Use of Reclaimed Water
30 TAC 290	Public Drinking Water
30 TAC 305	Consolidated Permits
30 TAC 321	Control of Certain Activities by Rule
30 TAC 323	Waste Disposal Approvals
30 TAC 330	Municipal Solid Waste
30 TAC 334	Underground and Aboveground Storage Tanks
30 TAC 335	Industrial Solid Waste and Municipal Hazardous Waste
HSC 382.0518(a)	Preconstruction Permit

U.S. AIR FORCE (USAF)

AFI 32-7020	(2020) Environmental Restoration Program
DAFMAN 32-7003	(2024) Environmental Conservation

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)

TXR040000	TPDES Phase II (Small) Municipal Separate Storm Sewer System (MS4) General Permit

TXR050000	TPDES Multi Sector General Permit
TXR150000	TPDES Construction General Permit

U.S. Code (USC)

42 USC CHAPTER 116	Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)
42 USC CHAPTER 133	Pollution Prevention Act of 1990 (PPA)

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 600/4-79/020	(1983) Methods for Chemical Analysis of Water and Wastes
EPA SW-846	(Third Edition; Update VII) Test Methods for Evaluating Solid Waste: Physical/Chemical Methods

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

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.1053	Respirable Crystalline Silica
29 CFR 1910.1200	Hazard Communication
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.62	Lead
29 CFR 1926.1153	Respirable Crystalline Silica
40 CFR 50	National Primary and Secondary Ambient Air Quality Standards
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 61-SUBPART M	National Emission Standard for Asbestos
40 CFR 61.145	Standard for Demolition and Renovation
40 CFR 63	National Emission Standards for Hazardous Air Pollutants for Source Categories
40 CFR 64	Compliance Assurance Monitoring
40 CFR 82	Protection of Stratospheric Ozone
40 CFR 112	Oil Pollution Prevention
40 CFR 122.26	Storm Water Discharges (Applicable to State NPDES Programs, see section 123.25)
40 CFR SUBCHAPTER E	Pesticide Programs

40 CFR 152	Pesticide Registration and Classification Procedures
40 CFR 241	Guidelines for Disposal of Solid Waste
40 CFR 243	Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
40 CFR 258	Subtitle D Landfill Requirements
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 261.7	Residues of Hazardous Waste in Empty Containers
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 262.11	Hazardous Waste Determination and Recordkeeping
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 273	Standards for Universal Waste Management
40 CFR 273.2	Standards for Universal Waste Management - Batteries
40 CFR 273.3	Standards for Universal Waste Management - Pesticides
40 CFR 273.4	Standards for Universal Waste Management - Mercury Containing Equipment
40 CFR 273.5	Standards for Universal Waste Management - Lamps
40 CFR 273.6	Applicability - Aerosol Cans

40 CFR 279	Standards for the Management of Used Oil
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 300.125	National Oil and Hazardous Substances Pollution Contingency Plan - Notification and Communications
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 355	Emergency Planning and Notification
40 CFR 403	General Pretreatment Regulations for Existing and New Sources of Pollution
40 CFR 745	Lead-Based Paint Poisoning Prevention in Certain Residential Structures
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR SUBCHAPTER C	Hazardous Materials Regulations
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
49 CFR 178	Specifications for Packagings

1.2 DEFINITIONS

1.2.1 Class I and II Ozone Depleting Substance (ODS)

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

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

1.2.2 High Global Warming Potential (GWP) Hydrofluorocarbons (HFCs)

Certain HFCs and their phasedown are defined in the American Innovation and Manufacturing Act. A list of substances and its status can be found on the EPA website at the following weblink. https://www.epa.gov/snap

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste is materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e., methyl ethyl ketone, toluene), waste thinners, excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Electronics Waste

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

1.2.5 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally or historically.

1.2.6 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.7 Hazardous Debris

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

1.2.8 Hazardous Materials

Hazardous material is any material that: Is defined in 49 CFR 171, listed in 49 CFR 172, regulated as a hazardous material in accordance with 49 CFR 173; or requires a Safety Data Sheet (SDS) in accordance with 29 CFR 1910.1200; or during end use, treatment, handling, packaging, storage, transportation, or disposal meets or has components that meet or have potential to meet the definition of a hazardous waste as defined by 40 CFR 261 Subparts A, B, C, or D. Designation of a material by this definition, when separately regulated or controlled by other sections or directives, does not eliminate the need for adherence to that hazard-specific guidance which takes precedence over this section for "control" purposes. Such material includes ammunition, weapons, explosive actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical supplies, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos, mercury, and polychlorinated biphenyls (PCBs).

1.2.9 Hazardous Waste

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

1.2.10 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.11 Land Application

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

1.2.12 Municipal Separate Storm Sewer System (MS4) Permit

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

1.2.13 National Pollutant Discharge Elimination System (NPDES)

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

1.2.14 Oily Waste

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

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

1.2.15 Pesticide

Pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.16 Pesticide Treatment Plan

A plan for the prevention, monitoring, and control to eliminate pest infestation.

1.2.17 Pests

Pests are arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.18 Project Pesticide Coordinator

The Project Pesticide Coordinator (PPC) is an individual who resides at a Civil Works Project office and who is responsible overseeing of pesticide application on project grounds.

1.2.19 Regulated Waste

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

1.2.20 Sediment

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

1.2.21 Solid Waste

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

1.2.21.1 Debris

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

1.2.21.2 Green Waste

Green waste is the vegetative matter from landscaping, land clearing and

grubbing, including, but not limited to, grass, bushes, scrubs, small trees and saplings, tree stumps and plant roots. Marketable trees, grasses and plants that are indicated to remain, be re-located, or be re-used are not included.

1.2.21.3 Material Not Regulated As Solid Waste

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

1.2.21.4 Non-Hazardous Waste

Non-hazardous waste is waste that is excluded from, or does not meet, hazardous waste criteria in accordance with 40 CFR 261.

1.2.21.5 Recyclables

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

1.2.21.6 Surplus Soil

Surplus soil is existing soil that is in excess of what is required for this work, including aggregates intended, but not used, for on-site mixing of concrete, mortars, and paving. Contaminated soil meeting the definition of hazardous material or hazardous waste is not included and must be managed in accordance with paragraph HAZARDOUS MATERIAL MANAGEMENT.

1.2.21.7 Scrap Metal

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

1.2.21.8 Wood

Wood is dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated or painted wood that meets the definition of lead

contaminated or lead based contaminated paint is not included. Treated wood includes, but is not limited to, lumber, utility poles, crossties, and other wood products with chemical treatment.

1.2.22 Surface Discharge

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

1.2.23 Wastewater

Wastewater is the used water and solids that flow through a sanitary sewer to a treatment plant.

1.2.23.1 Stormwater

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

1.2.24 Waters of the United States

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

1.2.25 Wetlands

Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

1.2.26 Universal Waste

The universal waste regulations streamline collection requirements for certain hazardous wastes in the following categories: batteries, pesticides, mercury-containing equipment (for example, thermostats), and lamps (for example, fluorescent bulbs). The rule is designed to reduce hazardous waste in the municipal solid waste (MSW) stream by making it easier for universal waste handlers to collect these items and send them for recycling or proper disposal. These regulations can be found at 40 CFR 273 and 30 TAC 335 SUBCHAPTER H.

1.2.27 Encountered Waste

Material that is of Government origin that becomes a waste during construction at or on Government property. This term includes both foreseen and unforeseen Government waste discovered at the worksite.

1.2.28 Firewood

Raw, woody material cut into short lengths and burned to produce energy.

1.2.29 Fugitive Dust

Particulate matter or any visible air contaminant (smoke, dust, or fume) other than uncombined water that is not collected by a capture system and emitted from a stack, but is released to the atmosphere at the point of generation.

1.2.30 Ozone Depleting Substance (ODS) Substitute

Any chemical or product, whether existing or new, that is used by any person as an EPA-approved replacement for a Class I or Class II ODS in a given refrigeration or air-conditioning end-use.

1.2.31 Refrigerant

Any substance consisting in part or whole of a Class I or Class II ODS, or an ODS substitute that is used for heat transfer purposes and provides a cooling effect.

1.2.32 Refuse

Includes, but is not limited to garbage, rubbish, trash, some soils, and non-painted demolition and construction debris. The Government will designate refuse. When designated as "refuse," the Government has determined the waste is not "Dangerous Waste."

1.2.33 Sewage

Liquid waste designated by the Government as "domestic sanitary sewage" and normally discharged through domestic sanitary sewage systems. Liquids designated as "sewage" include human body waste, and wastewater from sinks, showers, laundries, dishwashers, and garbage disposals when these liquids use only chemicals approved by the Government for discharge into the sanitary sewer.

1.2.34 Spill Event

A spill is any release of oil or hazardous substances to the water or ground that is not controlled or permitted. This includes any spilling, leaking, pumping, emitting, discharging, injecting, escaping, leaching, disposing, or dumping of liquid or solid material that is not authorized in writing by the Contracting Officer.

1.2.34.1 Reportable Release

A reportable release means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of a known or unknown material or hazardous substance that poses an immediate threat to human health or the environment to the air, soil, or water. Reportable releases are: a sheen of oil on the water; a violation of the Installation's or project's water permit (NPDES permit); a sewage spill that threatens human health or the environment; a Comprehensive Environmental Response, Compensation, and Liability Act reportable quantity for hazardous/toxic substances (40 CFR 302); an air or hazardous substance release that is a threat to human health or the environment, or released outside the facility boundaries; any discharge from an underground storage tank regulated under 30 TAC 334; or oil spilled to the ground or to permeable secondary containment of 42 gallons and greater.

1.2.34.2 Non-emergency Spill Event

A non-emergency spill event is a discharge of a known material or any hazardous substance that does not pose an immediate threat to human health or the environment, can be cleaned up as part of normal housekeeping by the personnel who discovered the spill, and is not released on the soil or into any waterway inlet (for example, storm drain) or outside Navy property boundaries.

1.2.35 Timber, Merchantable

Any raw material yielded by a forest that is of a size, quality and condition suitable for marketing under given economic conditions, even if it is situated such that it is not immediately accessible for logging.

1.2.36 Nonroad Engine

Any internal combustion engine, except motor vehicle (highway engines, stationary engines, or engines that remain at one location for more than 12 months), engines used solely for competition, or engines used in aircraft. This definition is based on the principle of mobility and portability, and includes engines installed on (1) self-propelled equipment, (2) equipment that is propelled while performing its function, or (3) equipment that is portable or transportable, as indicated by the presence of wheels, skids, carrying handles, dolly, trailer, or platform. Examples of regulated applications include farm tractors, excavators, bulldozers, wheel loaders, backhoe loaders, road graders, diesel lawn tractors, logging equipment, portable generators, skid steer loaders, or forklifts.

1.2.37 Critical Root Zone (CRZ)

The critical root zone is the area around and under a tree where the majority of its roots are located. The CRZ is usually measured as a circle with a radius of 1.5 foot for every inch of the tree's diameter at breast height (DBH), and a depth of 24 inches.

1.2.38 Demolition

The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Contractor Hazardous Material Inventory Log; G

Preconstruction Survey

Regulatory Notifications; G

Employee Training Records; G

Environmental Protection Plan; G

Dirt and Dust Control Plan; G

Solid Waste Management Permit; G

Stormwater Pollution Prevention Plan (SWPPP); G

Construction Site Notice; G

Spill Prevention Control And Countermeasure (SPCC) Plan; G

TxDSHS Asbestos/Demolition Notification; G

Equipment Inventory List; G

SD-03 Product Data

Safety Data Sheets (SDS); G

SD-06 Test Reports

Monthly Solid Waste Disposal Report; G

Inspection Reports

Laboratory Analysis; G

SD-07 Certificates

Employee Training Records; G

Erosion and Sediment Control Inspector Qualifications

Certificate of Competency

SD-11 Closeout Submittals

Environmental Records Binder; G

Regulatory Notifications; G

Assembled Employee Training Records; G

Solid Waste Management Permit; G

Stormwater Pollution Prevention Plan Compliance Notebook; G

Waste Determination Documentation; G

Project Solid Waste Disposal Documentation Report; G

Sales Documentation; G

Contractor Certification

Hazardous Waste/Debris Management; G

Disposal Documentation for Hazardous and Regulated Waste; G

Contractor Hazardous Material Inventory Log; G

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS

FAR 52.223-3 Hazardous Material Identification and Material Safety Data requires that all offerors submit a list of hazardous material and corresponding SDS to be delivered under the contract, prior to award. FAR 52.223-5 Pollution Prevention and Right-to-Know Information requires the Contractor to provide information necessary for Federal facilities to comply with 42 USC CHAPTER 116 (EPCRA) and 42 USC CHAPTER 133 (PPA), to include Safety Data Sheets. FAR 52.223-11 Ozone-Depleting Substances and High Global Warming Potential Hydrofluorocarbons requires the Contractor to label products that contain or are manufactured with ozone-depleting substances, and to refer to EPA's SNAP program to identify alternatives.

Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during construction practice. The control of environmental pollution and damage requires consideration of land, water, and air resources. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this Contract. Comply with federal, state, and local regulations pertaining to the environment, including water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

Tests and procedures assessing whether construction operations comply with Applicable Environmental Laws may be required. Analytical work must be performed by qualified laboratories; and where required by law, the laboratories must be certified.

The following table lists the contact information for the JBSA Environmental Office serving each JBSA site.

TABLE 1

JBSA ENVIRONMENTAL OFFICE CONTACT INFORMATION

SITE	SITE CODE	CONTACT
JBSA Lackland	MPLS	210-671-4844
JBSA Chapman Training Annex	MPFJ	
JBSA Kelly Field Annex	KELL	
JBSA Port Annex	MBPB	

TABLE 1		
JBSA ENVIRONMENTAL OFFICE CONTACT INFORMATION		
SITE	SITE CODE	CONTACT
JBSA Sam Houston	JBSF	210-221-1142
JBSA Medical Center Annex	JBSC	
JBSA Grayson Street Annex	JBSG	
JBSA Bullis	CYRB	
JBSA Randolph	TYMX	210-652-4668
JBSA Canyon Lake	DAXG	
JBSA Seguin Auxiliary Field	VGJT	

1.4.1 Conformance with the Environmental Management System

Perform work under this contract consistent with the policy and objectives identified in the JBSA Environmental Management System (EMS). Perform work in a manner that conforms to objectives and targets of the environmental programs and operational controls identified by the EMS. Support Government personnel when environmental compliance and EMS audits are conducted by escorting auditors at the Project site, answering questions, and providing proof of records being maintained. Provide monitoring and measurement information as necessary to address environmental performance relative to environmental, energy, and transportation management goals. In the event an EMS nonconformance or environmental noncompliance associated with the contracted services, tasks, or actions occurs, take corrective and preventative actions. In addition, employees must be aware of their roles and responsibilities under the installation EMS and of how these EMS roles and responsibilities affect work performed under the contract.

Coordinate with the installation's EMS coordinator to identify training needs associated with environmental aspects and the EMS, and arrange training or take other action to meet these needs. Provide training documentation to the Contracting Officer. The Installation Environmental Office will retain associated environmental compliance records. Make EMS Awareness training completion certificates available to Government auditors during EMS audits and include the certificates in the Employee Training Records. EMS Awareness training is located on the Air Force Learning Portal, TEACH, at the link: https://usaf.learningbuilder.com. See paragraph EMPLOYEE TRAINING RECORDS.

1.5 SPECIAL ENVIRONMENTAL REQUIREMENTS

Comply with the special environmental requirements listed here.

1.5.1 Environmental Restoration Program (ERP) Sites

The following guidance has been developed to assist in the performance of

work for projects located in possibly contaminated areas (ERP sites), in conformance with AFI 32-7020. It is imperative that the JBSA Environmental Office is coordinated with early and often in the construction process to minimize the impact that contaminated soils or groundwater may have on the project.

1.5.1.1 Guideline Set 1

Guideline Set 1 is the most stringent and involves projects in an area that has known contamination and regulatory land use controls. All restrictions will be coordinated with the Environmental Restoration Program Manager from the JBSA Environmental Office. Contractor shall educate workers on potential to encounter contamination and to assure workers are adequately protected with appropriate PPE. If unusual soil or groundwater color or odor is encountered, contact the JBSA Environmental Office immediately. During non-duty hours, contact EMCS at 210-652-3143 and at 210-671-2288.

1.5.1.2 Guideline Set 2

Guideline Set 2 is general and applies to any area of the installation where contamination has not been confirmed, without land use control, and not in close proximity to known contamination or an ERP site.

1.6 QUALITY ASSURANCE

1.6.1 Preconstruction Survey and Protection of Features

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, perform a Preconstruction Survey of the project site with the Contracting Officer, and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record. Include in the report a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. The Contractor and the Contracting Officer will sign this survey report upon mutual agreement regarding its accuracy and completeness. Protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference that their preservation may cause to the work under the Contract.

1.6.2 Regulatory Notifications

Provide regulatory notification requirements in accordance with federal, state and local regulations. In cases where the Government will also provide public notification (such as stormwater permitting), coordinate with the Contracting Officer. Submit copies of regulatory notifications to the Contracting Officer at least 14 calendar days prior to commencement of work activities. Typically, regulatory notifications must be provided for the following (this listing is not all-inclusive): demolition, renovation, TPDES defined site work, construction, removal or use of a permitted air emissions source, and remediation of controlled substances (asbestos, hazardous waste, lead paint).

Contractor shall submit the following regulatory notifications, at a

minimum:

a. Construction Site Notice;

b. TxDSHS Asbestos/Demolition Notification;

1.6.3 Environmental Brief

Attend an environmental brief to be included in the preconstruction conference. Provide the following information: types, quantities, and use of hazardous materials that will be brought onto the installation; and types and quantities of wastes/wastewater that may be generated during the Contract. Discuss the results of the Preconstruction Survey at this time.

Prior to initiating any work on site, meet with the Contracting Officer, Contracting Officer's Technical Representative, and installation Environmental Office to discuss the proposed Environmental Protection Plan (EPP). Develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural and cultural resources, required reports, required permits, permit requirements (such as mitigation measures), waste management plans and practices, how waste diversion requirements will be met, and other measures to be taken. The requirements of this meeting may be fulfilled during the Coordination and Mutual Understanding meeting outlined in Section 01 45 00 QUALITY CONTROL.

1.6.3.1 Progress Meetings

Discuss integrated solid waste and recycling management during progress meetings. Request attendance of JBSA Environmental Office personnel, as needed, to address waste management issues and ensure compliance with the approved EPP. Coordinate all communications with the JBSA Environmental Office through the Contracting Officer and Contracting Officer's Technical Representative.

1.6.4 Employee Training Records

Prepare and maintain Employee Training Records throughout the term of the contract meeting applicable 40 CFR requirements. Provide Employee Training Records in the Environmental Records Binder. Ensure every employee completes a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with federal, state and local regulatory requirements for RCRA Large Quantity Generator. Provide a Position Description for each employee, by subcontractor, based on the Davis-Bacon Wage Rate designation or other equivalent method, evaluating the employee's association with hazardous and regulated wastes. This Position Description will include training requirements as defined in 40 CFR 265 for a Large Quantity Generator facility. Submit these Assembled Employee Training Records to the Contracting Officer at the conclusion of the project, unless otherwise directed.

Train personnel to meet EPA and state requirements. Conduct environmental protection/pollution control meetings for personnel prior to commencing construction activities. Conduct additional meetings for new personnel and when site conditions change. Include in the training and meeting agenda: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring

purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, waters of the United States, and endangered species and their habitat that are known to be in the area.

Provide copy of the Erosion and Sediment Control Inspector Certification as required by the City of San Antonio. The inspector must[have completed the EPA construction inspection course and have passed the exam][be either a professional engineer, a Certified Professional in Erosion and Sedimentation Control (CPESC), a Certified Erosion, Sediment and Storm Water Inspector (CESSWI), or a Certified Inspector of Sediment and Erosion Control (CISEC)]. This inspector shall conduct ongoing inspections of all stormwater controls and erosion and sediment controls. They shall have the authority to direct the person or firm responsible for maintenance to make any repairs or modifications necessary within forty-eight (48) hours of the initial notification.

1.6.4.1 Pest Control Training

Trained personnel in pest control. Conduct a pest control meeting for personnel prior to commencing construction activities. Conduct additional meetings for new personnel and when site conditions change. Include in the training and meeting agenda: methods of detecting and pest infestation; familiarization with statutory and contractual pest control standards; installation and care of devices, and instruments, if required, for monitoring purposes to ensure adequate and continuous pest control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of waters of the United States, and endangered species and their habitat that are known to be in the area. Provide a Certificate of Competency for the personnel who will be conducting the pesticide application and management of pest control.

1.6.5 Non-Compliance Notifications

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with federal, state or local environmental laws or regulations, permits, and other elements of the Contractor's EPP. After receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. FAR 52.242-14 Suspension of Work provides that a suspension, delay, or interruption of work due to the fault or negligence of the Contractor allows for no adjustments to the contract for time extensions or equitable adjustments. In addition to a suspension of work, the Contracting Officer may use additional authorities under the contract or law.

1.6.6 Frequency of Inspections

Inspections of disturbed areas that do not meet the requirements of final stabilization, locations where stabilization measures have been implemented, areas of construction support activity, stormwater controls, erosion and sediment controls, and points of discharge from the site shall be performed in accordance with one of the following frequency schedules:

(1) at least once every fourteen (14) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater during active construction activities; or

(a) Where multiple, smaller storms that alone produce less than 0.5 inches but together produce 0.5 inches or more in 24 hours, inspection is required within 24 hours of when 0.5 inches of rain or more has fallen.

(b) Where there are multi-day storm events, inspection is required within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.5 inches or greater.

(2) at least once every month in areas of the construction site that meet final stabilization or have been temporarily stabilized; or

(3) at least once every month for construction sites where runoff is unlikely due to the occurrence of frozen conditions at the site, until thawing conditions begin to occur; or

(4) at least once every month in arid, semi-arid, or drought-stricken areas and within 24 hours after the end of a storm event of 0.5 inches or greater; or

(5) at least once every seven (7) calendar days, regardless of whether or not there has been a rainfall event since the previous inspection.

The inspection frequency schedule can only be changed a maximum of once per calendar month and implemented within the first five (5) business days of a calendar month; with the reason for the schedule change documented in the SWPPP.

1.7 ENVIRONMENTAL PROTECTION PLAN

The purpose of the EPP is to present an overview of known or potential environmental issues that must be considered and addressed during construction. Incorporate construction related objectives and targets from the installation's EMS into the EPP. Include in the EPP measures for protecting natural and cultural resources, required reports, and other measures to be taken. Meet with the Contracting Officer or Contracting Officer Representative to discuss the EPP and develop a mutual understanding relative to the details for environmental protection including measures for protecting natural resources, required reports, and other measures to be taken. Submit the EPP not less than 60 calendar days before scheduled final site or building design approval. Revise the EPP throughout the project to include any reporting requirements, changes in site conditions, or contract modifications that change the project scope of work in a way that could have an environmental impact. No requirement in this section will relieve the Contractor of any applicable federal, state, and local environmental protection laws and regulations. During Construction, identify, implement, and submit for approval any additional requirements to be included in the EPP. Maintain the current version onsite.

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

1.7.1 General Overview and Purpose

1.7.1.1 Descriptions

A brief description of each specific plan required by environmental permit or elsewhere in this Contract such as stormwater pollution prevention plan, spill control plan, solid waste management plan, wastewater management plan, air pollution control plan, dirt and dust control plan, contaminant prevention plan, a historical, archaeological, cultural resources, biological resources and wetlands plan, traffic control plan, Hazardous, Toxic and Radioactive Waste (HTRW) Plan, and Non-Hazardous Solid Waste Disposal Plan,.

1.7.1.2 Duties

The duties and level of authority assigned to the person(s) on the job site who oversee environmental compliance, such as who is responsible for adherence to the EPP, who is responsible for spill cleanup and training personnel on spill response procedures, who is responsible for manifesting hazardous waste to be removed from the site (if applicable), and who is responsible for training the Contractor's environmental protection personnel.

1.7.1.3 Procedures

A copy of any standard or project-specific operating procedures that will be used to effectively manage and protect the environment on the project site.

1.7.1.4 Communications

Communication and training procedures that will be used to convey environmental management requirements to Contractor employees and subcontractors.

1.7.1.5 Contact Information

Emergency contact information (office phone number, cell phone number, and e-mail address).

1.7.2 General Site Information

1.7.2.1 Drawings

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

1.7.2.2 Work Area

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

Show where any fuels, hazardous substances, solvents, or lubricants will

be stored. Provide a spill plan to address any releases of those materials.

1.7.2.3 Documentation

A letter signed by an officer of the firm appointing the Environmental Manager and stating that person is responsible for managing and implementing the Environmental Program as described in this contract. Include in this letter the Environmental Manager's authority to direct the removal and replacement of non-conforming work.

1.7.3 Management of Natural Resources

a. Land resources

b. Tree protection

c. Replacement of damaged landscape features

d. Temporary construction

e. Stream crossings

f. Fish and wildlife resources

g. Wetland areas

1.7.4 Protection of Historical and Archaeological Resources

a. Objectives

b. Methods

1.7.5 Stormwater Management and Control

a. Ground cover

b. Erodible soils

c. Temporary measures

(1) Structural Practices

(2) Temporary and permanent stabilization

d. Effective selection, implementation and maintenance of Best Management Practices (BMPs).

e. Stormwater Pollution Prevention Plan (SWPPP).

f. Statement of required notices required for coverage by CGP TXR150000

(1) Construction site notice

1.7.6 Protection of the Environment from Waste Derived from Contractor Operations

Control and disposal of solid and sanitary waste.

Control and disposal of hazardous waste.

This item consist of the management procedures for hazardous waste to be generated. The elements of those procedures will coincide with the Installation Hazardous Waste Management Plan when within an installation. The Contracting Officer will provide a copy of the Installation Hazardous Waste Management Plan as applicable.

As a minimum, include the following:

a. List of the types of hazardous wastes expected to be generated

b. Procedures to ensure a written waste determination is made for appropriate wastes that are to be generated

c. Sampling/analysis plan, including laboratory method(s) that will be used for waste determinations and copies of relevant laboratory certifications

d. Methods and proposed locations for hazardous waste accumulation/storage (that is, in tanks or containers)

e. Management procedures for storage, labeling, transportation, and disposal of waste (treatment of waste is not allowed unless specifically noted)

f. Management procedures and regulatory documentation ensuring disposal of hazardous waste complies with Land Disposal Restrictions (40 CFR 268)

g. Management procedures for recyclable hazardous materials such as lead-acid batteries, used oil, and similar

h. Used oil management procedures in accordance with 40 CFR 279; Hazardous waste minimization procedures

i. Plans for the disposal of hazardous waste by permitted facilities; and Procedures to be employed to ensure required employee training records are maintained.

1.7.7 Prevention of Releases to the Environment

Procedures to prevent releases to the environment

Notifications in the event of a release to the environment

1.7.8 Regulatory Notification and Permits

List what notifications and permit applications must be made. Some permits require up to 180 days to obtain. Demonstrate that those permits have been obtained or applied for by including copies of applicable environmental permits. The EPP will not be approved until the permits have been obtained.

1.7.9 Clean Air Act Compliance

1.7.9.1 Haul Route

Submit truck and material haul routes along with a Dirt and Dust Control

Plan for controlling dirt, debris, and dust on Installation roadways. As a minimum, identify in the plan the subcontractor and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.

1.7.9.2 Pollution Generating Equipment

Identify air pollution generating equipment or processes that may require federal, state, or local permits under the Clean Air Act. Determine requirements based on any current installation permits and the impacts of the project. Provide a list of all fixed or mobile equipment, machinery or operations that could generate air emissions during the project to the Installation Environmental Office (Air Program Manager). Ensure required permits are obtained prior to installing and operating applicable equipment/processes.

1.7.9.3 Stationary Internal Combustion Engines

Identify portable and stationary internal combustion engines that will be supplied, used or serviced. Comply with 40 CFR 60 Subpart IIII, 40 CFR 60 Subpart JJJJ, 40 CFR 63 Subpart ZZZZ, and local regulations as applicable. At minimum, include the make, model, serial number, manufacture date, size (engine brake horsepower), and EPA emission certification status of each engine. Maintain applicable records and log hours of operation and fuel use. Logs must include reasons for operation and delineate between maintenance/testing, emergency, and non-emergency operation.

1.7.9.4 Refrigerants

Identify management practices to ensure that heating, ventilation, and air conditioning (HVAC) work involving refrigerants complies with 40 CFR 82 requirements. Technicians must be certified, maintain copies of certification on site, use certified equipment and log work that requires the addition or removal of refrigerant. Any refrigerant reclaimed is the property of the Government, coordinate with the Installation Environmental Office to determine the appropriate turn in location.

1.7.9.5 Air Pollution-engineering Processes

Identify planned air pollution-generating processes and management control measures (including, but not limited to, spray painting, abrasive blasting, demolition, material handling, fugitive dust, and fugitive emissions). Log hours of operations and track quantities of materials used.

1.7.9.6 Compliant Materials

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

1.8 LICENSES AND PERMITS

Obtain licenses and permits required for the construction of the project

and in accordance with FAR 52.236-7 Permits and Responsibilities. Notify the Government of all equipment that may require permits or special approvals that the Contractor plans to use on site. This paragraph supplements the Contractor's responsibility under FAR 52.236-7 Permits and Responsibilities.

a. The following permits have been issued by the State of Texas:

(1) TPDES Construction General Permit No. TXR150000

(2) TPDES Phase II (Small) Municipal Separate Storm Sewer System (MS4) Permit No. TXR040000

(3) TPDES Multi Sector General Permit No. TXR050000

1.8.1 Wastewater Discharge

No discharges to JBSA sanitary sewers are allowed unless prior approval has been given by the JBSA Environmental Office. Contractors shall not discharge any waste that will violate JBSA specific area wastewater discharge permits. A Request shall be submitted in writing along with documentation of waste to be discharged (i.e. Safety Data Sheets, sample analysis results that include chain-of-custody and QA/QC data).

1.8.2 Public Water Systems

In accordance with 30 TAC 290.39, changes or additions to previously approved plans and specifications, existing systems, or supplies shall have approval from the TCEQ executive director prior to commencing construction or supporting activities. All applicable Pre-Construction Submittal documentation shall be submitted to the JBSA Environmental Office for review. Construction shall not commence prior to written approval from the TCEQ executive director for each project, or partial section. TCEQ requires plans be submitted at least 30 days prior to the time that approval, comments, and recommendations are desired. For phased projects, TCEQ approval can be obtained for each phase by submitting a certification of completion package for each phase as a partial completion of the entire project. All associated documentation (e.g. Certification of Completion Form, as-built drawings, bacteriological analysis, pressure test results) shall be submitted to the JBSA Environmental Office and Bioenvironmental for review. The Base Utility Supervisor shall be provided a copy of the TCEQ clearance for each project or partial section before activating or reactivating the public water system to that area.

Disinfection and bacteriological testing of water system components shall be conducted in accordance with TCEQ regulations and American Water Works Association (AWWA) standards. Bioenvironmental and the Base Utility office shall be notified of all disinfection and bacteriological testing activities. New or repaired portions of the public water system shall not be placed into service until coordination with Bioenvironmental and bacteriological testing are complete. Contractors shall not obstruct drinking water sample collection specified points throughout distribution.

1.8.2.1 Water Well Projects

Contractors shall coordinate with installation Water Quality Program Manager for permitting requirements associated with any water well projects. Water system projects require review and approval by the JBSA Environmental Office.

1.8.3 Stormwater Discharge

Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP) TXR150000 coverage shall be obtained by the contractor prior to commencing construction or construction support activities for projects disturbing one acre or greater of land, including equipment/material storage yards or temporary access roads. The contractor is responsible for submitting documentation (Notice of Intent (NOI), small/large construction site notice (CSN), inspection records, Notice of Change (NOC), Notice of Termination (NOT), providing notifications, and paying applicable fees to local (MS4 Operator - 802 CES/CEIE), state, and federal authorities, as applicable.

Contract operators disturbing greater than 1 acre of land shall maintain compliance with applicable CGP conditions for Small or Large Construction Sites, as defined in the CGP. Contract operators disturbing less than 1 acre of land shall implement best management practices (BMPs) to prevent the discharge of pollutants into the MS4. Additional information can be found at the following link:
www.tceq.texas.gov/permitting/stormwater/construction/index

The Stormwater Pollution Prevention Plan (SWP3) shall be designed, implemented, and maintained in compliance with the CGP for the duration of site activities; final stabilization and submittal of NOT to the MS4 Operator, 802 CES/CEIE. The SWP3 and required documentation shall be maintained on site and made available for review upon request by local, state, and federal authorities.

1.9 ENVIRONMENTAL RECORDS BINDER

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

1.10 SOLID WASTE MANAGEMENT PERMIT

Provide the Contracting Officer with written notification of the quantity of anticipated solid waste or debris that is anticipated or estimated to be generated by construction. Include in the report the locations where various types of waste will be disposed or recycled. Include letters of acceptance from the receiving location or as applicable; submit one copy of the receiving location state and local Solid Waste Management Permit or license showing such agency's approval of the disposal plan before transporting wastes off Government property.

1.10.1 Monthly Solid Waste Disposal Report

Monthly, submit a solid waste disposal report to the Contracting Officer. For each waste, the report will state the classification (using the definitions provided in this section), amount, location, and name of the business receiving the solid waste.

1.11 FACILITY HAZARDOUS WASTE GENERATOR STATUS

JBSA Sam Houston is designated as a Large Quantity Generator. Meet the regulatory requirements of this generator designation for any work conducted within the boundaries of this Installation. Comply with

provisions of federal, state, and local regulatory requirements applicable to this generator status regarding training and storage, handling, and disposal of construction derived wastes.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

The environmental resources within the project boundaries and those affected outside the limits of work under this contract shall be protected during the entire period of this contract. Confine activities to areas defined by the solicitation and provide adequate maps depicting the project area. All contractors shall comply with the JBSA Integrated Natural Resources Management Plan, DAFMAN 32-7003, Endangered Species Act, Clean Water Act, and Migratory Bird Treaty Act.

3.1 PROTECTION OF NATURAL RESOURCES

Minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitats. Prior to the commencement of activities, consult with the JBSA Environmental Office as applicable, regarding rare species or sensitive habitats that need to be protected. The protection of rare, threatened, and endangered animal and plant species identified, including their habitats, is the Contractor's responsibility. Activities that risk destroying or disrupting migratory birds or bird nests require prior coordination with the JBSA Environmental Office. Ensure removal of natural resources will not affect protected species. If previously unknown wildlife and wildlife habitats are discovered, halt all activities and contact the Contracting Officer and Contracting OFficer's Technical Representative.

Preserve the natural resources within the project boundaries and outside the limits of permanent work. Contractor shall not park vehicles or equipment within the drip line of trees. Restore to an equivalent or improved condition upon completion of work that is consistent with the requirements of the Installation Environmental Office or as otherwise specified. Confine construction activities to within the limits of the work indicated or specified.

Contractor's field offices, staging areas, storage, and temporary buildings shall be placed in areas designated on approved drawings or as directed by the Contracting Officer. Movement or relocation of Contractor's facilities shall be made only when approved by the Contracting Officer. Borrow and spoil areas shall be managed and controlled to limit spoil intrusion into designated areas, minimize erosion, and to prevent soil or sediment from entering nearby waters or storm drains. Temporary excavation and embankments for plant and work areas shall be controlled to protect adjacent areas from despoilment.

3.1.1 Flow Ways

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

3.1.2 Vegetation

Except in areas to be cleared, do not remove, cut, deface, injure, dredge, fill, disturb soil or destroy trees, shrubs, vines, grasses, topsoil, floodplains, wetlands, and landforms without the Contracting Officer's permission and coordination with the Natural Resources Management Office of the JBSA Environmental Office. Approved removal or trimming of trees, shrubs, or other vegetation, shall be conducted between 15 SEP - 28 FEB. Oak species trimmed or accidentally damaged during construction, shall be painted with pruning paint immediately, to include damaged roots. Do not fasten or attach ropes, cables, or guys to existing nearby trees for anchorages unless authorized by the Contracting Officer. Where such use of attached ropes, cables, or guys is authorized, the Contractor shall provide effective protection for land and vegetation; and is responsible for any resultant damage.

Protect existing trees, shrubs, and other vegetation that are to remain to ensure they are not injured, bruised, defaced, or otherwise damaged by construction operations. Vegetation to be preserved shall be clearly identified by marking, fencing, wrapping with boards, or other approved technique. Remove displaced rocks from uncleared areas. Coordinate with the Contracting Officer and the Natural Resources Management Office of the JBSA Environmental Office to determine appropriate action for trees and other landscape features scarred or damaged by equipment operations.

3.1.2.1 Landscapping

All new landscape plant species must be regionally native and follow current, local watering restrictions. **No planting of new turf or plants in Stage III water restrictions is authorized unless an exception is granted. Coordinate with the JBSA Envionmental Office Natural Resource Manager to submit requests for an exception. In Stage IV and V water restrictions, the installation of new turf and plants is absolutely prohibited.** Refer to paragraph EROSION AND SEDIMENT CONTROL MEASURES for other methods of site stabilization to use until a lesser stage water restriction is in effect.

3.1.3 Streams

Stream crossings must allow movement of materials or equipment without violating water pollution control standards of the federal, state, and local governments. Construction of stream crossing structures must be in compliance with all required permits including, but not limited to, Clean Water Act Section 404, and Section 401 Water Quality. Contractor shall check the AF Form 813 to verify if any environmental impact is foreseen and if mitigation measures are required.

The Contracting Officer's approval and appropriate permits are required before any equipment will be permitted to ford live streams. In areas where frequent crossings are required, install temporary culverts or bridges. Obtain Contracting Officer's approval prior to installation. Remove temporary culverts or bridges upon completion of work, and repair the area to its original condition unless otherwise required by the Contracting Officer.

3.1.4 Spoils

Excavated spoils shall be reused on site or removed from the Installation. Removal of excess spoils must be continuous throughout the

project, but no later than completion of site work. No permanent stockpiling of spoils is authorized on JBSA.

3.2 STORMWATER

Do not discharge stormwater from construction sites to the sanitary sewer. If the water is noted or suspected of being contaminated, it may only be released to the storm drain system if the discharge is specifically permitted. Obtain authorization in advance from the JBSA Environmental Office for any release of contaminated water. Runoff from the construction site or from storms shall be controlled, retarded, and diverted as directed to protect drainage courses by means of diversion ditches, benches, berms, sediment basins, inlet protection devices, stabilization, and by any measures required by area-wide plans under the Clean Water Act.

3.2.1 Construction General Permit

Comply with the provisions of the Construction General Permit as required by 40 CFR 122.26 and the State of Texas agency Texas Commission on Environmental Quality's Construction General Permit No. TXR150000. Under the terms and conditions of the permit, install, inspect, maintain BMPs, prepare stormwater erosion and sediment control inspection reports, and submit SWPPP inspection reports. Maintain construction operations and management in compliance with the terms and conditions of the general permit for stormwater discharges from construction activities.

Construction Site Notice must be posted in a visible location that is readable from outside the project boundary fence. Suggested location is near the primary entrance to the project site. In the case of work that is horizontal and is continually shifting the project boundary as work is completed, the site notice must also be continually shifted to remain within the project boundary.

3.2.1.1 Stormwater Pollution Prevention Plan

Submit a project-specific Stormwater Pollution Prevention Plan (SWPPP) to the Contracting Officer for approval, within 30 days of Contract Award and prior to the commencement of work. The SWPPP must meet the requirements of 40 CFR 122.26 and the Texas Commission on Environmental Quality General Permit for stormwater discharges from construction sites.

Include the following:

a. Comply with terms of the state general permit for stormwater discharges from construction activities. Prepare SWPPP in accordance with state requirements. Use state and EPA guidance to develope the SWPPP. EPA guidance can be found at www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp. TCEQ guidance can be found at www.tceq.texas.gov/assistance/water/stormwater/sw-construction.html.

b. Select applicable BMPs from EPA Fact Sheets located at https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater-construction; or in accordance with TCEQ Regulatory Guidance 348 located at https://www.tceq.texas.gov/downloads/publications/rg/complying-with-the-edwards-aquifer-rules-rg-348.pdf.

c. Include a completed copy of the Notice of Intent, BMP Inspection

Report Template, and Stormwater Notice of Termination, except for the effective date.

d. Provide product data for all proposed BMPs.

3.2.1.2 Inspection Reports

Submit "Inspection Reports" to the Contracting Officer in accordance with the State of Texas Construction General Permit TXR150000. Refer to paragraph FREQUENCY OF INPSECTIONS for minimum requirements for inspection frequency. Report shall meet the signatory requirements of 30 TAC 305.138.

3.2.1.3 Stormwater Pollution Prevention Plan Compliance Notebook

Create and maintain a three ring binder of documents that demonstrate compliance with the Construction General Permit. Include a copy of the permit Notice of Intent, proof of permit fee payment, SWPPP and SWPPP update amendments, inspection reports and related corrective action records, copies of correspondence with the the Texas Commission on Environmental Quality, and a copy of the permit Notice of Termination in the binder. At project completion, the notebook becomes property of the Government. Provide the compliance notebook to the Contracting Officer.

3.2.2 Erosion and Sediment Control Measures

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

Erosion control inspection reports may be compiled as part of a stormwater pollution prevention plan inspection reports.

3.2.2.1 Erosion Control

Prevent erosion by mulching, Compost Blankets, Geotextiles, temporary slope drains, or other applicable methods. Stabilize slopes by chemical stabilization, sodding, seeding, or such combination of these methods necessary for effective erosion control. Use of hay bales is prohibited. Berms, dikes, drains, sedimentation basins, grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative.

Provide seeding in accordance with Section 32 92 19 SEEDING. Provide sodding in accordance with Section 32 92 23 SODDING.

In some cases where severe erosion results in waters becoming turbid despite control measures, regular turbidity monitoring and documentation shall be necessary. Reports require review by the JBSA Environmental Office.

3.2.2.2 Sediment Control Practices

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

Temporary sediment controls shall be adequate to prevent potential pollutants discharging from the site, installed as per manufacturer's specifications, and maintained in effective operating condition. Temporary sediment control devices will remain in place and be properly maintained until the site meets the final stabilization requirements defined in the TPDES Construction General Permit TXR150000.

3.2.2.3 Earthwork

Earth work shall be planned and conducted to minimize the length of exposure time for unprotected soils. Side and back slopes shall be protected as soon as practicable upon completion of rough grading. Earthwork brought to final grade shall be finished as indicated by approved For-Construction documents.

3.2.3 Work Area Limits

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

3.2.4 Contractor Facilities and Work Areas

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

3.2.4.1 Equipment Maintenance

Maintenance of contractor vehicles and heavy equipment (including oil changing, lubrication, and vehicle washing) is not authorized on JBSA properties.

3.2.4.2 Concrete Washout

Contractor shall provide concrete truck washout facilities to contain wash water and material generated from truck washout. The concrete washout shall be maintained to prevent the discharge of pollutants and materials disposed of in accordance with solid waste rules and regulations. Concrete trucks are not authorized to be washed out onto the ground.

3.2.5 Municipal Separate Storm Sewer System (MS4) Management

Comply with the TPDES MS4 permit TXR040000 requirements.

3.3 SURFACE AND GROUNDWATER

Contractor shall keep construction activities under surveillance, management, and control to prevent pollutants from entering the MS4 (roads, ditches, and similar means of collecting and conveying

stormwater), surface and ground waters of the state. Monitoring of land and water impacted by construction and supporting activities shall be the Contractor's responsibility.

3.3.1 Cofferdams, Diversions, and Dewatering

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure must be constantly controlled to maintain compliance with existing state water quality standards and designated uses of the surface water body. Comply with the State of Texas water quality standards and anti-degradation provisions and the Clean Water Act Section 404. Do not discharge excavation ground water to the sanitary sewer, storm drains, or to surface waters without prior specific authorization in writing from the JBSA Environmental Office or Contracting Officer. Discharge of hazardous substances will not be permitted under any circumstances. Use sediment control BMPs to prevent construction site runoff from directly entering any storm drain or surface waters.

If the construction dewatering is noted or suspected of being contaminated, it may only be released to the storm drain system if the discharge is specifically permitted. Obtain authorization for any contaminated groundwater release in advance from the JBSA Environmental Office and the TCEQ, as applicable. Discharge of hazardous substances will not be permitted under any circumstances.

3.3.2 Waters of the United States

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

3.4 PROTECTION OF POTABLE WATER

Contractor personnel performing work on potable water utilities and systems shall be certified and licensed within the State of Texas for the installation of all potable water lines and backflow prevention devices. Access to potable water through fire hydrants on the Installation shall be requested and coordinated through American Water prior to temporary connections and hookups. Fire hydrant temporary connections shall meet state mandated backflow prevention requirements. Backflow devices shall be tested and certified immediately after installation on a fire hydrant. Testing certifications shall be submitted to American Water and the Contracting Officer, and shall include a copy of the tester's credentials. Refer to section 01 50 00 TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS for additional requirements. Hose bib use from an existing facility, except for housing, may be allowed by submitting a request for use to the Contracting Officer. Contractor shall provide all required backflow prevention devices.

Installation or repair of water mains must be coordinated with Bioenvironmental and American Water prior to start of work. Contractor shall follow TCEQ regulations and American Water Works Association standards for water main disinfection. The water main shall not be placed into service until bacteriological samples are collected and results

approved by the Contracting Officer.

TABLE	
BIOENVIRONMENTAL CONTACT INFORMATION	
SITE CODE	CONTACT
MPLS	210-671-7061
MPFJ	
KELL	
MBPB	
JBSF	
JBSC	
JBSG	
CYRB	
TYMX	210-652-3526
DAXG	
VGJT	

Water conservation is in effect all year on Joint Base San Antonio and each stage of water conservation is highly emphasized. Use of reclaimed/recycled water for irrigation is encouraged at JBSA and is available at most locations. The Contractor shall comply with TCEQ requirements established in 30 TAC 210 when utilizing reclaimed water.

3.5 PROTECTION OF CULTURAL RESOURCES

All communications with the State Historic Preservation Office shall be conducted by the appointed Government representative from the JBSA Environmental Office and shall not be contacted by the Contractor.

3.5.1 Archaeological Resources

If, during excavation or other construction activities, any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, activities that may damage or alter such resources shall be 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, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, immediately notify the Contracting Officer and Contracting Officer's Technical Representative 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. At the very least, the Cultural Resource Office of the JBSA Environmental Office will be involved in the identification and determination of any discoveries. Cease all activities that may result in impact to or the destruction of these resources. Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources. The Government retains ownership and control over archaeological resources.

3.5.2 Historical Resources

Existing historical resources within the work area are shown on the drawings. Protect these resources and be responsible for their preservation during the life of the Contract.

3.6 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with 40 CFR 64 and state air emission and performance laws and standards. Ensure that the National Ambient Air Quality Standards (NAAQS) set by the Environmental Protection Agency are maintained and modeled if needed. New construction, renovation, or modification of a facility that will impact air quality emissions will require a New Source Review (NSR) permitting process PRIOR to any work beginning. In addition, an Air Conformity Applicability Model (ACAM) questionnaire must be completed for all new construction, renovation, and modification projects and submitted to the JBSA Environmental Office. An electronic copy of the questionnaire can be requeted from the JBSA Environmental Office.

3.6.1 Preconstruction Air Permits

Notify the Air Program Manager, through the Contracting Officer, prior to bringing equipment, assembled or unassembled, onto the Installation, so that air permits can be secured. Necessary permitting time must be considered in regard to construction activities. Clean Air Act (CAA) permits must be obtained prior to bringing equipment, assembled or unassembled, onto the Installation.

For permitting requirements, provide all data related to processes to be conducted in a facility to include, but not limited to, any process or procedure which might entail or include anodizing; brushing; blasting; electroplating; evaporation; exhausting; misting; splashing; smoking; spraying; welding; melting; smelting; reacting (forms from resins); vaporizing; or otherwise releases volatile organic compounds, particulates, or other air emissions into the air. Equipment that requires permitting by the Texas Commission on Environmental Quality must be approved before being utilized.

Provide an equipment inventory list of proposed equipment which may have an impact on Air Emissions or Air Quality and comply with the CAA when conducting construction or other work at JBSA. Inventory data, in the form of emission source ID data plates, shall be submitted to the Air Program Manager for all air emission sources, including but not limited to water heaters, boilers, generators, A/C units, and water-cooling towers.

Permits shall be provided by the Contarctor, with permit application submission through the the JBSA Environmental Office once all supporting documents and calculations are certified and have been provided. Permit fees are the responsibility of the Contractor.

3.6.1.1 State Permitting

Prior to construction, per 30 TAC 116.110, any person who plans to construct any new facility or to engage in the modification of any existing facility which may emit air contaminants into the air shall either:

a. obtain a state air permit by following the general application process described in 30 TAC 116.111;

b. satisfy the conditions for a standard permit described in 30 TAC 116 Subchapter F, 30 TAC 321 Subchapter B, 30 TAC 323, or 30 TAC 330 Subchapter N;

c. satisfy the conditions for a flexible permit under the requirements in 30 TAC 116 Subchapter G;

d. satisfy the conditions for facilities permitted by rule under 30 TAC 106; or

e. satisfy the criteria for a de minimis facility or source under 30 TAC 116.119.

In accordance with the HSC 382.0518(a) (relating to preconstruction authorization), "Before work is begun on the construction of a new facility or modification of an existing facility that may emit air contaminants, the person planning the construction or modification must obtain a permit from the Texas Commission on Environmental Quality."

The Texas Commission on Environmental Quality has issued guidelines that anything other than site clearance or site preparation is considered "start of construction". All work such as excavation, form erection, or steel laying pertaining to foundations upon which permit units will rest shall be considered construction. For permit units not requiring a concrete foundation, the erection or construction of associated items like earthen dams, placement of piling, soil stabilization, storage tank fills, or retaining structures shall be considered construction, and WILL NOT be allowed without prior receipt of the required construction permit. Land clearing, soil load bearing tests, leveling of the area, sewer and utility lines, road building, power line installation, fencing, construction shack building, etc., are considered site clearance and site preparation. Once the soil and site are ready for foundations, the first excavation into the readied soil is considered "start of construction".

After an application has been submitted for a permit, construction may not begin until the JBSA Environmental Office receives a copy of the Pre-Construction Authorization (PCA) from the Texas Commission on Environmental Quality.

3.6.2 Oil or Dual-fuel Boilers and Furnaces

Provide product data and details for new, replacement, or relocated fuel fired boilers, heaters, or furnaces to the Installation Environmental Office (Air Program Manager) through the Contracting Officer. Data to be reported include: equipment purpose (water heater, building heat, process), manufacturer, model number, serial number, fuel type (oil type, gas type) size (MMBTU heat input). Provide in accordance with paragraph PRECONSTRUCTION AIR PERMITS.

3.6.3 Burning

Burning is prohibited on the Government premises.

3.6.4 Class I and II ODS Prohibition

Contractor shall not introduce any Class I or Class II ODS to JBSA. Class I and II ODS are Government property and must be returned to the Government for appropriate management. Contractor shall provide all necessary cylinders, perform refrigerant recovery on behalf of the Government, provide appropriate labeling and documentation, and transport. Coordinate with the JBSA Refrigerant Management Shop to determine the appropriate location for turn in of all reclaimed refrigerant.

3.6.5 High GWP HFCs & Other Refrigerants

In addition to Class I and Class II ODS, all other refrigerants are Government property and must be returned to the Government for appropriate management. Contractor shall provide all necessary cylinders, perform refrigerant recovery on behalf of the Government, provide appropriate labeling and documentation, and transport. Coordinate with the JBSA Refrigerant Management Shop to determine the appropriate location for turn in of all reclaimed refrigerant.

3.6.6 Venting of Refrigerant

Accidental venting of a refrigerant is a release and must be reported immediately to the Contracting Officer. Intentional venting of refrigerants (including most Non-ODS substitute refrigerants) is prohibited per 40 CFR 82.

3.6.7 EPA Certification Requirements

Heating and air conditioning technicians must be certified through an EPA-approved program. Maintain copies of certifications at the employees' places of business; technicians must carry certification wallet cards, as provided by environmental law.

3.6.8 Halons

Halon systems are not allowed to be installed on any DoD installation.

3.6.9 Dust Control

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

3.6.9.1 Particulates

Dust particles, aerosols and gaseous by-products from construction activities, and processing and preparation of materials (such as from asphaltic batch plants) must be controlled at all times, including weekends, holidays, and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates that would exceed 40 CFR 50, state, and local air pollution standards or that would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators, or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with state and local visibility regulations. Such emissions of airborne particulate matter shall not exceed 20% opacity as defined in 40 CFR 60 Appendix A, Test Method 9. Approved practices for control are as follows:

a. Watering: Apply water by means of trucks and/or hoses during construction activities.

b. Chemical Stabilizers: During periods of high winds apply chemical stabilizers per manufacturer's directions and prior to any forecasted or expected wind events. Apply water as necessary, and prior to expected wind events. If chemical stabilizers are to be used, contractor shall contact the JBSA Environmental Office prior to use.

c. Pre-grading planning: Grade each phase and apply chemical stabilizers or ground cover to graded areas where construction is scheduled to begin.

d. Wind fencing: Provide three-to-five-foot barriers with 50% or less porosity, adjacent to roadways or urban areas. Normally, used in conjunction with watering or chemical stabilization. Use trees and shrubs for long-term sites.

e. Material coverage: For hauling vehicles cover entire surface of hauled material once vehicle is full. Do not overload haul vehicle. Freeboard should not be less than 3 inches.

f. Mix material with water prior to loading, and/or to entire surface of material after loading. Apply water as necessary during loading operation.

g. Empty loader slowly and keep bucket close to the truck while dumping.

h. Altering loading and unloading procedures. Confine loading and unloading procedures to the downwind side of storage piles. Loading activities may require wind fencing.

i. Coverings: Tarps, plastic, or other materials can be used as a temporary covering. When used, coverings must be anchored to prevent movement of coverings from wind.

j. Vegetation: Establish as quickly as possible when active operations have ceased.

k. Prevent Access: Install fencing around the perimeter of property. Install "No trespassing" signs.

l. Paving or chip sealing: Requires routine street sweeping if subject to material accumulation.

m. Gravel/Recycled Asphalt: Maintain milling activities to a size and depth effective in controlling dust.

n. Eliminate unnecessary travel and restrict access to reduce vehicle trips.

o. Locate haul roads as far from existing housing as possible.

p. Stay on established routes.

q. Stop work activities temporarily if required.

r. Properly maintain equipment to reduce pollutant emissions.

s. Wheel Washers: Wheel washers shall be placed where vehicles exit unpaved areas onto paved areas.

3.6.9.2 Vehicles

All vehicles used to haul materials of any kind shall have their receptacle covered at all times when materials are not being accessed. Additionally, vehicles are authorized an idling period no more than 15 minutes on JBSA properties before they must be shut off.

3.6.9.3 Site Access

Install a gravel pad or stabilized entrance at the access point to the construction site and designate a single entrance and exit. Stay on established routes.

3.6.9.4 Roadways

Cleaning of roadways on a regular basis shall be used to prevent dust/particulate build-up. Do not clean streets or roadways with water. Do not discharge water or debris into the storm drain.

3.6.9.5 Abrasive Blasting

Blasting operations cannot be performed without prior approval of the Installation Air Program Manager. The use of silica sand is prohibited in sandblasting.

Provide tarpaulin drop cloths and windscreens to enclose abrasive blasting operations to confine and collect dust, abrasive agent, paint chips, and other debris. All drains, vents, or other openings shall be masked or covered with a suitable material to prevent any breaches of media from the containment area. All media must be kept dry from the start of the contract until the material has been disposed of. contractor shall dispose of the spent media. Any breaches will be repaired immediately before continuing the blast operation process. Perform work involving removal of hazardous material in accordance with 29 CFR 1910 and applicable state regulations.

Dry abrasive cleaning is permitted if performed in accordance with 30 TAC 106.452. Logs shall be turned in to the JBSA Environmental Office annotating the number of hours actual blasting took place and pounds of waste media removed.

If blasting is in an area where lead base paint of lead containing paint has been identified, work shall be performed in accordance with 29 CFR 1926.62. Blasting media will characterized by a State of Texas accredited NELAP laboratory to determine characteristics of the waste stream for proper landfill disposal. List of accredited laboratories can be found at:
https://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html

Abrasive media or water pressure shall not be used when directed by the Cultural Resource Office of the JBSA Environmental Office.

3.6.10 Odors

Control odors from construction activities. The odors must be in compliance with state regulations and local ordinances and may not constitute a health hazard.

3.7 WASTE MINIMIZATION

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

3.7.1 Salvage, Reuse and Recycle

Identify anticipated materials and waste for salvage, reuse, and recycling. Describe actions to promote material reuse, resale or recycling. To the extent practicable, all scrap metal must be sent for reuse or recycling and will not be disposed of in a landfill.

Include the name, physical address, and telephone number of the hauler, if transported by a franchised solid waste hauler. Include the destination and, unless exempted, provide a copy of the state or local permit (cover) or license for recycling.

3.7.2 Nonhazardous Solid Waste Diversion Report

Maintain an inventory of nonhazardous solid waste diversion and disposal of construction and demolition debris. Submit a report to the JBSA Environmental Office through the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that nonhazardous solid waste has been generated. Include the following in the report:

Construction and Demolition (C&D) Debris Disposed	cubic yards, tons as appropriate
C&D Debris Recycled	cubic yards, tons as appropriate
C&D Debris Composted	cubic yards, tons as appropriate
Total C&D Debris Generated	cubic yards, tons as appropriate
Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount)	cubic yards, tons as appropriate

3.8 WASTE MANAGEMENT AND DISPOSAL

3.8.1 Waste Determination Documentation

Complete a Waste Determination form (provided at the pre-construction conference) for Contractor-derived wastes to be generated. All potentially hazardous solid waste streams that are not subject to a specific exclusion or exemption from the hazardous waste regulations (e.g., scrap metal, domestic sewage) or subject to special rules, (lead-acid batteries and precious metals) must be characterized in accordance with the requirements of 40 CFR 262.11 or corresponding applicable state or local regulations. Base waste determination on user knowledge of the processes and materials used, and analytical data when necessary. Consult with the Installation environmental staff for guidance on specific requirements. Attach support documentation to the Waste Determination form. As a minimum, provide a Waste Determination form for the following waste (this listing is not exhaustive): oil- and latex -based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and containers of the original materials.

3.8.1.1 Sampling and Analysis of Waste

3.8.1.1.1 Waste Sampling

Sample waste in accordance with EPA SW-846 or EPA 600/4-79/020 when applicable. Clearly mark each sampled drum or container with the Contractor's identification number, and cross reference to the chemical analysis performed.

3.8.1.1.2 Laboratory Analysis

Follow the analytical procedure and methods in accordance with the 40 CFR 261. A TCEQ certified laboratory, capable of conducting all required tests, shall perform sample testing. Landfill may require additional testing be performed, which shall be contractor performed at no additional cost to the Government. Provide analytical results and reports performed to the Contracting Officer. Coordinate all activities with Installation Hazardous Waste Manager (210-652-6204 or 210-452-8929). No waste shall be removed from the project site or Installation until these analytical results and reports have been reviewed by the Industrial Waste Hazardous Manager and approved by the Contracting Officer.

3.8.1.1.3 Analysis Type

Identify hazardous waste by analyzing for the following characteristics: ignitability, corrosivity, reactivity, and toxicity based on TCLP results.

3.8.1.1.3.1 Soil Characterization

Prior to soil removal from the Installation, a qualified sampler with requisite training specified by the Department of Transportation (DOT) and the Environmental Protection Agency's Resource Conservation and Recovery Act (RCRA) shall collect representative samples. Representative samples shall be taken for every 200 cubic yards of soil, at a minimum, that has been identified for removal from the Installation.

Each representative sample of soil shall be tested for the following items using the indicated test methods and analytical parameters.

RCRA 11 Metals	EPA SW-846, Method 7000 series, TCLP extraction
Organochlorine Pesticides/Polychlorinated Biphenyl (PCBs)	EPA SW-846, Method 8081B/8080, TCLP extraction
Semi-Volatile Organic Compounds (SVOCs)	EPA SW-846, Method 8270E, TCLP extraction
Volatile Organic Compounds (VOCs)	EPA SW-846, Method 8260D, TCLP extraction
Total Petroleum Hydrocarbons (TPH)	TCEQ, Method 1005
Non-halogenated Organics	EPA SW-846, Method 8015C, TCLP extraction
Reactivity, Corrosivity, Ignitibility (RCI)	

Based on review of the Analytical Report, the JBSA Environmental Office will confirm a hazardous or non-hazardous determination delineating soil in accordance with 30 TAC 335 Subchapter R, Sections 501 through 508.

3.8.2 Solid Waste Management

3.8.2.1 Project Solid Waste Disposal Documentation Report

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

3.8.2.2 Control and Management of Solid Wastes

Pick up solid wastes, and place in covered containers that are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with non-hazardous solid waste. Transport solid waste off Government property and dispose of it in compliance with 40 CFR 260, Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, Section 02 81 00 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS, state, and local requirements for solid waste disposal. Verify that the selected transporters have the necessary permits and licenses to operate. Solid waste disposal offsite must comply with most stringent local, state, and federal requirements, including 40 CFR 241, 40 CFR 243, and 40 CFR 258.

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

3.8.2.3 Excess Spoils

All excess spoils shall be removed from the Installation. Spoils shall be disposed of at an authorized landfill in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

3.8.3 Control and Management of Hazardous Waste

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

3.8.3.1 Hazardous Waste/Debris Management

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

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

3.8.3.2 Waste Storage/Satellite Accumulation/90 Day Storage Areas

Accumulate hazardous waste at satellite accumulation points and in compliance with 40 CFR 262 and applicable state or local regulations.

Individual waste streams will be limited to 55 gallons of accumulation (or one quart for acutely hazardous wastes). If the Contractor expects to generate hazardous waste at a rate and quantity that makes satellite accumulation impractical, the Contractor may request a temporary 90-day or 180-day, as appropriate, accumulation point be established. Submit a request in writing to the Contracting Officer and provide the following information (Attach Site Plan to the Request):

Contract Number	[_____]
Contractor	[_____]
Haz/Waste or Regulated Waste POC	[_____]
Phone Number	[_____]
Type of Waste	[_____]
Source of Waste	[_____]
Emergency POC	[_____]
Phone Number	[_____]
Location of the Site	[_____]

Attach a Waste Determination form for the expected waste streams. Allow 10 working days for processing this request. Additional compliance requirements (e.g., training and contingency planning) that may be required are the responsibility of the Contractor. Barricade the designated area where waste is being stored and post a sign identifying as follows:

"DANGER - UNAUTHORIZED PERSONNEL KEEP OUT"

3.8.3.3 Hazardous Waste Disposal

3.8.3.3.1 Responsibilities for Contractor's Disposal

Provide hazardous waste manifest to the Installations Environmental Office for review, approval, and signature prior to shipping waste off Government property.

3.8.3.3.1.1 Services

Provide service necessary for the final treatment or disposal of the hazardous material or waste in accordance with 40 CFR 260 - 40 CFR 279, local, and state, laws and regulations, and the terms and conditions of the Contract within 60 days after the materials have been generated. These services include necessary personnel, labor, transportation, packaging, detailed analysis (if required for disposal or transportation, include manifesting or complete waste profile sheets, equipment, and compile documentation).

3.8.3.3.1.2 Samples

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

3.8.3.3.1.3 Analysis

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

3.8.3.3.1.4 Labeling

During waste accumulation label all containers in accordance with 40 CFR 262. Prior to offering a waste for off-site transport, determine the Department of Transportation's (DOT's) proper shipping names for waste in accordance with 49 CFR 172 (each container requiring disposal) and demonstrate to the Contracting Officer how this determination is developed and supported by the sampling and analysis requirements contained herein. Label all containers of hazardous waste with the words "Hazardous Waste" or other words to describe the contents of the container in accordance with 40 CFR 262 and applicable state or local regulations.

3.8.3.4 Universal Waste Management

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

a. Batteries as described in 40 CFR 273.2

b. Lamps as described in 40 CFR 273.5

c. Mercury-containing equipment as described in 40 CFR 273.4

d. Aerosol cans as described in 40 CFR 273.6

e. Pesticides as described in 40 CFR 273.3

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

3.8.3.5 Electronics End-of-Life Management

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

3.8.3.6 Disposal Documentation for Hazardous and Regulated Waste

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

Submit a copy of the applicable EPA and or state permit(s), manifest(s), or license(s) for transportation, treatment, storage, and disposal of hazardous and regulated waste by permitted facilities. Hazardous or toxic waste manifests must be reviewed, signed, and approved by the Contracting Officer before the Contractor may ship waste. To obtain specific disposal instructions, coordinate with the Installation Environmental Office. Refer to location special requirements for the Installation Point of

Contact information.

3.8.4 Releases/Spills of Oil and Hazardous Substances

3.8.4.1 Response and Notifications

Exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, sewage, regulated gas, petroleum, lubrication oil, and other substances regulated in accordance with 40 CFR 300. Maintain spill cleanup equipment and materials at the work site. In the event of a spill, take prompt, effective action to stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Installation Fire Department, the JBSA Environmental Office, and the Contracting Officer.

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

3.8.4.2 Clean Up

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

3.8.5 Mercury Materials

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

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

3.8.6 Wastewater

3.8.6.1 Sewage Holding Tanks

Contractor is not authorized sewage-holding tanks on JBSA. Portable toilets are the only authorized means to provide site restroom facilities, with exception of contractor's job site trailer and temporary swing space. All jobsite trailers and temporary swing space shall either be plumbed to JBSA's sanitary sewer system or utilize black water tanks that are serviced at minimum on a weekly basis. Connection to the sanitary sewer system requires approval from American Water and the establishment of a Connection Charge Agreement. All work to American Water assets will be performed by them, at the Prime Contractor's expense. Portable toilets shall be serviced on a regular basis, and shall be removed upon completion

of the project by a TCEQ licensed septic waste hauler.

3.8.6.2 Disposal of Wastewater

Disposal of wastewater must be as specified below.

3.8.6.2.1 Treatment

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

3.8.6.2.2 Surface Discharge

For discharge of ground water, surface discharge in accordance with the requirements of the TPDES Construction General Permit TXR150000.

3.8.6.2.3 Land Application

Water generated from the flushing of lines after disinfection, disinfection in conjunction with hydrostatic testing, or hydrostatic testing must be land-applied in accordance with federal, state, and local laws and regulations for land application.

3.9 HAZARDOUS MATERIAL MANAGEMENT

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

JBSA is the primary generator for all hazardous wastes, including Universal Waste, generated throughout the duration of the contract. The Contractor shall be considered the primary co-generator of this waste. All hazardous waste management activities shall be coordinated through and approved by the JBSA Environmental Office. Under no circumstances may hazardous, special, or universal waste be disposed of in municipal waste dumpsters. Ensure only DOT and HAZWOPER trained personnel manage hazardous waste.

contractor shall be familiar with 40 CFR 260, 40 CFR 279,

49 CFR SUBCHAPTER C, and the JBSA Hazardous Waste Management Plan for Hazardous and Special Waste (including Universal Waste).

3.9.1 Contractor Hazardous Material Inventory Log

Submit the "Contractor Hazardous Material Inventory Log"(found at: https://www.wbdg.org/dod/ufgs/ufgs-01-57-19), which provides information required by (EPCRA Sections 312 and 313) along with corresponding SDS, to the Contracting Officer at the start and at the end of construction (30 days from final acceptance), and update by the 5th day of each month during the life of the contract. The log shall include the stock number, nomenclature (trade name/part number), manufacturer, container size, quantity usage, contract number, Quality Assurace or Contracting Officer's Technical Representative, and contract performance period. Keep copies of the SDSs for hazardous materials onsite. At the end of the project, provide the Contracting Officer with copies of the SDSs, and the maximum quantity of each material that was present at the site at any one time, the dates the material was present, the amount of each material that was used during the project, and how the material was used.

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

3.9.2 Hazardous Material Storage

Hazardous material brought onto the Installation shall be stored in accordance with manufacturer recommendations listed on the corresponding SDS, 29 CFR 1910.176, and 29 CFR 1926.250. All flammable materials shall be stored in approved flammable containers within approved storage areas. Careful consideration shall be taken when storing chemicals that may have an adverse reaction to each other. All necessary precautions shall be taken to ensure the safe storage of these materials and to protect from contaminating the environment. The Spill Prevention Control and Countermeasure (SPCC) plan shall be revised as necessary to reflect current hazardous material storage and usage.

3.10 PREVIOUSLY USED EQUIPMENT

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

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

Manage and dispose of asbestos-containing waste in accordance with all applicable federal, state, and local requirements. At minimum this includes 40 CFR 61-SUBPART M, 40 CFR 61.145, and 25 TAC 296. Refer to Section 02 82 00 ASBESTOS REMEDIATION. Manifest asbestos-containing waste and provide the manifest to the Contracting Officer. A designated representative from the JBSA Environmental Office is the only authorized individual to sign as the Generator on all manifests. Notifications to the Texas Department of State Health Services and the JBSA Environmental Office are required before starting any asbestos work. Refer to Section 02 82 00 ASBESTOS REMEDIATION for additional notification requirements.

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

Manage and dispose of lead-contaminated waste in accordance with 40 CFR 745 and Section 02 83 00 LEAD REMEDIATION. Manifest any lead-contaminated waste and provide the manifest to the Contracting Officer. A designated representative from the JBSA Environmental Office is the only authorized individual to sign as the Generator on all manifests. No lead containing paint shall be used during the course of the project.

3.13 CONTROL AND MANAGEMENT OF POLYCHLORINATED BIPHENYLS (PCBs)

Manage and dispose of PCB-contaminated waste in accordance with 40 CFR 761 and Section 02 84 33 REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs). A designated representative from the JBSA Environmental Office is the only authorized individual to sign as the Generator on all manifests.

3.14 CONTROL AND MANAGEMENT OF LIGHTING BALLAST AND LAMPS CONTAINING PCBs

Manage and dispose of contaminated waste in accordance with 40 CFR 761. Refer to Section 02 84 16 HANDLING OF LIGHTING BALLASTS AND LAMPS CONTAINING PCBs AND MERCURY. A designated representative from the JBSA Environmental Office is the only authorized individual to sign as the Generator on all manifests.

3.15 CONTROL AND MANAGEMENT OF EXIT LAMPS CONTAINING TRITIUM

inspect all exit lamps to ensure that they do not contain tritium. Lamps found to contain tritium shall be disposed of in accordance with applicable federal regulations. Tritium exit signs must still comply with Nuclear Regulatory Commission Radio-Active Regulations. If Tritium is found, contact the JBSA Environmental Office prior to any removal activities to determine disposal and manifesting requirements.

3.16 MILITARY MUNITIONS

In the event military munitions, as defined in 40 CFR 260, are discovered or uncovered, immediately stop work in that area and immediately inform the Contracting Officer.

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

POL products include flammable or combustible liquids, such as gasoline, diesel, lubricating oil, used engine oil, hydraulic oil, mineral oil, and cooking oil. Store POL products and fuel equipment and motor vehicles in a manner that affords the maximum protection against spills and evaporation into the environment. Manage and store POL products in approved containers for flammable and combustible products in accordance with EPA 40 CFR 112, and other federal, state, regional, and local laws and regulations. Use secondary containments, dikes, curbs, and other barriers, to prevent POL products from spilling and entering the ground, storm or sewer drains, stormwater ditches or canals, or navigable waters of the United States. Secondary containment shall be sized at a minimum 110% of the largest container. Fire extinguishers and spill kits must be available, and no smoking signs posted. Describe in the EPP (see paragraph ENVIRONMENTAL PROTECTION PLAN) how POL tanks and containers must be stored, managed, and inspected and what protections must be provided. Storage of oil, including fuel, on the project site is not allowed. Fuel must be brought to the project site each day that work is performed.

3.17.1 Used Oil Management

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

3.17.2 Oil Storage Including Fuel Tanks

Provide secondary containment and overfill protection for oil storage tanks. A berm used to provide secondary containment must be of sufficient size and strength to contain the contents of the tanks plus 5 inches freeboard for precipitation. Construct the berm to be impervious to oil for 72 hours that no discharge will permeate, drain, infiltrate, or otherwise escape before cleanup occurs. Use drip pans during oil transfer operations; adequate absorbent material must be onsite to clean up any spills and prevent releases to the environment. Cover tanks and drip pans during inclement weather. Provide procedures and equipment to prevent overfilling of tanks. If tanks and containers with an aggregate aboveground capacity greater than 1320 gallons will be used onsite (only containers with a capacity of 55 gallons or greater are counted), provide and implement a Spill Prevention Control and Countermeasure (SPCC) plan meeting the requirements of 40 CFR 112. Do not bring underground or aboveground storage tanks to the installation for Contractor use during a project. Submit the SPCC plan to the Contracting Officer for approval at least 30 calendar days prior to bringing containers on the Installation. If the SPCC plan is not approved, containers 55 gallons or greater shall not be brought onto the Installation.

When obtaining fuels from refuelers, contractor shall comply with 30 TAC 334, AFTO 37-1-1 General Operation and Inspection of Installed Fuel Storage and Dispensing System, AFTO 37A-1-101 General Instructions, USAF Fuel, Water, and Lubricant Dispensing Equipment, AFTO 42B-1-1 Quality Control of Fuels and Lubricants, and CGA P-1.

Monitor and remove any rainwater that accumulates in open containment dikes or berms. Inspect the accumulated rainwater prior to draining from a containment dike to the environment, to determine there is no oil sheen present.

3.17.3 Tank Installations or Modifications

Permanent tanks and equipment that are required by the project scope shall be installed in accordance with all Federal, state, and local laws and regulations. At least ***60 calendar days prior to installation***, the JBSA Environmental Office must be notified of all planned tank/equipment specifications, including location, installation date, product to be stored, quantity of product, volume of tank, material of construction, containment type, Stage I Vapor recovery system, tank dimensions, and any additional required information to comply with the requirements of 30 TAC 334. Any planned tank installation, to include emergency generator belly tanks, that are 1,100 gallons or larger requires registration with the State of Texas. Contractor ***must notify*** the JBSA Environmental Office prior to tank installation, for the tank to be registered with the State. All notifications to the TCEQ on tank installations and registrations shall be made by the JBSA Environmental Office with Contractor provided

information.

Modifications to existing tanks or equipment tanks require notification to the JBSA Environmental Office at least 60 calendar days prior to beginning any removal, repair, or modification. The State of Texas may be required to be notified in advance with a Construction Notification. If confined space entry into an existing tank is required, then a confined space entry plan must be coordinated with the JBSA ABW Safety Office, the JBSA Fire Department, and the JBSA Environmental Office. The Contractor shall provide the JBSA Environmental Office with a description of work being performed prior to beginning work. For work on underground and aboveground storage tanks, the Contractor must be licensed and registered in accordance with 30 TAC 334.401.

3.18 INADVERTENT DISCOVERY OF PETROLEUM-CONTAMINATED SOIL OR HAZARDOUS WASTES

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

3.19 EMERGENCY RESPONSE SPILL PROCEDURES

All fuel, oil, and chemical spills or releases that pose a threat to occupational health & safety or the environment must be immediately reported to the Installation Fire Emergency Services. After emergency services have been notified, provide notification to the Contracting Officer, Contracting Officer's Technical Representative, and the JBSA Environmental Office. A verbal report shall be made to the JBSA Environmental Office within one hour of discovery, followed by a detailed written notification within 15 hours. Cleanup and all associated costs are the responsibility of the Contractor. Costs for actions performed by the Government due to delay on Contractor response shall be reimbursed by the Contractor. The JBSA Environmental Office will make all required spill notifications to federal, state and local regulatory agencies. Ensure all personnel are trained on spill procedures, fire-suppression systems, and SDSs for all materials used or stored at the project site.

The Spill Prevention Control and Countermeasure (SPCC) plan shall include emergency response spill procedures. Include proof of training on spill procedures given to personnel and training certificates of DOT and HAZWOPER trained personnel. Plan shall also include the primary and alternate Contractor POC to contact in the event of an emergency.

3.19.1 Spill Kits and Clean Up Equipment

Contractor shall provide and maintain spill clean up equipment, sufficient in both type and quantity, at all sites involving the storage and handling of fuel, POL, hazardous materials, or hazardous wastes. The type of equipment and quantity required shall be identified in the Spill Prevention Control and Countermeasure (SPCC) plan. Ensure employees are trained in the use of the spill kits and clean up equipment and document the training. If a spill occurs, initiate containment, control, and clean up actions. Notify the JBSA Environmental Office immediately if release extends off-site or enters the natural environment. Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing and shall collect waste in suitable containers observing chemical compatibility requirements.

3.20 PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, coordinate with the Installation Pest Management Coordinator (IPMC) or Project Pesticide Coordinator (PPC), through the Contracting Officer, at the earliest possible time prior to pesticide application. Discuss integrated pest management strategies including prevention of invasive species as applicable with the IPMC and receive concurrence from the IPMC through the Contracting Officer prior to the application of any pesticide associated with these specifications. Provide Installation Project Office Pest Management personnel the opportunity to be present at meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR SUBCHAPTER E.

3.20.1 Application

Apply pesticides using a state-certified pesticide applicator in accordance with EPA label restrictions and recommendation. The certified applicator must wear clothing and personal protective equipment as specified on the pesticide label. The Contracting Officer will designate locations for water used in formulating. Do not allow the equipment to overflow. Inspect equipment for leaks, clogging, wear, or damage and repair prior to application of pesticide.

3.20.2 Pesticide Treatment Plan

Include and update a pesticide treatment plan, as information becomes available. Include in the plan the sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (that is, pounds of active ingredient applied), equipment used for application and calibration of equipment. Comply with 40 CFR 152-189, state, regional, and local pest management record-keeping and reporting requirements as well as any additional Installation specific requirements for data required to be reported to the Installation.

3.21 CHLORDANE

Evaluate excess soils and concrete foundation debris generated during the demolition of housing units or other wooden structures for the presence of chlordane or other pesticides prior to reuse or final disposal.

3.22 SOUND INTRUSION

Make the maximum use of low-noise emission products, as certified by the EPA. Blasting or use of explosives are not permitted without written permission from the Contracting Officer, and then only during the designated times. Confine pile-driving operations to the period between 7 a.m. and 4 p.m., Monday through Friday, exclusive of holidays, unless otherwise specified.

Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the State of Texas rules.

3.23 POST CONSTRUCTION CLEANUP

Clean up areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing by the Contracting Officer, remove traces of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade parking area and similar temporarily used areas to conform with surrounding contours. Restore landscapping in areas directly and indirectly affected by construction activities.

-- End of Section --

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01/26

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ATT-1 - JBSA FSH Project Sign

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SECTION 01 58 00

PROJECT IDENTIFICATION
01/26

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EP 310-1-6a	(2006; 2019 Change 2) Project Operation -- Sign Standards Manual, VOL 1
EP 310-1-6b	(2006) Sign Standards Manual, VOL 2, Appendices

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Project Identification Sign

SD-02 Shop Drawings

Project Identification Sign; G

1.3 QUALITY CONTROL

1.3.1 Project Identification Sign

Provide a project sign rendering before the full size project sign is produced.

1.4 PROJECT IDENTIFICATION SIGN

Prior to initiating any work on site, provide two project identification signs at the locations designated. Construct the sign in accordance with paragraph PROJECT SIGNBOARD. Maintain sign throughout the life of the project. Upon completion of the project, remove the sign from the site.

1.4.1 Project Signboard

Furnish the sign, maintain the sign during construction, and remove the sign from the job site upon completion of the project. Details of sign graphics and construction are indicated in ATT-1, and are based off of details from Plates 6 and 7. Replace the NAVFAC logo seen in Plate 7 with

the 802 CES emblem. Remove all references to Naval Facilities Engineering Command and NAVFAC.

1.4.2 Construction Project Signs

Furnish the construction project sign package, maintain the signs during construction, and remove the signs from the job site upon completion of the project. The construction project sign package consists of two signs: one for project identification and the other to show the on-the-job safety performance of the contractor. Ensure that the package conforms to the requirements of paragraph PROJECT SIGNBOARD for the project identification sign; and EP 310-1-6a and EP 310-1-6b, specifically Section 16, for the safety performance sign.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

ATT-1 - JBSA FSH Project Sign

ATTACHED IN APPENDIX A

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01/26

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CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
01/26

PART 1 GENERAL

1.1 REFERENCES

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

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

40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 273	Standards for Universal Waste Management
40 CFR 279	Standards for the Management of Used Oil
49 CFR SUBCHAPTER C	Hazardous Materials Regulations
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
49 CFR 178	Specifications for Packagings

1.2 DEFINITIONS

1.2.1 Co-mingle

The practice of placing unrelated materials together in a single container, usually for benefits of convenience and speed.

1.2.2 Construction Waste

Waste generated by construction activities, such as scrap materials, damaged or spoiled materials, temporary and expendable construction materials, and other waste generated by the workforce during construction activities.

1.2.3 Demolition Debris/Waste

Waste generated from demolition activities, including minor incidental demolition waste materials generated as a result of Intentional dismantling of all or portions of a building, to include clearing of building contents that have been destroyed or damaged.

1.2.4 Disposal

Depositing waste in a solid waste disposal facility, usually a managed landfill or incinerator, regulated in the US under the Resource Conservation and Recovery Act (RCRA).

1.2.5 Diversion

The practice of diverting waste from disposal in a landfill or incinerator, by means of eliminating or minimizing waste, or reuse of materials.

1.2.6 Green Waste

Materials that can be composted or used as mulch, including plant materials (trees, shrubs, limbs, brush, leaves), sawdust, raw lumber (not treated, painted, pressed, or particleboard), and certain food scraps.

1.2.7 Final Construction Waste Diversion Report

A written assertion by a material recovery facility operator identifying constituent materials diverted from disposal, usually including summary tabulations of materials, weight in short-ton.

1.2.8 Recycling

The series of activities, including collection, separation, and processing, by which products or other materials are diverted from the solid waste stream for use in the form of raw materials in the manufacture of new products sold or distributed in commerce, or the reuse of such materials as substitutes for goods made of virgin materials, other than fuel.

1.2.9 Reuse

The use of a product or materials again for the same purpose, in its original form or with little enhancement or change.

1.2.10 Salvage

Usable, salable items derived from buildings undergoing demolition or deconstruction, parts from vehicles, machinery, other equipment, or other components.

1.2.11 Source Separation

The practice of administering and implementing a management strategy to identify and segregate unrelated waste at the first opportunity.

1.3 CONSTRUCTION WASTE (INCLUDES DEMOLITION DEBRIS/WASTE)

Divert a minimum of 60 percent by weight of the project construction waste and demolition debris/waste from the landfill or incinerator. Follow applicable industry standards in the management of waste. Apply sound environmental principles in the management of waste. (1) Practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction waste and demolition debris/waste from landfills and incinerators and to facilitate the recycling or reuse of excess construction materials.

1.4 CONSTRUCTION WASTE MANAGEMENT

Implement a Construction Waste Management Program for the project. Take a pro-active, responsible role in the management of construction

construction waste, recycling process, disposal of demolition debris/waste, and require all subcontractors, vendors, and suppliers to participate in the Construction Waste Management Program. Establish a process for clear tracking, and documentation of construction waste and demolition debris/waste.

1.4.1 Implementation of Construction Waste Management Program

Develop and document how the Construction Waste Management Program will be implemented in a Construction Waste Management Plan. Submit a Construction Waste Management Plan to the Contracting Officer for approval. Construction waste and demolition debris/waste materials include un-used construction materials not incorporated in the final work, as well as demolition debris/waste materials from demolition activities or deconstruction activities. In the management of waste, consider the availability of viable markets, the condition of materials, the ability to provide material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates.

1.4.2 Oversight

The Quality Control Manager, as specified in Section 01 45 00 QUALITY CONTROL, is responsible for overseeing and documenting results from executing the Construction Waste Management Plan for the project.

1.4.2.1 Government Oversight

The following table lists Government POCs to coordinate with for questions relating to waste management and proper removal from JBSA. Record of conversations shall be supplied to the Contracting Officer and Contracting Officer's Technical Representative.

PROGRAM	CONTACT
Qualified Recycling Program (QRP) Manager	(210) 671-5371 (210) 671-4844
Concrete, Asphalt, Asphalt Milling Material Recycling	(210) 671-0331 (210) 671-4844
Pollution Prevention (P2) Program Manager	(210) 671-8015 (210) 671-4844

1.4.3 Special Programs

Implement special programs involving rebates or similar incentives related to recycling of construction waste and demolition debris/waste materials. Retain revenue or savings from salvaged or recycling, unless otherwise directed. Ensure firms and facilities used for recycling, reuse, and disposal are permitted for the intended use to the extent required by federal, state, and local regulations.

1.4.4 Special Instructions

Provide on-site instruction of appropriate separation, handling,

recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the projects. Designation of single source separating will be clearly marked on the containers.

Designate an on-site authority who shall be responsible for instructing workers and overseeing and documenting results of the Construction Waste Management Plan. Ensure that approved copies of the Construction Waste Management Plan are distributed to key personnel.

Reduce the amount of solid waste generated through procurement of products with less or reusable packaging, buying only the amounts needed, investigating new recycling/re-use opportunities, and altering operations to reduce wastes.

Coordinate with the JBSA Environmental Office on all matters involving solid waste management and recycling. This includes sampling, lab analysis, and characterization of waste streams. Verify that facilities designated to receive waste, recyclable, and re-used materials are permitted for the intended use to the extent required by federal, state, and local regulations.

1.4.5 Waste Streams

Delineate waste streams and characterization, including estimated material types and quantities of waste, in the Construction Waste Management Plan. Manage all waste streams associated with the project. Typical waste streams are listed below. Include additional waste steams not listed:

a. Land Clearing Debris

b. *Asphalt and asphalt milling material

c. Masonry and CMU

d. *Concrete; with and without reinforcement

e. *Metals (Includes, but is not limited to, banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized, stainless steel, aluminum, copper, zinc, bronze.)

f. Wood (nails and staples allowed); inlcuding pallets

g. Glass

h. Paper; including newspapers, magazines, books, phone books, envelopes

i. Plastics (PET, HDPE,PVC,LDPE,PP,PS, Other)

j. Gypsum

k. *Non-hazardous paint and paint cans

l. Carpet

m. Ceiling Tiles

n. Insulation

o. *Tanks and vessels; only if triple-rinsed, as necessary, and cut open

p. *Clean air conditioning units, refrigerators, and freezers (after refrigerant removal)

q. *Corrugated cardboard

r. *Ink and toner (printer) cartridges

s. *Used oil

t. Beverage Containers

u. Trash (lunch waste, miscellaneous municipal solid waste items)

Items denoted with an asterisk (*) shall be recycled to the maximum extent practicable.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Waste Management Plan; G

Profile Sheet; G

SD-06 Test Reports

Monthly Reports; G

Quarterly Reports; G

Annual Report; G

Analytical Report; G

SD-07 Certificates

Documentation

SD-11 Closeout Submittals

Final Construction Waste Diversion Report; S

1.6 MEETINGS

Conduct Construction Waste Management meetings. After award of the Contract and prior to commencement of work, schedule and conduct a meeting with the Contracting Officer to discuss the proposed Construction Waste Management Plan and to develop a mutual understanding relative to the management of the Construction Waste Management Program and how waste diversion requirements will be met. Government team will provide input, as capable, to help identify possible pollution prevention and solid waste diversion opportunities.

The requirements of this meeting may be fulfilled during the Coordination and Mutual Understanding meeting outlined in Section 01 45 00 QUALITY CONTROL. At a minimum, discuss and document waste management goals at following meetings:

a. Preconstruction meeting.

b. Regular site meetings.

c. Work safety meeting (if applicable).

1.7 CONSTRUCTION WASTE MANAGEMENT PLAN

Submit Construction Waste Management Plan not less than 45 calendar days before scheduled final site or building design approval. Revise and resubmit Construction Waste Management Plan until it receives final approval from the Contracting Officer, in order for construction to begin. Execute demolition or deconstruction activities in accordance with Section 02 41 00 DEMOLITION AND DECONSTRUCTION. Manage demolition debris/waste or deconstruction materials in accordance with the approved construction waste management plan.

An approved Construction Waste Management Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations or meeting project cumulative waste diversion requirement. Ensure all subcontractors receive a copy of the approved Construction Waste Management Plan. The plan demonstrates how to meet the project waste diversion requirement. Also, include the following in the plan:

a. Identify the names of individuals responsible for waste management and waste management tracking, along with roles and responsibilities on the project.

b. Actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.

c. Description of the regular meetings to be held to address waste management.

d. Description and estimated quantities of the proposed waste, including recyclable materials, salvable materials, and construction and demolition debris to be generated. This includes waste that is separated for re-use, salvage, recycling, or disposal. Indicate whether materials will be salvaged for resale, salvaged and reused on the current project, salvaged and stored for reuse on a future project, recycled, or disposed.

e. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas on site and equipment to be used for processing, sorting, and temporary storage of materials.

f. Name of landfill to be used. Identify the landfill by name, address, and phone number. Transfer stations are not acceptable disposal facilities.

g. Name of recycling facility to be used. Identify the recycling facilities by name, address, and phone number. Transfer stations are

not acceptable recycling facilities.

h. Identification of local and regional re-use programs, including non-profit organizations such as schools, local housing agencies, and organization that accept used materials such as material exchange networks and resale stores. Include the name, location, phone number for each re-use facility identified, and provide a copy of the permit or license for each facility.

i. List of specific materials, by type and quantity, that will be salvaged for resale, salvaged and reused on the current project, salvaged and stored for reuse on a future project, or recycled. Identify the recycling facilities by name, address, and phone number.

j. Identification of materials that cannot be recycled or reused with an explanation or justification, to be approved by the Contracting Officer.

k. Description of the means by which materials identified in item (i) above will be protected from contamination.

l. Description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site).

m. Copy of training plan for subcontractors and other services to prevent contamination by co-mingling materials identified for diversion and waste materials.

n. Facilities or subcontractors offering construction waste transport on-site or off-site must ensure that proper shipping orders, bill of lading, manifests, or other shipping documents containing waste diversion information meet requirements of 40 CFR 273 Universal Waste Management, 49 CFR 173 Shippers - General Requirements for Shipments and Packagings, and 49 CFR 178 Specifications for Packaging. Only designated indiviuals from the JBSA Environmental Office will be signing manifests or other shipping documents.

o. List each supplier who deliver construction materials, in bulk, or package products in returnable containers or returnable packaging, or have take-back programs. List each program and the applicable material to actively monitor and track to assist in meeting waste diversion requirements on the project.

Distribute copies of the waste management plan to each subcontractor, Quality Control Manager, and the Contracting Officer.

1.8 RECORDS (DOCUMENTATION)

1.8.1 General

Maintain records to document the types and quantities of waste generated and diverted though re-use, recycling and sale to third parties; through disposal to a landfill or incinerator facility. Provide explanations for materials not recycled, reused or sold. Collect and retain manifests, weight tickets, sales receipts, and invoices specifically identifying diverted project waste materials or disposed materials.

1.8.2 Accumulated

Maintain a running record of materials generated and diverted from landfill disposal, including accumulated diversion rates for the project. Make records available to the Contracting Officer during construction or incidental demolition activities. Provide a copy of the diversion records to the Contracting Officer upon completion of the construction, incidental demolitions or minor deconstruction activities.

1.9 REPORTS

1.9.1 General

Maintain current construction waste diversion information on site for periodic inspection by the Contracting Officer. Include in the monthly reports, quarterly reports, annual reports and final reports: the project name, contract information, information for waste generated, diverted and disposed of for the current reporting period and show cumulative totals for the project. Reports must identify quantifies of waste by type and disposal method. Also include in each report, supporting documentation to include manifests, weigh tickets, receipts, and invoices specifically identifying the project and waste material type and weighted sum. Also include proof of reclamation of oil from compressors and other equipment prior to recycling or disposal and documentation of proper disposal of the used oil. All material donated, recycled, or disposed of from across JBSA shall be documented and tracked to meet Environmental Reporting requirements.

1.9.2 Monthly Reporting

Provide cumulative reports at the end of each month. Submit monthly reports no later than 7 calendar days after the month has ended.

1.9.3 Quarterly Reporting

Provide cumulative reports at the end of each quarter (December, March, June, and September, corresponding with the federal fiscal year for reporting purposes). Submit quarterly reports no later than 14 calendar days after the preceding quarter has ended. Submit Quarterly Reports to the Contracting Officer. Reports will be distributed to the appropriate office after receipt by the Government.

1.9.4 Annual Reporting

Provide a cumulative construction waste diversion report annually. Submit annual report not later than 30 calendar days after the preceding fourth quarter has ended. Provide copy of annual construction waste diversion report to the Contracting Officer. Reports will be distributed to the appropriate office after receipt by the Government.

1.10 FINAL CONSTRUCTION WASTE DIVERSION REPORT

A Final Construction Waste Diversion Report is required at the end of the project. Provide Final Construction Waste Diversion Report no later than 30 calendar days after the Beneficial Occupancy Date (BOD). The final Construction Waste Diversion Report must be included in the Sustainability eNotebook in accordance with Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING.

1.11 COLLECTION

Collect, store, protect, and handle reusable and recyclable materials at the site in a manner which prevents contamination, and provides protection from the elements to preserve their usefulness and monetary value. Provide receptacles and storage areas designated specifically for recyclable and reusable materials and label them clearly and appropriately to prevent contamination from other waste materials. Keep receptacles or storage areas neat and clean.

Train subcontractors and other service providers to separate waste streams as described in the Construction Waste Management Plan. Handle hazardous waste and hazardous materials in accordance with applicable regulations and coordinate with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS and Section 02 81 00 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS. Separate materials by one of the following methods described herein:

1.11.1 Source Separation Method

Separate waste products and materials that are recyclable from trash and sort as described below into appropriately marked separate containers and then transport to the respective recycling facility for further processing. Deliver materials in accordance with recycling or reuse facility requirements (e.g., free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process). Separate materials into the category types as defined in the Construction Waste Management Plan.

1.11.2 Other Methods

Other methods proposed by the Contractor may be used when approved by the Contracting Officer and the JBSA Environmental Office.

1.12 DISPOSAL

Control accumulation of waste materials and trash. Recycle or dispose of collected materials off-site at intervals approved by the Contracting Officer and in compliance with waste management procedures as described in the waste management plan. Except as otherwise specified in other sections of the specifications, dispose of in accordance with the following:

1.12.1 Reuse

Give first consideration to reusing construction and demolition materials as a disposition strategy. Recover for reuse materials, products, and components as described in the approved Construction Waste Management Plan. Coordinate with the Contracting Officer to identify onsite reuse opportunities or material sales or donation available through Government resale or donation programs. Sale of recovered materials is not allowed on the Installation. Consider the use of surplus industrial supply broker services, who match entities with reusable or repurpose industrial materials with entities with need of such materials.

1.12.2 Recycle

Recycle non-hazardous construction and demolition/debris materials that are not suitable for reuse. Track rejection of contaminated recyclable materials by the recycling facility. Rejected recyclables materials will

not be counted as a percentage of diversion calculation. Recycle all fluorescent lamps, HID lamps, mercury (Hg) -containing thermostats and ampoules, and PCBs-containing ballasts and electrical components as directed by the Contracting Officer and the JBSA Hazardous Waste Program Manager. Do not crush lamps on site as this creates a hazardous waste stream with additional handling requirements.

1.12.2.1 Authorized Recyclers

All recyclable materials shall be directly transported to an EPA approved recycler. Transportation to a transfer station is not allowed.

1.12.3 Green Waste

Consider separating items that can be composted or mulched (trees, limbs, brush, raw lumber, sawdust, etc.) and deliver these materials to off-base compost or mulch facilities. Ensure materials meet or exceed the compost or mulch facility requirements for material type, size, and contamination level. Track rejection of materials by the compost or mulch facility and document reason(s) for rejection. Rejected materials must not be counted as a percentage of diversion calculation.

1.12.4 Waste

Dispose by landfill only those waste materials with no practical use, economic benefit, or recycling opportunity in accordance with the approved Construction Waste Management Plan.

1.12.4.1 Authorized Landfills

All waste materials shall be directly transported to a TCEQ authorized landfill that has been vetted through the JBSA Environmental Office. Transportation to a transfer station is not allowed. The current authorized and vetted local landfills are:

a. Covel Gardens Landfill, operated by Waste Management Services

b. Tessman Road Landfill, operated by Republic Services

A separate request shall be submitted to the Contracting Officer if the Contractor wants to use a landfill that is not listed above. Do not list any alternate landfill in the Construction Waste Management Plan until a request has been approved. Refer to the following link for the current TCEQ authorized active landfills:
https://www.tceq.texas.gov/permitting/waste_permits/msw_permits/msw-data

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 COLLECTION

Layout and label a specific area to facilitate separation of materials for waste and potential recycling, salvage, re-use, and return. Recycling and waste container areas shall be kept neat, clean, and clearly marked to avoid contamination of materials.

Prevent waste disposal in containers located across JBSA that are outside the limits of the project site.

3.2 DISPOSAL

Refer to Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, Section 02 41 00 DEMOLITION AND DECONSTRUCTION, Section 02 81 00 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS, Section 02 82 00 ASBESTOS REMEDIATION, Section 02 83 00 LEAD REMEDIATION, Section 02 84 16 HANDLING OF LIGHTING BALLASTS AND LAMPS CONTAINING PCBs AND MERCURY, and Section 02 84 33 REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs) for additional requirements for identifying, handling, transporting, and disposing of hazardous material.

For both hazardous and non-hazardous waste, all debris, reusable mterial, recyclable material, and soils shall be characterized by lab analysis, profiled, and manifested to an approved landfill or recycling facility. All costs associated with disposal of reusable, recyclable, soils, and waste material shall be the responsibility of the Contractor.

Ensure that preparation, packaging, marking, and labeling of wastes is performed in accordance with 49 CFR SUBCHAPTER C.

3.2.1 Characterization

All soil, reusable, recyclable, and waste material shall have a determination of either hazardous or non-hazardous material. Known hazardous waste material will have been identified and characterized by the Hazardous Material Survey report(s) provided in Appendix D. Contractor shall ensure representative samples of materials that have not been characterized are collected by qualified personnel and submitted to a certified laboratory. Resulting report shall be provided to the Contracting Officer and the JBSA Environmental Office to confirm the hazardous or non-hazardous determination.

Any material encountered that is suspected of being hazardous material, and that has not been previously identified, shall be characterized by lab analysis using applicable methods in accordance with 40 CFR 261. Contractor is responsible for the collection of representative samples, transportation, and testing of samples to be characterized. Analytical Report for each characterization shall be submitted to the Contracting Officer for review by the JBSA Environmental Office to confirm the hazardous or non-hazardous determination. The JBSA Environmental Office will assist in the identification of state permitted landfills that are eligible to receive the waste.

If waste is designated to be transported to a landfill, they may require additional testing be performed. Any additional testing requested by the landfill shall be performed at no additional cost to the Government.

3.2.2 Profiling

All soil, reusable, recyclable, and waste material shall be profiled. Waste material shall be profiled using the Profile Sheet from an approved landfill listed in the Construction Waste Management Plan or the Hazardous Waste Management Plan. Reusable and recyclable material shall be profiled using the applicable Profile Sheet attached to this section specification.

Draft profile sheets shall be submitted for review to determine if all

necessary information has been included. Contractor shall use the following information as the Generator's Information in the applicable sections of the profile sheets:

a. Name: Building 2263

b. Site Address: 2484 Stanley Rd, JBSA Sam Houston, TX 78234

c. Mailing Address Line:

(1) ATTN: 802 CES/CEIE

(2) 2250 Engineer St, B4196 Ste 7; JBSA Sam Houston, TX 78234

d. County: Bexar

Profile sheets for waste material, both hazardous and non-hazardous, shall be entered electronically into the applicable landfill's system. Corrections required based on the Government's review of the draft profile sheet shall be represented in the electronic system. Once fully entered, Contractor shall utilize the elctronic system's notification tool to alert the JBSA Environmental Office that a profile is ready for digital signature. Contractor shall not sign any profile as the Generator. Signature shall only be made by an authorized JBSA Environmental Office representative.

Profile sheets for recyclable material do not require signature by a Generator. Submission shall be in accordance with the requirements of Section 01 33 00 SUBMITTAL PROCEDURES.

With each profile generated, inlcude the following additional information:

a. Container size to be used

b. Number of manifests requested

c. Estimated total quantity (a x b)

3.2.3 Manifesting

All soil ,reusable, recyclable, and waste material shall be manifested directly to the landill or recycling location. Transportation to transfer stations is not allowed.

Manifests shall not be signed by the Prime Contractor or its subcontractors as the Generator, even for manifests dealing with hazardous wastes. Only an authorized representative of the JBSA Environmental Office shall sign as the Generator. The applicable landfill will generate manifests for the corresponding profile sheet and send to the JBSA Environmental Office to be signed. Manifests for recyclable material will be generated by the JBSA Environmental Office. Once the manifests have been signed by the JBSA Environmental Office as the Generator, the Contracting Officer's Technical Representative will deliver them to the Contractor's designated representative at the project site.

General instruction for use a manifest are as follows:

a. Only one (1) manifest may be used per transport. Do not overfill the transport container.

b. Manifest shall state the quantity and unit measure of material being transported.

c. Contractor must ensure that the licensed transporter legibly prints all required information and signs in the appropriate section.

d. Contractor shall retain the "Generator's Copy" sheet from the manifest before the transporter leaves the project site.

e. Contractor shall retreive the associated weight ticket from the transporter after the load has been delivered to and accepted by the approved destination.

f. Contractor shall submit the "Generator's Copy" sheet and associated weight ticket to the Contracting Officer's Technical Representative.

g. In the event that the destination facility returns the completed manifest to anyone but the Generator, Contractor shall retrieve that manifest and submit it to the Contracting Officer's Technical Representative.

3.2.3.1 Profile Revisions

When additional manifests are required for an existing profile, a request shall be submitted to the Contracting Officer at least 21 calendar days in advance of the needed date. The request shall detail the number of additional manifests needed, container size to be used, and if there is an increase in material. An incomplete request will not meet the advance notice requirement.

Profiles for active manifests are only valid for one year. Contractor shall provide notice to the Contracting Officer's Technical Representative at least 30 calendar days before expiration, to extend the time the profile is valid.

3.2.4 Transporting

All material shall be transported directly to its approved destination, with no intermidiate stops at transfer stations, by a licensed transporter. Refer to Section 02 81 00 TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS for additional requirements for transportation of hazardous waste.

3.3 SPECIFIC MATERIALS

a. Universal wastes (lamps, ballasts, mercury-containing equipment, batteries, paint and paint-related waste, aerosol cans) will be properly manifested and managed.

(1) Lamps shall not be disposed of in municipal dumpsters or managed as municipal solid waste. All lights shall be checked for mercury containing lamps. If the lamp is a sodium vapor, fluorescent, or metal halide bulb the bulbs shall be shipped as Universal Waste or recycled at an approved EPA recycling center.

(2) When fluorescent and mercury vapor fixtures are removed, the ballast must be examined for PCB labeling. Ballast is presumed to contain PCBs unless clearly labeled "NO PCBs". Suspected

ballast must be removed and recycled through a licensed recycling center for PCBs.

b. Recyclable metal that has tested positive for lead-based or lead-containing paint will require a waste manifest, weight ticket, and certificate of disposal from the selected recycling facility.

c. Asbestos containing materials will be properly profiled, manifested, and managed.

d. Compressed gas and liquid fuel cylinders MUST NEVER be placed into any containers, recycling bins in buildings, scrap metal dumpsters, or Installation refuse and trash dumpsters. Contact the JBSA Hazardous Waste Manager at 210-652-6204 or 210-671-4844 for specific guidance on disposal of these items.

e. Scrap metal recycling may be coordinated through the JBSA Qualified Recycling Program. Proceeds from these scrap metal sales will be retained by the QRP. Contact the QRP POC for information and coordination. Trip tickets and weight tickets for all recycled metal shall be submitted to the Contracting Officer.

f. Other recyclable items accepted by the JBSA QRP may be given to the QRP for recycling; including paper, cardboard, certain plastics, aluminum cans, ink & toner cartridges, and wood pallets. Contact the QRP or P2 POC for a current list of accepted items. Items must be separated by type before transport to a JBSA Recycle Center. Proceeds from sales of these items will be retained by the QRP.

g. Used oil must be managed in accordance with 40 CFR 260 and 40 CFR 279.

3.4 DOCUMENTATION

All original sheets titled "Generator Copies", or similar, from used manifests shall be returned to the Contracting Officer's Technical Representative as they are generated. Each sheet shall also include the associated weight ticket.

If the original sheet titled "Generator", or similar, from used manifests is returned to the Contractor or any of its subcontractors, it shall be delivered to the Contracting Officer's Technical Representative. Otherwise, this sheet will typically be sent directly to the Generator's address by the landfill or recycler.

All unused manifests shall be turned over to the Contracting Officer's Technical Representative.

ATT-1 - Profile Sheet for Non-Haz Asphalt/Concrete

ATTACHED IN APPENDIX A

ATT-2 - Profile Sheet for Non-Haz Misc Recyclable

ATTACHED IN APPENDIX A

-- End of Section --

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CLOSEOUT SUBMITTALS
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PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-1-2909	(2012) Engineering and Design -- Geospatial Data and Systems
ERDC/ITL SR-23-1	(2023) A/E/C Graphics Standard, Release 2.2
ERDC/ITL SR-24-3	(2024) A/E/C CAD Standard - Release 6.2

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-300-08	(2026) Criteria for Transfer and Acceptance of DoD Real Property

1.2 DEFINITIONS

1.2.1 As-Built Drawings

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

1.2.2 Record Drawings

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

Produce the record drawings from the Record Model(s) and do not include annotations indicating revisions.

1.2.3 Record Model

A model reflecting approved changes during construction including red-lines, requests for information (RFI's), and contract modifications. Include updated construction phase facility/site data for components.

1.2.4 Advanced Modeling

A subset of geospatial technologies as defined in EM 1110-1-2909 to include Building Information Modeling (BIM), Civil Information Modeling (CIM), Geographic Information Systems (GIS), and Computer-Aided Design (CAD). Advanced modeling is comprised of models and drawings that form a digital representation of the project, or part thereof, that are comprised of model elements with facility data.

1.2.5 USACE CAD/BIM Technology Center

The USACE CAD/BIM Technology Center hosts all standard content for USACE. This content can be accessed through the CAD/BIM Technology Center website, https://cadbimcenter.erdc.dren.mil/.

1.3 SOURCE DRAWING FILES

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

1.3.1 Terms and Conditions

Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction drawings and data for the referenced project. Any other use or reuse is at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor must make no claim and waives to the fullest extent permitted by law, any claim or cause of action of any nature against the Government, its agents or sub consultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic CAD drawing files are not construction documents. Differences may exist between the CAD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CAD files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished Source drawing files, the signed and sealed construction documents govern. The Contractor is responsible for determining if any conflict exists. Use of these Source Drawing files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction drawings and data related to this contract, remove all previous indicia of ownership (seals, logos, signatures, initials and dates).

1.4 RECORD DRAWINGS

The Government will provide pdf and or program files at the preconstruction conference that contains one set of "as-built" electronic CAD files in the specified software and format revised to reflect all

amendments and the final contract PDF drawings. The CAD files are provided to enable preparation of as-built or as-constructed drawings. If discrepancies exist between the CAD files and the contract PDF drawings, correct the CAD files to show the contract PDF drawings.

1.4.1 Variation with Contract Drawings

The electronic files provided are not part of the contract documents. If there is any discrepancy between the electronic files and the contract drawings, the contract drawings govern. The Government has no responsibility to modify any GFM due to changes in the design that occur after award.

Evaluate the content and quality of the GFM upon receipt. If major discrepancies or omissions occur in the GFM, notify the Contracting Officer and indicate the nature of such variations.

1.4.2 Data Loss, Corruption, and Error

Transfer of GFM files may result in corrupted files resulting in data loss and errors. Use of GFM files at own risk. Verify data integrity upon receipt and request a replacement if necessary. Make any adjustment in file structure, format, or software version as needed to make GFM compatible with computer systems and/or software to meet the requirements of the contract.

1.4.3 Modeling Completeness and Quality

The Government makes no guarantee that the GFM provide the level of completeness or quality as required by the contract. Further, the Government makes no guarantee that identified variations will be corrected upon notification.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Warranty Management Plan; G

Warranty Tags

Spare Parts Data

SD-08 Manufacturer's Instructions

Posted Instructions

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals; G

SD-11 Closeout Submittals

As-Built Drawings; G

Record Drawings; G

Record Model; G

As-Built Record of Equipment and Materials

Warranted Equipment and Materials

Final Approved Shop Drawings; G

Construction Contract Specifications; G

Certification of EPA Designated Items; G

Certification Of USDA Designated Items; G

Interim DD FORM 1354; G

High Performance and Sustainable Building (HPSB) Checklist; G

List Of Installed Building Equipment Items For DD Form 1354

1.6 SPARE PARTS DATA

Submit two copies of the Spare Parts Data list.

a. Indicate manufacturer's name, part number, and stock level required for test and balance, pre-commissioning, maintenance and repair activities. List those items that may be standard to the normal maintenance of the system.

b. At acceptance of commissioning, ensure the required stock level is supplied as indicated in subparagraph a for maintenance and repair activities through the facilities warranty period. Provision of spare parts does not relieve the Contractor of responsibilities listed under the contract guarantee provisions.

1.7 QUALITY CONTROL

Additions and corrections to the contract drawings must be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols must conform to ERDC/ITL SR-24-3.

1.8 WARRANTY MANAGEMENT

1.8.1 Warranty Management Plan

Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction. At least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan narrative must contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due

date and whether item has been submitted or was accomplished. Submit warranty information, made available during the construction phase, to the Contracting Officer for approval prior to each monthly pay estimate. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period must begin on the date of project acceptance and continue for the full product warranty period. Conduct a joint 4 month and 9 month warranty inspection, measured from time of acceptance; with the Contractor, Contracting Officer and the Customer Representative. The warranty management plan must include, but is not limited to, the following:

a. Roles and responsibilities of personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

b. For each warranty, the name, address, telephone number, and e-mail of each of the guarantor's representatives nearest to the project location.

c. A list and status of delivery of Certificates of Warranty for extended warranty items, including roofs, HVAC balancing, pumps, motors, transformers, and for commissioned systems, such as fire protection and alarm systems, sprinkler systems, and lightning protection systems.

d. Warranted Equipment and Materials list for each warranted equipment, item, feature of construction or system indicating:

(1) Name of item.
(2) Model and serial numbers.
(3) Location where installed.
(4) Name and phone numbers of manufacturers or suppliers.
(5) Names, addresses and telephone numbers of sources of spare parts.
(6) Warranties and terms of warranty. Include one-year overall warranty of construction, including the starting date of warranty of construction. Items which have warranties longer than one year must be indicated with separate warranty expiration dates.
(7) Cross-reference to warranty certificates as applicable.
(8) Starting point and duration of warranty period.
(9) Summary of maintenance procedures required to continue the warranty in force.
(10) Cross-reference to specific pertinent Operation and Maintenance manuals.
(11) Organization, names and phone numbers of persons to call for warranty service.
(12) Typical response time and repair time expected for various warranted equipment.

e. The plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

f. Procedure and status of tagging of equipment covered by warranties longer than one year.

g. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty or safety reasons.

1.8.2 Performance Bond

The Performance Bond must remain effective throughout the construction period.

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.8.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. At this meeting, establish and review communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty. In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact must be located within the local service area of the warranted construction, be continuously available, and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.8.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty item that has been repaired during the warranty period. Include within the report the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframe specified, the Government will perform the work and back charge the construction warranty payment item established.

a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

b. Second Priority Code 2. Perform onsite inspection to evaluate

situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Life Safety Systems
(1) Fire suppression systems.
(2) Fire alarm system(s) in place in the building.

Code 1-Air Conditioning Systems
(1) Recreational support.
(2) Air conditioning leak in part of building, if causing damage.
(3) Air conditioning system not cooling properly.

Code 1-Doors
(1) Overhead doors not operational, causing a security, fire, or safety problem.
(2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors
(1) Overhead doors not operational.
(2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical
(1) Power failure (entire area or any building operational after 1600 hours).
(2) Security lights
(3) Smoke detectors

Code 2-Electrical
(1) Power failure (no power to a room or part of building).
(2) Receptacle and lights (in a room or part of building).

Code 3-Electrical
Street lights.

Code 1-Gas
(1) Leaks and breaks.
(2) No gas to family housing unit or cantonment area.

Code 1-Heat
(1) Area power failure affecting heat.
(2) Heater in unit not working.

Code 2-Kitchen Equipment
(1) Dishwasher not operating properly.
(2) All other equipment hampering preparation of a meal.

Code 1-Plumbing
(1) Hot water heater failure.
(2) Leaking water supply pipes.

Code 2-Plumbing
(1) Flush valves not operating properly.

(2) Fixture drain, supply line to commode, or any water pipe leaking.
(3) Commode leaking at base.

Code 3 -Plumbing
Leaky faucets.

Code 3-Interior
(1) Floors damaged.
(2) Paint chipping or peeling.
(3) Casework.

Code 1-Roof Leaks
Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks
Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)
No water to facility.

Code 2-Water (Hot)
No hot water in portion of building listed.

Code 3-All other work not listed above.

1.8.5 Warranty Tags

At the time of installation, tag each warranted item with a durable, oil and water resistant tag approved by the Contracting Officer. Attach each tag with a copper wire and spray with a silicone waterproof coating. Also, submit two record copies of the warranty tags showing the layout and design. The date of acceptance and the QC signature must remain blank until the project is accepted for beneficial occupancy. Show the following information on the tag.

Type of product/material	
Model number	
Serial number	
Contract number	
Warranty period from/to	
Inspector's signature	
Construction Contractor	
Address	

Telephone number	
Warranty contact	
Address	
Telephone number	
Warranty response time priority code	
WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.	

PART 2 PRODUCTS

2.1 RECORD DRAWINGS

Prepare the CAD drawing files in AutoCAD Release 2020 format compatible with a Windows 11 operating system.

2.1.1 Additional Drawings

If additional drawings are required, prepare them using the specified electronic file format applying ERDC/ITL SR-24-3 and ERDC/ITL SR-23-1. The title block and drawing border to be used for any new final record drawings must be identical to that used on the contract drawings.

2.1.1.1 Sheet Numbers and File Names

If a sheet needs to be added between two sequential sheets, append a Supplemental Drawing Designator in accordance with ERDC/ITL SR-24-3 Adding a drawing sheet, and ERDC/ITL SR-23-1 Adding or deleting drawing sheets and index sheet procedures.

2.2 ADVANCED MODELING PACKAGE

For each Advanced Modeling Package submittal for both the Interim Record Model Package and the Final Record Model Package, submit in accordance with ERDC/ITL SR-24-3 and in accordance with Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD) and also provide the following items:

a. Advanced Modeling PxP: Provide an electronic copy of the most current approved version of the project Advanced Modeling PxP.

b. Electronic Files: Provide an electronic list (.txt file or similar), of all submitted electronic files including a description, directory, and file name for each file submitted. Identify which files have been produced from the Model and Facility Data. For all sheet files, include a list of the sheet titles and sheet numbers.

c. Advanced Modeling Submittal Checklist: Complete the USACE BIM/CIM Advanced Modeling Submittal Checklist and include with each submittal. Download the Checklist from the USACE CAD/BIM Technology Center website.

d. Advanced Modeling Files: Provide all native Advanced Modeling files associated with the production of the contract drawings and associated as-modeled drawings. Update and maintain in compliance with the Advanced Modeling formatting, content requirement, and standards in Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD), in order to yield a complete and coordinated document package.

e. Quality Control (QC) Reports: Provide electronic PDFs of all QC reports and checklist utilized to ensure full compliance with the contract requirements and standards.

f. CAD Exports of BIM-Generated Sheets and Drawings: Provide supplemental 2D CAD exports from the project BIM model as needed to demonstrate compliance with contract requirements. Export all contract drawings sheets to the CAD format(s) defined in Section 01 33 16.00 30 DESIGN DATA(DESIGN AFTER AWARD).

2.3 CERTIFICATION OF EPA DESIGNATED ITEMS

Submit the Certification of EPA Designated Items as required by FAR 52.223-9 Estimate of Percentage of Recovered Material Content for EPA Designated Items in Service and Construction Contracts. Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. "I hereby certify the information provided herein is accurate and that the requisition/procurement of all materials listed on this form comply with current EPA standards for recycled/recovered materials content. The following exemptions may apply to the non-procurement of recycled/recovered content materials:

a. The product does not meet appropriate performance standards;

b. The product is not available within a reasonable time frame;

c. The product is not available competitively (from two or more sources);

d. The product is only available at an unreasonable price (compared with a comparable non-recycled content product)."

Record each product used in the project that has a requirement or option of containing recycled content in accordance with SECTION 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING, noting total price, total value of post-industrial recycled content, total value of post-consumer recycled content, exemptions (a, b, c, or d, as indicated), and comments. Recycled content values may be determined by weight or volume percent, but must be consistent throughout.

2.4 CERTIFICATION OF USDA DESIGNATED ITEMS

Submit the Certification of USDA Designated Items as required by FAR 52.223-1 Bio-based Product Certifications and FAR 52.223-2 Affirmative Procurement of Biobased Products Under Service and Construction Contracts. Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. "I hereby certify the information provided herein is accurate and that the requisition/procurement of all

materials listed on this form comply with current USDA standards for biobased materials content. The following exemptions may apply to the non-procurement of biobased content materials:

a. The product does not meet appropriate performance standards;

b. The product is not available within a reasonable time frame;

c. The product is not available competitively (from two or more sources);

d. The product is only available at an unreasonable price (compared with a comparable bio-based content product)."

Record each product used in the project that has a requirement or option of containing biobased content in accordance with SECTION 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING, noting total price, total value of post-industrial recycled content, total value of post-consumer recycled content, total value of biobased content, exemptions (a, b, c, or d, as indicated), and comments. Biobased content values may be determined by weight or volume percent, but must be consistent throughout.

2.5 PDF AS-BUILT FILES

Provide electronic PDF "plots" of all contract drawings sheets associated with the as-built drawing submittal. Compile and organize the PDF set to match the contract drawings. Bookmark and label the pages of the PDF file in accordance with Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD).

2.6 REDLINES AND MARKUPS

Provide PDFs of the current working redlines and/or markups complying with the as-builts drawing and markup requirements contained in this specification.

2.7 GEO-DATA-BASE FILES

Provide a SDSFIE/FGDC GeoReferenced personal GeoDataBase. For all information outside of the building walls, provide a personal GeoDataBase in .mdb format using the latest version of Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) as the database structure. Provide a shell database to define the projection and database structure.

For all drawings within and including the exterior walls, utilize the advanced modeling formats described and referenced herein. Provide a short GeoDataBase read-me file explaining the deliverable. The read-me file will include a description of the software used to create the data, projection, and include the attribute tables used.

2.8 AS-BUILT OR ADVANCED MODELING RE-SUBMISSION REQUIREMENTS

If elements of an as-built submittal or advanced modeling package are rejected, provide the following for each re-submission, in addition to any information required in Section 01 33 00 SUBMITTAL PROCEDURES:

a. Re-submit all components required under paragraph As-Builts or Advanced Modeling Package, including a new Advanced Modeling Submittal Checklist and updated content in response to Government comments.

b. Provide a copy of all Government review comments.

c. Provide a disposition/response to each Government review comment for a back-check of the re-submission deliverable.

PART 3 EXECUTION

3.1 AS-BUILT DRAWINGS

Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings. Maintain the as-builts throughout construction as red-lined hard copies on site and red-lined PDF files. Submit As-Built Drawings 30 days prior to Beneficial Occupancy Date (BOD).

3.1.1 Markup Guidelines

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

a. Use base colors of red, green, and blue. Color code for changes as follows:

(1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.

(2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.

(3) Additions (Green) - Added items, lettering in notes and leaders.

b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.

c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.

d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.

e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.

f. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules, notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.

g. For deletions, cross out all features, data and captions that relate to that revision.

h. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with leaders to the applicable location.

i. Indicate one of the following when attaching a print or sketch to a

markup print:

1) Add an entire drawing to contract drawings

2) Change the contract drawing to show changes on the drawing.

3) Provided for reference only to further detail the initial design.

j. Incorporate all shop and fabrication drawings into the markup drawings.

3.1.2 As-Built Drawings Content

Revise As-Built Drawings in accordance with ERDC/ITL SR-23-1 and ERDC/ITL SR-24-3. Keep these working as-built markup drawings current on a weekly basis and at least one set available on the jobsite at all times. Changes from the contract drawings which are made during construction or additional information which might be uncovered in the course of construction must be accurately and neatly recorded as they occur by means of details and notes. Submit the working as-built markup drawings for approval prior to submission of each monthly pay estimate. For failure to maintain the working and final record drawings as specified herein, the Contracting Officer will withhold up to 10 percent of the monthly progress payment until approval of updated drawings. Show on the as-built drawings, but not limited to, the following information:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.

b. The location and dimensions of any changes within the building structure.

c. Layout and schematic drawings of electrical circuits and piping.

d. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

e. Changes in details of design or additional information obtained from working drawings specified to be prepared or furnished by the Contractor; including but not limited to shop drawings, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment, and foundations.

f. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

g. Changes or Revisions which result from the final inspection.

h. Where contract drawings or specifications present options, show only the option selected for construction on the working as-built markup drawings.

i. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, furnish a contour map of the final borrow pit/spoil area elevations.

j. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

k. Changes in location of equipment and architectural features.

l. Modifications.

m. Actual location of anchors, construction and control joints, etc., in concrete.

n. Unusual or uncharted obstructions that are encountered in the contract work area during construction.

o. Location, extent, thickness, and size of stone protection particularly where it will be normally submerged by water.

3.2 RECORD DRAWING FILES

If additional drawings are required, prepare them using the specified electronic file format applying ERDC/ITL SR-24-3 and ERDC/ITL SR-23-1. The title block and drawing border to be used for any new final record drawings must be identical to that used on the contract drawings. Accomplish additions and corrections to the contract drawings using BIM, CIM, GIS, and CAD files. Provide all program files and hardware necessary to prepare final PDF record drawings. The Contracting Officer will review final PDF record drawings for accuracy and return them to the Contractor for required corrections, changes, additions, and deletions.

3.2.1 Rename the CAD Drawing files

Rename the CAD Drawing files using the contract number as the Project Code field,(e.g., FA301624C10A-102.DWG) as instructed in the Pre-Construction conference. Use only those renamed files for the Marked-up changes. Make all changes on the layer/level as the original item.

a. For AutoCAD files (DWG), enter all as-built delta changes and notations on the AS-BUILT layer.

b. When final revisions have been completed, show the wording "RECORD DRAWING AS-BUILTS" followed by the name of the Contractor in letters at least 3/16 inch high on the cover sheet drawing. Date "RECORD DRAWING AS-BUILTS" drawing revisions in the revision block.

c. Within 20 days after Government approval of all of the working record drawings for a phase of work, prepare the final CAD record drawings for that phase of work and submit PDF drawing files and two sets of prints for review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 10 days revise the CAD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 20 days of substantial completion of all phases of work, submit the final record drawing package for the entire project. Submit one set of electronic CAD files, and one set of the approved working record PDF and or programfiles with two sets of prints. The CAD files must be complete in all details and identical in form and

function to the CAD drawing files supplied by the Government. Prepare AutoCAD files for transmittal using e-Transmit. Make any transactions or adjustments necessary to accomplish this. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CAD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final record PDF drawing files, CAD files and marked prints as specified will be cause for withholding any payment due under this contract. Approval and acceptance of final record drawings must be accomplished before final payment is made.

3.3 RECORD DRAWINGS

Prepare final record drawings after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (such as Foundations, Utilities, or Structural Steel as appropriate for the project). Transfer the changes from the approved working as-built markup drawings to the original electronic BIM, CIM, GIS, and CAD drawing files. Modify the as-built BIM, CIM, GIS, and CAD drawing files to correctly show the features of the project as-built by bringing the working CAD drawing set into agreement with approved working as-built markup drawings, and adding such additional drawings as may be necessary. Refer to ERDC/ITL SR-23-1. Jointly review the working as-built markup drawings with printouts from working as-built BIM, CIM, GIS, and CAD drawing PDF files for accuracy and completeness. Monthly review of working as-built BIM, CIM, GIS, and CAD drawing PDF file printouts must cover all sheets revised since the previous review. These PDF drawing files are part of the permanent records of this project. Any drawings damaged or lost must be satisfactorily replaced at no expense to the Government.

Drawing revisions (include within change order price the cost to change working and final record drawings to reflect revisions) and compliance with the following procedures.

a. Follow directions in the revision for posting descriptive changes.

b. The revision delta size must be 5/16 inch unless the area where the delta is to be placed is crowded. Use a smaller size delta for crowded areas.

c. Place a revision delta at the location of each deletion.

d. For new details or sections which are added to a drawing, place a revision delta by the detail or section title.

e. For minor changes, place a revision delta by the area changed on the drawing (each location).

f. For major changes to a drawing, place a revision delta by the title of the affected plan, section, or detail at each location.

g. For changes to schedules or drawings, place a revision delta either by the schedule heading or by the change in the schedule.

3.3.1 Final Record Drawing Package

Submit the final record PDF, BIM, CIM, GIS, and CAD drawings package for the entire project within 20 days of substantial completion of all phases of work, to include all shop drawings. Submit one set of ANSI D size PDF,

BIM files, CIM files, GIS files and CAD files, one set of ANSI D size prints and one set of the approved working record drawings. The package must be complete in all details and identical in form and function to the contract drawing files supplied by the Government.

3.4 FINAL APPROVED SHOP DRAWINGS

Submit final approved project shop drawings 30 days after transfer of the completed facility. Submit one set of ANSI D size PDF, BIM files, CIM files, GIS files and CAD files.

3.5 CONSTRUCTION CONTRACT SPECIFICATIONS

Submit final PDF file record construction contract specifications, including revisions thereto, 30 days after transfer of the completed facility. PDF file shall be generated in accordance with the requirements for specifications outlined in Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD). Submission shall also include all SpecsIntact native files.

3.6 AS-BUILT RECORD OF EQUIPMENT AND MATERIALS

Furnish one copy of preliminary record of equipment and materials used on the project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government comments. Submit Two sets of final record of equipment and materials 10 days after final inspection. Key the designations to the related area depicted on the contract drawings. List the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA				
Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used

3.7 OPERATION AND MAINTENANCE MANUALS

Provide project operation and maintenance manuals as specified in Section 01 78 23 OPERATION AND MAINTENANCE DATA. Submit to the Contracting Officer for approval within 30 calendar days of the Beneficial Occupancy Date (BOD). Update and resubmit files for final approval at BOD.

3.8 CLEANUP

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

3.9 REAL PROPERTY RECORD

Refer to UFC 1-300-08 for instruction on completing the DD FORM 1354. Contact the Contracting Officer for any project specific information necessary to complete the DD FORM 1354.

3.9.1 Interim DD FORM 1354

At approximately 65% completion of the Project, but a minimum of 60 calendar days prior to final acceptance of the work, complete, update draft DD FORM 1354, and submit an accounting of all installed property with Interim DD FORM 1354. Include any additional assets, improvements, and alterations from the Draft DD FORM 1354.

3.9.2 Final DD FORM 1354

No later than [14] calendar days after final acceptance of all work, update the Interim DD FORM 1354 and submit an accounting of all installed property with Final DD FORM 1354. Include any additional assets, improvements, and alterations from the Interim DD FORM 1354

3.9.3 Completed DD FORM 1354

Attach the Real Property receiving Component's completed High Performance and Sustainable Building (HPSB) Checklist for each applicable building to the completed DD 1354, in accordance with Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING. For convenience, a blank fillable PDF DD FORM 1354 is attached as ATT-1.

Submit the completed List of Installed Building Equipment items for DD FORM 1354. Attach this list to the updated DD FORM 1354.

ATT-1 - Draft DD Form 1354

ATTACHED IN APPENDIX A

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

01/26

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ATTACHMENTS:

ATT-1 - O&M Manual Template

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA
01/26

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 HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE GUIDELINE 1.4	(2019) Preparing Systems Manuals for Facilities

ASTM INTERNATIONAL (ASTM)

ASTM E1971	(2024) Standard Guide for Stewardship for the Cleaning of Commercial and Institutional Buildings
ASTM E2166	(2016; R 2023) Standard Practice for Organizing and Managing Building Data

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-10 Operation and Maintenance Data

Training Plan; G

Training Outline; G

Training Content; G

Operation And Maintenance Manual, Progress Submittal; G

Operation And Maintenance Manual, Prefinal Submittal; G

Operation And Maintenance Manual, Final Submittal; G

SD-11 Closeout Submittals

Training Video Recording; G

Validation of Training Completion; G

Training Plan; G

Record Drawings And Utility Systems; G

1.3 MEETINGS

To assure that Operation and Maintenance Manual and Facility Data Workbook requirements are being met through the duration of the project, organize the following meetings and discuss the subsequent topics:

1.3.1 Post-Award Kickoff Meeting

At a minimum, discuss the following:

a. The requirement for Operation and Maintenance Manuals and Facility Data deliverables under this contract including coordination meetings

b. Processes and method of gathering Facility Data information during construction

c. Primary roles and responsibilities associated with the development and delivery of the Operation and Maintenance Manuals and Facility Data deliverables, and

d. Identify and agree upon a date and attendance list for the meetings described below:

1.3.2 Operation and Maintenance Manual and Facility Data Workbook Coordination Meeting

Facilitate a meeting after the Post-Award Kickoff Meeting prior to the submission of the Operation and Maintenance Manual Progress Submittal. Meeting attendance must include the Contractor's Operation and Maintenance Manual and Facility Data Workbook Preparer, Designer of Record (DOR), Quality Control Manager, the Commissioning Authority (CxA), the Government's Design Manager (DM), Contracting Officer's Representative, and Government's facility data reviewer. Include any Mechanical, Electrical, and Fire Protection Sub-Contractors.

The purpose of this meeting is to reach a mutual understanding of the scope of work concerning the contract requirements for Operation and Maintenance Manual and coordinate the efforts necessary by both the Government and Contractor to ensure an accurate collection, preparation and timely Government review of Operation and Maintenance Manual.

1.3.3 Submittal Coordination Meeting

Facilitate a meeting following submission and Government review of each design or progress submittal of the Operation and Maintenance Manual and Facility Data Workbook.

a. Include personnel from the Coordination meeting and any additional personnel identified.

b. The purpose of this meeting is to demonstrate ongoing compliance with the requirements identified in this specification. Discuss Government review comments and unresolved items preventing completion and Government approval of the Operation and Maintenance Manuals and Facility Data Workbook (FDW).

c. The applicable deliverables, along with Government remarks associated with review of these submittals serve as the primary guide and agenda for this meeting.

1.3.4 Facility Turnover Meeting

Include Operation and Maintenance Manual in Red Zone facility turnover meetings as specified in Section 01 30 00 ADMINISTRATIVE REQUIREMENTS.

1.4 OPERATION AND MAINTENANCE MANUAL MEDIA

Assemble Operation and Maintenance Manual into an electronically bookmarked file using the most current version of Adobe Acrobat or similar software capable of producing PDF file format. Provide transmittal through DoD SAFE as appropriate, so that each one contains operation, maintenance and record files, project record documents, and training videos. Include a complete bookmarked operation and maintenance directory.

1.4.1 DVD Label and Disk Holder or Case

Provide the following information on the disk label and disk holder or case:

a. Building Number

b. Project Number & Title

c. Activity and Location

d. Construction Contract Number

e. Prepared For: 502 CONS & 802 CES

f. Prepared By: (Name, title, phone number and email address)

g. Include the disk content on the disk label

h. Date

i. Virus scanning program used

1.4.2 O&M Manual Tabbed Hard Copy

Provide a hard copy of the O&M manual upon completion of the project. Provide tabs for each section and subsection for ease of navigation by the user.

1.5 O&M MANUAL CONTENT

Organize the bookmarked Operation and Maintenance Manual into the following Parts in accordance with ASHRAE GUIDELINE 1.4, and as modified and detailed below. Word template for O&M Manual is available as ATT-1.

1.5.1 Part 1: Executive Summary

Provide a summary of the information found in the O&M manual including the purpose of the manual and a description of the manual's organization.

1.5.2 Part 2: Facility Design and Construction

1.5.2.1 General Facility and Systems Description

Provide an overview of the intent for design and use of the facility. Provide a PDF of the Record Drawings prepared in accordance with 01 78 00 CLOSEOUT SUBMITTALS and bookmarked using the sheet title and sheet number. Include uncluttered 11 by 17 inches floor plans with room numbers, type or function of space, and overall facility dimensions on the floor plans. Do not include items such as construction instructions, references, or frame numbers.

Detail the overall dimensions of the facility, number of floors, foundation type, expected number of occupants, and facility Category Code list and generally describe all the facility systems and any special building features (for example, HVAC Controls, Sprinkler Systems, Cranes, Elevators, and Generators). Include photographs marked up and labeled to show key operating components and the overall facility appearance.

1.5.2.2 Basis of Design

Provide a copy of the contract Basis of Design.

1.5.2.3 Contract Documents, RFP, Amendments, and Modifications

Provide the contract construction documents complete, to include specifications, drawings, Request for Proposal, amendments, and modifications.

1.5.2.4 Room Inventory of Real Property and Finishes

Provide a list of installed equipment furnished under this contract. Include all information usually listed on manufacturer's name plate. Include, as applicable, the following information for each piece of equipment installed: description of item, all dimensions, location by room number, model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. Real property includes, but is not limited to, floor coverings, wall surfaces, ceiling surfaces, windows, roofing, HVAC filters, plumbing fixtures, and lighting fixtures. Submit the final list 30 days after transfer of the completed facility.

Include spatial data defining actual net square footage and data of each room. Also include the room finish schedule including room names and numbers. Include schedules in the construction drawings in the room inventory. Add a column to each schedule to record what was provided by the contractor during construction. Provide a PDF of room inventory. Key the designations to the related area depicted on the contract drawings. List the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA				
Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA				
[_____]				

1.5.3 Part 3: Facilities, Systems, and Assemblies Information

1.5.3.1 Organization

Bookmark information in this section using the current version of ASTM E2166 Uniformat II, UFGS numbers, and document type as outlined in the example below. Bookmark/tab each item to the third level for easy navigation of the manual.

Example as shown in Table below:

PARTS AND SUBPART NUMBERING
3.1 B20 EXTERIOR CLOSURE (System)
3.1.1 B2030 EXTERIOR DOORS (Subsystem)
3.1.1.1 B2030110 GLAZED DOORS (Component)
3.1.1.1.1 Applicable specifications List in UFGS Format
3.1.1.1.2 Manufacturer's Operations and Maintenance Data
3.1.1.1.3 Approved Submittal
3.1.1.1.4 Coordination/Shop Drawings
3.1.1.1.5 Sequence of Operation for Operating Equipment
3.1.1.1.6 Testing Equipment Information and Performance Data
3.1.1.1.7 Routine Maintenance Requirements
3.1.1.1.8 Repair Procedures
3.1.1.1.9 Emergency Procedures & Locations of Applicable Controls
3.1.1.1.10 Warranties
3.1.1.1.11 Record Drawings and Utility Systems
3.1.1.1.12 Contractor / Supplies Listing and Contact Information

1.5.3.2 Related Specifications

Reference each specification related to the subsystem in this section, and locate the actual specification section in Part 2 of the O&M Manual. List specifications in table format as shown in the below example.

UFGS Number	Specification Title	Page Spec Begins in Part 2

1.5.3.3 Manufacturer's Operations and Maintenance Data

Provide a copy of all manufacturer specifications and cutsheets. Provide text-searchable, high-quality document files from the manufacturer's online or electronic documentation. Color documents are preferred. Provide documents specific to the product(s) installed under this Contract. Provide identification and coverage for the parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Provide Uniformat II Level 3 identification for D20, D30, D40 installed equipment. When possible, do not submit document files containing multiple product catalogs from the same manufacturer, or product data from multiple manufacturers in the same files. Provide documents directly from the manufacturer whenever possible. Do not provide scanned copies of hardcopy documents. Provide identification and coverage for the parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing must show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Group the parts shown in the listings by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master part catalog.

1.5.3.4 Approved Submittals and Certificates

Provide a copy of all submittals documented with the required approval as applicable for each UFGS specification listed in the table outlined in applicable specifications. Include copies of SD-07 Certificates submittals documented with the required approval, SD-08 Manufacturer's Instructions submittals documented with the required approval, and SD-10 Operation and Maintenance Data submittals documents with the required approval.

1.5.3.5 Approved Coordination/Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work. Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project. Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

1.5.4 Sequence of Operation for Operating Equipment

Provide record one-line diagrams for each floor, delineating mechanical equipment location within the building. Provide specific instructions, procedures, and illustrations for the following phases of operation for the installed model and features of each system:

1.5.4.1 Safety Precautions and Hazards

List personnel hazards and equipment or product safety precautions for operating conditions. List all residual hazards identified in the Activity Hazard Analysis provided under Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. Provide recommended safeguards for each identified hazard. Specify if any certifications or licenses are required to operate the equipment.

1.5.4.2 Operator Prestart

Provide procedures required to install, set up, and prepare each system for use.

1.5.4.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.5.4.4 Normal Operations

Provide Control Diagrams with data to explain operation and control of systems and specific equipment. Provide narrative description of Normal Operating Procedures.

1.5.4.5 Emergency Operations

Provide Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Provide Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of utility systems including required valve positions, valve locations and zones or portions of systems controlled.

1.5.4.6 Operator Service Requirements

Provide instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gauge readings.

1.5.4.7 Environmental Conditions

Provide a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

1.5.4.8 Operating Log

Provide forms, sample logs, and instructions for maintaining necessary operating records.

1.5.4.9 Additional Requirements for Equipment Control Systems

Provide Data Package 5 and the following for all control systems:

a. Provide a narrative description on how to perform and apply functions, features, modes, and other operations, including unoccupied operation, seasonal changeover, manual operation, and alarms. Include detailed technical manual for programming and customizing control loops and algorithms.

b. Submit complete controls equipment schedules, full as-built sequence of operations, wiring and logic diagrams, Input/Output Tables, equipment schedules, copies of checkout tests and calibrations performed by the Contractor (not Cx tests), and all associates information.

c. Full points list. Provide a listing of rooms with the following information for each room:

(1) Floor

(2) Room number

(3) Room name

(4) Air handler unit ID

(5) Reference drawing number

(6) Air terminal unit tag ID

(7) Heating or cooling valve tag ID

(8) Minimum cfm

(9) Maximum cfm

d. Full print out of all schedules and set points after testing and acceptance of the system.

e. Full as-built print out of software program.

f. Marking of system sensors and thermostats on the as-built floor plan and mechanical drawings with their control system designations.

1.5.4.10 Testing Equipment Information and Performance Data

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

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

1.5.5 Routine Maintenance Requirements

1.5.5.1 Preventive Maintenance Plan, Schedule, and Procedures

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

a. Define the anticipated time required to perform each test (work-hours), test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements within the schedule. Provide a remarks column for the testing validation procedure referencing operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Delineate procedures for preventive maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize repairs.

b. Repair requirements must inform operators how to check out, troubleshoot, repair, and replace components of the system. Include electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and troubleshooting of the system after acceptance.

1.5.5.2 Lubrication Data

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

a. A table showing recommended lubricants for specific temperature ranges and applications.

b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities. Provide procedural instructions for Oil Sampling for all equipment.

c. A Lubrication Schedule showing service interval frequency.

1.5.6 Repair Procedures

Provide instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards. Provide manufacturer's recommended procedures and instructions for correcting problems and making repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials. Specify if any certifications or licenses are required to repair the equipment.

1.5.6.1 Troubleshooting Guides and Diagnostic Techniques

Provide step-by-step procedures to promptly isolate the cause of typical

malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.5.6.2 Wiring Diagrams and Control Diagrams

Provide point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.5.6.3 Removal and Replacement Instructions

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

1.5.6.4 Repair Work-Hours

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

1.5.6.5 Warranty Information

List and explain the various warranties and clearly identify the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Identify if replacement of a subassembly, attachment or accessory requires the entire assembly to be replaced. Include warranty information for primary components of the system. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

1.5.6.6 Extended Warranty Information

List all warranties for products, equipment, components, and sub-components whose duration exceeds one year. For each warranty listed, indicate the applicable specification section, duration, start date, end date, and the point of contact for warranty fulfillment. Also, list or reference the specific operation and maintenance procedures that must be performed to keep the warranty valid. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

1.5.6.7 Record Drawings and Utility Systems

The record drawings are the final compilation of actual conditions reflected in the as-built drawings. Provide record drawings as outlined in 01 78 00 CLOSEOUT SUBMITTALS.

Using Record Source Drawings, show and document details of the actual installation of the utility systems, annotate and highlight the Operation and Maintenance information. Provide the following drawings at a large enough scale to differentiate designated isolation units from surrounding valves and switches.

1.5.6.8 Personnel Training Requirements

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

1.5.6.9 Contractor / Supplier Listing and Contact Information

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

1.5.7 Part 4: Facility Operations

1.5.7.1 Completed Facility Operating Plan

Provide a plan that documents that procedures for the operation of systems and assemblies in the facility. The systems that should be included in the Operating Plan include, but are not limited to:

a. Electrical systems and equipment

b. Mechanical systems and equipment

c. Fire Protection systems and equipment

d. Control Systems and equipment

e. Architectural and Structural systems, fixtures, structures, and equipment

f. Vertical transportation such as elevators and escalators

1.5.7.2 Testing Equipment and Special Tool Information

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

1.5.7.3 Testing and Performance Data

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

1.5.7.4 Approved Field Test Reports and Manufacturer's Field Reports

Compile and provide approved Field Test Reports (SD-06) and Manufacturer's Field Reports (SD-09) submittals.

1.5.7.5 Maintenance Plans, Procedures, Checklists, Records, and Spare Parts Inventory

1.5.7.5.1 Maintenance Schedules

Include recommended maintenance schedules for systems and equipment.

1.5.7.5.2 Ongoing Commissioning Operational and Maintenance Record Keeping

Include ongoing commissioning and optimization procedures and documentation to monitor and improve the performance of facility systems.

1.5.7.5.3 Janitorial and Cleaning Plans and Procedures

Include a copy of facility cleaning and janitorial plan with procedures and intended chemicals and equipment.

Provide environmentally friendly cleaning recommendations in accordance with ASTM E1971.

1.5.7.6 Utility Record Drawings

1.5.7.6.1 Utility Schematic Diagrams

Provide a one-line schematic diagram for each utility system such as power, water, wastewater, and gas/fuel. Schematic diagram must show from the point where the utility line is connected to the mainline up to the 5 foot connection point to the facility. Indicate location or area designation for route of transmission or distribution lines; locations of duct banks, manholes/handholes or poles; isolation units such as valves and switches; and utility facilities such as pump stations, lift stations, and substations.

1.5.7.6.2 Enlarged Connection and Cutoff Plans

Provide enlarged floor plans and provide information between the 5 foot utilities connection point and where utilities connect to facility distribution. Enlarge floor plans/elevations of the rooms where the utility enters the building and indicate on these plans the locations of the main interiors and exterior connection and cutoff points for the utilities. Also enlarge floor plans/elevations of the rooms where equipment is located. Include enough information to enable someone unfamiliar with the facility to locate the connection and cutoff points. Indicate designations such as room number, panel number, circuit breaker, or valve number of each utility and equipment connection and cutoff point, and what that connection and cutoff point controls.

1.5.7.6.2.1 Description of Utility Metering and Monitoring Systems

Provide in narrative format a description of the utility metering and monitoring systems. Include locations, function, and related systems.

1.5.7.6.2.2 Procedures for Tracking Utility Use and Reporting

Procedures for usage reporting and tracking in support of establishing and monitoring utility budgets and costs, and in developing annual energy reports.

1.5.7.6.2.3 One-Line Diagrams and Meter Location of System

Provide one-line diagrams and design drawings that highlight meter locations on the site.

1.5.7.6.3 Spare Parts and Supply Lists

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

1.5.8 Part 5: Training

Provide a copy of training plans used for each type of equipment along with training materials used, arranged in specification sequence. Provide a copy of training records, sign-in sheets, and agendas. Include training and documentation on the updating and continued use of the O&M Manual.

1.5.9 Part 6: Cx Project Report and TAB Report

Provide the final Cx Plan and complete Cx reports with evaluation and testing forms and records for each building system. Include relevant commissioned system assemblies test reports including installers checklists of assemblies. Provide all Cx Progress Reports, issues and resolutions logs with resolution or status of each item, and a list of any open items and seasonal or additional testing required.

1.5.10 Part 7: Regulatory Requirements

Provide information describing regulatory and policies compliance requirements or provide a reference to where it is stored.

1.5.11 Part 8: Permits

Provide information requiring frequently asked questions and associated answers or provide a reference to where it is stored.

1.5.12 Part 9: Operations and Maintenance Manual Approval

Provide a signed document stating that the project O&M Manual has been reviewed and confirming agreement with the approach it presents. Include contact information for the signer for coordination of any future changes.

1.6 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Provide the O&M data packages specified in individual technical sections. O&M Data Packages are one of the components of the O&M Manual. The information required in each type of data package follows:

1.6.1 Package Quality

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

1.6.2 Data Package 1

a. Safety precautions and hazards

b. Cleaning recommendations

c. Maintenance and repair procedures

d. Warranty information

e. Extended warranty information

f. Contractor information

g. Spare parts and supply list

1.6.3 Data Package 2

a. Safety precautions and hazards

b. Normal operations

c. Environmental conditions

d. Lubrication data

e. Preventive maintenance plan, schedule, and procedures

f. Cleaning recommendations

g. Maintenance and repair procedures

h. Removal and replacement instructions

i. Spare parts and supply list

j. Parts identification

k. Warranty information

l. Extended warranty information

m. Contractor information

1.6.4 Data Package 3

a. Safety precautions and hazards

b. Operator prestart

c. Startup, shutdown, and post-shutdown procedures

d. Normal operations

e. Emergency operations

f. Environmental conditions

g. Operating log

h. Lubrication data

i. Preventive maintenance plan, schedule, and procedures

j. Cleaning recommendations

k. Troubleshooting guides and diagnostic techniques

l. Wiring diagrams and control diagrams

m. Maintenance and repair procedures

n. Removal and replacement instructions

o. Spare parts and supply list

p. Product submittal data

q. O&M submittal data

r. Parts identification

s. Warranty information

t. Extended warranty information

u. Testing equipment and special tool information

v. Testing and performance data

w. Contractor information

x. Field test reports

1.6.5 Data Package 4

a. Safety precautions and hazards

b. Operator prestart

c. Startup, shutdown, and post-shutdown procedures

d. Normal operations

e. Emergency operations

f. Operator service requirements

g. Environmental conditions

h. Operating log

i. Lubrication data

j. Preventive maintenance plan, schedule, and procedures

k. Cleaning recommendations

l. Troubleshooting guides and diagnostic techniques

m. Wiring diagrams and control diagrams

n. Repair procedures

o. Removal and replacement instructions

p. Spare parts and supply list

q. Repair work-hours

r. Product submittal data

s. O&M submittal data

t. Parts identification

u. Warranty information

v. Extended warranty information

w. Personnel training requirements

x. Testing equipment and special tool information

y. Testing and performance data

z. Contractor information

aa. Field test reports

1.6.6 Data Package 5

a. Safety precautions and hazards

b. Operator prestart

c. Start-up, shutdown, and post-shutdown procedures

d. Normal operations

e. Environmental conditions

f. Preventive maintenance plan, schedule, and procedures

g. Troubleshooting guides and diagnostic techniques

h. Wiring and control diagrams

i. Maintenance and repair procedures

j. Removal and replacement instructions

k. Spare parts and supply list

l. Product submittal data

m. Manufacturer's instructions

n. O&M submittal data

o. Parts identification

p. Testing equipment and special tool information

q. Warranty information

r. Extended warranty information

s. Testing and performance data

t. Contractor information

u. Field test reports

v. Additional requirements for HVAC control systems

1.6.7 Changes to Submittals

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

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 TRAINING

Prior to acceptance of the facility by the Contracting Officer for Beneficial Occupancy, provide comprehensive training for the systems and equipment specified in the technical specifications. The training must be targeted for the building maintenance personnel, and applicable building occupants. Instructors must be well-versed in the particular systems that they are presenting. Address aspects of the Operation and Maintenance Manual submitted in accordance with Section 01 78 00 CLOSEOUT SUBMITTALS. Training must include classroom or field lectures based on the system operating requirements. The location of classroom training requires approval by the Contracting Officer. Notification of planned training must be sent to the Contracting Officer's Technical Representative at least 14 calendar days in advance.

3.1.1 Training Plan

Submit a written training plan to the Contracting Officer for approval at least 60 calendar days prior to the scheduled training. Training plan must be approved by the Commissioning Authority (CxA) prior to forwarding to the Contracting Officer. Also, coordinate the training schedule with the Contracting Officer and CxA. Include within the plan the following elements:

a. Equipment included in training

b. Intended audience

c. Location of training

d. Dates of training

e. Objectives

f. Outline of the information to be presented and subjects covered including description

g. Start and finish times and duration of training on each subject

h. Methods (e.g. classroom lecture, video, site walk-through, actual operational demonstrations, written handouts)

i. Instructor names and instructor qualifications for each subject

j. List of texts and other materials to be furnished by the Contractor that are required to support training

k. Description of proposed software to be used for video recording of training sessions.

3.1.2 Training Content

The core of this training must be based on manufacturer's recommendations and the operation and maintenance information. The CxA is responsible for overseeing and approving the content and adequacy of the training. Spend 95 percent of the instruction time during the presentation on the OPERATION AND MAINTENANCE DATA. Include the following for each system training presentation:

a. Start-up, normal operation, shutdown, unoccupied operation, seasonal changeover, manual operation, controls set-up and programming, troubleshooting, and alarms.

b. Relevant health and safety issues.

c. Discussion of how the feature or system is environmentally responsive. Advise adjustments and optimizing methods for energy conservation.

d. Design intent.

e. Use of O&M Manual Files.

f. Review of control drawings and schematics.

g. Interactions with other systems.

h. Special maintenance and replacement sources.

i. Tenant interaction issues.

3.1.3 Training Outline

Provide the Operation and Maintenance Manual Files (Bookmarked PDF) and a written course outline listing the major and minor topics to be discussed by the instructor on each day of the course to each trainee in the course. Provide the course outline 14 calendar days prior to the training.

3.1.4 Training Video Recording

Record classroom training session(s) on video. Provide to the Contracting Officer two copies of the training session(s) in DVD video recording format. Capture within the recording, in video and audio, the instructors' training presentations including question and answer periods with the attendees. The recording camera(s) must be attended by a person during the recording sessions to assure proper size of exhibits and projections during the recording are visible and readable when viewed as training.

3.1.5 Unresolved Questions from Attendees

If, at the end of the training course, there are questions from attendees that remain unresolved, the instructor must send the answers, in writing, to the Contracting Officer for transmittal to the attendees, and the training video must be modified to include the appropriate clarifications.

3.1.6 Validation of Training Completion

Ensure that each attendee at each training session signs a class roster daily to confirm Government participation in the training. At the completion of training, submit a signed validation letter that includes a sample record of training for reporting what systems were included in the training, who provided the training, when and where the training was performed, and copies of the signed class rosters. Provide two copies of the validation to the Contracting Officer, and one copy to the Operation and Maintenance Manual Preparer for inclusion into the Manual's documentation.

3.1.7 Quality Control Coordination

Coordinate this training with the CxA in accordance with Section 01 45 00 QUALITY CONTROL.

3.2 SUBMITTAL SCHEDULING

3.2.1 Operation and Maintenance Manual, Progress Submittal

Submit the Progress submittal when construction is approximately 50 percent complete, to the Contracting Officer for approval. Provide Operation and Maintenance Manual Files (Bookmarked PDF). Include the elements and portions of system construction completed up to this point. The purpose of this submittal is to verify progress is in accordance with contract requirements as discussed during the Operation and Maintenance Manual Coordination Meeting.

3.2.2 Operation and Maintenance Manual, Prefinal Submittal

Submit the 100 percent submittal of the Operation and Maintenance Prefinal Submittal to the Contracting Officer for approval within 30 calendar days prior to the Beneficial Occupancy Date (BOD). This submittal must provide a complete, working document that can be used to operate and maintain the facility. Any portion of the submittal that is incomplete or inaccurate requires the entire submittal to be returned for correction. Any discrepancies discovered during the Government's review of Operation and Maintenance Progress submittal must be corrected prior to the Prefinal submission. The Prefinal Submittal must include Operation and Maintenance Manual Files (Bookmarked PDF).

3.2.3 Operation and Maintenance Manual, Final Submittal

Submit completed Operation and Maintenance Manual Files (Bookmarked PDF) and two hard copies of the Operation and Maintenance Manuals. The Final submittal is due at BOD. Any discrepancies discovered during the Government's review of the Prefinal submittal, including the Field Verification, must be corrected prior to the Final submission.

ATT-1 - O&M Manual Template

ATTACHED IN APPENDIX A

-- End of Section --

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01/26

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SECTION 01 78 24.00 30

FACILITY DATA REQUIREMENTS
01/26

PART 1 GENERAL

This specification requires the collection, organization, and turnover of electronic Facility Data for specific assets designed and constructed as part of this contract. Provide a Facility Document Set (FDS) and Facility Data Workbook (FDW) as defined in this specification. See Sections 01 33 00 SUBMITTAL PROCEDURES, 01 78 00 CLOSEOUT SUBMITTALS, and 01 78 23 OPERATION AND MAINTENANCE DATA, and 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD) for additional Facility Data delivery requirements.

1.1 DEFINITIONS AND ABBREVIATIONS

1.1.1 Assets

Assets are specific items of property or equipment.

1.1.2 Attributes

Attributes are individual pieces of Facility Data that describe facilities and their associated assets.

1.1.3 Facility Data

Information defined and collected in the Facility Data Workbook (FDW) and Facility Document Set (FDS).

1.1.4 Facility Document Set (FDS)

An electronically compiled and organized document containing the supporting documents and data used to populate the Facility Data Workbook during its respective phase of development.

a. For design-based deliverables, the FDS contains the "Design Complete" or "Issued for Construction" (IFC) design drawings, specifications, and design analysis.

b. For construction-based deliverables, the FDS is comprised of the project Operation and Maintenance Data Packages and Government-Approved Record drawings.

1.1.5 Facility Data Workbook (FDW)

A pre-formatted spreadsheet template used to compile Asset, Attribute, Facility, and Space Data that the Government wishes to manage via electronic means. The FDW also contains all requirements associated with proper collection, organization, and turnover of the Facility Data.

1.1.6 Facility Data Project Execution Plan (FDPxP)

A document that describes the clear and organized plan for the collection, organization, and turnover of the Facility Data deliverables required by this specification.

1.2 UNITS OF MEASURE

Provide Facility Data deliverables utilizing the units of measure required by 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD).

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Facility Data Project Execution Plan(FDPxP)

SD-05 Design Data

Facility Data Workbook, Design; G

Facility Document Set, Design; G

SD-10 Operation and Maintenance Data

Facility Data Workbook, Construction Progress; G

Facility Document Set, Construction Progress; G

SD-11 Closeout Submittals

Facility Data Workbook, Construction Final; G

Facility Document Set, Construction Final; G

1.4 QUALITY CONTROL

1.4.1 Facility Data Project Execution Plan (FDPxP)

Provide the Government with a plan for the collection, organization, and turnover of the Facility Data deliverables to the Government. The Contractor may consolidate BIM PxP requirements defined in 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD) and FDPxP requirements defined herein and integrate them into a single, consolidated BIM/Facility Data PxP for Government approval. At a minimum, include the following items in the FDPxP:

1.4.1.1 Front Matter

Provide a Cover Page, Table of Contents, and Executive Summary/Objectives.

1.4.1.2 Project Information

List the Project Owner, Project Name, Project Location and address, Contract Type, Project Description, Project/Contract Number, Project Milestones.

1.4.1.3 Submittal Schedule

Identify delivery schedule for all deliverables in compliance with the submission requirements identified in this specification.

1.4.1.4 Personnel

Identify key personnel involved in the development of the Facility Data deliverables including Contractor and Government personnel.

1.4.1.5 Facility Data Workbook(s)

Identify Facility and Space Data as applicable at time of FDPxP submission. Individually list every asset group from the FDW Requirements that will require Facility Data collection. No attribute data is required at this time. Identify asset groups from the FDW Requirements that are not required within the scope of this Contract. Document the version of FDW to be used through the duration of the project.

1.4.1.6 Facility Document Set(s)

Define structure and format of the submittal. Provide a comprehensive outline of the final FDS to be delivered. Organize the outline with headings, titles, and descriptions such that the Government may ascertain that working documents comply with the formatting requirements defined by this specification.

1.4.1.7 Protocols

Detailed procedures:

a. Facility Data documentation/collection process.

b. Facility Document Set production/development process.

c. Collaboration procedures including strategy, meetings, communication, and subcontractor/consultant involvement.

d. Quality Control, including site verification of FDW, as applicable.

e. File and folder naming structure.

f. Hardware and software being used for collection and organization of Facility Data. Identify type, format, and anticipated organization of digital storage media to be provided as part of required deliverables. Include means and methods for checking deliverables for malicious content.

1.4.2 Meetings

To assure that Facility Data requirements are being met through the duration of the project, organize the following meetings and discuss the subsequent topics:

1.4.2.1 Post-Award Kickoff Meeting

At a minimum, discuss the following:

a. The requirement for Facility Data deliverables under this contract.

b. Primary roles and responsibilities associated with the development and delivery of the Facility Data deliverables, and.

c. Identify and agree upon a date and attendance list for the meetings described below:

1.4.2.2 FDPxP Coordination Meeting

a. Facilitate a meeting following submission and Government review of the FDPxP. Include the Facility Data Preparer(s), Designer of Record (DOR),, Quality Control (QC) Manager,Commissioning Authority (CA), Government's Facility Data Proponent, Contracting Officer's Representative, and Base Civil Engineer (BCE) Facilities Management Specialist (FMS).

b. The purpose of this meeting is to coordinate the efforts necessary by contract parties to ensure an accurate collection, preparation, quality control, and submittal of these deliverables.

c. The FDPxP serves as the primary agenda for this meeting. At a minimum, discuss the following:

(1) Processes and methods of gathering facility data during construction. Discuss and obtain special permissions and waivers as necessary (such as photo waivers and data encryption);

(2) Contractor Quality Control practices and procedures;

(3) Corrective actions necessary for Government approval of FDPxP;

(4) Necessity for additional or recurring Facility Data Coordination Meetings outside of those required by this specification, as requested by the Contractor. Intent of these meetings would be to maintain regular contact between responsible parties of the Contractor and Government with regard to development of the facility data deliverables. Conduct status meetings with a frequency agreed upon at this meeting.

1.4.2.3 Submittal Coordination Meeting

a. Facilitate a meeting following submission and Government review of each design or progress submittal of the Facility Data. Include the Facility Data Preparer(s), Designer of Record (DOR), Quality Control (QC) Manager, Commissioning Authority (CA), Government's Facility Data Proponent, Contracting Officer's Representative, and Base Civil Engineer (BCE) Facilities Management Specialist (FMS). Include Mechanical, Electrical, Plumbing, and Fire Protection subcontractors as applicable.

b. The purpose of this meeting is to demonstrate ongoing compliance with the requirements identified in this specification.

c. The applicable deliverables, along with Government remarks associated with review of these submittals serve as the primary guide and agenda for this meeting. At a minimum, discuss the following during this meeting:

(1) Review assets, applicable attributes, facility, and space data in

FDW at time of submittal;

(2) Demonstrate Quality Control and site verification procedures, as applicable, by Contractor QC;

(3) Review contents and organization of FDS at time of submittal;

(4) Discuss Government review comments and unresolved items preventing completion and Government approval of the Facility Data Workbook and Facility Document Set.

1.4.3 Facility Turnover and Contract Closeout

Include the Facility Document Set, Construction Final as a deliverable in Facility Turnover and Contract Closeout procedures as defined in 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD) and 01 78 00 CLOSEOUT SUBMITTALS.

1.4.4 Facility Data Workbook Quality Requirements

For each submittal, ensure that the information contained in the FDW(s) reflects the minimum content requirements defined in the PART 3 EXECUTION portion of this section. Ensure that information provided as part of the FDW(s) conforms to the standards described below:

a. Compile FDW(s) using approved spreadsheet templates. Do not alter the formatting or organizational layout of the templates. For this Contract, templates are attached to this specification. Editable copies of the templates will be provided upon Contract Award.

b. Instructions for the proper maintenance and completion of these FDWs are contained in the FDW Requirements contained within the FDW template.

1.4.5 Facility Document Set Quality Requirements

Ensure that information provided as part of each FDS conforms to the electronic and data formatting standards identified in 01 33 00 SUBMITTAL REQUIREMENTS and 01 78 23 OPERATION AND MAINTENANCE DATA.

1.4.6 Facility Document Set Integrity Requirements

Ensure that information provided as part of each FDS conforms to the integrity standards identified below:

1.4.6.1 File Protection

Do not restrict data files, document files or photographic files from being printed, exported, modified or copied. Do not deliver files with restrictions such as expiration date and locks for access, viewing, archiving, or editing.

1.4.6.2 Manufacturer-Specific Documents

Provide text-searchable, vector-based document files from the manufacturer's online or electronic documentation. Color documents are preferred. Provide documents specific to the product(s) installed under this Contract. When possible, do not submit document files containing multiple product catalogs from the same manufacturer, or product data from

multiple manufacturers in the same file. Provide documents directly from the manufacturer whenever possible. Do not provide scanned copies of hardcopy documents.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver facility data submittals in an organized and legible manner. Provide submittals adhering to the requirements of of 01 33 00 SUBMITTAL REQUIREMENTS and 01 78 23 OPERATION AND MAINTENANCE DATA.

1.5.1 Malicious Content

Scan all files for malicious viruses using a commercially available scanning program that is routinely updated to identify and remove current virus threats.

PART 2 PRODUCTS

2.1 FACILITIES

Facilities that require individual (separate and complete) Facility Data deliverables as described in this specification are as follows:

a. Building 2263
b. Generator Yard
c. Fire Pump Yard

2.2 FACILITY DATA WORKBOOK(S)

Provide one compiled FDW for each facility identified above. Complete all portions of each FDW including facility, space, asset, and attribute data in compliance with the FDW Requirements. A blank FDW is attached to this section (ATT-1).

2.2.1 Spaces

Provide data for all applicable spaces in the facility. Minimum space definitions are as follows:

a. Provide all rooms as defined in the design documents.

b. If not otherwise defined, provide a minimum of one "roof" space in the FDW.

c. If not otherwise defined, provide a minimum of one "site" space in the FDW.

d. Provide all spaces not otherwise described, but necessary to accurately indicate the location of all FDW assets required by this specification.

2.2.2 Assets

a. Compile an FDW that contains the maintainable and warrantable equipment (assets) associated with each facility. This includes assets in contract scope and within the project extents. See 01 78 00 CLOSEOUT SUBMITTALS and 01 78 23 OPERATION AND MAINTENANCE DATA for related requirements. Assets include, but are not limited to, those types described in the "Required Assets" portion of the FDW template,

those assets listed in the table below, and additional assets defined in the FDPxP. Itemized FDW asset entries (instance-based). Entries indicative of multiple assets (type-based) are not allowed.

SUPPLEMENTAL ASSET LIST (INCLUDE IN ADDITION TO "REQUIRED ASSETS" LISTED IN FDW TEMPLATE)	
Asset	Description/Example
Fixtures, Furnishings, and Equipment	Furniture, systems furniture, appliances, and other significant items of equipment
Valves	All operable valves in facility including but limited to those installed in plumbing, HVAC, and fire protection systems.
Tanks and Vaults	Items such as expansion tanks, septic tanks, oil-water separators, grease separators
DDC and EMCS Equipment	Panels and consoles associated with the facility automation and control systems integration.

Document assets applicable to the scope of this project in the FDPxP.

b. Sub-component assets that are an integral and functional part of another component (e.g. An electric motor that serves as part of an air-handling unit) need not be duplicated or listed separately as its own asset.

c. Definitions, descriptions, and formatting requirements for these assets can be found in the FDW Requirements contained within the FDW template.

d. If an asset type is not included in the scope of the Project, no Facility Data (assets or attributes) are to be included in the FDW (even as a placeholder) for that asset type.

2.2.3 Attributes

a. Populate each individual asset with all required attributes defined in the "Required Attributes" portion of the FDW template.

b. Definitions, descriptions, and formatting requirements for these attributes can be found in the FDW Requirements contained within the FDW template.

c. If an attribute is not applicable, populate that field with "N/A". Do not leave it blank.

2.3 FACILITY DOCUMENT SET

2.3.1 Organization

Organize the FDS in a hierarchical manner as follows. Use electronic bookmarks to create an easily navigable document. The first and primary hierarchical level must contain the following bookmarks:

a. "Design Data" - See subordinate hierarchical requirements in the "DESIGN DATA HIERARCHY" paragraph.

b. "O&M Data" - See subordinate hierarchical requirements in the "O&M DATA HIERARCHY" paragraph.

c. "Record Drawings" - See subordinate hierarchical requirements in paragraph RECORD DRAWINGS HIERARCHY.

2.3.1.1 Design Data Hierarchy

Under "Design Data," provide all Government-Approved "Design Complete" or "Issued for Construction" design documents as defined in 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD), including:

a. Design Drawings - Provide the Government-Approved, "Design Complete" or "Issued for Construction" design drawings.

b. Design Specifications - Provide the Government-Approved, "Design Complete" or "Issued for Construction" design specifications.

c. Design Analysis - Provide the "Design Complete" or "Issued for Construction" Government-Approved Design Analysis.

2.3.1.2 O&M Data Hierarchy

Under "O&M Data" provide all Government-Approved O&M Data Packages as defined in 01 78 23 OPERATION AND MAINTENANCE DATA and as required by technical specifications contained within this contract. Further organize this information under the following hierarchical levels:

a. The contract specification and title under which the Data Package and the associated equipment or system references. (e.g. 26 23 00 - LOW-VOLTAGE SWITCHGEAR)

b. The Data Package Number as defined in 01 78 23 OPERATION AND MAINTENANCE DATA. (e.g. Data Package 2)

2.3.1.3 Record Drawings Hierarchy

Under "Record Drawings" provide an electronic copy of the Government-Approved record drawings, as specified in 01 78 00 CLOSEOUT SUBMITTALS, for the project in PDF format. Further group discipline sheets under the following hierarchical levels:

a. The full discipline heading represented by the contents of the sheet and as shown in the Record Drawing Sheet Index. Organize these headings in the order that the drawings set is organized. (General, Civil, Structural, Architectural, Interiors, Plumbing, Mechanical, Electrical, Telecommunications)

b. The Sheet ID and Sheet Name as found in the Record Drawing Sheet Index and in accordance with the AEC CAD Standard referenced in 01 78 00 CLOSEOUT SUBMITTALS. (e.g. G-001 - LEGEND; CS101 - SITE PLAN AREA 101; A-101 - OVERALL FIRST FLOOR PLAN; P-601 - FIRST FLOOR DWS WATER RISER DIAGRAM)

PART 3 EXECUTION

3.1 DESIGN SUBMITTALS

Submit the Facility Data Workbook and Facility Document Set design

submittals together. Meet the following completeness and formatting requirements listed below:

a. Provide Facility Data Workbook, Design submittals(s) when at "Design Complete" or "Issued for Construction" phase as defined by 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD). Populate the FDW with all data required for the design submittal, detailed in the FDW Requirements. Clearly identify assets or asset groups missing in the "variations" section of the ENG Form 4025-ALT Transmittal Form provided with the submittal. See the FDW Requirements contained within the FDW template for a list of attributes to be completed for this submittal. Intent of this submittal is to populate the FDW with all design-based asset information prior to Project advertisement or construction.

b. Submit individual FDW templates for each facility identified in the "FACILITIES" paragraph. While FDWs will not be complete at this phase, provide accurate and correctly formatted data according to the FDW Requirements.

c. Submit Facility Document Set, Design submittal as defined in Part 2 of this specification.

3.2 CONSTRUCTION PROGRESS SUBMITTALS

Submit the FDW and FDS construction progress submittals together. Meet the following completeness and formatting requirements listed below:

a. Provide Facility Data Workbook, Construction Progress submittal(s) when all assets are identified, but not later than 30 days prior to Beneficial Occupancy Date (BOD) as identified in the Government-Approved construction schedule. Clearly identify assets or asset groups missing in the "variations" section of the ENG Form 4025 Transmittal Form provided with the submittal. Populate assets with front-loaded attribute data that is available at the time of asset input. See the FDW Requirements contained within the FDW template for a list of attributes to be completed for this submittal.

b. Submit individual FDW templates for each facility identified in the "FACILITIES" paragraph. While FDWs are not required to be complete for this submittal, provide accurate and correctly formatted data according to the FDW Requirements.

c. Submit a sample or working Facility Document Set, Construction Progress submittal containing "draft" or "example" documents that are organized in the manner defined by this specification. Draft or example documents need not be technically accurate or complete in their content, but defined and separated in a manner such that all organizational and formatting requirements defined by this specification may be evaluated.

3.3 CONSTRUCTION FINAL SUBMITTALS

Submit the FDW and FDS construction final submittals together. Coordinate the Facility Data Workbook, Construction Final submittal with data verification procedures as defined in the accepted FDPxP. Provide the Facility Document Set, Construction Final submittal only after Government acceptance of its individual components as defined by 01 78 00 CLOSEOUT SUBMITTALS and 01 78 23 OPERATION AND MAINTENANCE DATA.

3.4 FACILITY DATA WORKBOOK VERIFICATION

Verify the FDW through the quality control personnel and procedures as defined in the FDPxP. Coordinate and conduct verification with commissioning procedures defined in Section 01 91 00.15 BUILDING COMMISSIONING. One-hundred percent accuracy of FDW information is required for Government acceptance of the Facility Data Workbook, Design submittal and Facility Data Workbook, Construction Final submittal.

ATT-1 - Facility Data Workbook

ATTACHED IN APPENDIX A

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SECTION 01 91 00.15

BUILDING COMMISSIONING
01/26

PART 1 GENERAL

Building Commissioning is a systematic, quality-focused process for enhancing the delivery of a project that focuses on verifying and documenting that all of the commissioned systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the project requirements. The purpose is to reduce the cost and performance risks associated with delivering facilities projects, and to increase value to owners, occupants, and users.

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 HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 90.1 - IP	(2019) Energy Standard for Buildings Except Low-Rise Residential Buildings
ASHRAE 180	(2018) Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems
ASHRAE 202	(2024) Commissioning Process for Buildings and Systems

ASSOCIATED AIR BALANCE COUNCIL (AABC)

ACG Commissioning Guideline	(2005) Commissioning Guideline

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)

NEBB S1110	(2019) Whole Building Technical Commissioning of New Construction; 2nd Edition

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

ANSI/SMACNA 014	(2013) HVAC Systems Commissioning Manual, 2nd Edition

1.2 DEFINITIONS

Commissioning Process (Cx) - a quality-focused process for enhancing the delivery of a project. Refer to ASHRAE 202 for a comprehensive description of the commissioning process.

Lead Commissioning Specialist (CxC) - The entity who leads, plans, and

coordinates the Commissioning Team. The terms Commissioning Provider, Commissioning Firm, Lead Commissioning Specialist, Commissioning Specialist, and Commissioning Authority (CA or CxA) when used by sustainable Third Party Certification (TPC) programs, are interchangeable.

Commissioning Authority – The Government retains the authority for oversight and assurance of the entire commissioning process, and final approval of all commissioning deliverables.

1.3 COMMUNICATION WITH THE GOVERNMENT

The Lead Commissioning Specialist (CxC) must submit all plans, schedules, reports, and documentation directly to the Contracting Officer's Representative concurrent with submission to the Manager.

The Lead Commissioning Specialist must have direct communication with the Contracting Officer's Representative regarding all elements of the commissioning process; however, the Government has no direct contract authority with the Lead Commissioning Specialist.

1.4 COMMUNICATION WITH GOVERNMENT ACCEPTANCE TESTING REPRESENTATIVES

The QC Manager must communicate directly with the Government Acceptance Testing Representatives and Contracting Officer's Representative regarding Government acceptance testing activities. Inform the Contracting Officer's Representative when systems are ready for testing to be witnessed by Government Acceptance Testing Representatives, and allow access to the construction site and system(s) to be tested.

1.5 SYSTEMS TO BE COMMISSIONED

Coordinate commissioning and quality control activities for the following systems, equipment, and associated controls. System-specific requirements are located in the associated specification sections. Commission the following systems, equipment, and associated controls in accordance with this section and the inspection, testing, and quality control requirements of their respective sections:

Fire Alarm/Mass Notification Systems

Fire Suppression Systems

Heating, ventilating, air-conditioning, and refrigeration systems (mechanical and passive) and associated controls (HVAC)

Lighting systems: interior and exterior, automatic and manual daylighting controls, occupancy sensing devices, automatic shut-off controls, time switching, and other lighting control devices, and dimming systems

Service hot-water systems and controls

Water pressure-booster systems

Building Control Systems

Utility Monitoring and Control Systems

Metering and sub-metering

Facility Power Distribution System

Standby Power Generation System

Secured Facilities

Intrusion Detection System

Access Control System

1.6 RELATED SECTIONS

Refer to the following technical sections for additional commissioning requirements for respective systems:

Section 23 08 00 COMMISSIONING OF MECHANICAL AND PLUMBING SYSTEMS

Section 26 08 00 APPARATUS INSPECTION AND TESTING

Section 27 10 00 BUILDING TELECOMMUNICATIONS CABLING SYSTEM

Section 28 08 10 ELECTRONIC SECURITY SYSTEM ACCEPTANCE TESTING

Section 28 31 76 INTERIOR FIRE ALARM AND MASS NOTIFICATION SYSTEM, ADDRESSABLE

1.7 COMMISSIONING TEAM

The Commissioning team will include, but is not limited to the following team members.

Ensure all Design and Construction Activities for systems to be commissioned are coordinated with the appropriate commissioning team members.

a. Lead Commissioning Specialist (CxC)

b. CQC System Manager

c. Sub-Contractor Representatives for each trade responsible for construction/installation of systems to be commissioned

d. Contractor's Project Manager

e. Technical Commissioning Specialists for each system to be commissioned

f. TAB Representative

g. Equipment manufacturer representatives

h. Government Contracting Officer

i. Government Representatives

j. Installation Maintenance Representative

k. Facility End User

l. Designer of Record (DOR)

1.8 PROJECT SCHEDULE

Include the following tasks in the project schedule required by Section 01 32 01.00 30 PROJECT SCHEDULE. Ensure sufficient time is scheduled to complete each item. The order of items listed below is not intended to imply a specified sequence:

a. Submission and approval of the Commissioning Firm Qualifications

b. Submission and approval of the Design Phase Commissioning Plan

c. Submission and approval of the Design Review Report

d. Submission and approval of the Interim and Final Construction Phase Commissioning Plans

e. Commissioning Kickoff Meeting

f. Regular Commissioning Coordination Meetings

g. Installation of permanent utilities (gas, water, electric, steam)

h. Manufacturer's Equipment Start-Up for each of the systems to be commissioned

i. Submission and approval of the Completed Commissioning Observation Checklists

j. Submission and approval of Certificate of Readiness for each system to be commissioned

k. Commissioning Testing, including Functional Performance Testing, for each system to be commissioned

l. Integrated Systems Tests

m. Post-test deficiency correction for each system to be commissioned

n. Re-Testing

o. Submission and approval of the Maintenance and Service Life Plans

p. Submission and approval of the Systems Manual

q. Training for each of the systems to be commissioned

r. Submission and approval of the Final Commissioning Reports

s. Final testing required to be witnessed by Government Acceptance Testing Representatives, as identified in system level sections.

1.9 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit

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

SD-05 Design Data

Design Phase Commissioning Plan; G

SD-06 Test Reports

Completed Construction Observation Checklists; G

Design Review Report; G

Interim Construction Phase Commissioning Plan; G

Final Construction Phase Commissioning Plan; G; S

Issues Log; G

SD-07 Certificates

Commissioning Firm; G

SD-10 Operation and Maintenance Data

Maintenance and Service Life Plan; G

SD-11 Closeout Submittals

Final Commissioning Report; G

Updated Final Commissioning Report; G

Final Commissioning Report (eNotebook); S

Updated Final Commissioning Report (eNotebook); S

1.10 COMMISSIONING FIRM

Employ the services of a Commissioning Firm and all Commissioning Specialists required to perform work for this project. The Commissioning Firm must be a first-tier subcontractor that is financially and corporately independent from prime contractor and all other subcontractors and the Designer of Record and that is not participating in any other work on this Contract, including design, furnishing equipment, construction, or testing, adjusting, and balancing.

a. Submit the Commissioning Firm's and Commissioning Specialists' qualifications, including the name of the firm and each CxC and each certification, no later than 60 calendar days after contract award.

b. If, for any reason, a specialist loses a certification during this period, immediately notify the Contracting Officer and submit another Commissioning Specialist for approval. An approved successor must validate all work performed for this project by the CxC who lost a certification.

1.10.1 Commissioning Specialists (CxC)

Assign Lead Commissioning Specialist and other appropriate Commissioning

Specialists for the systems to be commissioned.

1.10.1.1 Lead Commissioning Specialist (CxC)

Lead Commissioning Specialist (CxC) coordinates all aspects of the commissioning process. Duties include leading and overseeing the commissioning work and acting as the primary point of contact for the commissioning work. CxC may serve as a systems Specialist if all requirements for both designations are met. CxC must have a minimum of five years of commissioning experience, including two projects of similar size and complexity to this project.

CxC must be certified in one of the following:

NEBB Building System Commissioning Professional (CxCP)

ACG Certified Commissioning Authority (CxA)

ICB/TABB Certified Commissioning Supervisor

BCA Certified Commissioning Professional (CCP)

AEE Certified Building Commissioning Professional (CBCP)

University of Wisconsin-Madison Qualified Commissioning Process Provider (QCxP)

ASHRAE Building Commissioning Professional (BCxP).

1.10.1.2 Commissioning Specialists

Refer to the related technical commissioning specification section for additional qualifications for each Commissioning Specialist associated with each system. Include all Commissioning Specialist qualifications with the Commissioning Firm submittal:

a. Mechanical Commissioning Specialist: The technical work associated with mechanical systems to be commissioned must be performed by a Commissioning Specialist certified by NEBB, ACG, ICB/TABB, AEE, University of Wisconsin-Madison, ASHRAE, or BCA in the commissioning of HVAC systems with five years of experience in the commissioning of HVAC systems.

b. Electrical Commissioning Specialist: The technical work associated with electrical systems to be commissioned must be performed by an engineering technician with five years of experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices. The lead engineering technician specified in specification Section 26 08 00 APPARATUS INSPECTION AND TESTING may serve as the Electrical Commissioning Specialist.

1.11 COMMISSIONING STANDARD

Comply with ASHRAE 202 and the commissioning standards under which the Commissioning Firm and Specialists qualifications are approved, which may include ACG Commissioning Guideline, NEBB S1110, or ANSI/SMACNA 014. In a conflict, the most stringent requirements apply. In addition, comply with ASHRAE 90.1 - IP commissioning requirements for all systems. Refer to related technical commissioning specification sections for additional

standards requirements. Comply with applicable International Electrical Testing Association (NETA) testing standards for electrical systems. The following requirements apply to all project commissioning and test standards:

a. Implement all recommendations and suggested practices contained in the Commissioning Standard and test standards.

b. Use the Commissioning Standard for all aspects of Commissioning, including calibration of instruments.

c. Where the instrument manufacturer calibration recommendations are more stringent than those listed in the Commissioning Standard, adhere to the manufacturer calibration recommendations.

d. All quality assurance provisions of the Commissioning Standard such as performance guarantees are part of this contract.

e. The Commissioning Specialists must develop commissioning procedures for any systems or system components not covered in the Commissioning Standard.

f. Use any new requirements, recommendations, and procedures published or adopted by the body responsible for the applicable Commissioning Standards at the time of project award.

g. If there is a conflict between the requirements of the contract documents and the commissioning standard used, the contract documents take precedent.

1.12 ISSUES LOG

The Commissioning Specialist develops and maintains an Issues Log for the systems to be commissioned. The issues log documents and tracks resolution of deficiencies identified during submittal reviews, inspection, and testing. At any point during construction, any commissioning team member finding deficiencies may communicate those deficiencies in writing to the Commissioning Specialist for inclusion into the Issues Log. For each issue, the Issues Log includes, but is not limited to, a unique reference number, description of the issue with contract requirement referenced, location of or equipment name/tags exhibiting the issue, the initials of the individual's name whom reported the issue, the date of first observation, the proposed resolution of the issue and date proposed, the date of any subsequent observations with applicable additional information, and the date of implementation of the final resolution of the issue as confirmed by the Commissioning Specialist and Contracting Officer. Issues must not be deleted from the issues log.

CxC must submit the Issues Log monthly and within three working days from changes to the Issue Log. The CxC is responsible for distributing the Issues Log to the Commissioning Team.

1.13 CERTIFICATE OF READINESS

Prior to scheduling Commissioning Tests for each system, the Quality Control Manager must issue a Certificate of Readiness for each system, certifying that inspections have been completed, open issues have been resolved, and the system is ready for Commissioning Tests. Refer to each related technical commissioning specification section for additional

requirements.

Submit the Certificate of Readiness for each system 30 calendar days prior to Commissioning Tests of that system. Do not schedule Commissioning Tests for a system until the Certificate of Readiness is approved by the Government.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 DESIGN COMMISSIONING COORDINATION MEETING

Conduct a design commissioning coordination meeting led by the CxC prior to the 35 percent design submittal for systems to be commissioned. Discuss the commissioning process, including project contract requirements, lines of communication, roles and responsibilities, schedules, and documentation requirements.

The Contractor's Project Manager, Quality Control team, Designer of Record, and the Government must attend this meeting. Invite the User and Base Civil Engineering Representative to attend this meeting. The meeting may be conducted by teleconferencing.

3.2 DESIGN PHASE COMMISSIONING PLAN

Submit the Design Phase Commissioning Plan no later than 14 calendar days after the Design Commissioning Coordination Meeting. Outline the commissioning process, commissioning team members and responsibilities, lines of communication, and documentation requirements for the design phase of the project in the Design Phase Commissioning Plan. Identify the Commissioning Standards chosen for the project.

3.3 DESIGN REVIEW

The CxC and other Commissioning Specialists must review design documents. The design review must occur prior to 65 percent design completion. The design review must include verifying that the design for the systems to be commissioned are prepared in accordance with the contract documents.

Provide a Design Review Report identifying discrepancies or deficiencies that would prevent the systems to be commissioned from operating or performing effectively or being adequately maintained. Report must include individual list of each deficiency and corresponding corrective action necessary for proper system performance. **Submit the Design Review Report no later than 14 calendar days after completing the review of the design.** The Contracting Officer, the Contractor's Project Manager, the CxC, and the Designers of Record for the associated systems must meet, discuss, and resolve any outstanding items contained in the report no later than 14 calendar days after submission of the report. The CxC must verify that their review comments have been adequately addressed in subsequent design submittals.

3.4 CONSTRUCTION SUBMITTAL REVIEWS

Coordinate construction submittal document reviews for commissioned systems and assemblies with the CxC. The commissioning submittal review

does not replace the designer of record (DOR) or Government submittal review, in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

The CxC must identify construction submittals to be provided by the contractor for the commissioned systems. The CxC must evaluate construction submittals for compliance with the contract documents concurrent with DOR review. Include a copy of CxC comments with the construction submittals. The DOR must consider the CxC's comments, and the DOR provides direction to the contractor as necessary. Provide a copy of final DOR submittal reviews with comment responses to the CxC. Include a copy of the submittal document review transmittal and response in the Commissioning Report.

3.5 COMMISSIONING KICKOFF MEETING

Conduct a Commissioning Kickoff Meeting, led by the CxC, after approval of the Commissioning Firm and Commissioning Specialists, and no later than 60 days following construction notice to proceed. Discuss the commissioning process including contract requirements, lines of communication, roles and responsibilities, schedules, documentation requirements, inspection and test procedures, and logistics as specified in this section.

The Contractor's Project Manager, Quality Control team, Designer of Record, and the Government team members must attend this meeting. Invite the User and Base Civil Engineering Representative to attend this meeting.

3.6 REGULAR COMMISSIONING COORDINATION MEETINGS

The Quality Control team, Designer of Record, and the Government team members must attend this meeting. Sub-Contractor Representatives for each trade responsible for construction/installation of systems to be commissioned must attend this meeting as requested by the CxC. Invite the User and a Base Civil Engineering Representative to attend this meeting.

CxC must conduct monthly commissioning coordination meetings when installation of commissioned systems begins. Provide status of commissioned systems, open issues log items, outstanding submittals, and upcoming commissioning activities. Conduct bi-weekly commissioning coordination meetings within 30 days of the scheduled date for commissioning testing.

3.7 CONSTRUCTION PHASE COMMISSIONING PLANS

The Interim Construction Phase Commissioning Plan identifies the commissioning and testing standards and outline the overall commissioning process, the commissioning schedule, the commissioning team members and responsibilities, lines of communication, documentation requirements for the construction phase of the project. Submit the Interim Construction Phase Commissioning Plan, prepared by the CxC, 14 calendar days after the Construction Commissioning Coordination Meeting and 14 days prior to the start of construction of the building enclosure. Include the following items in the commissioning schedule in addition to the items in paragraph PROJECT SCHEDULE: Commissioning Site Visits, Seasonal Testing, Warranty Phase Site Visit, Post-Construction Endurance Testing, and Updated Commissioning Report.

The Final Construction Phase Commissioning Plan includes the information provided in the Interim Construction Phase Commissioning Plan as well as commissioning construction observation checklists and test procedures such

as Pre-Functional Checklists, Integrated Systems Test Checklists, and Functional Performance Test Checklists and other Commissioning Test Checklists for each building, for each system required to be commissioned, and for each component for inclusion in the Final Construction Phase Commissioning Plan. Refer to the related technical commissioning specification section for additional requirements for checklists. Submit the Final Construction Phase Commissioning Plan, prepared by the CxC, no later than 90 calendar days prior to the start of Commissioning Inspections. Once approved, file the approved plan in the Sustainability eNotebook.

3.7.1 Construction Observation Checklists

Construction Observation Checklists must include items for physical inspection or testing that demonstrate that installation and start-up of equipment and systems is complete. Refer to paragraph COMMISSIONING INSPECTIONS. Construction observation checklists must be tailored to verify the specific installation requirements and details of the construction documents and manufacturer's instructions.

3.7.2 Test Procedures and Checklists

Test procedures and checklists must include procedures that explain, step-by-step, the actions and expected results that will demonstrate that the systems perform in accordance with the contract. Refer to paragraph COMMISSIONING TESTS. Include the following sections and details appropriate to the systems being tested in the test procedures and checklists:

a. Notable system features including information about controls to facilitate understanding of system operation

b. Conclusions and recommendations. Conclusions must clearly indicate if system does or does not perform in accordance with contract requirements. Recommendation must clearly indicate that the system should or should not be approved by the Government.

c. Test conditions including date, beginning and ending time, and beginning and ending outdoor air conditions

d. Attendees

e. Identification of the equipment involved in the test

f. Control system feature identification

g. As-found condition of the system operation

h. List of test items with step numbers along with the corresponding feature or operation, intended test procedure, expected system response, and pass/fail indication.

i. Space for comments for each test item.

3.8 COMMISSIONING SITE VISITS

The CxC must visit the construction site no less than once every 90 days during construction of the commissioned systems to verify that construction is achieving the requirements of the contract documents. The

frequency of the site visits must increase to bi-weekly within 45 days of the scheduled commissioning tests. The CxC must vist the construction site more frequently, as needed, to complete commissioning inspections. Document deficiencies or issues in the Issues Log.

3.9 COMMISSIONING INSPECTIONS

Complete inspections using Construction Observation Checklists for each individual item of equipment or system for each system required to be commissioned in accordance with the commissioning plan. Indicate commissioning team member inspection and validation of each checklist item by initials. Validation of each checklist item by each team member indicates that item conforms to the contract documents and design in their area of responsibility. Commissioning Specialist validation of each checklist item indicates that each item has been installed correctly and in accordance with contract documents. Submit the initialed and Completed Construction Observation Checklists no later than 7 calendar days after completion of inspection of all checklists items for each system.

3.10 COMMISSIONING TESTS

Demonstrate that all systems, equipment, and components have been installed correctly and that the systems operate and perform, including interactive operation between systems, in accordance with contract documents. Perform tests as specified in related technical commissioning specifications. Provide all materials, services, and labor required to perform all commissioning tests.

Commissioning Specialist's duties include leading and documenting all tests for the systems to be commissioned with appropriate sub-contractors performing the Tests. The representatives listed in the paragraph COMMISSIONING TEAM must attend the tests with the exception of the Contractor's Project Manager.

3.10.1 Test Scheduling and Coordination

Schedule Commissioning Tests for each system only after the Certificate of Readiness has been approved by the Government for the system. Correct all deficiencies identified through any prior review, inspection, or test activity before the start of Commissioning tests.

Commissioning Tests and Integrated Systems Tests must be performed with the CxC present. Government reserves the right to witness all tests. Coordinate test schedule with Government representatives.

3.10.2 Testing Procedures

Commissioning tests include tests such as functional performance and integrated systems tests. For electrical systems testing, include testing of sensor calibrations, control responses, safeties, interlocks, operating modes, capacity, lighting levels and burn-in, and verification of all other electrical system contract performance requirements. Perform test procedures in accordance with the commissioning standards specified. In addition, comply with the testing procedures specified in the sections listed in paragraph RELATED SECTIONS.

3.10.3 Sample Strategy

Perform commissioning tests for all systems and equipment to be

commissioned using the sample strategy identified herein. Complete a Test Checklist for each item of equipment or system to be tested. For sample sizes less than 100 percent for similar equipment, the Contracting Officer's Representative reserves the right to select the specific equipment or system to be tested.

For electrical systems, test 100 percent of all equipment and systems except for the following. Test at the sample rate shown:

a. Lighting Controls - 25%

Test all central plant equipment, primary air handling units, and process cooling or heating equipment. Test all system-level equipment serving multiple zones. Twenty-five percent sample testing is allowed for large groups of identical equipment with identical controllers serving single zones such as air terminal units, fan coil units, unitary equipment, and plumbing fixtures. Sample size may be no less than three units.

3.10.3.1 100 Percent Sample Procedures

Systems or equipment for which 100 percent sample size are tested fail if one or more of the test procedures results in discovery of a deficiency and the deficiency cannot be resolved within 5 minutes during the test.

Re-test to the extent necessary to confirm that the deficiencies have been corrected without negatively impacting the performance of the rest of the system.

3.10.3.2 Less than 100 Percent Sample Procedures

Randomly test each sample group of identical equipment. Sample size must be at least three units. If 10 percent of the units in the first sample fail the commissioning tests, test a second sample group, the same size as the first sample group. The second sample must not include any units from the first sample group.

If 10 percent of the units in the second sample fail, test all remaining units. If at any point frequent failures occur, the CxC may stop the testing and require the contractor to perform and document a checkout of the remaining equipment prior to continuing commissioning testing.

3.10.4 Aborted Tests and Re-Testing

Abort any test if any deficiency prevents successful completion of the test or if any required commissioning team member is not present for the test. Re-test after all deficiencies identified during the original test have been corrected. Contracting Officer may withhold payment equivalent to lost time, re-testing, and aborted tests. These costs may include salary, travel costs, and per diem for Government team members.

3.11 TRAINING PLAN

CxC must review the training plan for training associated with the equipment and systems to be commissioned, checking that each plan has the trainer name, trainer contract information, training schedule and location. Submit review at least 30 days prior to the first training event. Incorporate CxC review comments prior to submitting training plan in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA and Section 01 78 24.00 30 FACILITY DATA REQUIREMENTS. Update and resubmit

the training plan based on any corrective action taken.

3.12 MAINTENANCE AND SERVICE LIFE PLAN

3.12.1 Maintenance Plan

Prepare and submit a Maintenance Plan for the project mechanical, electrical, plumbing, and fire protection systems. Prepare the HVAC and refrigeration sections of the Maintenance Plan in accordance with ASHRAE 180. Develop required inspection and maintenance tasks similar to Section 5 of ASHRAE 180 for the other commissioned systems and fire protection systems. Ensure Maintenance Plan is coordinated with the requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA.

Submit the Maintenance Plan no later than 30 calendar days following the completion of Functional Performance Tests and Integrated Systems Tests.

3.12.2 Service Life Plan

Prepare and submit a Service Life Plan for the building enclosure, structural systems, and site hardscape that includes the following for each assembly or component:

a. A description of each including the materials or products.

b. The estimated service life, in years.

c. The estimated maintenance frequency and description of maintenance tasks.

d. The point of maintenance access for the components with estimated service life less than service life of the building.

Ensure Service Life Plan is coordinated with the requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA. Submit the Service Life Plan no later than 30 calendar days following the completion of Functional Performance Tests and Integrated Systems Tests.

3.13 COMMISSIONING REPORT

Submit an Final Commissioning Report no later than 14 calendar days following commissioning team validation of all Commissioning Tests, including Functional Performance Tests, and Integrated Systems Tests, with the exception of Seasonal Tests. File the approved Final Commissioning Report (eNotebook) in the Sustainability eNotebook. Include the following information in the Final Commissioning Report:

a. An executive summary describing the overall commissioning process, the results of the commissioning process, outstanding deficiencies and recommended resolutions, and seasonal testing that must be scheduled for a later date. Indicate, in the executive summary, whether the systems meet the requirements of the contract documents.

b. A list of deficiencies discovered during the commissioning process and the corrective actions taken in the report.

c. Completed Pre-Functional Checklists and other Commissioning Observation Checklists, Commissioning Test Checklists such as Functional Performance Test Checklists and Integrated Systems Test

Checklists the Final Construction Phase Commissioning Plan, the Issues Log, Training Attendance Rosters, the Design Review Reports, Submittal Review Report, and any other documents as specified by related technical commissioning specification sections.

3.14 WARRANTY PHASE SITE VISIT

The Lead Commissioning Specialist must visit the building site concurrent with the 9 month warranty inspection to inspect building system equipment and review building operation with the building operating/maintenance staff, and identify any deficiency of the building systems to operate in accordance with the contract documents. The Commissioning Specialist must notify the Contracting Officer of any identified deficiencies and the proposed corrective action. Submit Updated Final Commissioning Report documenting the results of the warranty phase inspection. Include other warranty or post-construction phase activities as specified in related technical commissioning specification sections, such as Seasonal testing results. File the approved Updated Final Commissioning Report (eNotebook) in the Sustainability eNotebook.

ATT-1 - Pre-Functional Checklists

ATTACHED IN APPENDIX A

ATT-3 - Functional Performance Test Checklists

ATTACHED IN APPENDIX A

ATT-4 - Integrated Systems Test Checklists

ATTACHED IN APPENDIX A

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SECTION 02 41 00

DEMOLITION AND DECONSTRUCTION
01/26

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.

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)

AHRI Guideline K	(2009) Guideline for Containers for Recovered Non-Flammable Fluorocarbon Refrigerants

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 145	(1991; R 2025) Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
AASHTO T 180	(2025) Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

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

ASTM INTERNATIONAL (ASTM)

ASTM D2487	(2017; R 2025) Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

STATE OF TEXAS ADMINISTRATIVE CODE (TAC)

25 TAC 296	Texas Asbestos Health Protection
25 TAC 296.251	Texas Asbestos Health Protection - Notifications

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

U.S. DEFENSE LOGISTICS AGENCY (DLA)

DLA 4145.25	(Jun 2000; Reaffirmed Oct 2010) Storage and Handling of Liquefied and Gaseous Compressed Gases and Their Full and Empty Cylinders; https://www.dla.mil/Portals/104/Documents/Dispositions/ddsr/docs/cylinderjointpub.pdf

U.S. DEPARTMENT OF DEFENSE (DOD)

DOD 4000.25-1-M	(2006) MILSTRIP - Military Standard Requisitioning and Issue Procedures
MIL-STD-129	(2014; Rev R; Change 1 2018; Change 2 2019; Change 3 2023) Military Marking for Shipment and Storage

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

40 CFR 61-SUBPART M	National Emission Standard for Asbestos
40 CFR 61.145	Standard for Demolition and Renovation
40 CFR 82	Protection of Stratospheric Ozone
49 CFR 173.301	Shipment of Compressed Gases in Cylinders and Spherical Pressure Vessels

1.2 PROJECT DESCRIPTION

1.2.1 Definitions

1.2.1.1 Demolition

Demolition is the process of tearing apart and removing any feature of a facility together with any related handling and disposal operations.

In the context of regulatory notification requirements, demolition is the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

1.2.1.2 Deconstruction

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

1.2.1.3 Demolition Plan

Demolition Plan is the planned steps and processes for managing demolition activities and identifying the required sequencing activities and disposal mechanisms.

1.2.1.4 Deconstruction Plan

Deconstruction Plan is the planned steps and processes for dismantling all or portions of a structure or assembly, to include managing sequencing activities, storage, re-installation activities, salvage and disposal mechanisms.

1.2.2 Demolition/Deconstruction Plan

Prepare a Demolition Plan and submit proposed salvage, demolition, deconstruction, and removal procedures for approval before work is started. Include in the plan procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, a detailed description of methods and equipment to be used for each operation and of the sequence of operations. Coordinate with Waste Management Plan in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Provide procedures for safe conduct of the work in accordance with EM 385-1-1. Plan must be approved by Contracting Officer prior to work beginning.

1.2.3 General Requirements

Do not begin demolition or deconstruction until authorization is received from the Contracting Officer. Remove rubbish and debris from the project site; do not allow accumulations inside or outside the building. The work includes demolition, deconstruction, salvage of identified items and materials, and removal of resulting rubbish and debris. Remove rubbish and debris from Government property daily, unless otherwise directed. Store materials that cannot be removed daily in areas specified by the Contracting Officer. In the interest of occupational safety and health, perform the work in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections.

1.3 ITEMS TO REMAIN IN PLACE

Comply with FAR 52.236-9 to protect existing vegetation, structures, equipment, utilities, and improvements. Coordinate the work of this section with all other work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract. Do not overload structural elements or pavements to remain. Provide new supports and reinforcement for existing construction weakened by demolition, deconstruction, or removal work. Repairs, reinforcement, or structural replacement require approval by the Contracting Officer prior to performing such work.

1.3.1 Existing Construction Limits and Protection

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

1.3.2 Weather Protection

For portions of the building to remain, protect building interior and materials and equipment from the weather at all times. Where removal of existing roofing is necessary to accomplish work, have materials and workmen ready to provide adequate and temporary covering of exposed areas.

1.3.3 Trees

Protect trees within the project site which might be damaged during demolition or deconstruction, and which are indicated to be left in place, by a 6 foot high fence. Erect and secure fence a minimum of 5 feet from the trunk of individual trees or follow the outer perimeter of branches or clumps of trees. Replace any tree designated to remain that is damaged during the work under this contract with like-kind or as approved by the Contracting Officer.

1.3.4 Utility Service

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

1.3.5 Facilities

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

1.4 BURNING

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

1.5 AVAILABILITY OF WORK AREAS

Areas in which the work is to be accomplished will be available at contract award.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Demolition Plan; G

Existing Conditions

TxDSHS Asbestos/Demolition Notification; G

SD-07 Certificates

Notification; G

SD-11 Closeout Submittals

Receipts

1.7 QUALITY ASSURANCE

Submit timely notification of asbestos/demolition projects to State authorities in accordance with 40 CFR 61-SUBPART M, 40 CFR 61.145, and 25 TAC 296. Notification to the State's environmental protection agency and the Contracting Officer shall be made at least 14 calendar days prior to the commencement of work in accordance with 40 CFR 61-SUBPART M and 25 TAC 296.251. Comply with federal, state, and local hauling and disposal regulations. Refer to Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS and 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL for additional requirements realted to reuse, recycling, and disposal of material generated from contract activities. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in ASSP A10.6. Comply with the Environmental Protection Agency requirements specified. Use of explosives will not be permitted.

1.7.1 TxDSHS Asbestos/Demolition Notification

Prior to the start of work, in accordance with 25 TAC 296.251, notification to the Texas Department of State Heath Services is required if one or more of the following criteria are met:

a. Any demolition of a public building whether or not asbestos has been identified.

b. Any demolition of a facility, to include commercial buildings, whether or not asbestos has been identified.

c. Any renovation operation if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed meets or exceeds the NESHAP threshold, in accordance with 40 CFR 61.145, of 160 square feet of surface area, 260 linear feet of pipe length, or 35 cubic feet off facility components where the length or area could not be measured.

In accordance with 25 TAC 296.251, an amendment to the notification is required if one or more of the following criteria are met:

a. The amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed changes from the notified amount by 20% or more.

b. A start date, stop date, phased project schedule, scheduled work day, or time changes from the current notified date, schedule, scheduled

work day, or time.

The JBSA Environmental Office will submit all notifications and amendments to the Texas Department of State Health Services on behalf of the Contractor. All associated fees are the responsobility of the Contractor. A copy of the notification form is provided as ATT-1.

1.7.1.1 Notification Details

In addition to the information required by ATT-1, the following information shall be supplied:

a. For Emergency Renovation and Demolition notifications:

(1) date and hour that the emergency occurred

(2) description of the sudden unexpected event

(3) explanation of how the event caused an unsafe condition, would cause equipment damage, or an unreasonable financial burden

(a) proof of cost burden shall be included in the request

* Work shall not proceed until an Emergency Notification number issued by the Texas Department of State Health Services. The final determination for granting an Emergency Notification is at the discretion of the JBSA Environmental Office and the Texas Department of State Health Services.

b. Emergency notification procedures for unforeseen site conditions. These procedures are only to be used when a situation arises where asbestos containing materials are disturbed in an inaccessible area that could not be accessed to conduct a thorough assessment.

c. Description of procedures to be followed if unexpected ACM is found or Category II non-friable ACM becomes crumbled, pulverized, or reduced to powder.

d. Phased abatement activities shall include a phased project schedule form. Any phased activity must not have a break in any abatement activity which exceeds 30 calendar days.

1.7.2 Dust and Debris Control

Prevent the spread of dust and debris and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Vacuum and dust the work area regularly. Sweep pavements as often as necessary to control the spread of debris.

1.8 PROTECTION

1.8.1 Traffic Control Signs

a. Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Anchor barricades in a manner to prevent displacement by wind. Notify the Contracting Officer, in accordance with Section 01 14 00 JBSA WORK RESTRICTIONS prior to beginning such work.

1.8.2 Protection of Personnel

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

1.9 RELOCATIONS

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

1.10 EXISTING CONDITIONS

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Contracting Officer or the Contracting Officer's Representative showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs or electronic images with a minimum resolution of 4032 x 2268 pixels, capable of a print resolution of 300 dpi, will be acceptable as a record of existing conditions. Include in the record the elevation of the top of foundation walls, finish floor elevations, possible conflicting electrical conduits, plumbing lines, alarms systems, the location and extent of existing cracks and other damage and description of surface conditions that exist prior to starting work. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document. Submit survey results to the Contracting Officer.

PART 2 PRODUCTS

2.1 FILL MATERIAL

a. Comply with excavating, backfilling, and compacting procedures for soils used as backfill material to fill basements, voids, depressions or excavations resulting from demolition or deconstruction of structures.

b. Provide fill material conforming to the definition of satisfactory soil material as defined in ASTM D2487. In addition, fill material must be free from roots and other organic matter, trash, debris, frozen materials, and stones larger than 2 inches in any dimension.

c. Proposed fill material must be sampled and tested by a TCEQ approved soil testing laboratory, as follows:

Soil classification	AASHTO M 145

Moisture-density relations	AASHTO T 180, Method B or D
RCRA 11 Metals	EPA SW-846, Method 7000 series, TCLP extraction
Organochlorine Pesticides/Polychlorinated Biphenyl (PCBs)	EPA SW-846, Method 8081B/8080, TCLP extraction
Semi-Volatile Organic Compounds (SVOCs)	EPA SW-846, Method 8270E, TCLP extraction
Volatile Organic Compounds (VOCs)	EPA SW-846, Method 8260D, TCLP extraction
Total Petroleum Hydrocarbons (TPH)	TCEQ, Method 1005
Non-halogenated Organics	EPA SW-846, Method 8015C, TCLP extraction
Reactivity, Corrosivity, Ignitibility (RCI)	

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

Inspect and evaluate existing structures onsite for reuse. Disassemble existing construction scheduled to be removed for reuse. Dismantled and removed materials are to be separated, set aside, and prepared as specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified. Designate materials for reuse onsite whenever possible.

3.1.1 Utilities and Related Equipment

3.1.1.1 General Requirements

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

3.1.1.2 Disconnecting Existing Utilities

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

3.1.2 Paving and Slabs

Remove concrete and asphaltic concrete paving and slabs including aggregate base as indicated. Provide neat sawcuts at limits of pavement removal as indicated. Move, grind and store pavement and slabs designated to be recycled and utilized in this project as directed by the Contracting

Officer. Remove pavement and slabs not to be used in this project from the Installation at Contractor's expense.

3.1.3 Masonry

Sawcut and remove masonry so as to prevent damage to surfaces to remain, to removed materials being salvaged and to facilitate the installation of new work. Where new masonry adjoins existing, abut or tie the new work into the existing construction as specified for the new work. Provide square, straight edges and corners where existing masonry adjoins new work and other locations. Salvage masonry removed in whole blocks and store for reuse.

3.1.4 Concrete

Saw concrete along straight lines to a depth of a minimum 2 inch. Make each cut in walls perpendicular to the face and in alignment with the cut in the opposite face. Break out the remainder of the concrete provided that the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, grind smooth or saw cut entirely through the concrete. Sawcuts in existing concrete sidewalk, roads, concrete pads, and parking areas must be at the nearest existing expansion joint or weakened plane joint and at full depth.

3.1.5 Miscellaneous Metal

Salvage shop-fabricated items such as access doors and frames, steel gratings, metal ladders, wire mesh partitions, metal railings, metal windows and similar items as whole units. Salvage light-gage and cold-formed metal framing, such as steel studs, steel trusses, metal gutters, roofing and siding, metal toilet partitions, toilet accessories and similar items. Recycle scrap metal as part of demolition and deconstruction operations. Provide separate containers to collect scrap metal and transport to a scrap metal collection or recycling facility, in accordance with the Waste Management Plan.

3.1.6 Patching

Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces, using on-site materials when available. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new work. Make finished surfaces of patched area flush with the adjacent existing surface and match the existing adjacent surface as closely as possible to texture and finish. Provide patching as specified and indicated, and include the following:

a. Concrete and Masonry: Completely fill holes and depressions, caused by previous physical damage or left as a result of removals in existing masonry walls to remain, with an approved masonry patching material, applied in accordance with the manufacturer's printed instructions.

b. Where existing partitions have been removed leaving damaged or missing resilient tile flooring, patch to match the existing floor tile.

c. Patch acoustic lay-in ceiling where partitions have been removed. Make the transition between the different ceiling heights by continuing the

higher ceiling level over to the first runner on the lower ceiling and closing the vertical opening with a painted sheet metal strip.

3.1.7 Air Conditioning Equipment

Remove air conditioning, refrigeration, and other equipment containing refrigerants without releasing chlorofluorocarbon refrigerants to the atmosphere in accordance with the Clean Air Act Amendment of 1990. Recover all refrigerants prior to removing air conditioning, refrigeration, and other equipment containing refrigerants in accordance with the paragraph entitled "Disposal of Ozone Depleting Substance (ODS)." Turn in salvaged refrigerants as specified in paragraph, "Salvaged Materials and Equipment."

3.1.8 Mechanical Equipment and Fixtures

Disconnect mechanical hardware at the nearest connection to existing services to remain, unless otherwise noted. Disconnect mechanical equipment and fixtures at fittings. Remove service valves attached to the unit. Salvage each item of equipment and fixtures as a whole unit; listed, indexed, tagged, and stored. Salvage each unit with its normal operating auxiliary equipment. Transport salvaged equipment and fixtures, including motors and machines, to a designated storage area as directed by the Contracting Officer. Do not remove equipment until approved. Do not offer low-efficiency equipment for reuse; provide to recycling service for disassembly and recycling of parts.

3.1.8.1 Preparation for Storage

Remove water, dirt, dust, and foreign matter from units; drain tanks, piping and fixtures; if previously used to store flammable, explosive, or other dangerous liquids, steam clean interiors. Seal openings with caps, plates, or plugs. Secure motors attached by flexible connections to the unit. Change lubricating systems with the proper oil or grease.

3.1.8.2 Piping

Disconnect piping at unions, flanges and valves, and fittings as required to reduce the pipe into straight lengths for practical storage. Store salvaged piping according to size and type. If the piping that remains can become pressurized due to upstream valve failure, attach end caps, blind flanges, or other types of plugs or fittings with a pressure gage and bleed valve to the open end of the pipe to ensure positive leak control. Carefully dismantle piping that previously contained gas, gasoline, oil, or other dangerous fluids, with precautions taken to prevent injury to persons and property. Store piping outdoors until all fumes and residues are removed. Box prefabricated supports, hangers, plates, valves, and specialty items according to size and type. Wrap sprinkler heads individually in plastic bags before boxing. Classify piping not designated for salvage, or not reusable, as scrap metal.

3.1.8.3 Ducts

Classify removed duct work as scrap metal.

3.1.8.4 Fixtures, Motors and Machines

Remove and salvage fixtures, motors and machines associated with plumbing, heating, air conditioning, refrigeration, and other mechanical system installations. Salvage, box and store auxiliary units and accessories

with the main motor and machines. Tag salvaged items for identification, storage, and protection from damage. Classify broken, damaged, or otherwise unserviceable units and not caused to be broken, damaged, or otherwise unserviceable as debris to be disposed of by the Contractor.

3.1.9 Electrical Equipment and Fixtures

Salvage motors, motor controllers, and operating and control equipment that are attached to the driven equipment. Salvage wiring systems and components. Box loose items and tag for identification. Disconnect primary, secondary, control, communication, and signal circuits at the point of attachment to their distribution system.

3.1.9.1 Fixtures

Remove and salvage electrical fixtures. Salvage unprotected glassware from the fixture and salvage separately. Salvage incandescent, mercury-vapor, and fluorescent lamps and fluorescent ballasts manufactured prior to 1978, boxed and tagged for identification, and protected from breakage.

3.1.9.2 Electrical Devices

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

3.1.9.3 Wiring Ducts or Troughs

Remove and salvage wiring ducts or troughs. Dismantle plug-in ducts and wiring troughs into unit lengths. Remove plug-in or disconnecting devices from the busway and store separately.

3.1.9.4 Conduit and Miscellaneous Items

Salvage conduit except where embedded in concrete or masonry. Consider corroded, bent, or damaged conduit as scrap metal. Sort straight and undamaged lengths of conduit according to size and type. Classify supports, knobs, tubes, cleats, and straps as debris to be removed and disposed.

3.2 CONCURRENT EARTH-MOVING OPERATIONS

Do not begin excavation, filling, and other earth-moving operations that are sequential to demolition or deconstruction work in areas occupied by structures to be demolished or deconstructed until all demolition and deconstruction in the area has been completed and debris removed. Fill holes, open basements and other hazardous openings.

3.3 DISPOSITION OF MATERIAL

3.3.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, become the property of the Contractor and must be removed from Government property. Materials approved for storage

by the Contracting Officer must be removed before completion of the contract. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Showing for sale or selling materials and equipment on JBSA is prohibited.

3.3.2 Reuse of Materials and Equipment

Remove and store materials and equipment listed in the Demolition Plan and as specified by other contract requirements to be reused or relocated to prevent damage, and reinstall as the work progresses. Coordinate the re-use of materials and equipment with the re-use requirements in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Capture re-use of materials in the diversion calculations for the project.

3.3.3 Salvaged Materials and Equipment

Remove materials and equipment that are listed in the Demolition Plan and specified by other contract requirements to be removed by the Contractor and that are to remain the property of the Government, and deliver to a storage site on the Installation.

a. Salvage items and material to the maximum extent possible.

b. Store all materials salvaged for the Contractor as approved by the Contracting Officer and remove from Government property before completion of the contract. Coordinate the salvaged materials with tracking requirements in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Capture salvaged materials in the diversion calculations for the project.

c. Remove salvaged items to remain the property of the Government in a manner to prevent damage, and packed or crated to protect the items from damage while in storage or during shipment. Items damaged during removal or storage must be repaired or replaced to match existing items. Properly identify the contents of containers. Deliver the items reserved as property of the Government to the areas designated.

e. Remove historical items in a manner to prevent damage. Deliver the following historical items to the Government for disposition: Corner stones, contents of corner stones, and document boxes wherever located on the site.

f. Remove and capture all refrigerants in accordance with the Clean Air Act Amendment of 1990, and turn in to the Installation's HVAC Shop. Provide cylinders as needed to capture all refrigerants. Cylinders will not be returned to the contractor.

3.3.4 Disposal of Ozone Depleting Substance (ODS)

Class I and Class II ODS are defined in Section, 602(a) and (b), of The Clean Air Act. Prevent discharge of Class I and Class II ODS to the atmosphere. Place recovered ODS in cylinders meeting AHRI Guideline K suitable for the type ODS (filled to no more than 80 percent capacity) and provide appropriate labeling. Recovered ODS must be turned over to the designated location identified by the Contracting Officer. Dispose

products, equipment and appliances containing ODS in a sealed, self-contained system (e.g. residential refrigerators and window air conditioners) in accordance with 40 CFR 82. Submit Receipts or bills of lading, as specified.

3.3.4.1 Special Instructions

No more than one type of ODS is permitted in each container. Apply a warning/hazardous label to the containers in accordance with Department of Transportation regulations. Provide a tag with the following information on all cylinders including but not limited to fire extinguishers, spheres, or canisters containing an ODS:

a. Activity name and unit identification code

b. Activity point of contact and phone number

c. Type of ODS and pounds of ODS contained

d. Date of shipment

e. National stock number (for information, call (804) 279-4525).

3.3.5 Transportation Guidance

Transport all ODS containers to the Government's storage location in accordance with MIL-STD-129, DLA 4145.25 (also referenced one of the following: Army Regulation 700-68, Naval Supply Instruction 4440.128C, Marine Corps Order 10330.2C, and Air Force Regulation 67-12), 49 CFR 173.301, and DOD 4000.25-1-M.

3.3.6 Unsalvageable and Non-Recyclable Material

Dispose of unsalvageable and non-recyclable material in accordqnce with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

3.4 CLEANUP

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

3.5 DISPOSAL OF REMOVED MATERIALS

3.5.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other nonsalvageable materials resulting from removal operations with all applicable federal, state and local regulations as contractually specified in Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL and Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

3.5.2 Burning on Government Property

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

3.5.3 Removal to Spoil Areas on Government Property

Transport noncombustible materials removed from demolition and deconstruction structures to designated spoil areas with the project site boundary. Government does not have any spoil areas for use by contractors. All materials shall be temporarily stored in an appropriate container within the project site boundary or approved contractor laydown area until it can be removed from the Installation.

3.5.4 Removal from Government Property

Transport waste materials removed from demolished and deconstructed structures from Government property for legal disposal. Dispose of waste soil per Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS and Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

3.6 REUSE OF SALVAGED ITEMS

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

ATT-1 - TxDSHS Asbestos/Demolition Notification

REFER TO SECTION 02 82 00 ASBESTOS REMEDIATION

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REMOVAL AND SALVAGE OF HISTORIC CONSTRUCTION MATERIALS

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SECTION 02 42 91

REMOVAL AND SALVAGE OF HISTORIC CONSTRUCTION MATERIALS
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PART 1 GENERAL

1.1 REFERENCES

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

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

29 CFR 1910.1000	Air Contaminants
29 CFR 1926.55	Gases, Vapors, Fumes, Dusts, and Mists
40 CFR 261	Identification and Listing of Hazardous Waste

1.2 PROJECT DESCRIPTION

The work includes removal and salvage of identified historic items and materials, and removal of resulting rubbish and debris. General demolition of non-historic materials and removal of resulting rubbish and debris must comply with the requirements of Section 02 41 00 DEMOLITION AND DECONSTRUCTION. Store salvaged or recycled materials daily in areas and in a manner specified by the Contracting Officer. In the interest of conservation, pursue salvage and recycling to the maximum extent possible. Submit a Work Plan that includes procedures proposed for the accomplishment of the work. The Work Planprocedures must provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged or recycled, dust control, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. Include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations in the Work Plan.

1.2.1 Dust Control

Control the amount of dust resulting from removal, salvage and demolition operations to prevent the spread of dust to occupied portions of the construction site, to avoid creation of a nuisance in the surrounding area and to minimize occupational exposures. Occupational exposures cannot exceed the requirements in 29 CFR 1910.1000 and 29 CFR 1926.55. Use of water to control dust will not be permitted when it will result in, or create, damage to existing building materials and hazardous or objectionable conditions such as ice, flooding and pollution.

1.2.2 Protection

1.2.2.1 Protection of Existing Historic Property

Survey the site and examine the drawings and specifications to determine the extent of work before beginning any removal, salvage or demolition

work. Take necessary precautions to avoid damage to existing historic items that are to remain in place, to be reused, or to remain the property of the Government. Repair or restore items damaged by the Contractor to original condition, or replace, as approved by the Contracting Officer. Coordinate the work of this section with all other work and construct and maintain shoring, bracing and supports, as required. Ensure that structural elements are not overloaded and provide additional supports as may be required as a result of any cutting, removal, or demolition work performed under this contract.

1.2.2.2 Protection From the Weather

Protect the interior of buildings to remain and salvageable materials from the weather at all times. Store salvaged historic materials off the ground and under weathertight covering.

1.2.2.3 Environmental Protection

Comply with the requirements of Section 02 82 00 ASBESTOS REMEDIATION, Section 02 83 00 LEAD REMEDIATION, and 02 85 00 MOLD REMEDIATION. Ensure a thorough inspection has been performed for hazardous materials prior to beginning work.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Work Plan; G

1.4 QUALIFICATIONS

Provide qualified workers trained and experienced in whole-building recycling, including removal and salvage of historic materials. Submit documentation of five consecutive years of work of this type with a list of similar projects identifying when, where, and for whom the work was done. Provide a current point-of-contact for identified references.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 HAZARDOUS MATERIALS

Unforeseen hazardous materials may exist in wall cavities, beneath floors, in chases, inside various components, as well as other building materials. Exercise extreme care when performing demolition and salvage operations to ensure unexpected hazardous materials area not inadvertently disturbed creating a potential exposure concern. If suspect hazardous materials are observed or encountered, stop work and notify the Contracting Officer immediately.

3.2 SALVAGED ITEMS

Salvage items to the maximum extent possible. Remove historic items to be salvaged from the structure prior to demolition work. Remove salvageable items by hand labor to the maximum extent possible. Do not damage historic portions of the structure to remain or items identified for salvage. Remove furnishings, equipment, and materials not scheduled for salvage or recycling prior to any salvaging procedures. Keep a complete recording of all salvaged materials including the condition of such materials before, and after, salvage operations.

3.2.1 Site Work

Remove intact and salvage the following site items: fences and gates, site furnishings, fountains, sculpture, site ornaments, site lighting fixtures where indicated by other contract requirements.

3.2.2 Concrete

Remove intact and salvage the following concrete items: precast architectural elements where indicated by other contract requirements.

3.2.3 Masonry

Remove intact and salvage the following masonry items: brick, stone, terra cotta, cast stone, clay tile trim elements, cornerstones where indicated by other contract requirements.

3.2.4 Metals

Remove intact and salvage the following metal items: ladders, stairs and handrails, cast architectural ornament, architectural metalwork, ornamental ironwork, gratings and metal walkways where indicated by other contract requirements.

3.2.5 Wood

Remove intact and salvage the following materials: wood decking, millwork, custom paneling, wood stairs and handrails, ladders, architectural woodwork, custom casework, wood timbers (5 x 5 inch or larger) where indicated by other contract requirements.

3.2.6 Thermal and Moisture Protection

Remove intact and salvage the following materials: slate tiles, clay tiles, gutters, leaders, and downspouts, skylights, roof accessories, exterior siding where indicated by other contract requirements.

3.2.7 Doors and Windows

Remove doors and windows with associated hardware and operating mechanisms intact (including glass) and salvage in accordance with the schedule.

3.2.8 Finishes

Protect the following special or historic finishes: stenciling, decorative tile, molded ornament, decorative ceiling materials, wood flooring, textured wall coverings, murals where indicated by other contract requirements.

3.2.9 Equipment and Specialty Items

Remove intact and salvage the following equipment and specialty items: chalkboards and tackboards, toilet partitions, louvers and vents, stoves, plaques, lockers, mirrors, bath accessories, partitions, contents of cornerstones, document boxes where indicated by other contract requirements.

3.3 RECYCLED MATERIALS

Recycle materials to the maximum extent possible. Use hand labor wherever possible to remove recyclable materials. Do not damage historic portions of the structure indicated to remain and items identified for salvage while removing materials for recycling. Recycle the following materials: dimension lumber, scrap wood, paper and cardboard, gypsum wallboard, asphalt, rubble, glass, metals where indicated by other contract requirements.

3.4 DISPOSITION OF MATERIALS

The Contractor, upon receipt of notice to proceed, is vested with the title to materials and equipment to be demolished, except Government and using service salvage and historical items. The Government will not be responsible for the condition, loss or damage to such property after notice to proceed.

3.4.1 Material Salvaged for the Contractor

Temporarily store salvaged material as approved by the Contracting Officer and remove from Government property before completion of the contract. Sale of salvaged material on the site is prohibited.

3.4.2 Items Salvaged for the Government

Remove salvaged items to remain the property of the Government in a manner to prevent damage, packed or crated to protect the items from damage, or as directed by the Contracting Officer, or Contracting Officer's Technical Representative. Repair or replace items damaged during removal or storage to match existing items. Properly label and identify containers as to contents. Deliver the items reserved as property of the Government to the areas designated:

For Historic Materials, Bldg 4193, 2181 Supply St, JBSA SAM HOUSTON, TX 78234

For Non-Historic Materials, Bldg 4197, 2199 Storage St, JBSA SAM HOUSTON, TX 78234

3.5 CLEAN-UP

Upon completion of the work, clean portions of structure to remain and adjacent areas and structures of dust, dirt, and debris caused by salvage and demolition operations. Verify that debris and rubbish created by the work is non-hazardous. If any debris and rubbish is suspect hazardous waste characterize it in accordance with 40 CFR 261. If the debris and rubbish is determined to be hazardous materials notify the Contracting Officer. Remove and transport non-hazardous debris and rubbish in a manner that prevents spillage on streets or adjacent areas. Transport and

dispose of all material in accordance with all local, state and Federal regulations. Provide copies of all disposal manifests to the the Contracting Officer.

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SECTION 02 81 00

TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIALS
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PART 1 GENERAL

1.1 REFERENCES

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

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

IATA DGR	(2025) Dangerous Goods Regulations - Edition 66

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

IMDG DGR	(2024) Dangerous Goods Regulations - 42nd Amendment

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

DOT 4500.9R	Defense Transportation Regulation, Part 2, Cargo Movement, Chapter 204, Hazardous Material

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

40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions

40 CFR 270	EPA Administered Permit Programs: The Hazardous Waste Permit Program
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR 107	Hazardous Materials Program Procedures
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
49 CFR 178	Specifications for Packagings

1.2 DEFINITIONS

1.2.1 Hazardous Material

A substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated pursuant to the Hazardous Materials Transportation Act, 49 U.S.C. Appendix Section 1801 et seq. The term includes materials designated as hazardous materials under the provisions of 49 CFR 172, Sections .101 and .102 and materials which meet the defining criteria for hazard classes and divisions in 49 CFR 173. EPA designated hazardous wastes are also hazardous materials.

1.2.2 Hazardous Waste

A waste which meets criteria established in Resource Conservation and Recovery Act (RCRA) or specified by the EPA in 40 CFR 261 or which has been designated as hazardous by a RCRA authorized state program.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Packaging Notifications

Hazardous Waste Management Plan; G

Onsite Hazardous Waste Management; G

Notices of Non-Compliance and Notices of Violation

SD-06 Test Reports

Recordkeeping; G

Exception Report; G

Spill Response

SD-07 Certificates

Training; G

Pipeline Hazardous Materials Safety Administration Certification

Shipping Documents and Packagings Certification; G

Security Plan

Certificates of Disposal

Waste Minimization

1.4 QUALITY ASSURANCE

1.4.1 Training

Hazardous materials/waste employees must be trained, tested, and certified to safely and effectively carry out their assigned duties. Employees transporting hazardous materials or preparing hazardous materials for transportation, including samples, must be trained, tested, and certified in accordance with 49 CFR 172, Subpart H, including security awareness and any applicable security plans. Hazardous material employees must also be trained in accordance with IATA DGR when shipping hazardous materials by air and IMDG DGR when shipping hazardous materials by water. Employees must be trained, tested, and certified in accordance with 49 CFR 172, Subpart H to determine that shipments do not constitute DOT regulated hazardous materials.

1.4.2 Pipeline Hazardous Materials Safety Administration Certification

The hazardous materials transporter and offeror must possess a current certificate of registration issued by the Pipeline Hazardous Materials Safety Administration, when required by 49 CFR 107, Subpart G and unless an exemption applies. Submit copies of the certificates or written statements certifying exemption from these requirements.

1.4.3 Laws and Regulations Requirements

Comply with Federal, state, and local laws and regulations which are applicable. These requirements are amended frequently and compliance with amendments is required as they become effective. Notify the Contracting Officer immediately if compliance exceeds the scope of work or conflicts

with specific requirements of the contract.

PART 2 PRODUCTS

2.1 MATERIALS

Provide all the materials required for the packaging, labeling, marking, placarding and transportation of hazardous wastes and hazardous materials in conformance with Department of Transportation standards. Details in this specification must not be construed as establishing the limits of the Contractor's responsibility.

2.1.1 Packagings

Provide bulk and non-bulk containers for packaging hazardous materials/wastes consistent with the authorizations referenced in the Hazardous Materials Table in 49 CFR 172, Section.101, Column 8. Bulk and non-bulk packaging must meet the corresponding specifications in 49 CFR 173 referenced in the Hazardous Materials Table, 49 CFR 172, Section .101. Packaging must conform to the general packaging requirements of Subpart B of 49 CFR 173, to the requirements of 49 CFR 178 at the specified packing group performance level, to the requirements of special provisions of column 7 of the Hazardous Materials Table in 49 CFR 172, Section .101, and be compatible with the material to be packaged as required by 40 CFR 262. Also provide other packaging related materials such as materials used to cushion or fill voids in overpacked containers. The hazardous materials being packaged must not react dangerously with, decompose or ignite the sorbent packaging materials. Additionally, sorbents used to treat free liquids to be disposed of in landfills must be non-biodegradable as specified in 40 CFR 264, Section .314. In addition, packaging notifications will be provided to the Government in accordance with 49 CFR 172, Section .178.2(c) regarding type and dimensions of closures, including gaskets, needed to satisfy performance test requirements.

2.1.2 Markings

Provide markings for each hazardous material/waste package, freight container, and transport vehicle consistent with the requirements of 49 CFR 172 Subpart D and 40 CFR 262.32 (for hazardous waste); 40 CFR 761.45 (for PCBs); 40 CFR 61.149(d) (for asbestos). Markings must withstand a 180 day exposure to conditions reasonably expected to be encountered during container storage and transportation, without deterioration or substantial color change.

2.1.3 Labeling

Provide primary and subsidiary labels for hazardous materials/wastes consistent with the requirements in the Hazardous Materials Table in 49 CFR 172, Section .101, Column 6. Labels must meet design specifications required by 49 CFR 172, Subpart E including size, shape, color, printing, and symbol requirements. Labels must be durable weather resistant and withstanding a 180 day exposure to conditions reasonably expected to be encountered during container storage and transportation, without deterioration or substantial color change.

2.1.4 Placards

For each offsite shipment of hazardous material/waste, provide primary and subsidiary placards consistent with the requirements of 49 CFR 172,

Subpart F. Provide placards for each side and each end of bulk packaging, freight containers, transport vehicles, and rail cars requiring such placarding. Placards may be plastic, metal, or other material capable of withstanding, without deterioration, a 30 day exposure to open weather conditions and must meet design requirements specified in 49 CFR 172, Subpart F.

2.1.5 Spill Response Materials

Provide spill response materials including, but not limited to, containers, adsorbent, shovels, and personal protective equipment. Spill response materials must be available at all times when hazardous materials/wastes are being handled or transported, must be compatible with the type of material being handled, and must include a sufficient volume of materials to contain the contents of the spill.

2.2 EQUIPMENT AND TOOLS

Provide miscellaneous equipment and tools necessary to handle hazardous materials and hazardous wastes in a safe and environmentally sound manner.

PART 3 EXECUTION

3.1 HAZARDOUS WASTE MANAGEMENT PLAN

Prepare a Hazardous Waste Management Plan detailing the manner in which hazardous wastes will be managed and describing the types and volumes of hazardous wastes anticipated to be managed. The Hazardous Waste Management Plan must be consistent with identified environmental controls described in 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS and 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL Address both onsite and offsite hazardous waste management. Describe the methods to be used to ensure accurate piece counts or weights of shipments; describe waste minimization methods; identify and describe facilities to be used for treatment, storage, and disposal (TSD); identify areas onsite where hazardous wastes are to be handled; and identify whether transfer facilities are to be used; and if so, how the wastes will be tracked to ultimate disposal. Submit the plan to the Contracting Officer for approval prior to start of work. Provide waste inspections as required by federal, state and local hazardous waste regulations. Submit written documentation of weekly hazardous waste inspections on a monthly basis.

3.2 ONSITE HAZARDOUS WASTE MANAGEMENT

Coordinate the onsite management of all hazardous materials and waste with the installation environmental function and the Contracting Officer. These paragraphs apply to Government owned waste only. Ensure compliance with Federal, state, and local hazardous waste laws and regulations and verifying those requirements when preparing reports, waste shipment records, hazardous waste manifests, or other documents. Identify hazardous wastes using criteria set forth in 40 CFR 261 or applicable state and local laws, regulations, and ordinances. Comply with generator requirements in 40 CFR 262 and applicable state or local law or regulations when accumulating hazardous waste onsite. Separate hazardous or otherwise regulated wastes from materials that are eligible for recycling or reclamation to the greatest extent practicable in accordance with Section 01 74 19 CONSTRUCTION WASTE MANGEMENT AND DISPOSAL.

Restrict onsite accumulation times to applicable time frames referenced in

40 CFR 262, Section 16, 17 and 18 based upon waste generator status and applicable state or local law or regulation. Accumulation start dates commence when waste is placed into the container, unless accumulating in a Satellite Accumulation Area (SAA); then requirements of 40 CFR 262, Section 15 and state and local regulations must be followed. For waste accumulated in an SAA, the accumulation start date commences when the container exceeds the SAA volume limits and is moved to a Central Accumulation Area. Only use containers in good condition and compatible with the waste to be stored. Ensure containers are closed except when adding or removing waste, or temporary venting is necessary to support equipment operation or prevent hazardous pressure buildup. Immediately mark all hazardous waste containers with the words "hazardous waste" and other information required by 40 CFR 262, Section 32 and applicable state or local law or regulation as soon as the waste is containerized. Place additional markings on containers of "unknowns" designating the date sampled, and the suspected hazard. Inspect containers for signs of deterioration and for responding to any spills or leaks. Inspect all hazardous waste areas weekly and provide written documentation of the inspection. For hazardous waste tank systems, perform daily inspections in accordance with 40 CFR 265 and provide written documentation of the inspections. Include date and time of inspection, name of individual conducting the inspection, problems noted, and corrective actions taken on the inspection logs.

3.2.1 Hazardous Waste Classification

Identify, in consultation with the JBSA Environmental Office, all federal and state waste codes applicable to each hazardous waste stream based on requirements in 40 CFR 261 or applicable state or local law or regulation. Also identify applicable treatment standards in 40 CFR 268 and land disposal restrictions and make a determination as to whether or not the waste meets or exceeds the standards. Submit waste profiles, analyses, classification and treatment standards information to Contracting Officer for review and approval by the JBSA Environmental Office.

3.2.2 Packaging, Labeling, and Marking

Package, label, and mark hazardous materials/wastes using the specified materials and in accordance with the referenced authorizations. Mark each container of hazardous waste of 110 gallons or less with the following:

"HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal.
If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

1) Generator's name: _____
2) Manifest Document Number (or applicable labels required by RCRA authorized state programs): _____".
3) RCRA characterization (toxic, reactive, corrosive, ignitable): _____
4) DOT shipping name and Emergency Response Guide (ERG)#: _____

3.3 OFFSITE HAZARDOUS WASTE MANAGEMENT

Coordinate the off site transfer of all hazardous materials and waste with the installation environmental function and the Contracting Officer. Use RCRA Subtitle C permitted facilities which meet the requirements of

40 CFR 264 or facilities operating under interim status which meet the requirements of 40 CFR 265 or 40 CFR 300 Section 440 for CERCLA sites. Do not use offsite treatment, storage, and disposal facilities with significant RCRA violations or compliance problems (such as facilities known to be releasing hazardous constituents into ground water, surface water, soil, or air). Submit Notices of Non-Compliance and Notices of Violation by a Federal, state, or local regulatory agency issued to the Contractor in relation to any work performed under this contract. Immediately provide copies of such notices to the Contracting Officer. Also furnish relevant documents regarding the incident and any information requested by the Contracting Officer, and coordinate its response to the notice with the Contracting Officer or the designated representative prior to submission to the notifying authority. Also furnish a copy to the Contracting Officer of all documents submitted to the regulatory authority, including the final reply to the notice, and all other materials, until the matter is resolved.

3.3.1 Treatment, Storage, and Disposal Facility and Transporter

Provide the Contracting Officer with EPA ID numbers, names, locations, and telephone numbers of TSD facilities and transporters. This information must be contained in the Hazardous Waste Management Plan and be approved by the Contracting Officer prior to waste disposal.

3.3.2 Facility Status Information

Facilities receiving hazardous waste must be permitted in accordance with 40 CFR 270 or operating under interim status in accordance with 40 CFR 265 requirements, or permitted by a state authorized by the Environmental Protection Agency to administer the RCRA permit program. Additionally, for waste generated at CERCLA sites, prior to using a TSD Facility, contact the EPA Regional Offsite Coordinator specified in 40 CFR 300, Section 440, to determine the facility's status, and document all information necessary to satisfy the requirements of the EPA Offsite policy and submit this information to the Contracting Officer in the Hazardous Waste Management Plan.

3.3.3 Shipping Documents and Packagings Certification

Prior to shipment of any hazardous material offsite and a minimum of 7 calendar days prior to anticipated pickup, provide for review written certification to the Contracting Officer that hazardous materials have been properly packaged, labeled, and marked in accordance with Department of Transportation and EPA or authorized state requirements. Furnish designated disposal facility packaging assurances not later than 35 days after acceptance of the shipment. The Contractor's TDC must also provide written certification regarding waste minimization efforts documenting that efforts have been taken to reduce the volume and toxicity of waste to the degree economically practicable and that the method of treatment, storage, or disposal selected minimizes threats to human health and the environment.

3.3.4 Transportation

Prior to conducting hazardous materials activities, the Contractor responsible for pre-transportation activities must either certify to the Government that a Security Plan is in place which meets the requirements of 49 CFR 172, Subpart I or in the event that the types or amounts of hazardous materials are excluded from the security planning requirements,

a written statement to that effect detailing the basis for the exception. Use manifests for transporting hazardous wastes as required by 40 CFR 263 or applicable state or local law or regulation. Transportation must comply with all requirements in the Department of Transportation referenced regulations in the 49 CFR series. Prepare hazardous waste manifests for each shipment of hazardous waste shipped offsite. Complete manifests using instructions in 40 CFR 262, Subpart B and applicable state or local law or regulation. Submit manifests and waste profiles to Contracting Officer for review and approval in accordance with Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD). Prepare land disposal restriction notifications as required by 40 CFR 268 or applicable state or local law or regulation for each shipment of hazardous waste. Submit notifications with the manifest to the Contracting Officer for review and approval in accordance with Section 01 33 16.00 30 DESIGN DATA (DESIGN AFTER AWARD). In accordance with DOT 4500.9R, inspect motor vehicles used to transport hazardous materials in accordance the 49 CFR and DOT safety regulations and complete DD Form 626, Motor Vehicle Inspection.

3.3.5 Treatment and Disposal of Hazardous Wastes

Coordinate any off site shipments of hazardous materials or hazardous wastes with the installation environmental function. Initial, or satellite hazardous waste accumulation is limited to 55 gallons (or 1 quart of acutely hazardous waste). Once a waste stream exceeds 55 gallons, it must be transferred to an on-site 90 day (180 day small quantity generator) accumulation area, or 270 days if the designated disposal facility is more than 200 miles away, or a permitted hazardous waste treatment, storage or disposal facility within three days. Ship hazardous wastes only to facilities which are properly permitted to accept the hazardous waste or operating under interim status. Ensure wastes are treated to meet land disposal treatment standards in 40 CFR 268 prior to land disposal. Propose TSD facilities via submission of the Hazardous Waste Management Plan, subject to the approval of the Contracting Officer. Submit Certificates of Disposal documenting the ultimate disposal, destruction or placement of hazardous wastes, and asbestos within 15 days of initial shipment. Receipt of these certificates will be required for final payment.

3.4 SPECIAL REQUIREMENTS FOR ASBESTOS WASTES

If work involves asbestos containing wastes, manage these wastes in accordance with specification Section 02 82 00 ASBESTOS REMEDIATION.

3.4.1 Asbestos Waste Shipment Documents

Prepare waste shipment records, as required by 40 CFR 61, for shipments of asbestos. Submit waste shipment records to the Contracting Officer for review and approval by the JBSA Environmental Office.

3.5 WASTE MINIMIZATION

Minimize the generation of hazardous waste to the maximum extent practicable and take all necessary precautions to avoid mixing clean and contaminated wastes. Identify and evaluate recycling and reclamation options as alternatives to land disposal. Requirements of 40 CFR 266 apply to: hazardous wastes recycled in a manner constituting disposal; hazardous waste burned for energy recovery; lead-acid battery recycling; and hazardous wastes with economically recoverable precious metals. Submit written certification that waste minimization efforts have been

undertaken to reduce the volume and toxicity of waste to the degree economically practicable and that the method of treatment, storage, or disposal selected minimizes threats to human health and the environment. Exclude hazardous waste (whether recycled, reclaimed, or sent to landfill) from waste reduction calculations in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

3.6 RECORDKEEPING

Maintain adequate records to support information provided to the Contracting Officer regarding exception reports, annual reports, and biennial reports; maintain hazardous waste, PCB waste and asbestos waste shipment records for a minimum of 3 years from the date of shipment or any longer period required by applicable law or regulation or other provision of this contract; and maintain bill of ladings for a minimum of 2 years from the date of shipment or longer period required by applicable law or regulation or other provision of this contract. Submit information necessary to file state annual or EPA biennial reports for hazardous waste transported, treated, stored, or disposed of under this contract and in accordance with federal and state regulatory requirements. Do not forward these data directly to the regulatory agency but to the Contracting Officer at the specified time. Submit the information necessary for filing of the formal reports in the form and format required by the governing Federal or state regulatory agency. A cover letter must accompany the data to include the contract number, Contractor name, and project location. In the event that a manifest copy documenting receipt of hazardous waste at the treatment storage and disposal facility is not received within 45 to 60 days of shipment initiation based on the generator status, or that a manifest copy documenting receipt of PCB waste at the designated facility is not received within 35 days of shipment initiation, prepare and submit an exception report to the Contracting Officer within 60 days of shipment initiation. Exception reports must also comply with applicable state regulations.

3.7 SPILL RESPONSE

In the event of a spill or release of a hazardous substance (as designated in 40 CFR 302), or pollutant or contaminant, or oil (as governed by the Oil Pollution Act (OPA), 33 U.S.C. 2701 et seq.), notify the Contracting Officer immediately. Direction from the Contracting Officer concerning a spill or release is not considered a change under the contract. If the spill exceeds a reporting threshold, follow the pre-established procedures for immediate reporting to the Contracting Officer. Comply with applicable requirements of Federal, state, or local laws or regulations regarding any spill incident. Transporters must comply with 49 CFR 171 Section 15 for reporting of spills and releases during tranport.

3.8 EMERGENCY CONTACTS

Comply with the emergency contact provisions in 49 CFR 172, Section .604. Whenever the Contractor ships hazardous materials, provide a 24 hr emergency response contact and phone number of a person knowledgeable about the hazardous materials being shipped and who has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information. Monitor the phone on a 24 hour basis at all times when the hazardous materials are in transportation, including during storage incidental to transportation. Ensure that information regarding this emergency contact and phone number are placed on all hazardous material

shipping documents. Designate an emergency coordinator and post the following information at areas in which hazardous wastes are managed:

a. The name of the emergency coordinator.

b. Phone number through which the emergency coordinator can be contacted on a 24 hour basis.

c. The telephone number of the local fire department.

d. The location of fire extinguishers and spill control materials.

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SECTION 02 82 00

ASBESTOS REMEDIATION
01/26

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP Z9.2	(2018) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

ASTM INTERNATIONAL (ASTM)

ASTM D4397	(2016; R 2023) Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
ASTM E1368	(2023) Standard Practice for Visual Inspection of Asbestos Abatement Projects

COMPRESSED GAS ASSOCIATION (CGA)

CGA G-7	(2019) Standard for Compressed Air for Human Respiration; 6th Edition

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

ANSI/ISEA Z87.1	(2020) Occupational and Educational Personal Eye and Face Protection Devices

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701	(2023; ERTA 1 2023) Standard Methods of Fire Tests for Flame Propagation of Textiles and Films

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH NMAM	(2020; 5th Ed) NIOSH Manual of Analytical Methods

STATE OF TEXAS ADMINISTRATIVE CODE (TAC)

25 TAC 296	Texas Asbestos Health Protection
25 TAC 296.251	Texas Asbestos Health Protection - Notifications

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 340/1-90/018	(1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance
EPA 560/5-85-024	(1985) Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book)

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

29 CFR 1910.147	The Control of Hazardous Energy (Lock Out/Tag Out)
29 CFR 1926.51	Sanitation
29 CFR 1926.59	Hazard Communication
29 CFR 1926.103	Respiratory Protection
29 CFR 1926.200	Accident Prevention Signs and Tags
29 CFR 1926.1101	Asbestos
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 61-SUBPART A	General Provisions
40 CFR 61-SUBPART M	National Emission Standard for Asbestos
40 CFR 61.145	Standard for Demolition and Renovation
40 CFR 763	Asbestos
42 CFR 84	Approval of Respiratory Protective Devices
49 CFR 107	Hazardous Materials Program Procedures
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings

UL SOLUTIONS (UL)

UL 586	(2009; Reprint Sep 2022) UL Standard for Safety High-Efficiency Particulate, Air

Filter Units

1.2 DEFINITIONS

1.2.1 Amended Water

Water containing a wetting agent or surfactant with a maximum surface tension of 0.00042 psi.

1.2.2 Area Sampling

Sampling of asbestos fiber concentrations which approximates the concentrations of asbestos in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.

1.2.3 Asbestos

The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite and any of these minerals that have been chemically treated or altered.

1.2.4 Asbestos Containing Material (ACM)

Any material which contains greater than 1 percent asbestos.

1.2.5 Asbestos Containing Construction Material (ACCM)

Any manufactured construction material which contains more than 1/10th of 1 percent asbestos by weight.

1.2.6 Asbestos Control Area

That area where asbestos removal operations are performed which is isolated by physical boundaries which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris.

1.2.7 Asbestos Fibers

Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.

1.2.8 Asbestos Permissible Exposure Limit

0.1 fibers per cubic centimeter of air as an 8-hour time weighted average measured in the breathing zone as defined by 29 CFR 1926.1101 or other Federal legislation having legal jurisdiction for the protection of workers health.

1.2.9 Authorized Person

Any person authorized by the Contractor and required by work duties to be present in the regulated areas.

1.2.10 Background

The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but

asbestos free locations.

1.2.11 Competent Person (CP)

A person meeting the requirements for competent person as specified in 29 CFR 1926.1101 including a person capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, and is specifically trained in a training course which meet the criteria of EPA's Model Accreditation Plan (40 CFR 763) for project designer or supervisor, or its equivalent. The competent person must have a current State of Texas asbestos contractors or supervisors license.

1.2.12 Contractor

The Contractor is that individual, or entity under contract to perform the herein listed work.

1.2.13 Disposal Bag

A 6 mil thick, leak-tight plastic bag, pre-labeled in accordance with 29 CFR 1926.1101 and applicable state regulations, used for transporting asbestos waste from containment to disposal site.

1.2.14 Disturbance

Activities that disrupt the matrix of ACM or ACCM, crumble or pulverize ACM or ACCM, or generate visible debris from ACM or ACCM. Disturbance includes cutting away small amounts of ACM or ACCM, no greater than the amount which can be contained in one standard sized glovebag or waste bag, not larger than 60 inches in length and width in order to access a building component.

1.2.15 Encapsulation

The abatement of an asbestos hazard through the appropriate use of a physical barrier or chemical encapsulants.

1.2.16 Encapsulants

Specific materials in various forms used to chemically or physically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulants as follows which must comply with performance requirements as specified herein.

a. Removal Encapsulant (can be used as a wetting agent)

b. Bridging Encapsulant (used to provide a tough, durable surface coating to asbestos containing material)

c. Penetrating Encapsulant (used to penetrate the asbestos containing material encapsulating all asbestos fibers and preventing fiber release due to routine mechanical damage)

d. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed).

1.2.17 Friable Asbestos Material

A term defined in 40 CFR 61-SUBPART M and EPA 340/1-90/018 meaning any material which contains more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

1.2.18 Glovebag Technique

Those asbestos removal and control techniques put forth in 29 CFR 1926.1101.

1.2.19 Government Consultant (GC)

That qualified person employed directly by the Government to monitor, sample, inspect the work or in some other way advise the Contracting Officer. The GC is normally a private consultant, but can be an employee of the Government.

1.2.20 HEPA Filter Equipment

High efficiency particulate air (HEPA) filtered vacuum and exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters must retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

1.2.21 Model Accreditation Plan (MAP)

USEPA training accreditation requirements for persons who work with asbestos as specified in 40 CFR 763.

1.2.22 Negative Pressure Enclosure (NPE)

That engineering control technique described as a negative pressure enclosure in 29 CFR 1926.1101 or applicable state regulations.

1.2.23 NESHAP

National Emission Standards for Hazardous Air Pollutants. The USEPA NESHAP regulation for asbestos is at 40 CFR 61-SUBPART M. Additional state regulation is at 25 TAC 296. Requirements associated with demolition and renovation activities are found in Section 61.145 of the NESHAP while requirements associated with waste disposal are found in Section 61.150.

1.2.24 Nonfriable Asbestos Material

Material that contains asbestos in which the fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos fibers are not normally released during appropriate use, handling, storage or transportation. It is understood that asbestos fibers may be released under other conditions such as demolition, removal, or mishap.

1.2.25 Permissible Exposure Limits (PELs)

1.2.25.1 PEL-Time Weighted Average(TWA)

Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter

of air (f/cc) as an 8-hour time weighted average (TWA).

1.2.25.2 PEL-Excursion Limit

An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes.

1.2.26 Personal Sampling

Air sampling which is performed to determine asbestos fiber concentrations within the breathing zone of a specific employee, as performed in accordance with 29 CFR 1926.1101.

1.2.27 Presumed ACM

Any material which cannot be sampled at the time of the initial inspection due to inaccessibility, structural or safety concerns (such as charged electrical components), or could void active warranties (such as roofing materials). Presumed ACM must be managed as ACM unless proven to not be ACM through testing by a qualified and certified asbestos professional.

1.2.28 Private Qualified Person (PQP)

A Registered Architect, Professional Engineer, Certified Industrial Hygienist, consultant or other qualified person who has successfully completed training and is therefore accredited under a legitimate State Model Accreditation Plan as described in 40 CFR 763 as a Building Inspector, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer. The PQP that collects samples and elects to analyze samples on site must successfully complete the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or equivalent, and must participate in the American Industrial Hygiene Association (AIHA) Asbestos Analysis Registry (AAR). The PQP must be appropriately licensed in the State of Texas.

1.2.29 TEM

Refers to Transmission Electron Microscopy.

1.2.30 Thermal System Insulation

Thermal system insulation (TSIACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain.

1.2.31 Time Weighted Average (TWA)

The TWA is an 8-hour time weighted average airborne concentration of asbestos fibers.

1.2.32 Transite

A generic name for asbestos cement wallboard and pipe.

1.2.33 Wetting Agent

A chemical added to water to reduce the water's surface tension thereby increasing the water's ability to soak into the material to which it is applied. An equivalent wetting agent must have a surface tension of at

most 0.00042 psi.

1.2.34 Worker

Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 29 CFR 1926.1101, to include EPA Model Accreditation Plan (MAP) "Worker" training; accreditation, if required by the OSHA Class of work to be performed or by the state where the work is to be performed. The worker must be appropriately licensed in the State of Texas.

1.3 REQUIREMENTS

1.3.1 Description of Work

The work covered by this section includes the handling and control of asbestos containing materials and describes some of the resultant procedures and equipment required to protect workers, the environment and occupants of the building or area, or both, from contact with airborne asbestos fibers. The work also includes the disposal of any asbestos containing materials generated by the work. More specific operational procedures must be outlined in the Asbestos Hazard Abatement Plan called for elsewhere in this specification. The asbestos work includes the demolition and removal of piping insulation located within the facility which is governed by 40 CFR 763. Under normal conditions non-friable or chemically bound materials containing asbestos would not be considered hazardous; however, this material may release airborne asbestos fibers during demolition and removal and therefore must be handled in accordance with the removal and disposal procedures as specified herein. Provide negative pressure enclosure techniques as outlined in this specification. The work area must be evacuated during the asbestos abatement work. A competent person must supervise asbestos removal work as specified herein.

Resilient Floor Covering Institute (RFCI) work procedures are not authorized at any JBSA locations.

1.3.1.1 Wallboard/Joint Compound

Sampling has not been performed of the wallboard, to include discrete sampling of the components (wallboard and joint compound). Contractor is responsible for sampling and testing of these items. The analytical report shall be provided to the Contracting Officer and the JBSA Environmental Office.

1.3.2 Unexpected Discovery of Asbestos

Notify the Contracting Officer if any previously untested building components suspected to contain asbestos are impacted by the work.

1.3.3 Medical Requirements

Provide medical requirements including but not limited to medical surveillance and medical record keeping as listed in 29 CFR 1926.1101.

1.3.3.1 Medical Examinations

Contractor must submit documentation of workers who perform activities potentially impacting ACM or ACCM including the name of each employee, type of exam received, and date of the exam. The documentation must also

include a signed statement that the medical examination was reviewed by the contractor's Safety Manager and Industrial Hygienist stating that the listed personnel have received the required medical examination in accordance with 29 CFR 1926.1101 and the exam results are saved. This requirement must have been satisfied within the 12 months prior to the start of work on this contract. The same medical examination must be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. Specifically identify x-ray films of asbestos workers to the consulting radiologist and mark medical record jackets with the word "ASBESTOS."

1.3.3.2 Medical Records

Maintain complete and accurate records of employees' medical examinations, medical records, and exposure data for a period of 30 years after termination of employment and make records of the required medical examinations and exposure data available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health (OSHA), or authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

1.3.4 Employee Training

Submit certificates, prior to the start of work but after the main abatement submittal, signed by each employee indicating that the employee has received training in the proper handling of materials and wastes that contain asbestos in accordance with 40 CFR 763; understands the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of the respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis. Organize certificates by individual worker, not grouped by type of certification. Make training requirement records readily available in accordance with 40 CFR 763. Train personnel involved in the asbestos control work in accordance with United States Environmental Protection Agency (USEPA) Asbestos Hazard Emergency Response Act (AHERA) training criteria or State training criteria whichever is more stringent. Document the training by providing: dates of training, training entity, course outline, names of instructors, and qualifications of instructors upon request by the Contracting Officer. Furnish each employee with respirator training and fit testing administered by the PQP as required by 29 CFR 1926.1101 and 29 CFR 1926.103. Fully cover engineering and other hazard control techniques and procedures. Asbestos workers must have a current State of Texas asbestos worker's license.

1.3.5 Permits and Notifications

Prior to the start of work, obtain necessary permits in conjunction with asbestos removal, hauling, and disposition, and furnish notification of such actions required by Federal, State, regional, and local authorities. Notify the Texas Department of State Heath Services (TxDSHS) and the Contracting Officer in writing a minimum of 14 calendar days prior to commencement of work in accordance with 40 CFR 61-SUBPART M, 40 CFR 61.145, and 25 TAC 296.251. TxDSHS Asbestos/Demolition Notification and amendments shall be submitted to the Texas Department of State Heath Services through the JBSA Environmental Office. Amendments and Cancellations shall also be submitted through the JBSA Environmental

Office. Amendments to notifications must be received by the Texas Department of State Health Services in accordance with the deadlines outlined in 25 TAC 296.251, so at least three working days must be allotted for the JBSA Environmental Office to submit the amendments. All fees shall be paid by the Contractor. A copy of the notification form is provided as ATT-1. Submit copies of all Notifications to the Contracting Officer. Notify the local fire department 3 working days prior to removing fire-proofing material from the building including notice that the material contains asbestos.

In accordance with 25 TAC 296.251, any activity that meets one or more of the following criteria requires submission of an Asbestos Demolition/Renovation Notification to the Texas Department of State health Services:

a. Any demolition of a public building whether or not asbestos has been identified.

b. Any demolition of a facility, to include commercial buildings, whether or not asbestos has been identified.

c. Any renovation operation if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed meets or exceeds the NESHAP threshold, in accordance with 40 CFR 61.145, of 160 square feet of surface area, 260 linear feet of pipe length, or 35 cubic feet off facility components where the length or area could not be measured.

In accordance with 25 TAC 296.251, an amendment to the notification is required if one or more of the following criteria are met:

a. The amount of RACM to be stripped, removed, dislodged, cut, drilled, or similarly disturbed changes from the notified amount by 20% or more.

b. A start date, stop date, phased project schedule, scheduled work day, or time changes from the current notified date, schedule, scheduled work day, or time.

1.3.5.1 Notification Details

In addition to the information required by ATT-1, the following information shall be supplied:

a. For Emergency Renovation and Demolition notifications:

(1) date and hour that the emergency occurred

(2) description of the sudden unexpected event

(3) explanation of how the event caused an unsafe condition, would cause equipment damage, or an unreasonable financial burden

(a) proof of cost burden shall be included in the request

* Work shall not proceed until an Emergency Notification number issued by the Texas Department of State Health Services. The final determination for granting an Emergency Notification is at the discretion of the JBSA Environmental Office and the Texas Department of State Health Services.

b. Emergency notification procedures for unforeseen site conditions. These procedures are only to be used when a situation arises where asbestos containing materials are disturbed in an inaccessible area that could not be accessed to conduct a thorough assessment.

c. Description of procedures to be followed if unexpected ACM is found or Category II non-friable ACM becomes crumbled, pulverized, or reduced to powder.

d. Phased abatement activities shall include a phased project schedule form (ATT-3). Any phased activity must not have a break in any abatement activity which exceeds 30 calendar days.

1.3.6 Environment, Safety and Health Compliance

In addition to detailed requirements of this specification, comply with those applicable laws, ordinances, criteria, rules, and regulations of Federal, State, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Comply with the applicable requirements of the current issue of EM 385-1-1, 29 CFR 1926.1101, 40 CFR 61-SUBPART A, 40 CFR 61-SUBPART M, 40 CFR 763, and 25 TAC 296. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the Government apply. The following laws, ordinances, criteria, rules and regulations regarding removal, handling, storing, transporting and disposing of asbestos materials apply:

a. Encapsulation of ACM is not allowed at any location within JBSA.

1.3.7 Respiratory Protection Program

Establish and implement a respirator program as required by 29 CFR 1926.1101, and 29 CFR 1926.103 and applicable state and local regulations. Submit a written description of the program to the Contracting Officer. Submit a written program manual or operating procedure including methods of compliance with regulatory statutes.

1.3.7.1 Respirator Program Records

Submit records of the respirator program as required by 29 CFR 1926.103, and 29 CFR 1926.1101.

1.3.7.2 Respirator Fit Testing

The Contractor's PQP must conduct a qualitative or quantitative fit test conforming to 29 CFR 1926.103 for each worker required to wear a respirator, and any authorized visitors who enter a regulated area where respirators are required to be worn. A respirator fit test must be performed prior to initially wearing a respirator and every 12 months thereafter. If physical changes develop that will affect the fit, a new fit test must be performed. Functional fit checks must be performed each time a respirator is put on and in accordance with the manufacturer's recommendation.

1.3.7.3 Respirator Selection and Use Requirements

Provide respirators, and ensure that they are used as required by 29 CFR 1926.1101 and in accordance with CGA G-7 and the manufacturer's recommendations. Respirators must be approved by the National Institute for Occupational Safety and Health NIOSH, under the provisions of 42 CFR 84, for use in environments containing airborne asbestos fibers. For air-purifying respirators, the particulate filter must be high-efficiency particulate air (HEPA)/(N-,R-,P-100). The initial respirator selection and the decisions regarding the upgrading or downgrading of respirator type must be made by the Contractor's Designated IH based on the measured or anticipated airborne asbestos fiber concentrations to be encountered.

1.3.8 Asbestos Hazard Control Supervisor

The Contractor must be represented on site by a supervisor, trained using the model Contractor accreditation plan as indicated in the Federal statutes for all portions of the herein listed work.

1.3.9 Hazard Communication

Adhere to all parts of 29 CFR 1926.59 and provide the Contracting Officer with a copy of the Safety Data Sheets (SDS) for all materials brought to the site.

1.3.10 Asbestos Hazard Abatement Plan

Submit a detailed plan of the safety precautions such as lockout, tagout, tryout, fall protection, and confined space entry procedures and equipment and work procedures to be used in the removal and demolition of materials containing asbestos. The plan, not to be combined with other hazard abatement plans, must be prepared, signed, and sealed by the PQP. Provide a Table of Contents for each abatement submittal, which follows the sequence of requirements in the contract. The plan must include but not be limited to the precise personal protective equipment to be used including, but not limited to, respiratory protection, type of whole-body protection and if reusable coveralls are to be employed, an outer disposable layer such as disposable whole body cover must be employed over the top of the coveralls, the location of asbestos control areas including clean and dirty areas, buffer zones, showers, storage areas, change rooms, removal method, interface of trades involved in the construction, sequencing of asbestos related work, disposal plan, type of wetting agent and asbestos sealer to be used, locations of local exhaust equipment, planned air monitoring strategies, and a detailed description of the method to be employed in order to control environmental pollution. The plan must also include (both fire and medical emergency) response plans and an Activity Hazard Analyses (AHAs) in accordance with EM 385-1-1. The Asbestos Hazard Abatement Plan must be approved in writing prior to starting any asbestos work. The Contractor, Asbestos Hazard Control Supervisor, CP and PQP must meet with the Contracting Officer prior to beginning work, to discuss in detail the Asbestos Hazard Abatement Plan, including work procedures and safety precautions. Once approved by the Contracting Officer, the plan will be enforced as if an addition to the specification. Any changes required in the specification as a result of the plan must be identified specifically in the plan to allow for free discussion and approval by the Contracting Officer prior to starting work.

1.3.11 Testing Laboratory

Submit the name, address, telephone number, and appliable laboratory certification(s) of each testing laboratory selected for the sampling, analysis, and reporting of airborne concentrations of asbestos fibers along with evidence that each laboratory selected holds the appropriate State license and permits and certification that each laboratory is American Industrial Hygiene Association (AIHA) accredited and that persons counting the samples have been judged proficient by current inclusion on the AIHA Asbestos Analysis Registry (AAR) and successful participation of the laboratory in the Proficiency Analytical Testing (PAT) Program. Where analysis to determine asbestos content in bulk materials or transmission electron microscopy is required, submit evidence that the laboratory is accredited by the National Institute of Science and Technology (NIST) under National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos analysis. The testing laboratory firm must be independent of the asbestos contractor and must have no employee or employer relationship which could constitute a conflict of interest.

1.3.12 Landfill Approval

Submit written evidence that the landfill is approved for asbestos disposal by the U.S. Environmental Protection Agency, Region 6, Air Enforcement Section, and the Texas Commission on Environmental Quality (TCEQ). Within three working days after delivery, submit detailed delivery tickets, prepared, signed, and dated by an agent of the landfill, certifying the amount of asbestos materials delivered to the landfill. Submit a copy of the waste shipment records within one day of the shipment leaving the project site.

1.3.13 Transporter Certification

Submit written evidence that the transporter is approved to transport asbestos waste in accordance with the DOT requirements of 49 CFR 171, 49 CFR 172 and 49 CFR 173 as well as registration requirements of 49 CFR 107 and all other State and local regulatory agency requirements.

1.3.14 Medical Certification

Provide a written certification for each worker and supervisor, signed by a licensed physician indicating that the worker and supervisor has met or exceeded all of the medical prerequisites listed herein and in 29 CFR 1926.1101 and 29 CFR 1926.103 as prescribed by law. Submit certificates prior to the start of work but after the main abatement submittal.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Asbestos Hazard Abatement Plan; G

TxDSHS Asbestos/Demolition Notification; G

SD-03 Product Data

Amended Water; G

Safety Data Sheets (SDS) for All Materials; G

Respirators; G

Local Exhaust Equipment; G

Pressure Differential Automatic Recording Instrument; G

Vacuums; G

Glovebags; G

SD-06 Test Reports

Analytical Report; G

Air Sampling Results; G

Pressure Differential Recordings for Local Exhaust System; G

Clearance Sampling; G

Asbestos Disposal Quantity Report; G

SD-07 Certificates

Employee Training; G

Notifications; G

Respiratory Protection Program; G

Asbestos Hazard Abatement Plan; G

Testing Laboratory; G

Landfill Approval; G

Delivery Tickets; G

Waste Shipment Records; G

Transporter Certification; G

Medical Certification; G

Private Qualified Person Documentation; G

Designated Competent Person; G

Worker's License; G

Contractor's License; G

Federal, State or Local Citations on Previous Projects; G

Equipment Used to Contain Airborne Asbestos Fibers; G

Water Filtration Equipment; G

Vacuums; G

Ventilation Systems; G

SD-11 Closeout Submittals

Permits; G

Notifications; G

Respirator Program Records; G

Protective Clothing Decontamination Quality Control Records; G

Protective Clothing Decontamination Facility Notification; G

Rental Equipment; G

1.5 QUALITY ASSURANCE

1.5.1 Private Qualified Person Documentation

Submit the name, address, and telephone number of the PQP selected to prepare the Asbestos Hazard Abatement Plan, direct monitoring and training, and documented evidence that the PQP has successfully completed training in and is accredited and where required is certified as, a Building Inspector, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer as described by 40 CFR 763 and has successfully completed the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or equivalent. The PQP must be appropriately licensed in the State of Texas as a Project Monitor. The PQP and the asbestos contractor must not have an employee/employer relationship or financial relationship which could constitute a conflict of interest. The PQP must be a first tier subcontractor.

1.5.2 Designated Competent Person Documentation

The Designated Competent Person must be experienced in the administration and supervision of asbestos abatement projects including exposure assessment and monitoring, work practices, abatement methods, protective measures for personnel, setting up and inspecting asbestos abatement work areas, evaluating the integrity of containment barriers, placement and operation of local exhaust systems, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, notification of other employees onsite. The Designated Competent Person must be on-site at all times when asbestos abatement activities are underway. Submit training certification and a current State of Texas Asbestos Contractor's and Supervisor's License. Submit evidence that the Designated Competent Person has a minimum of 2 years of on-the-job asbestos abatement experience relevant to OSHA designated competent person requirements. The Designated Competent Person must be a first tier subcontractor.

1.5.3 Worker's License

Submit documentation that workers meet the requirements of 29 CFR 1926.1101, 40 CFR 61-SUBPART M and have a current State of Texas Asbestos Workers License.

1.5.4 Contractor's License

Submit a copy of the asbestos contractor's license issued by the State of Texas. Submit the following certification along with the license: "I certify that the personnel I am responsible for during the course of this project fully understand the contents of 29 CFR 1926.1101, 40 CFR 61-SUBPART M, 25 TAC 296, EM 385-1-1, and the Federal, State and local requirements for those asbestos abatement activities that they will be involved in." This certification statement must be signed by the Company's President or Chief Executive.

1.5.5 Air Sampling Results

Complete fiber counting and provide results to the PQP for review within 16 hours of the "time off" of the sample pump. Notify the Contracting Officer immediately of any airborne levels of asbestos fibers in excess of the acceptable limits. Submit sampling results to the Contracting Officer and the affected Contractor employees where required by law within three working days, signed by the testing laboratory employee performing air sampling, the employee that analyzed the sample, and the PQP. Notify the Contractor and the Contracting Officer immediately of any variance in the pressure differential which could cause adjacent unsealed areas to have asbestos fiber concentrations in excess of 0.01 fibers per cubic centimeter or background whichever is higher. In no circumstance must levels exceed 0.1 fibers per cubic centimeter.

1.5.6 Pressure Differential Recordings for Local Exhaust System

Provide a local exhaust system that creates a negative pressure of at least 0.02 inches of water relative to the pressure external to the enclosure and operate it continuously, 24-hours a day, until the temporary enclosure of the asbestos control area is removed. Submit pressure differential recordings for each work day to the PQP for review and to the Contracting Officer within 24-hours from the end of each work day.

1.5.7 Protective Clothing Decontamination Quality Control Records

Provide all records that document quality control for the decontamination of reusable outer protective clothing.

1.5.8 Protective Clothing Decontamination Facility Notification

Submit written evidence that persons who decontaminate, store, or transport asbestos contaminated clothing used in the performance of this contract were duly notified in accordance with 29 CFR 1926.1101.

1.5.9 Federal, State or Local Citations on Previous Projects

Submit a statement, signed by an officer of the company, containing a record of any citations issued by Federal, State or local regulatory agencies relating to asbestos activities within the last 5 years (including projects, dates, and resolutions); a list of penalties incurred

through non-compliance with asbestos project specifications, including liquidated damages, overruns in scheduled time limitations and resolutions; and situations in which an asbestos-related contract has been terminated (including projects, dates, and reasons for terminations). If there are none, a negative declaration signed by an officer of the company must be provided.

1.5.10 Preconstruction Conference

Conduct a safety preconstruction conference to discuss the details of the Asbestos Hazard Abatement Plan, Accident Prevention Plan (APP) including the AHAs required in specification Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. The safety preconstruction conference must include the Contractor and their Designated Competent Person, Designated IH and Project Supervisor and the Contracting Officer. Deficiencies in the APP will be discussed. Onsite work must not begin until the APP has been accepted.

1.6 SECURITY

A log book must be kept documenting entry into and out of the regulated area. Entry into regulated areas must only be by personnel authorized by the Contractor and the Contracting Officer. Personnel authorized to enter regulated areas must be trained, medically evaluated, and wear the required personal protective equipment.

1.7 EQUIPMENT

1.7.1 Rental Equipment

Provide a copy of the written notification to the rental company concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment.

PART 2 PRODUCTS

2.1 DUCT TAPE

Industrial grade duct tape of appropriate widths suitable for bonding sheet plastic and disposal container.

2.2 DISPOSAL CONTAINERS

Leak-tight (defined as solids, liquids, or dust that cannot escape or spill out) disposal containers must be provided for ACM wastes, and presumed ACM wastes, as required by 29 CFR 1926.1101 and state and local regulatory requirements. Disposal containers can be in the form of:

a. Disposal Bags

b. Fiberboard Drums

c. Cardboard Boxes

2.3 SHEET PLASTIC

Sheet plastic must be polyethylene of 6 mil minimum thickness and must be provided in the largest sheet size necessary to minimize seams. Film shall conform to ASTM D4397, except as specified below:

2.3.1 Flame Resistant

Where a potential for fire exists, flame-resistant sheets must be provided. Film must conform to the requirements of NFPA 701.

2.3.2 Reinforced

Reinforced sheets must be provided where high skin strength is required, such as where it constitutes the only barrier between the regulated area and the outdoor environment. The sheet stock must consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between 2 layers of polyethylene film. Film must meet flame resistant standards of NFPA 701.

2.4 MASTIC REMOVING SOLVENT

Mastic removing solvent must be nonflammable and must not contain methylene chloride, glycol ether, or halogenated hydrocarbons. Solvents used onsite must have a flash point greater than 140 degrees F.

Prior to approving the use of mastic removing solvent for renovation projects where a new material is placed on the treated surface, the treated surface with mastic removing solvent must be completely removed. Remaining mastic removing solvent may react with glues and mastic of the new product.

2.5 LEAK-TIGHT WRAPPING

Two layers of 6 mil minimum thick polyethylene sheet stock must be used for the containment of removed asbestos-containing components or materials such as large tanks, boilers, insulated pipe segments and other materials. Upon placement of the ACM component or material, each layer must be individually leak-tight sealed with duct tape.

2.6 VIEWING INSPECTION WINDOW

Where feasible, a minimum of one clear, 1/8 inch thick, acrylic sheet, 18 by 24 inches, must be installed as a viewing inspection window at eye level on a wall in each containment enclosure. The windows must be sealed leak-tight with industrial grade duct tape.

2.7 WETTING AGENTS

Removal encapsulant (a penetrating encapsulant) must be provided when conducting removal abatement activities that require a longer removal time or are subject to rapid evaporation of amended water. The removal encapsulant must be capable of wetting the ACM and retarding fiber release during disturbance of the ACM greater than or equal to that provided by amended water. Performance requirements for penetrating encapsulants are specified in paragraph ENCAPSULANTS above.

PART 3 EXECUTION

3.1 EQUIPMENT

Provide manufacturer's certificate of compliance for all equipment used to contain airborne asbestos fibers.

3.1.1 Air Monitoring Equipment

The Contractor's PQP must approve air monitoring equipment. The equipment must include, but must not be limited to:

a. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute.

b. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps must also be equipped with an automatic flow control unit which must maintain a constant flow, even as filter resistance increases due to accumulation of fiber and debris on the filter surface.

c. Single use standard 25 mm diameter cassette, open face, 0.8 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive extension cowl, and shrink bands for personal air sampling.

d. Single use standard 25 mm diameter cassette, open face, 0.45 micron pore size, mixed cellulose ester membrane filters and cassettes with 50 mm electrically conductive cowl, and shrink bands when conducting environmental area sampling using NIOSH NMAM Methods 7400 and 7402, (and the transmission electric microscopy method specified at 40 CFR 763 if required).

e. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 to plus 140 degrees F and traceable to a NIST primary standard.

3.1.2 Respirators

Select respirators from those approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

3.1.2.1 Respirators for Handling Asbestos

Provide personnel engaged in pre-cleaning, cleanup, handling, removal and demolition of asbestos materials with respiratory protection as indicated in 29 CFR 1926.1101 and 29 CFR 1926.103. Breathing air must comply with CGA G-7.

3.1.3 Exterior Whole Body Protection

3.1.3.1 Outer Protective Clothing

Provide personnel exposed to asbestos with disposable "non-breathable," whole body outer protective clothing, head coverings, gloves, and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but must not be used alone. Make sleeves secure at the wrists, make foot coverings secure at the ankles, and make clothing secure at the neck by the use of tape. Reusable whole body outer protective clothing must be either disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area or be properly decontaminated.

3.1.3.2 Work Clothing

Provide cloth work clothes for wear under the outer protective clothing and foot coverings and either dispose of or properly decontaminate them as recommended by the PQP after each use.

3.1.3.3 Personal Decontamination Unit

Provide a temporary, negative pressure unit with a separate decontamination locker room and clean locker room with a shower that complies with 29 CFR 1926.51(f)(4)(ii) through (V) in between for personnel required to wear whole body protective clothing. Provide two separate lockers for each asbestos worker, one in each locker room. Keep street clothing and street shoes in the clean locker. HEPA vacuum and remove asbestos contaminated disposable protective clothing while still wearing respirators at the boundary of the asbestos work area and seal in impermeable bags or containers for disposal. Do not wear work clothing between home and work. Locate showers between the decontamination locker room and the clean locker room and require that all employees shower before changing into street clothes. Collect used shower water and filter with approved water filtration equipment to remove asbestos contamination. Wastewater filters must be installed in series with the first stage pore size 20 microns and the second stage pore size of 5 microns. Dispose of filters and residue as asbestos waste. Discharge clean water to the sanitary system. Dispose of asbestos contaminated work clothing as asbestos contaminated waste or properly decontaminate as specified in the Contractor's Asbestos Hazard Abatement Plan. Keep the floor of the decontamination unit's clean room dry and clean at all times. Proper housekeeping and hygiene requirements must be maintained. Provide soap and towels for showering, washing and drying. Cloth towels provided must be disposed of as ACM waste. Physically attach the decontamination units to the asbestos control area. Construct both a personnel decontamination unit and an equipment decontamination unit onto and integral with each asbestos control area.

3.1.3.4 Decontamination of Reusable Outer Protective Clothing

When reusable outer protective clothing is used, transport the double bagged clothing to a previously notified commercial/industrial decontamination facility for decontamination. Perform non-destructive testing to determine the effectiveness of asbestos decontamination. If representative sampling is used, ensure the statistical validity of the sampling results. If representative sampling is used, reject any entire batch in which any of the pieces exceed 40 fibers per square millimeter. Inspect reusable protective clothing prior to use to ensure that it will provide adequate protection and is not or is not about to become ripped, torn, deteriorated, or damaged, and that it is not visibly contaminated. Notify, in writing, all personnel involved in the decontamination of reusable outer protective clothing as indicated in 29 CFR 1926.1101.

3.1.3.5 Eye Protection

Provide eye protection that complies with ANSI/ISEA Z87.1 when operations present a potential eye injury hazard. Provide goggles to personnel engaged in asbestos abatement operations when the use of a full face respirator is not required.

3.1.4 Regulated Areas

All Class I, II, and III asbestos work must be conducted within regulated areas. The regulated area must be demarcated to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne asbestos. Control access to regulated areas, ensure that only authorized personnel enter, and verify that Contractor required medical surveillance, training and respiratory protection program requirements are met prior to allowing entrance.

3.1.5 Load-out Unit

Provide a temporary load-out unit that is adjacent and connected to the regulated area. Attach the load-out unit in a leak-tight manner to each regulated area.

3.1.6 Warning Signs and Labels

Provide bilingual warning signs printed in English and Spanish at all approaches to asbestos control areas. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to the requirements are acceptable.

3.1.6.1 Warning Sign

Provide vertical format conforming to applicable state and local regulations 29 CFR 1926.200, and 29 CFR 1926.1101 minimum 20 by 14 inches displaying the following legend in the lower panel:

Legend	Notation
DANGER	one inch Sans Serif Gothic or Block
ASBESTOS	one inch Sans Serif Gothic or Block
MAY CAUSE CANCER	one inch Sans Serif Gothic or Block
CAUSES DAMAGE TO LUNGS	1/4 inch Sans Serif Gothic or Block
AUTHORIZED PERSONNEL ONLY	1/4 inch Sans Serif Gothic or Block
WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA	1/4 inch Sans Serif Gothic or Block

Spacing between lines must be at least equal to the height of the upper of any two lines.

3.1.6.2 Warning Labels

Provide labels conforming to 25 TAC 296.212 and 29 CFR 1926.1101 of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST, AVOID CREATING DUST

3.1.7 Local Exhaust System

Provide a local exhaust system in the asbestos control area in accordance with ASSP Z9.2 and 29 CFR 1926.1101 that provides at least four air changes per hour inside of the negative pressure enclosure. Local exhaust equipment must be operated 24-hours per day, until the asbestos control area is removed and must be leak proof to the filter and equipped with HEPA filters. Maintain a minimum pressure differential in the control area of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour per day monitoring of the pressure differential with a pressure differential automatic recording instrument. The building ventilation system must not be used as the local exhaust system for the asbestos control area. Filters on exhaust equipment must conform to ASSP Z9.2 and UL 586. Terminate the local exhaust system out of doors and remote from any public access or ventilation system intakes.

3.1.8 Tools

Vacuums must be leak proof to the filter and equipped with HEPA filters. Filters on vacuums must conform to ASSP Z9.2 and UL 586. Do not use power tools to remove asbestos containing materials unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation systems. Remove all residual asbestos from reusable tools prior to storage or reuse. Reusable tools must be thoroughly decontaminated prior to being removed from the regulated areas.

3.1.9 Rental Equipment

If rental equipment is to be used, furnish written notification to the rental agency concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment.

3.1.10 Glovebags

Submit written manufacturers proof that glovebags will not break down under expected temperatures and conditions.

3.1.11 Single Stage Decontamination Area

A decontamination area (equipment room/area) must be provided for Class I work involving less than 25 feet or 10 square feet of TSI or surfacing ACM, and for Class II and Class III asbestos work operations where

exposures exceed the PELs or where there is no negative exposure assessment. The equipment room or area must be adjacent to the regulated area for the decontamination of employees, material, and their equipment which could be contaminated with asbestos. The area must be covered by an impermeable drop cloth on the floor or horizontal working surface. The area must be of sufficient size to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area.

3.1.12 Decontamination Area Exit Procedures

Ensure that the following procedures are followed:

a. Before leaving the regulated area, remove all gross contamination and debris from work clothing using a HEPA vacuum.

b. Employees must remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers for disposal.

c. Employees must not remove their respirators until showering.

d. Employees must shower prior to entering the clean room. If a shower has not been located between the equipment room and the clean room or the work is performed outdoors, ensure that employees engaged in Class I asbestos jobs: a) Remove asbestos contamination from their work suits in the equipment room or decontamination area using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area; or b) Remove their contaminated work suits in the equipment room, without cleaning worksuits, and proceed to a shower that is not adjacent to the work area.

3.2 WORK PROCEDURE

Perform asbestos related work in accordance with 29 CFR 1926.1101, 40 CFR 61-SUBPART M, 25 TAC 296, and as specified herein. Use wet or if given prior Texas Department of State Health Services approval, dry removal procedures and negative pressure enclosure techniques. Wear and utilize protective clothing and equipment as specified herein. No eating, smoking, drinking, chewing gum, tobacco, or applying cosmeticsis permitted in the asbestos work or control areas. Personnel of other trades not engaged in the removal and demolition of asbestos containing material must not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection and training provisions of this specification are complied with by the trade personnel. Seal all roof top penetrations, except plumbing vents, prior to asbestos roofing work. Shut down the building heating, ventilating, and air conditioning system, cap the openings to the system, prior to the commencement of asbestos work. Power to the regulated area must be locked-out and tagged in accordance with 29 CFR 1910.147. Disconnect electrical service when wet removal is performed and provide temporary electrical service with verifiable ground fault circuit interrupter (GFCI) protection prior to the use of any water. All electrical work must be performed by a licensed electrician. Stop abatement work in the regulated area immediately when the airborne total fiber concentration: (1) equals or exceeds 0.01 f/cc, or the pre-abatement concentration, whichever is greater, outside the regulated area; or (2) equals or exceeds 1.0 f/cc inside the regulated area. Correct the condition to the satisfaction of the Contracting Officer, including visual inspection and air sampling. Work must resume only upon

notification by the Contracting Officer. Corrective actions must be documented. If an asbestos fiber release or spill occurs outside of the asbestos control area, stop work immediately, correct the condition to the satisfaction of the Contracting Officer including clearance sampling, prior to resumption of work.

3.2.1 Notice to Occupants

Prior to start of work, ATT-2 shall be posted around the outer perimeter of the area where abatement work will occur.

3.2.2 Building Ventilation System and Critical Barriers

Building ventilation system supply and return air ducts in a regulated area must be shut down and isolated by lockable switch or other positive means in accordance with 29 CFR 1910.147 and isolated by airtight seals to prevent the spread of contamination throughout the system. The airtight seals must consist of 2 layers of polyethylene. Edges to wall, ceiling and floor surfaces must be sealed with industrial grade duct tape.

a. A Competent Person must supervise the work.

b. For indoor work, critical barriers must be placed over all openings to the regulated area.

c. Impermeable dropcloths must be placed on surfaces beneath all removal activity.

3.2.3 Protection of Existing Work to Remain

Perform work without damage or contamination of adjacent work. Where such work is damaged or contaminated as verified by the Contracting Officer using visual inspection or sample analysis, it must be restored to its original condition or decontaminated by the Contractor at no expense to the Government as deemed appropriate by the Contracting Officer. This includes inadvertent spill of dirt, dust, or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, stop work immediately. Then clean up the spill. When satisfactory visual inspection and air sampling results are obtained from the PQP work may proceed at the discretion of the Contracting Officer.

3.2.4 Furnishings

Furniture and equipment will remain in the building. Cover and seal furnishings with 6-mil plastic sheet or remove from the work area and store in a location on site approved by the Contracting Officer.

3.2.5 Precleaning

Wet wipe and HEPA vacuum all surfaces potentially contaminated with asbestos prior to establishment of an enclosure.

3.2.6 Asbestos Control Area Requirements

3.2.6.1 Negative Pressure Enclosure

Removal of asbestos contaminated acoustical ceiling tiles, spray applied fireproofing, thermal system insulation, gypsum wallboard/joint compound require the use of a negative pressure enclosure. Block and seal openings

in areas where the release of airborne asbestos fibers can be expected. Establish an asbestos negative pressure enclosure with the use of curtains, portable partitions, or other enclosures in order to prevent the escape of asbestos fibers from the contaminated asbestos work area. Negative pressure enclosure development must include protective covering of uncontaminated walls, and ceilings with a continuous membrane of two layers of minimum 6-mil plastic sheet sealed with tape to prevent water or other damage. Provide two layers of 6-mil plastic sheet over floors and extend a minimum of 12 inches up walls. Seal all joints with tape. Provide local exhaust system in the asbestos control area. Openings will be allowed in enclosures of asbestos control areas for personnel and equipment entry and exit, the supply and exhaust of air for the local exhaust system and the removal of properly containerized asbestos containing materials. Replace local exhaust system filters as required to maintain the efficiency of the system.

3.2.6.2 Glovebag

If the construction of a negative pressure enclosure is infeasible for the removal of piping insulation located in the facility, use alternate techniques as indicated in 29 CFR 1926.1101. Establish designated limits for the asbestos regulated area with the use of rope or other continuous barriers, and maintain all other requirements for asbestos control areas. The PQP must conduct personal samples of each worker engaged in asbestos handling (removal, disposal, transport and other associated work) throughout the duration of the project. If the quantity of airborne asbestos fibers monitored at the breathing zone of the workers at any time exceeds background or 0.01 fibers per cubic centimeter whichever is greater, stop work, evacuate personnel in adjacent areas or provide personnel with approved protective equipment at the discretion of the Contracting Officer. This sampling may be duplicated by the Government at the discretion of the Contracting Officer. If the air sampling results obtained by the Government differ from those obtained by the Contractor, the Government will determine which results predominate. If adjacent areas are contaminated as determined by the Contracting Officer, clean the contaminated areas, monitor, and visually inspect the area as specified herein.

3.2.6.3 Regulated Area for Class II Removal

Removal of asbestos containing floor tile/mastic, carpet/mastic, sealants and wallboard are Class II removal activities. Establish designated limits for the asbestos regulated work area with the use of red barrier tape; install critical barriers, splash guards and signs, and maintain all other requirements for asbestos control area except local exhaust. Place impermeable dropcloths on surfaces beneath removal activity extending out 3 feet in all directions. A detached decontamination system may be used. Conduct area monitoring of airborne fibers during the work shift at the designated limits of the asbestos work area and conduct personal samples of each worker engaged in the work. If workers the airborne fiber concentration of the workers or designated limits at any time exceeds background or 0.01 fibers per cubic centimeter, whichever is greater, stop work immediately and correct the situation.

3.2.7 Removal Procedures

Wet asbestos material with a fine spray of an approved wetting agent during removal, cutting, or other handling so as to reduce the emission of airborne fibers. Remove material and immediately place in 6 mil plastic

disposal bags. Remove asbestos containing material in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. Where unusual circumstances prohibit the use of 6 mil plastic bags, submit an alternate proposal for containment of asbestos fibers to the Contracting Officer for approval. For example, in the case where both piping and insulation are to be removed, the Contractor may elect to wet the insulation, wrap the pipes and insulation in plastic and remove the pipe by sections. Containerize asbestos containing material while wet. Do not allow asbestos material to accumulate or become dry. Lower and otherwise handle asbestos containing material as indicated in 40 CFR 61-SUBPART M.

3.2.7.1 Sealing Contaminated Items Designated for Disposal

Remove contaminated architectural, mechanical, and electrical appurtenances such as venetian blinds, full-height partitions, carpeting, duct work, pipes and fittings, radiators, light fixtures, conduit, panels, and other contaminated items designated for removal by completely coating the items with an asbestos lock-down encapsulant at the demolition site before removing the items from the asbestos control area. These items need not be vacuumed. The asbestos lock-down encapsulant must be tinted a contrasting color and spray-applied by airless method. Thoroughness of sealing operation must be visually gauged by the extent of colored coating on exposed surfaces. Lock-down encapsulants must comply with the performance requirements specified herein.

3.2.7.2 Exposed Pipe Insulation Edges

Contain edges of asbestos insulation to remain that are exposed by a removal operation. Wet and cut the rough ends true and square with sharp tools and then encapsulate the edges with a 1/4 inch thick layer of non-asbestos containing insulating cement troweled to a smooth hard finish. When cement is dry, lag the end with a layer of non-asbestos lagging cloth, overlapping the existing ends by at least 4 inches. When insulating cement and cloth is an impractical method of sealing a raw edge of asbestos, take appropriate steps to seal the raw edges as approved by the Contracting Officer.

3.2.7.3 Presumed ACM

Presumed ACM must be treated as ACM throughout the abatement and disposal process. Testing can be performed by a trained and certified asbestos professional following applicable local, state, and federal regulations to either confirm the material is ACM or non-ACM. If testing proves asbestos is not present, the material can be managed as non-ACM.

3.2.8 Methods of Compliance

3.2.8.1 Mandated Practices

The specific abatement techniques and items identified must be detailed in the Contractor's Asbestos Hazard Abatement Plan (AHAP). Use the following engineering controls and work practices in all operations, regardless of the levels of exposure:

a. Vacuum cleaners equipped with HEPA filters.

b. Wet methods or wetting agents except where it can be demonstrated that

the use of wet methods is unfeasible due to the creation of electrical hazards, equipment malfunction, and in roofing.

(1) Item encased in concrete or other similarly hard material must be adequately wet whenever exposed during demolition.

(2) ACM exposed during cutting or disjoining operations must be adequatley wet.

(3) ACM stripped from a facility component while it remains in place must be adequatley wet during the stripping operation.

(4) During periods when wetting operations are suspended due to freezing temperatures, temperatures in the area containing the facility components shall be recorded at the beginning, middle, and end of each workday. Daily temperature records shall be available at the jobsite at all times. These records shall be retained for at least 2 years.

c. Prompt clean-up and disposal.

d. Inspection and repair of polyethylene.

e. Cleaning of equipment and surfaces of containers prior to removing them from the equipment room or area.

3.2.8.1.1 Wet Methods Alternative

Wet methods are not required if the use of wet methods is unfeasible due to the creation of electrical hazards or equipment malfunction, and prior approval is obtained from the Texas Department of State Health Services. Alternative method for removal must be equivalent to the requirements of paragraph MANDATED PRACTICES and CONTROL METHODS and use the following control methods:

a. A local exhaust ventilation and collection system is designed and operated in accordance with 40 CFR 61.152 to capture the particulate asbestos material produced by the stripping and removal of the asbestos materials and exhibits no visible emissions to the outside air;

b. A glove-bag system is designed and operated to contain the particulate asbestos material produced by the stripping of the asbestos materials; and

c. Leak-tight wrapping is used to contain all ACM prior to dismantlement.

A copy of the Texas Department of State Health Services approval shall be kept at the worksite at all times and made available for inspection. Provide a copy of the approval to the Contracting Officer. Any changes to wet methods shall be written by a DSHS-licensed asbestos consultant.

3.2.8.2 Control Methods

Use the following control methods:

a. Local exhaust ventilation equipped with HEPA filter;

b. Enclosure or isolation of processes producing asbestos dust;

c. Where the feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PELs, use them to reduce employee exposure to the lowest levels attainable and must supplement them by the use of respiratory protection;

d. Facilities that are structurally damaged or unsound where an asbestos inspection is not possible due to safety concerns must be treated as asbestos containing material.

3.2.8.3 Unacceptable Practices

The following work practices must not be used:

a. High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.

b. Compressed air used to remove asbestos containing materials, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.

c. Dry sweeping, shoveling, or other dry clean up.

d. Employee rotation as a means of reducing employee exposure to asbestos.

3.2.9 Class I Work Procedures

In addition to requirements of paragraphs MANDATED PRACTICES and CONTROL METHODS, the following engineering controls and work practices must be used:

a. A Competent Person must supervise the installation and operation of the control methods.

b. For jobs involving the removal of more than 25 feet or 10 square feet of TSI or surfacing material, place critical barriers over all openings to the regulated area.

c. HVAC systems must be isolated in the regulated area by sealing with a double layer of plastic or air-tight rigid covers.

d. Impermeable dropcloths (6 mil or greater thickness) must be placed on surfaces beneath all removal activity.

e. Where a negative exposure assessment has not been provided or where exposure monitoring shows the PEL was exceeded, the regulated area must be ventilated with a HEPA unit and employees must use PPE.

3.2.10 Specific Control Methods for Class I Work

Use Class I work procedures, control methods and removal methods for the following ACM:

a. Spray Applied Fireproofing

b. Gypsum Wallboard and Joint Compound

c. Thermal System Insulation and Mudded Pipe Fittings

d. Plaster and Textured Ceilings and Walls

e. Vermiculite

3.2.10.1 Negative Pressure Enclosure (NPE) System

The system must provide at least four air changes per hour inside the containment. The local exhaust unit equipment must be operated 24-hours per day until the containment is removed. The NPE must be smoke tested for leaks at the beginning of each shift and be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Pressure differential must be monitored continuously, 24-hours per day, with an automatic manometric recording instrument and Records must be provided daily on the same day collected to the Contracting Officer. The Contracting Officer must be notified immediately if the pressure differential falls below the prescribed minimum. The building ventilation system must not be used as the local exhaust system for the regulated area. The NPE must terminate outdoors unless an alternate arrangement is allowed by the Contracting Officer. All filters used must be new at the beginning of the project and must be periodically changed as necessary and disposed of as ACM waste.

3.2.10.2 Glovebag Systems

Glovebags must be used without modification, smoke-tested for leaks, and completely cover the circumference of pipe or other structures where the work is to be done. Glovebags must be used only once and must not be moved. Glovebags must not be used on surfaces that have temperatures exceeding 150 degrees F. Prior to disposal, glovebags must be collapsed using a HEPA vacuum. Before beginning the operation, loose and friable material adjacent to the glovebag operation must be wrapped and sealed in 2 layers of plastic or otherwise rendered intact. At least two persons must perform glovebag removal. Asbestos regulated work areas must be established for glovebag abatement. Designated boundary limits for the asbestos work must be established with rope or other continuous barriers and all other requirements for asbestos control areas must be maintained, including area signage and boundary warning tape.

a. Attach HEPA vacuum systems to the bag to prevent collapse during removal of ACM.

b. The negative pressure glove boxes must be fitted with gloved apertures and a bagging outlet and constructed with rigid sides from metal or other material which can withstand the weight of the ACM and water used during removal. A negative pressure must be created in the system using a HEPA filtration system. The box must be smoke tested for leaks prior to each use.

3.2.10.3 Mini-Enclosure

Single bulkhead containment, Double bulkhead containment, or Mini-containment (small walk-in enclosure) to accommodate no more than two persons, may be used if the disturbance or removal can be completely contained by the enclosure. The mini-enclosure must be inspected for leaks and smoke tested before each use. Air movement must be directed away from the employee's breathing zone within the mini-enclosure.

3.2.10.4 Wrap and Cut Operation

Prior to cutting pipe, the asbestos-containing insulation must be wrapped with polyethylene and securely sealed with duct tape to prevent asbestos becoming airborne as a result of the cutting process. The following steps must be taken: install glovebag, strip back sections to be cut 6 inches from point of cut, and cut pipe into manageable sections.

3.2.10.5 Class I Removal Method

Class I ACM must be removed using a control method described above. Prepare work area as previously specified. Establish designated limits for the asbestos regulated work area with the use of red barrier tape, critical barriers, signs, and maintain all other requirements for asbestos control area. Spread one layer of 6-mil seamless plastic sheeting on the floor below the work area. Remove ACM thermal system insulation and mudded pipe fittings using mechanical means and wet methods and immediately place into 6-mil thickness disposal bag. Continue wet cleaning until surfaces are free of visible debris. Bag all asbestos debris which has fallen to the floor as asbestos-containing debris. Place all debris in plastic disposal bags of 6-mil minimum thickness. Once the material is in the disposal bag, apply additional water as needed to achieve "adequately wet" conditions for NESHAP compliance. Place bagged asbestos waste under negative pressure with the use of a HEPA vacuum, goose neck and duck tape to seal the bag, wash to remove any visible contamination and place into a second 6-mil minimum thickness disposal bag. Containerize asbestos containing waste while wet. Lower and otherwise handle asbestos containing materials as indicated in 40 CFR 61-SUBPART M. Conduct area monitoring of airborne fibers during the work shift at the designated limits of the asbestos work area and conduct personal samples of each worker engaged in the work. If the quantity of airborne asbestos fibers monitored at the breathing zone of the workers or the designated limits at any time exceeds background or 0.01 fibers per cubic centimeter, whichever is greater, stop work, and immediately correct the situation.

3.2.11 Class II Work Procedures

In addition to the requirements of paragraphs MANDATED PRACTICES and CONTROL METHODS, the following engineering controls and work practices must be used:

a. A Competent Person must supervise the work.

b. For indoor work, critical barriers must be placed over all openings to the regulated area.

c. Impermeable dropcloths must be placed on surfaces beneath all removal activity.

3.2.12 Specific Control Methods for Class II Work

3.2.12.1 Gaskets

Establish designated limits for the asbestos regulated work area with the use of red barrier tape, critical barriers, signs, and maintain all other requirements for asbestos control area except local exhaust. Gaskets must be thoroughly wetted with amended water prior to removal and immediately placed in a disposal container. If a gasket is visibly deteriorated and

unlikely to be removed intact, removal must be undertaken within a glovebag. Any scraping to remove residue must be performed wet. Place debris into a 6-mil minimum thickness disposal bag or other approved container. Once the material is in the disposal bag, apply additional water as needed to achieve "adequately wet" conditions for NESHAP compliance. Place bagged asbestos waste under negative pressure with the use of a HEPA vacuum, goose neck and duck tape to seal the bag, wash to remove any visible contamination and place into a second 6-mil minimum thickness disposal bag. Containerize asbestos containing waste while wet. Conduct area monitoring of airborne fibers during the work shift at the designated limits of the asbestos work area and conduct personal samples of each worker engaged in the work. If the airborne fiber concentration of the workers or designated limits at any time exceeds background or 0.01 fibers per cubic centimeter, whichever is greater, stop work immediately and correct the situation.

3.2.13 Air Sampling

Perform sampling of airborne concentrations of asbestos fibers in accordance with 29 CFR 1926.1101, the Contractor's air monitoring plan, applicable local, state and federal regulations, and as specified herein. Sampling performed in accordance with 29 CFR 1926.1101 must be performed by the PQP. Sampling performed for environmental and quality control reasons must be performed by the PQP. Unless otherwise specified, use NIOSH Method 7400 for sampling and analysis. Monitoring may be duplicated by the Government at the discretion of the Contracting Officer. If the air sampling results obtained by the Government differ from those results obtained by the Contractor, the Government will determine which results predominate. Results of breathing zone samples must be made available to the tested employees and Contracting Officer. Submit all documentation regarding initial exposure assessments, negative exposure assessments, and air-monitoring results.

3.2.13.1 Sampling Prior to Asbestos Work

Provide area air sampling and establish the baseline one day prior to the masking and sealing operations for each demolition or removal site. Establish the background by performing area sampling in similar but uncontaminated sites in the building.

3.2.13.2 Sampling During Asbestos Work

The PQP must provide personal and area sampling as indicated in 29 CFR 1926.1101 and governing environmental regulations. Breathing zone samples must be taken for at least 25 percent of the workers in each shift, or a minimum of two, whichever is greater. Air sample fiber counting must be completed and results provided within 24-hours (breathing zone samples), and 72 hours (environmental/clearance monitoring) after completion of a sampling period. In addition, provided the same type of work is being performed, provide area sampling at least once every work shift close to the work inside the enclosure, outside the clean room entrance to the enclosure, and at the exhaust opening of the local exhaust system. If sampling outside the enclosure shows airborne levels have exceeded background or 0.01 fibers per cubic centimeter, whichever is greater, stop all work, correct the condition(s) causing the increase, and notify the Contracting Officer immediately. Where alternate methods are used, perform personal and area air sampling at locations and frequencies that will accurately characterize the evolving airborne asbestos levels. The written results must be signed by testing laboratory analyst, testing

laboratory principal and the Contractor's PQP. The air sampling results must be documented on a Contractor's daily air monitoring log.

3.2.13.3 Final Clearance Requirements, NIOSH PCM Method

For PCM sampling and analysis using NIOSH NMAM Method 7400, the fiber concentration inside the abated regulated area, for each airborne sample, must be less than 0.01 f/cc. The abatement inside the regulated area is considered complete when every PCM final clearance sample is below the clearance limit. If any sample result is greater than 0.01 total f/cc, the asbestos fiber concentration (asbestos f/cc) must be confirmed from that same filter using NIOSH NMAM Method 7402 (TEM) at no additional cost to the Government. If any confirmation sample result is greater than 0.01 asbestos f/cc, abatement is incomplete and cleaning must be repeated at no additional cost to the Government. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria must be done at the Contractor's expense.

3.2.13.4 Final Clearance Requirements, EPA TEM Method

For EPA TEM sampling and analysis, using the EPA Method specified in 40 CFR 763, abatement inside the regulated area is considered complete when the arithmetic mean asbestos concentration of the five inside samples is less than or equal to 70 structures per square millimeter (70 S/mm). When the arithmetic mean is greater than 70 S/mm, the three blank samples must be analyzed. If the three blank samples are greater than 70 S/mm, resampling must be done. If less than 70 S/mm, the five outside samples must be analyzed and a Z-test analysis performed. When the Z-test results are less than 1.65, the decontamination must be considered complete. If the Z-test results are more than 1.65, the abatement is incomplete and cleaning must be repeated. Upon completion of any required recleaning, resampling with results to meet the above clearance criteria must be done at the Contractor's expense.

3.2.13.5 Sampling After Final Clean-Up (Clearance Sampling)

Provide area sampling of asbestos fibers using aggressive air sampling techniques as defined in the EPA 560/5-85-024 and establish an airborne asbestos concentration of less than 0.01 fibers per cubic centimeter after final clean-up but before removal of the enclosure or the asbestos work control area. After final cleanup and the asbestos control area is dry but prior to clearance sampling, the PQP must perform a visual inspection in accordance with ASTM E1368 to ensure that the asbestos control and work area is free of any accumulations of dirt, dust, or debris. Prepare a written report signed and dated by the PQP documenting that the asbestos control area is free of dust, dirt, and debris and all waste has been removed. Perform at least two samples per containment. Use transmission electron microscopy (TEM) to analyze clearance samples and report the results in accordance with current NIOSH criteria. The asbestos fiber counts from these samples must be less than 0.01 fibers per cubic centimeter or be not greater than the background, whichever is greater. Should any of the final samples indicate a higher value take appropriate actions to re-clean the area and repeat the sampling and TEM analysis at no additional cost to the Government.

3.2.13.6 Air Clearance Failure

If clearance sampling results fail to meet the final clearance requirements, pay all costs associated with the required recleaning,

resampling, and analysis, until final clearance requirements are met.

3.2.14 Lock-Down

Prior to removal of plastic barriers and after pre-clearance clean up of gross contamination, the PQP must conduct a visual inspection of all areas affected by the removal in accordance with ASTM E1368. Inspect for any visible fibers. Spray apply a post removal (lock-down) encapsulant to ceiling, walls, floors and other areas exposed in the removal area. The exposed area includes but is not limited to plastic barriers, furnishings and articles to be discarded as well as dirty change room, air locks for bag removal and decontamination chambers.

3.2.15 Site Inspection

While performing asbestos engineering control work, the Contractor must be subject to on-site inspection by the Contracting Officer who may be assisted by or represented by safety or industrial hygiene personnel. If the work is found to be in violation of this specification, the Contracting Officer or his representative will issue a stop work order to be in effect immediately and until the violation is resolved. All related costs including standby time required to resolve the violation must be at the Contractor's expense.

3.3 CLEAN-UP AND DISPOSAL

3.3.1 Housekeeping

Essential parts of asbestos dust control are housekeeping and clean-up procedures. Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners. DO NOT BLOW DOWN THE SPACE WITH COMPRESSED AIR. When asbestos removal is complete, all asbestos waste is removed from the work-site, and final clean-up is completed, the Contracting Officer will attest that the area is safe before the signs can be removed. After final clean-up and acceptable airborne concentrations are attained but before the HEPA unit is turned off and the enclosure removed, remove all pre-filters on the building HVAC system and provide new pre-filters. Dispose of filters as asbestos contaminated materials. Reestablish HVAC mechanical, and electrical systems in proper working order. The Contracting Officer will visually inspect all surfaces within the enclosure for residual material or accumulated dust or debris. The Contractor must re-clean all areas showing dust or residual materials. If re-cleaning is required, air sample and establish an acceptable asbestos airborne concentration after re-cleaning. The Contracting Officer must agree that the area is safe in writing before unrestricted entry is permitted. The Government must have the option to perform monitoring to determine if the areas are safe before entry is permitted.

3.3.2 Title to Materials

All waste materials, except as specified otherwise, become the property of the Contractor and must be disposed of as specified in applicable local, State, and Federal regulations and herein.

3.3.3 Disposal of Asbestos

3.3.3.1 Procedure for Disposal

Coordinate all waste disposal manifests with the Contracting Officer and JBSA Environmental Office. Collect asbestos waste, contaminated waste water filters, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed fiber-proof, waterproof, non-returnable containers (e.g. double plastic bags 6 mils thick, cartons, drums or cans). Wastes within the containers must be adequately wet in accordance with 40 CFR 61-SUBPART M. Affix a warning and Department of Transportation (DOT) label to each container including the bags or use at least 6 mils thick bags with the approved warnings and DOT labeling preprinted on the bag. Clearly indicate on the outside of each container the name of the waste generator and the location at which the waste was generated. Prevent contamination of the transport vehicle (especially if the transport vehicle is a rented truck likely to be used in the future for non-asbestos purposes). These precautions include lining the vehicle cargo area with plastic sheeting (similar to work area enclosure) and thorough cleaning of the cargo area after transport and unloading of asbestos debris is complete. Dispose of waste asbestos material at an Environmental Protection Agency (EPA) or State-approved asbestos landfill off Government property. For temporary storage, store sealed impermeable bags in asbestos waste drums or skids. An area for interim storage of asbestos waste-containing drums or skids will be assigned by the Contracting Officer or his authorized representative. Comply with 40 CFR 61-SUBPART M, 25 TAC 296, regional, and local standards for hauling and disposal. Sealed plastic bags may be dumped from drums into the burial site unless the bags have been broken or damaged. Damaged bags must remain in the drum and the entire contaminated drum must be buried. Uncontaminated drums may be recycled. All persons handling containers with asbestos containing wastes must comply with applicable federal, state, and local regulations.

3.3.3.2 Asbestos Disposal Quantity Report

Direct the PQP to record and report, to the Contracting Officer, the amount of asbestos containing material removed and released for disposal. Deliver the report for the previous day at the beginning of each day shift with amounts of material removed during the previous day reported in linear feet or square feet as described initially in this specification and in cubic feet for the amount of asbestos containing material released

for disposal.

ATT-1 - TxDSHS Asbestos/Demolition Notification

ATTACHED IN APPENDIX A

ATT-2 - TxDSHS Required Occupant Notice

ATTACHED IN APPENDIX A

ATT-3 - TxDSHS Phased Project Schedule

ATTACHED IN APPENDIX A

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LEAD REMEDIATION
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PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP Z9.2	(2018) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

ASTM INTERNATIONAL (ASTM)

ASTM E1644	(2025) Standard Practice for Hot Plate Digestion of Dust Wipe Samples for the Determination of Lead
ASTM E1726	(2025) Standard Practice for Preparation of Soil Samples by Hotplate Digestion for Subsequent Lead Analysis
ASTM E1727	(2016) Standard Practice for Field Collection of Soil Samples for Subsequent Lead Determination
ASTM E1728/E1728M	(2024) Standard Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination
ASTM E1792	(2024) Standard Specification for Wipe Sampling Materials for Lead in Surface Dust
ASTM E3193	(2023) Standard Test Method for Measurement of Lead (Pb) by Flame Atomic Absorption Spectrophotometry (FAAS)
ASTM E3203	(2024; Rev A) Standard Test Method for Determination of Lead by Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701	(2023; ERTA 1 2023) Standard Methods of Fire Tests for Flame Propagation of Textiles and Films

STATE OF TEXAS ADMINISTRATIVE CODE (TAC)

25 TAC 295 SUBCHAPTER I	Texas Environmental Lead Reduction

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

HUD 6780	(1995; Rev July 2012) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2nd Edition)

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

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

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

29 CFR 1926.21	Safety Training and Education
29 CFR 1926.33	Access to Employee Exposure and Medical Records
29 CFR 1926.55	Gases, Vapors, Fumes, Dusts, and Mists
29 CFR 1926.59	Hazard Communication
29 CFR 1926.62	Lead
29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1926.103	Respiratory Protection
29 CFR 1926.1126	Chromium
29 CFR 1926.1127	Cadmium
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and

	Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 745	Lead-Based Paint Poisoning Prevention in Certain Residential Structures
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 178	Specifications for Packagings

UL SOLUTIONS (UL)

UL 586	(2009; Reprint Sep 2022) UL Standard for Safety High-Efficiency Particulate, Air Filter Units

1.2 DEFINITIONS

1.2.1 Abatement

Measures defined in 40 CFR 745, Section 223, designed to permanently eliminate lead-based paint hazards.

1.2.2 Action Level

Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period; to an airborne concentration of cadmium of 2.5 micrograms per cubic meter of air averaged over an 8-hour period; to an airborne concentration of chromium (VI) of 2.5 micrograms per cubic meter of air averaged over an 8-hour period.

1.2.3 Area Sampling

Sampling of lead, cadmium, chromium concentrations within the lead, cadmium, chromium control area and inside the physical boundaries which is representative of the airborne lead, cadmium, chromium concentrations but is not collected in the breathing zone of personnel (approximately 5 to 6 feet above the floor).

1.2.4 Cadmium Permissible Exposure Limit (PEL)

Five micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.1127. If an employee is exposed for more than 8-hours in a work day, determine the PEL by the following formula:

PEL (micrograms/cubic meter of air) = 40/No. hrs worked per day

1.2.5 Certified Industrial Hygienist (CIH)

As used in this section refers to a person retained by the Contractor who is certified as an industrial hygienist and who is trained in the recognition and control of lead, cadmium and chromium hazards in accordance with current federal, State, and local regulations. CIH must

be certified for comprehensive practice by the Board for Global EHS Credentialing (BGC). The Certified Industrial Hygienist must be independent of the Contractor and must have no employee or employer relationship which could constitute a conflict of interest.

1.2.6 Child-Occupied Facility

Real property which is a building or portion of a building constructed prior to 1978 visited regularly by the same child, 6-years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3-hours, and the combined annual visits last at least 60-hours. Child-occupied facilities include but are not limited to, day-care centers, preschools and kindergarten classrooms.

1.2.7 Chromium Permissible Exposure Limit (PEL)

Five micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.1126. If an employee is exposed for more than 8-hours in a work day, determine the PEL by the following formula:

PEL (micrograms/cubic meter of air) = 40/No. hrs worked per day

1.2.8 Competent Person (CP)

As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead, cadmium and chromium hazards in accordance with current federal, State, and local regulations and has the authority to take prompt corrective actions to control the lead, cadmium and chromium hazard. The Contractor may provide more than one CP as required to supervise and monitor the work. The CP must be a Certified Industrial Hygienist (CIH) certified by the Board for Global EHS Credentialing (BGC) or a Certified Safety Professional (CSP) certified by the Board of Certified Safety Professionals or a licensed lead-based paint abatement Supervisor/Project Designer in the State of Texas.

1.2.9 Contaminated Room

Refers to a room for removal of contaminated personal protective equipment (PPE).

1.2.10 Decontamination Shower Facility

That facility that encompasses a clean clothing storage room, and a contaminated clothing storage and disposal rooms, with a shower facility in between.

1.2.11 Deleading

Activities conducted by a person who offers to eliminate lead-based paint or lead-based paint hazards or to plan such activities in commercial buildings, bridges or other structures.

1.2.12 Eight-Hour Time Weighted Average (TWA)

Airborne concentration of lead, cadmium, chromium to which an employee is exposed, averaged over an 8-hour workday as indicated in 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

1.2.13 High Efficiency Particulate Air (HEPA) Filter Equipment

HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead, cadmium, chromium contaminated particulates. A high efficiency particulate filter demonstrates at least 99.97 percent efficiency against 0.3 micron or larger size particles.

1.2.14 Lead

Metallic lead, inorganic lead compounds, and organic lead soaps. Excludes other forms of organic lead compounds. The use of the term Lead in this section also refers to paints which contain detectable concentrations of Cadmium and Chromium. For the purposes of the section lead-based paint (LBP) and paint with lead (PWL), cadmium and chromium are included.

1.2.15 Lead-Based Paint (LBP)

Paint or other surface coating that contains lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight.

1.2.16 Lead-Based Paint Activities

In the case of target housing or child occupied facilities, lead-based paint activities include; a lead-based paint inspection, a risk assessment, or abatement of lead-based paint hazards.

1.2.17 Lead-Based Paint Hazards

Paint-lead hazard, dust-lead hazard or soil-lead hazard as identified in 40 CFR 745, Section 65. Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

1.2.18 Lead, Cadmium, Chromium Control Area

A system of control methods to prevent the spread of lead, cadmium, chromium dust, paint chips or debris to adjacent areas that may include temporary containment, floor or ground cover protection, physical boundaries, and warning signs to prevent unauthorized entry of personnel. HEPA filtered local exhaust equipment may be used as engineering controls to further reduce personnel exposures or building/outdoor environmental contamination.

1.2.19 Lead Permissible Exposure Limit (PEL)

Fifty micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than 8-hours in a work day, determine the PEL by the following formula:

PEL (micrograms/cubic meter of air) = 400/No. hrs worked per day

1.2.20 Material Containing Lead/Paint with Lead (MCL/PWL)

Any material, including paint, which contains lead as determined by the testing laboratory using a valid test method. The requirements of this section does not apply if no detectable levels of lead are found using a quantitative method for analyzing paint or MCL using laboratory instruments with specified limits of detection (usually 0.01 percent). An

X-Ray Fluorescence (XRF) instrument is not considered a valid test method.

1.2.21 Personal Sampling

Sampling of airborne lead, cadmium, chromium concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. Samples must be representative of the employees' work tasks. Breathing zone must be considered an area within a hemisphere, forward of the shoulders, with a radius of 6 to 9 inches and centered at the nose or mouth of an employee.

1.2.22 Physical Boundary

Area physically roped or partitioned off around lead, cadmium, chromium control area to limit unauthorized entry of personnel.

1.2.23 Target Housing

Residential real property which is housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any one or more children age 6-years or under resides or is expected to reside in such housing for the elderly or persons with disabilities) or any zero bedroom dwelling.

1.3 DESCRIPTION

Construction activities impacting PWL or material containing lead, cadmium, chromium which are covered by this specification include the demolition or removal of material containing lead, cadmium, chromium in various states of condition, located within the facility. The work covered by this section includes work tasks and the precautions specified in this section for the protection of building occupants and the environment during and after the performance of the hazard abatement activities.

1.3.1 Protection of Existing Areas To Remain

Project work including, but not limited to, lead, cadmium, chromium hazard abatement work, storage, transportation, and disposal must be performed without damaging or contaminating adjacent work and areas. Where such work or areas are damaged or contaminated, restore work and areas to the original condition.

1.3.2 Coordination with Other Work

Coordinate with work being performed in adjacent areas to ensure there are no exposure issues. Explain coordination procedures in the Lead, Cadmium, Chromium Compliance Plan and describe how the Contractor will prevent lead, cadmium and chromium exposure to other contractors and Government personnel performing work unrelated to lead, cadmium and chromium activities.

1.3.3 Sampling and Analysis

Submit a log of the analytical results from sampling conducted during the abatement. Keep the log of results current with project activities and brief the results to the Contracting Officer as analytical results are reported.

1.3.3.1 Dust Wipe Materials, Sampling and Analysis

Sampling must conform to ASTM E1728/E1728M or ASTM E1792. Analysis must conform to ASTM E3193, ASTM E3203 REV A, and ASTM E1644.

1.3.3.2 Soil Sampling and Analysis

Sampling must conform to ASTM E1727. Analysis must conform to ASTM E3193, ASTM E3203 REV A, ASTM E1726, EPA SW-846 Method 7000 series, and state and local regulations.

1.3.3.3 Clearance Monitoring

a. Collect dust wipe samples inside the lead, cadmium and chromium hazard control area after the final visual inspection in the quantities and at the locations specified.

(1) Floors - one dust sample shall be taken from the floors of each of no less than four rooms, hallways or stairwells within the containment area; unless there are less than four rooms, hallways or stairwells within the containment area, then all rooms, hallways or stairwells shall be sampled. In addition, one dust sample shall be taken from the floor outside the containment area.

(2) Interior Window Sills - one dust sample shall be taken from one interior window sill.

(3) Window Troughs - one dust sample shall be taken from one interior window trough.

b. Collect exterior bare soil samples inside the lead, cadmium and chromium hazard control area after the final visual inspection in the quantities and at the locations specified.

(1) Near the building foundation - one composite soil sample collected around the perimeter of each work area.

(2) Nearby Play areas - one composite soil sample for each nearby play area.

1.3.4 Clearance Requirements

[Target housing and child occupied facilities clearance levels.
]

(1) Floors - 5 micrograms/square foot.

(2) Interior Window Sills - 40 micrograms/square foot.

(3) Window Troughs - 100 micrograms/square foot.

(4) Bare soils in play areas accessible by children - 400 micrograms/kilogram.

(5) Bare soils in all other areas - 1200 micrograms/kilogram.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S"

classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Competent Person Qualifications; G

Training Certification; G

Occupational and Environmental Assessment Data Report; G

Medical Examinations; G

Lead, Cadmium, Chromium Waste Management Plan; G

Licenses, Permits and Notifications; G

Occupant Protection Plan; G

Lead, Cadmium, Chromium Compliance Plan; G

Initial Sample Results; G

Written Evidence of TSD Approval; G

SD-03 Product Data

Respirators; G

Vacuum Filters; G

Negative Air Pressure System; G

Materials and Equipment; G

Expendable Supplies; G

Local Exhaust Equipment; G

Pressure Differential Automatic Recording Instrument; G

Pressure Differential Log; G

SD-06 Test Reports

Sampling and Analysis; G

Occupational and Environmental Assessment Data Report; G

Sampling Results; G

Pressure Differential Recordings For Local Exhaust System; G

SD-07 Certificates

Testing Laboratory; G

Third Party Consultant Qualifications; G

Clearance Certification; G

SD-11 Closeout Submittals

Hazardous Waste Manifest; G

Turn-In Documents or Weight Tickets; G

Nonhazardous Manifest; G

Bill Of Lading; G

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

1.5.1.1 Competent Person (CP)

Submit name, address, and telephone number of the CP selected to perform responsibilities specified in paragraph COMPETENT PERSON (CP) RESPONSIBILITIES. Provide documented construction project-related experience with implementation of OSHA's Lead in Construction standard (29 CFR 1926.62), Chromium standard (29 CFR 1926.1126), Cadmium standard (29 CFR 1926.1127) which shows ability to assess occupational and environmental exposure to lead, cadmium, chromium; experience with the use of respirators, personal protective equipment and other exposure reduction methods to protect employee health. Demonstrate a minimum of 3 years experience implementing OSHA's Lead in Construction standard (29 CFR 1926.62), Chromium standard (29 CFR 1926.1126), and Cadmium standard (29 CFR 1926.1127). Submit proper documentation that the CP is trained and certified in accordance with federal, State of Texas and local laws. The competent person must be a licensed lead-based paint abatement Supervisor/Project Designer in the State of Texas.

1.5.1.2 Training Certification

Submit a certificate for each worker and supervisor, signed and dated by the accredited training provider, stating that the employee has received the required lead, cadmium and chromium training specified in 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 40 CFR 745 and is certified to perform or supervise deleading, lead removal or demolition activities in the State of Texas.

1.5.1.3 Testing Laboratory

Submit the name, address, and telephone number of the testing laboratory selected to perform the air and wipe analysis, testing, and reporting of airborne concentrations of lead, cadmium and chromium. Use a laboratory participating in the EPA National Lead Laboratory Accreditation Program (NLLAP) by being accredited by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA) and that is successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program to perform sample analysis. Laboratories selected to perform blood lead analysis must be OSHA approved.

1.5.1.4 Third Party Consultant Qualifications

Submit the name, address and telephone number of the third party consultant selected to perform the wipe sampling for determining concentrations of lead, cadmium and chromium in dust. Submit proper documentation that the consultant is trained and certified as an inspector technician or inspector/risk assessor by the USEPA authorized State (or local) certification and accreditation program.

1.5.1.5 Certified Risk Assessor

The Certified Risk Assessor must be certified pursuant to 40 CFR 745, Section 226 or applicable state certifications and be responsible to perform the clearance sampling, clearance sample data evaluation and summarize clearance sampling results in a section of the abatement report. The risk assessor must sign the abatement report to indicate clearance requirements for the contract have been met.

1.5.2 Requirements

1.5.2.1 Competent Person (CP) Responsibilities

a. Verify training meets all federal, State, and local requirements.

b. Review and approve Lead, Cadmium, Chromium Compliance Plan for conformance to the applicable referenced standards.

c. Continuously inspect LBP/PWL or MCL work for conformance with the approved plan.

d. Perform (or oversee performance of) air sampling.

e. Ensure work is performed in strict accordance with specifications at all times.

f. Control work to prevent hazardous exposure to human beings and to the environment at all times.

g. Supervise final cleaning of the lead, cadmium, chromium control area, take clearance wipe samples if necessary; review clearance sample results and make recommendations for further cleaning.

h. Certify the conditions of the work as called for elsewhere in this specification.

i. The CP must be certified pursuant to 40 CFR 745, Section 226 and is responsible for development and implementation of the occupant protection plan, the abatement report and supervise lead, cadmium and chromium hazard abatement work activities.

1.5.2.2 Lead, Cadmium, Chromium Compliance Plan

Submit a detailed job-specific plan of the work procedures to be used in the disturbance of lead, cadmium and chromium, LBP/PWL or MCL. Include in the plan a sketch showing the location, size, and details of lead, cadmium, chromium control areas, critical barriers, physical boundaries, location and details of decontamination facilities, viewing ports, and mechanical ventilation system. Include a description of equipment and materials, work practices, controls and job responsibilities for each

activity from which lead, cadmium, chromium is emitted. Include in the plan, eating, drinking, smoking, hygiene facilities and sanitary procedures, interface of trades, sequencing of lead, cadmium, chromium related work, collected waste water and dust containing lead, cadmium, chromium and debris, air sampling, respirators, personal protective equipment, and a detailed description of the method of containment of the operation to ensure that lead, cadmium, chromium is not released outside of the lead, cadmium, chromium control area. Include site preparation, cleanup and clearance procedures. Include occupational and environmental sampling, training and strategy, sampling and analysis strategy and methodology, frequency of sampling, duration of sampling, and qualifications of sampling personnel in the air sampling portion of the plan. Include a description of arrangements made among contractors on multicontractor worksites to inform affected employees and to clarify responsibilities to control exposures.

The plan must be developed and signed by a certified Lead Project Designer in the State of Texas. The plan must include the name and certification number of the person signing the plan.

1.5.2.3 Occupational and Environmental Assessment Data Report

If initial monitoring is necessary, submit occupational and environmental sampling results to the Contracting Officer within three working days of collection, signed by the testing laboratory employee performing the analysis, the employee that performed the sampling, and the CP.

In order to reduce the full implementation of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 the Contractor must provide documentation. Submit a report that supports the determination to reduce full implementation of the requirements of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and supporting the Lead, Cadmium, Chromium Compliance Plan.

a. The initial monitoring must represent each job classification, or if working conditions are similar to previous jobs by the same employer, provide previously collected exposure data that can be used to estimate worker exposures per 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. The data must represent the worker's regular daily exposure to lead, cadmium, chromium for stated work.

b. Submit worker exposure data gathered during the task based trigger operations of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 with a complete process description. This includes manual demolition, manual scraping, manual sanding, heat gun, power tool cleaning, rivet busting, cleanup of dry expendable abrasives, abrasive blast enclosure removal, abrasive blasting, welding, cutting and torch burning where lead, cadmium and chromium containing coatings are present.

c. The initial assessment must determine the requirement for further monitoring and the need to fully implement the control and protective requirements including the lead, cadmium, chromium compliance plan per 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

1.5.2.4 Medical Examinations

Submit documentation of workers who performed lead, cadmium, chromium activities including the name of each employee, type of exam received, and date of the exam. The documentation must also include a signed statement

that the medical examination was reviewed by the contractor's Safety Manager and Industrial Hygienist stating that the listed personnel have received the required medical examination in accordance with 29 CFR 1926.62 and the exam results are saved. Initial medical surveillance as required by 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 must be made available to all employees exposed to lead, cadmium, chromium at any time (one day) above the action level. Full medical surveillance must be made available to all employees on an annual basis who are or may be exposed to lead, cadmium and chromium in excess of the action level for more than 30 days a year or as required by 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. Adequate records must show that employees meet the medical surveillance requirements of 29 CFR 1926.33, 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and 29 CFR 1926.103. Provide medical surveillance to all personnel exposed to lead, cadmium, chromium as indicated in 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. Maintain complete and accurate medical records of employees for the duration of employment plus 30 years.

1.5.2.5 Training

Train each employee performing work that disturbs lead, cadmium, chromium, who performs LBP/MCL/PWL disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127, 40 CFR 745 and State and local regulations where appropriate.

1.5.2.6 Respiratory Protection Program

a. Provide each employee required to wear a respirator a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

b. Establish and implement a respiratory protection program as required by 29 CFR 1926.103, 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and 29 CFR 1926.55.

1.5.2.7 Hazard Communication Program

Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

1.5.2.8 Lead, Cadmium, Chromium Waste Management

The Lead, Cadmium, Chromium Waste Management Plan must comply with applicable requirements of federal, State, and local hazardous waste regulations and address:

a. Identification and classification of wastes associated with the work.

b. Estimated quantities of wastes to be generated and disposed of.

c. Names and qualifications of each contractor that transports, stores, treats, and disposes of the wastes. Include the facility location and operator and a 24-hour point of contact. Furnish copies of USEPA Identification numbers.

d. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.

e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.

f. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with 29 CFR 1926.65.

g. Work plan and schedule for waste containment, removal and disposal. Proper containment of the waste includes using acceptable waste containers (e.g., 55-gallon drums) as well as proper marking/labeling of the containers. All drums must meet applicable United Nations (UN) requirements and DOT regulations. Clean up and containerize wastes daily.

h. Include any process that may alter or treat waste rendering a hazardous waste non hazardous.

i. Unit cost for hazardous waste disposal according to this plan.

1.5.2.9 Environmental, Safety and Health Compliance

In addition to the detailed requirements of this specification, comply with laws, ordinances, rules, and regulations of federal, State, and local authorities regarding lead, cadmium and chromium. Comply with the applicable requirements of the current issue of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127, EM 385-1-1 and 25 TAC 295 SUBCHAPTER I. Submit matters regarding interpretation of standards to the Contracting Officer for resolution before starting work. Where specification requirements and the referenced documents vary, the most stringent requirements apply.

1.5.3 Pressure Differential Recordings for Local Exhaust System

Provide a local exhaust system that creates a negative pressure of at least 0.02 inches of water relative to the pressure external to the enclosure and operate it continuously, 24-hours a day, until the temporary enclosure of the lead, cadmium, chromium control area is removed. Submit pressure differential recordings for each work day to the PQP for review and to the Contracting Officer within 24-hours from the end of each work day.

1.5.4 Licenses, Permits and Notifications

Certify and submit in writing to the Texas Department of State Health Services and the Contracting Officer at least 14 calendar days prior to the commencement of work that licenses, permits and notifications have been obtained. All associated fees or costs incurred in obtaining the licenses, permits and notifications are included in the contract price.

1.5.5 Occupant Protection Plan

The certified project designer must develop and implement an Occupant Protection Plan describing the measures and management procedures to be taken during lead, cadmium and chromium hazard abatement activities to protect the building occupants/building facilities and the outside environment from exposure to any lead, cadmium and chromium contamination while lead, cadmium and chromium hazard abatement activities are performed.

1.5.6 Pre-Construction Conference

Along with the CP, meet with the Contracting Officer to discuss in detail the Lead, Cadmium, Chromium Waste Management Plan and the Lead, Cadmium, Chromium Compliance Plan, including procedures and precautions for the work.

1.6 EQUIPMENT

1.6.1 Respirators

Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead, cadmium and chromium dust, fume and mist. Respirators must comply with the requirements of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

1.6.2 Special Protective Clothing

Personnel exposed to lead, cadmium, chromiumcontaminated dust must wear proper disposable or uncontaminated, reusable protective whole body clothing, head covering, gloves, eye, and foot coverings as required by 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and applicable state and local regulations. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.

1.6.3 Rental Equipment Notification

If rental equipment is to be used during PWL or MCL handling and disposal, notify the rental agency in writing concerning the intended use of the equipment.

1.6.4 Vacuum Filters

UL 586 labeled HEPA filters.

1.6.5 Abrasive Removal Equipment

The use of powered machine for vibrating, sanding, grinding, or abrasive blasting is prohibited unless equipped with local exhaust ventilation systems equipped with high efficiency particulate air (HEPA) filters.

1.6.6 Negative Air Pressure System

1.6.6.1 Minimum Requirements

Do not proceed with work in the area until containment is set up and HEPA filtration systems are in place. The negative air pressure system must meet the requirements of ASSP Z9.2 including approved HEPA filters in accordance with UL 586. Negative air pressure equipment must be equipped with new HEPA filters, and be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Negative air pressure system minimum requirements are listed as follows:

a. The unit must be capable of delivering its rated volume of air with a clean first stage filter, an intermediate filter and a primary HEPA filter in place.

b. The HEPA filter must be certified as being capable of trapping and retaining mono-disperse particles as small as 0.3 micrometers at a minimum efficiency of 99.97 percent.

c. The unit must be capable of continuing to deliver no less than 70 percent of rated capacity when the HEPA filter is 70 percent full or measures 2.5 inches of water static pressure differential on a magnehelic gauge.

d. Equip the unit with a manometer-type negative pressure differential monitor with minor scale division of 0.02 inch of water and accuracy within plus or minus 1.0 percent. The manometer must be calibrated daily as recommended by the manufacturer.

e. Equip the unit with a means for the operator to easily interpret the readings in terms of the volumetric flow rate of air per minute moving through the machine at any given moment.

f. Equip the unit with an electronic mechanism that automatically shuts the machine off in the event of a filter breach or absence of a filter.

g. Equip the unit with an audible horn that sounds an alarm when the machine has shut itself off.

h. Equip the unit with an automatic safety mechanism that prevents a worker from improperly inserting the main HEPA filter.

1.6.6.2 Auxiliary Generator

Provide an auxiliary generator with capacity to power a minimum of 50 percent of the negative air machines at any time during the work. When power fails, the generator controls must automatically start the generator and switch the negative air pressure system machines to generator power. The generator must not present a carbon monoxide hazard to workers.

1.6.7 Vacuum Systems

Vacuum systems must be suitably sized for the project, and filters must be capable of trapping and retaining all mono-disperse particles as small as 0.3 micrometers (mean aerodynamic diameter) at a minimum efficiency of 99.97 percent. Properly dispose of used filters that are being replaced.

1.6.8 Heat Blower Guns

Heat blower guns must be flameless, electrical, paint-softener type with controls to limit temperature to 1,100 degrees F. Heat blower must be (grounded) 120 volts ac, and must be equipped with cone, fan, glass protector and spoon reflector nozzles.

1.7 PROJECT/SITE CONDITIONS

1.7.1 Protection of Existing Work to Remain

Perform work without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, restore work to its original condition or better as determined by the Contracting Officer.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

Keep materials and equipment needed to complete the project available and on the site. Submit a description of the materials and equipment required; including Safety Data Sheets (SDSs) for material brought onsite to perform the work.

2.1.1 Expendable Supplies

Submit a description of the expendable supplies required.

2.1.1.1 Polyethylene Bags

Disposable bags must be polyethylene plastic and be a minimum of 6 mils thick (4 mils thick if double bags are used) or any other thick plastic material shown to demonstrate at least equivalent performance; and capable of being made leak-tight. Leak-tight means that solids, liquids or dust cannot escape or spill out.

2.1.1.2 Polyethylene Leak-tight Wrapping

Wrapping used to wrap lead, cadmium, chromium contaminated debris must be polyethylene plastic that is a minimum of 6 mils thick or any other thick plastic material shown to demonstrate at least equivalent performance.

2.1.1.3 Polyethylene Sheeting

Sheeting must be polyethylene plastic with a minimum thickness of 6 mil, or any other thick plastic material shown to demonstrate at least equivalent performance; and be provided in the largest sheet size reasonably accommodated by the project to minimize the number of seams. Where the project location constitutes an out of the ordinary potential for fire, or where unusual fire hazards cannot be eliminated, provide flame-resistant polyethylene sheets which conform to the requirements of NFPA 701.

2.1.1.4 Tape and Adhesive Spray

Tape and adhesive must be capable of sealing joints between polyethylene sheets and for attachment of polyethylene sheets to adjacent surfaces. After dry application, tape or adhesive must retain adhesion when exposed to wet conditions, including water or amended water or wetting agents. Tape must be minimum 2 inches wide, industrial strength.

2.1.1.5 Containers

When used, containers must be leak-tight and be labeled in accordance with EPA, DOT and OSHA standards.

2.1.1.6 Chemical Paint Strippers

Chemical paint strippers must not contain methylene chloride, n-methylpyrrodlidione, or other regulated solvents, and be formulated to prevent stain, discoloration, or raising of the substrate materials.

2.1.1.7 Chemical Paint Stripper Neutralizer

Neutralizers for paint strippers must be compatible with the substrate and suitable for use with the chemical stripper that has been applied to the surface.

2.1.1.8 Detergents and Cleaners

Detergents or cleaning agents must not contain trisodium phosphate and have demonstrated effectiveness in lead, cadmium and chromium control work using cleaning techniques specified by HUD 6780 guidelines.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Protection

3.1.1.1 Notification

a. Notify the Contracting Officer 14 calendar days prior to the start of any lead, cadmium and chromium work.

3.1.1.2 Lead, Cadmium, Chromium Control Area

a. Physical Boundary - Provide physical boundaries around the lead, cadmium, chromium control area by roping off the area designated in the work plan or providing curtains, portable partitions or other enclosures to ensure that lead, cadmium and chromium will not escape outside of the lead, cadmium and chromium control area. Prohibit the general public from accessing the lead, cadmium, chromium control areas.

b. Warning Signs - Provide warning signs at approaches to lead, cadmium, chromium control areas. These signs must be posted in English and Spanish. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs must remain in place and be readable until the renovation and third-party clearances have been completed. Signs must comply with the requirements of 29 CFR 1926.62.

3.1.1.3 Furnishings

Furniture and equipment remaining in the building. Protect and cover furnishings or remove furnishings from the work area and store in a location approved by the Contracting Officer.

3.1.1.4 Heating, Ventilating and Air Conditioning (HVAC) Systems

Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead, cadmium, chromium control areas. Seal intake and exhaust vents in the lead, cadmium, chromium control area with 6 mil plastic sheet and tape. Seal seams in HVAC components that pass through the lead, cadmium, chromium control area. Provide temporary HVAC system for areas in which HVAC has been shut down outside the lead, cadmium, chromium control area.

3.1.1.5 Local Exhaust System

Provide a local exhaust system in the lead, cadmium, chromium control area in accordance with ASSP Z9.2, 29 CFR 1926.62, 29 CFR 1926.1126 and 29 CFR 1926.1127 that will provide at least 4 air changes per hour inside of the negative pressure enclosure. Local exhaust equipment must be operated 24-hours per day, until the lead, cadmium, chromium control area is removed and must be leak proof to the filter and equipped with HEPA filters. Maintain a minimum pressure differential in the lead, cadmium, chromium control area of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour per day monitoring of the pressure differential with a pressure differential automatic recording instrument. The building ventilation system must not be used as the local exhaust system for the lead, cadmium, chromium control area. Filters on exhaust equipment must conform to ASSP Z9.2 and UL 586. Terminate the local exhaust system out of doors and remote from any public access or ventilation system intakes.

3.1.1.6 Negative Air Pressure System Containment

a. Operate the negative air pressure systems to provide at least 4 air changes per hour inside the containment. Operate the local exhaust unit equipment continuously until the containment is removed. Smoke test the negative air pressure system for leaks at the beginning of each shift. The certified supervisor is responsible to continuously monitor and keep a pressure differential log with an automatic manometric recording instrument. Notify the Contracting Officer immediately if the pressure differential falls below the prescribed minimum. Submit the continuously monitored pressure differential log, as specified. Do not use the building ventilation system as the local exhaust system. Terminate the local exhaust system out of doors unless the Contracting Officer allows an alternate arrangement. All filters must be new at the beginning of the project and be periodically changed as necessary to maintain specified pressure differential and disposed of as lead, cadmium and chromium contaminated waste.

b. Discontinuing Negative Air Pressure System. Operate the negative air pressure system continuously during abatement activities unless otherwise authorized by the Contracting Officer. At the completion of the project, units must be run until full cleanup has been completed and final clearance testing requirements have been met. Dismantling of the negative air pressure systems must conform to written decontamination procedures be as presented in the Lead, Cadmium, Chromium Compliance Plan. Seal the HEPA filter machine intakes with polyethylene to prevent environmental contamination.

3.1.1.7 Decontamination Shower Facility

Provide clean and contaminated change rooms and shower facilities in accordance with this specification and 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

3.1.1.8 Eye Wash Station

Provide suitable facilities within the work area for quick drenching or flushing of the eyes where eyes may be exposed to injurious corrosive materials.

3.1.1.9 Mechanical Ventilation System

a. Use adequate ventilation to control personnel exposure to lead, cadmium and chromium in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. To the extent feasible, use local exhaust ventilation or other collection systems, approved by the CP. Evaluate and maintain local exhaust ventilation systems in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

b. Vent local exhaust outside the building and away from building ventilation intakes or ensure system is connected to HEPA filters.

c. Use locally exhausted, power actuated tools or manual hand tools.

3.1.1.10 Personnel Protection

Personnel must wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking or application of cosmetics is not permitted in the lead, cadmium, chromium control area. No one is permitted in the lead, cadmium, chromium control area unless they have been appropriately trained, medically cleared, and provided with protective equipment.

3.1.1.11 Interior

a. Close windows and doors in the work area. Doors must be covered with plastic sheeting or other impermeable material. Doors used as an entrance to the work area must be covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area.

b. Cover the floor surface, including installed carpet, with taped-down plastic sheeting or other impermeable material in the work area 6 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater.

c. Use precautions to ensure that all personnel, tools, and other items, including the exteriors of containers of waste, are free of dust and debris before leaving the work area.

3.1.1.12 Exterior

a. Close all doors and windows within 20 feet of the renovation. On multi-story buildings, close all doors and windows within 20 feet of the renovation on the same floor as the renovation, and close all doors and windows on all floors below that are the same horizontal distance from the renovation.

b. Ensure that doors within the work area that will be used while the job is being performed are covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area.

c. Cover the ground with plastic sheeting or other disposable impermeable material extending 10 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line prevents 10 feet of such ground covering.

d. Ensure that dust and debris from the work does not contaminate other buildings or other areas of the property or migrate to adjacent properties.

3.2 ERECTION

3.2.1 Lead, Cadmium, Chromium Control Area Requirements

Full containment - Contain removal operations by the use of a negative pressure enclosure system with decontamination facilities and with HEPA filtered exhaust if required by the CP. For containment areas larger than 1,000 square feet install a minimum of two 18 inch square viewing ports. Locate ports to provide a view of the required work from the exterior of the enclosed contaminated area. Glaze ports with laminated safety glass. Maintain the integrity of the containment by ensuring that any plastic or other impermeable materials are not torn or displaced. Ensure that the containment area does not interfere with emergency egress.

3.3 APPLICATION

3.3.1 Lead, Cadmium, Chromium Work

Perform lead, cadmium, chromium work in accordance with approved Lead, Cadmium, Chromium Compliance Plan. Use procedures and equipment required to limit occupational exposure and environmental contamination with lead, cadmium, chromium when the work is performed in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127, and as specified herein. Dispose of all PWL or MCL and associated waste in compliance with federal, State, and local requirements.

3.3.2 Paint with Lead, Cadmium, Chromium or Material Containing Lead, Cadmium, Chromium Removal

Manual or power sanding or grinding of lead, cadmium, chromium surfaces or materials is not permitted unless tools are equipped with HEPA attachments or wet methods. The dry sanding or grinding of surfaces that contain lead, cadmium, chromium is prohibited. Pressure washing is not permitted due to potential for cross contamination of surrounding areas and soils that would necessitate additional cleanup. No detergents are permitted to be used as this could result in contamination of waterways. Provide methodology for removing lead, cadmium, chromium in the Lead, Cadmium, Chromium Compliance Plan. Select lead, cadmium, chromium removal processes to minimize contamination of work areas outside the control area with lead, cadmium, chromium contaminated dust or other lead, cadmium, chromium contaminated debris or waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead, cadmium, chromium. Describe this removal process in the Lead, Cadmium, Chromium Compliance Plan.

The following items are either prohibited practices or restricted practices:

a. Open-flame burning or torching of lead-based paint is prohibited.

b. use of machines that remove lead-based paint through high-speed operation such as sanding, grinding, power planning, needle gun, pressure washing, abrasive blasting, or sandblasting, is prohibited unless such machines are used with HEPA exhaust control.

c. Operating a heat gun on lead-based paint is permitted only at temperatures below 1000 degrees Fahrenheit.

Avoid flash rusting or deterioration of the substrate. Provide surface preparations for painting in accordance with Section 09 90 00 PAINTS AND COATINGS.

Provide methodology for lead, cadmium and chromium, LBP/PWL abatement/control and processes to minimize contamination of work areas outside the control area with lead, cadmium, chromium contaminated dust or other lead, cadmium, chromium contaminated debris/waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead, cadmium, chromium. Describe this lead,, cadmium and chromium, LBP/PWL removal/control process in the Lead, Cadmium, Chromium Compliance Plan.

3.3.2.1 Paint with Lead, Cadmium, Chromium or Material Containing Lead, Cadmium, Chromium - Indoor Removal

Perform removal in the lead, cadmium, chromium control areas using enclosures, barriers or containments and powered locally exhausted tools equipped with HEPA filters. Collect residue and debris for disposal in accordance with federal, State, and local requirements.

3.3.2.2 Paint with Lead, Cadmium, Chromium or Material Containing Lead, Cadmium, Chromium - Outdoor Removal

Perform outdoor removal as indicated in federal, State, and local regulations and in the Lead, Cadmium, Chromium Compliance Plan. The worksite preparation (barriers or containments) must be job dependent and presented in the Lead, Cadmium, Chromium Compliance Plan.

3.3.3 Personnel Exiting Procedures

Whenever personnel exit the lead, cadmium, chromium controlled area, they must perform the following procedures and must not leave the work place wearing any clothing or equipment worn in the control area:

a. Vacuum all clothing before entering the contaminated change room.

b. Remove protective clothing in the contaminated change room, and place them in an approved impermeable disposal bag.

c. Shower.

d. Wash hands and face at the site, don appropriate disposable or uncontaminated reusable clothing, move to an appropriate shower facility, shower.

e. Change to clean clothes prior to leaving the clean clothes storage area.

3.4 FIELD QUALITY CONTROL

3.4.1 Tests

3.4.1.1 Air and Wipe Sampling

Conduct sampling for lead, cadmium, chromium in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and as specified

herein. Air and wipe sampling must be directed or performed by the CP.

a. The CP must be on the job site directing the air and wipe sampling and inspecting the PWL or MCL removal work to ensure that the requirements of the contract have been satisfied during the entire PWL or MCL operation.

b. Collect personal air samples on employees who are anticipated to have the greatest risk of exposure as determined by the CP. In addition, collect air samples on at least twenty-five percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.

c. Submit results of air samples, signed by the CP, within 72-hours after the air samples are taken.

d. Conduct area air sampling daily, on each shift in which lead, cadmium and chromium and lead-based paint removal operations are performed, in areas immediately adjacent to the lead, cadmium and chromium control area. Conduct sufficient area monitoring to ensure unprotected personnel are not exposed at or above 30 micrograms of lead per cubic meter of air or 2.5 micrograms of cadmium/chromium per cubic meter of air. If 30 micrograms of lead per cubic meter of air or 2.5 micrograms of cadmium/chromium per cubic meter of air is reached or exceeded, stop work, correct the conditions(s) causing the increased levels. Notify the Contracting Officer immediately. Determine if condition(s) require any further change in work methods. Resume removal work only after the CP and the Contracting Officer give approval.

e. Before any work begins, a third party consultant must collect and analyze baseline wipe samples in accordance with methods defined by federal, State, and local standards inside and outside of the physical boundary to assess the degree of dust contamination in the facility prior to lead, cadmium and chromium disturbance or removal. Provide Initial Sample Results to the Contracting Officer before work begins.

f. Surface Wipe Samples - Collect surface wipe samples on floors at a location no greater than 10 feet outside the lead, cadmium, chromium control area at a frequency of once per day while lead, cadmium, chromium removal work is conducted in occupied buildings. Surface wipe samples or Micro Vacuum surface sample results must meet criteria in paragraph CLEARANCE CERTIFICATION.

3.4.1.2 Sampling After Removal

After the visual inspection, collect wipe samples according to the HUD protocol contained in HUD 6780 to determine the lead, cadmium and chromium content of settled dust in micrograms per square foot of surface area.

3.4.1.3 Testing of Material Containing Lead, Cadmium, Chromium Residue

Test residue in accordance with 40 CFR 261 or applicable state or local regulations for hazardous waste.

3.5 CLEANING AND DISPOSAL

3.5.1 Cleanup

Maintain surfaces of the lead, cadmium, chromium control area free of accumulations of dust and debris. Restrict the spread of dust and debris; keep waste from being distributed over the work area. Do not dry sweep or use pressurized air to clean up the area. At the end of each shift and when the lead, cadmium, chromium operation has been completed, clean the controlled area of all visible contamination by vacuuming with a HEPA filtered vacuum cleaner, wet mopping the area and wet wiping the area as indicated by the Lead, Cadmium, Chromium Compliance Plan. Clean walls starting at the ceiling and working down to the floor. Thoroughly vacuum all remaining surfaces and objects in the work area, including furniture and fixtures. The vacuum must be equipped with a beater bar when vacuuming carpets and rugs. Reclean areas showing dust or debris. After visible dust and debris is removed, wet wipe and HEPA vacuum all surfaces in the controlled area. If adjacent areas become contaminated at any time during the work, clean, visually inspect, and then wipe sample all contaminated areas. The CP must then certify in writing that the area has been cleaned of lead, cadmium and chromium contamination before clearance testing.

3.5.1.1 Clearance Certification

The CP must certify in writing that air samples collected outside the lead, cadmium, chromium control area during paint removal operations are less than 30 micrograms of lead per cubic meter of air and less than 2.5 micrograms of cadmium/chromium per cubic meter of air; the respiratory protection used for the employees was adequate; the work procedures were performed in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127; and that there were no visible accumulations of material and dust containing lead, cadmium, chromium left in the work site. Do not remove the lead, cadmium, chromium control area or roped off boundary and warning signs prior to the Contracting Officer's acknowledgement of receipt of the CP certification.

The third party consultant must certify surface wipe sample or Micro Vacuum surface sample results collected inside and outside the work area are less than 200 micrograms of lead per square foot on floors or horizontal surfaces. Micro Vacuum technique should be used on rough or porous surfaces which are difficult to achieve clearance by the wipe sampling methodology. Micro Vacuum readings must be calculated by a certified industrial hygienist.

For lead, cadmium and chromium-based paint hazard abatement work, surface wipe and soil sampling must be conducted and clearance determinations made according to the work practice standards presented in 40 CFR 745.227.

3.5.2 Disposal

a. Dispose of material, whether hazardous or non-hazardous in accordance with all laws and provisions and all federal, State or local regulations. Ensure all waste is properly characterized. The result of each waste characterization (TCLP for RCRA materials) dictates disposal requirements. All copies of lab results shall be provided to the Contracting Officer and the JBSA Environmental Office prior to disposal of such material. All analysis shall be accomplished by an approved TCEQ National Environmental Laboratory Accreditation

Conference (NELAC), synonymous with the National Environmental Laboratory Accreditation Program (NELAP), laboratory. Separate hazardous waste from non-hazardous waste to be recycled or reclaimed to the greatest extent practicable in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

b. Contractor is responsible for segregation of waste. Collect lead, cadmium, chromium contaminated waste, scrap, debris, bags, containers, equipment, and lead, cadmium, chromiumcontaminated clothing that may produce airborne concentrations of lead, cadmium, chromium particles. Label the containers in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and 40 CFR 261, 40 CFR 262 and corresponding state regulations.

c. Dispose of lead, cadmium, chromiumcontaminated material classified as hazardous waste at an State approved hazardous waste treatment, storage, or disposal facility off Government property and in accordance with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS and 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

d. Accumulate waste materials in U.S. Department of Transportation (49 CFR 178) compliant container. Properly label each drum to identify the type of hazardous material (49 CFR 172). For hazardous waste, the collection container requires marking/labeling in accordance with 40 CFR 262 and corresponding state regulations during the accumulation/collection timeframe. The Contracting Officer or an authorized representative will assign an area for accumulation of waste containers. Coordinate authorized accumulation volumes and time limits with the host installation environmental function.

e. Handle, store, transport, and dispose lead, cadmium, chromium or lead, cadmium, chromium contaminated waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.

f. All lead, cadmium, and chromium waste generation, management,and disposal will be coordinated with the JBSA Environmental Office.

3.5.2.1 Disposal Documentation

Coordinate all disposal or off-site shipments of lead, cadmium, and chromium waste with the host installation environmental function. Submit written evidence of TSD approval to demonstrate the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead, cadmium, chromium disposal by the EPA, State or local regulatory agencies. Submit one copy of the completed hazardous waste manifest, nonhazardous manifest, or bill of lading,, signed and dated by the initial transporter in accordance with 40 CFR 262. Provide a certificate that the waste was accepted by the disposal facility. Provide turn-in documents or weight tickets for non-hazardous waste disposal. Exclude hazardous waste from waste reduction calculations in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

3.5.2.2 Payment for Hazardous Waste

Payment for disposal of hazardous and non-hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility is received and approved by the Contracting Officer. The

manifest must detail and certify the amount of lead, cadmium, chromium containing materials or non-hazardous waste delivered to the treatment or disposal facility.

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SECTION 02 85 00

MOLD REMEDIATION
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PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN COLLEGE OF RADIOLOGY (ACR)

ACR	MRI Accreditation Program Requirements, Latest Edition

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (AIHA)

AIHA IMOM08-679	(2008) Recognition, Evaluation, and Control of Indoor Mold

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP Z9.2	(2018) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

INSTITUTE OF INSPECTION, CLEANING, AND RESTORATION CERTIFICATION (IICRC)

ANSI/IICRC S520	(2015) Standard and Reference Guide for Professional Mold Remediation
IICRC S100	(2015) S100 Standard and R100 Reference Guide for Professional Cleaning of Textile Floor Covering
IICRC S500	(2015) Standard and Reference Guide for Professional Water Damage Restoration

NATIONAL ASSOCIATION OF MOLD REMEDIATORS AND INSPECTORS (NAMRI)

NAMRI APR	Accreditation Program Requirements, Latest Edition

NAVY AND MARINE CORPS PUBLIC HEALTH CENTER (NMCPHC)

IHFOM, CH 13, Sec. 3	(2019) Mold Cleanup, Remediation, and Clearance Sampling

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

29 CFR 1910.134	Respiratory Protection
29 CFR 1926.59	Hazard Communication

29 CFR 1926.62	Lead
29 CFR 1926.1101	Asbestos
29 CFR 1926.1126	Chromium
29 CFR 1926.1127	Cadmium

UL SOLUTIONS (UL)

UL 586	(2009; Reprint Sep 2022) UL Standard for Safety High-Efficiency Particulate, Air Filter Units

1.2 DEFINITIONS

1.2.1 AIHA

American Industrial Hygiene Association.

1.2.2 AIHA EMLAP

American Industrial Hygiene Association's Environmental Microbiology Laboratory Accreditation Program

1.2.3 AFU

Air filtration unit with High Efficiency particulate air (HEPA) filtered vacuum and exhaust ventilation equipment with a filter system capable of collecting and retaining microbial contamination ASSP Z9.2. Filters must retain 99.97 percent of particles 0.000012 inches or larger as indicated in UL 586.

1.2.4 Categories of Water

Category 1 Water: Water that originates from a sanitary water source and does not pose a substantial risk from dermal, ingestion, or inhalation exposure. IICRC S500

Category 2 Water: Water that contains significant contamination and has the potential to cause discomfort or sickness if contacted or consumed by humans. Can contain potentially unsafe levels of microorganisms or nutrients for microorganisms as well as other organic or inorganic matter. IICRC S500

Category 3 Water: Water that is grossly contaminated and can cause significant adverse reactions to humans if contacted or consumed. IICRC S500

1.2.5 Certified Industrial Hygienist (CIH)

An individual that has been certified by the American Board of Industrial Hygiene (ABIH), with professional qualifications and experience as required for an industrial hygienist, as presented in the definition of "Industrial Hygienist."

1.2.6 Complete Interior Building Demolition (Complete Gut)

Interior finishes of the building have been removed to expose basic structural elements.

1.2.7 Containment

Physical separation and engineering controls required to prevent contamination of undamaged materials and occupied areas. The level of containment varies depending on the extent of the contamination.

1.2.7.1 Source Containment

Use when the contaminated surface area is less than 10 square feet, in both residential and non-residential buildings. At a minimum, source containment will include the following (ANSI/IICRC S520):

a. Isolation of Work Areas. Install polyethylene barriers to isolate the areas or material to be demolished / remediated from non-remediation areas.

b. Floor protection. Maintain protection for finished floors through all construction activities.

c. HEPA vacuum to control dust created during the demolition. Hold HEPA vac intake at source of dust.

1.2.7.2 Limited Containment

Use when contaminated surface area is between 10 square feet and 100 square feet per room in both residential and non-residential buildings. At a minimum, limited containment includes the following (ANSI/IICRC S520):

a. Containment. For residential buildings, a containment includes the entire room where work is being performed. The containment does not extend past the extents of the room unless there are instances of contamination extending from one room to the next. For non-residential buildings, the containment includes the area to be remediated, plus enough additional area to allow for all equipment and work activities.

b. Isolation of Work Areas. Install polyethylene barriers to isolate the areas to be demolished / remediated.

c. Floor protection. Maintain protection for finished floors through all construction activities.

d. Air Filtration / Pressurization Control. Install AFUs with HEPA filters in the containment. Configure the AFUs with splitters / diverters to allow some of the air to recirculate within the containment. Discharge the remainder of the air directly to the outside to maintain an overall negative pressure in the containment of 0.02 inch water column minimum to 0.04 inch water column maximum relative to the outside and other adjacent spaces not undergoing remediation(AIHA IMOM08-679). AFUs must filter a minimum of four air changes per hour and a maximum of six air changes per hour (ANSI/IICRC S520).

e. Protection for all items remaining in the containment. Protective

devices must prevent physical damage (e.g., scratches and dents) and must provide a positive seal to prevent dust from settling in or on the items.

f. Decontamination. Construct a decontamination airlock for entry into and exit from the work area. HEPA vacuum the sealed bags of contaminated debris within the airlock. When possible, locate the decontamination airlock so that the sealed bags can be passed directly from the airlock to the outside, through a door or window.

g. Containment Entrance. Install a triple-flap poly "door" to be used during demolition to provide a good separation between containment and occupied areas of the house / building.

h. HVAC System. Seal off all supply and return vents. HVAC may need to be shut down to ensure proper seal of the vents.

1.2.7.3 Full Containment

Use when contaminated surface area is greater than 100 square feet in both residential and nonresidential buildings. At a minimum, full containment includes the following(ANSI/IICRC S520):

a. Containment. For residential buildings, a containment includes the entire room where work is being performed. The containment does not extend past the extents of the room unless there are instances of contamination extending from one room to the next. For non-residential buildings, the containment includes the area to be remediated, plus enough additional area to allow for all equipment and work activities.

b. Isolation of Work Areas. Construct polyethylene barriers to isolate the areas to be demolished / remediated.

c. Floor protection. Maintain protection for finished floors through all construction activities.

d. Air Filtration / Pressurization Control. Install AFUs with HEPA filters in the containment. Configure the AFUs with splitters / diverters to allow some of the air to recirculate within the containment. Discharge the remainder of the air directly to the outside to maintain an overall negative pressure in the containment of 0.02 inch water column minimum to 0.04 inch water column maximum relative to the outside and other adjacent spaces not undergoing remediation (AIHA IMOM08-679). AFUs must filter a minimum of four air changes per hour and a maximum of six air changes per hour (ANSI/IICRC S520).

e. Protection for all items remaining in the containment. Protective devices must prevent physical damage (e.g., scratches and dents) and must provide a positive seal to prevent dust from settling in or on the items.

f. Decontamination. Construct a decontamination airlock for entry into and exit from the work area. HEPA vacuum the sealed bags of contaminated debris within the airlock. When possible, locate the decontamination airlock so that the sealed bags can be passed directly from the airlock to the outside, through a door or window.

g. Containment Entrance. Install a triple-flap poly "door" at the entrance to the airlock, and between the airlock and the work area during demolition to provide a good separation between containment and occupied areas of the house / building.

h. HVAC System. Seal off all supply and return vents. HVAC may need to be shut down to ensure proper seal of the vents.

1.2.7.4 Unoccupied Building Containment

Use when a building is unoccupied and large amounts of mold growth are present throughout the building:

a. Containment. The containment consists of the entire building. Install AFUs with HEPA filters in the building. Configure the AFUs to recirculate within the active remediation area. AFUs must filter a minimum of four air changes per hour and a maximum of six air changes per hour based on the size of the area undergoing active remediation (ANSI/IICRC S520).

b. Isolation of Work Areas. Install polyethylene barriers to isolate remediation areas from non-remediation areas. AFU discharge may be used to positively pressurize non-remediation areas from areas undergoing remediation to prevent the movement of spores into "clean" areas.

c. Floor Protection. Maintain protection for finished floors through all construction activities.

d. Protection for all items remaining in the containment. Protective devices must prevent physical damage (e.g., scratches and dents) and must provide a positive seal to prevent dust from settling in or on the items.

e. Decontamination. Construct a decontamination airlock for entry into and exit from the building.

f. Containment Entrance. Install a triple-flap poly "door" to be used during demolition to provide a good separation between containment and non-remediation areas of the house / building.

g. HVAC System. Seal off all supply and return vents. HVAC may need to be shut down to ensure proper seal of the vents.

1.2.7.5 Cleaning Containment

For items being salvaged, set up a temporary containment structure to clean items removed from the containment. At a minimum, the cleaning area must contain:

a. Two chambers. Construct walls with polyethylene. Clean the items in the first chamber. Store the clean items in the second chamber.

b. Air Filtration / Pressurization Control Cleaning Chamber. Install AFUs with HEPA filters in the cleaning chamber. Configure the AFUs with splitters / diverters to allow some of the air to recirculate within the containment. Discharge the remainder of the air directly to the outside to maintain an overall negative pressure in the containment of 0.02 inch water column minimum to 0.04 inch water

column (maximum) relative to the storage chamber (AIHA IMOM08-679).

c. Air Filtration, Storage Chamber. Install AFUs with HEPA filters in the storage chamber. Configure the AFUs to allow air to recirculate within the chamber. AFUs must provide air filtration at a rate of between four and six air changes per hour (ANSI/IICRC S520).

d. Containment Entrance. Install a triple-flap poly "door" at the entrance to the cleaning chamber, between the cleaning and storage chambers, and at the exit of the storage chamber to provide a good separation between the chambers.

1.2.8 Decontamination Unit (Airlock)

An enclosed area adjacent to, and connected to, a regulated work area. It consists of various rooms that are used for the decontamination of workers, equipment, and materials.

1.2.9 Dehumidifier

Mechanism or machine to remove moisture from the air.

1.2.10 Detergent

A cleaning agent. The term refers to a prepared compound that may include surfactants, builders, dry solvents, softeners, etc, but does not include true soap.

1.2.11 Disinfectants or Biocide Sanitizing Solutions

One of three groups of antimicrobials registered by the EPA for public health uses. The EPA considers an antimicrobial to be a disinfectant when it destroys or irreversibly inactivates infectious or other undesirable organisms, but not necessarily their spores.

1.2.12 EPA

U.S. Environmental Protection Agency.

1.2.13 Fungal Growth Structures

Portions of fungi indicating active fungal growth is present on a surface. These include spores, conidiophores, hyphae, hyphal fragments, and mycelium.

1.2.14 Fungicidal Agents, (EPA)

An EPA registered fungicide that inhibits the spread and growth of mold with the ability to withstand moist and humid conditions.

1.2.15 HEPA Filter

A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97 percent of all particulate larger than 0.000012 inches.

1.2.16 HVAC

Heating, Ventilating, and Air Conditioning (System).

1.2.17 Industrial Hygienist (IH)

An individual designated and provided by the Contractor that is a professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational and indoor air quality hazards. Education must include a minimum 12 semester hours or quarter hour equivalent of chemistry and 18 additional semester hours or quarter hour equivalent of courses in any combination of chemistry, physics, engineering, health physics, environmental health, biostatistics, biology, physiology, toxicology, epidemiology, or industrial hygiene. The Industrial Hygienist must be a CIH or working under the supervision of a Certified Industrial Hygienist.

1.2.18 Microbial Remediation Supervisor

Individual responsible for the execution of the microbial remediation work as defined by the scope of work. This individual must have documented training in microbial remediation and have at least three years experience in microbial remediation work. Remediation contractor's on-site supervisor must have one of the following certifications: Council-Certified Microbial Remediator (CMR), or Council-Certified Microbial Remediation Supervisor (CMRS) as certified by the American Council for Accredited Certification, or Applied Microbial Remediation Specialist (AMRS), Institute of Inspection, Cleaning, and Restoration Certification (IICRC) or Contracting Officer approved equivalent.

1.2.19 NADCA

National Air Duct Cleaners Association

1.2.20 NAMRI

National Association of Mold Remediators and Inspectors

1.2.21 Non-Porous Material

A material that does not absorb nor is easily penetrated by liquids, especially water. Generally, non-porous materials have a permeable factor of less than one. Some examples are metal, glass, plastic, ceramic tile.

1.2.22 Occupied Spaces (Areas)

The phrase "occupied space" within this specification refers to spaces that are occupied by unprotected non-remediation personnel while work is in progress. It also refers to areas adjacent to work areas that are not currently undergoing remediation.

1.2.23 Personal Protective Equipment (PPE)

Any material or device worn to protect a worker from exposure to, or contact with, any harmful material or force. Standard PPE (such as hard hats, safety glasses, work boots, gloves) must be cleaned or disposed of prior to removal from the remediation work area.

1.2.24 Poly

Polyethylene sheet with a minimum thickness of 6 mils (IHFOM, CH 13, Sec. 3).

1.2.25 Porous Material

Permeable materials having the physical properties that allow liquids or gasses to pass through. These materials include but are not limited to the following: gypsum wall board, insulation, wallpaper, ceiling material, carpet, padding, paper goods (i.e., cardboard boxes, loose paper, books), stuffed furniture, wicker, fabrics.

1.2.26 Pressure Differential Measuring Instrument

Device used to measure the relative pressure difference between the work area/containment and areas outside the work area. For mold remediation, the device must measure accurately in the 0 to 0.04 inch of water range.

1.2.27 Semi-porous Material

A material that can absorb liquids if exposed over long periods of time. These materials include but are not limited to wood, concrete, linoleum, vinyl wall covering, wooden or hardboard furniture, plaster.

1.2.28 Ventilation System Mold Remediator Qualifications (VSMR)

An individual certified by the North American Duct Cleaning Association (NADCA) to clean HVAC systems.

1.2.29 Work Area

The area where remediation operations are actively performed and controlled to prevent the spread of dust / spores and entry by unauthorized personnel. A work area is the space, group of spaces, or the building, as defined by the Microbial Assessment Survey.

1.3 REQUIREMENTS

1.3.1 Description of Work

The Contracting Officer will furnish the Contractor, in the contract documents, an initial Microbial Assessment Survey with containment categories and remediation methods specified for each work area and material within the work area.

a. The Contracting Officer's initial Microbial Assessment Survey specified below must be furnished and certified by a qualified assessor authorized by the Contracting Officer to do such work. The initial survey is included in the solicitation documents at the end of this specification section.

b. Provide mold remediation work including the handling and control of mold contaminated materials and the resultant procedures and equipment required to protect workers, the environment and occupants of the building or area, or both, from contact with mold products and spores. The work also includes the disposal of any mold contaminated materials generated by the work. The mold removal work includes the demolition and removal of mold growth located within the facility. Provide containment and engineering control techniques as outlined in this specification. All mold contaminated material removal work must be supervised by a microbial remediation supervisor as specified herein.

c. No work in this specification section can be provided by any person, contractor, or contracting entity involved in the preparation of the contract documents of which this specification section is a part.

d. The following microbial remediation specifications apply to the cleaning / removal and disposal of fungally-contaminated porous, semi-porous and non-porous surfaces within various types of structures. The level of containment and requirements for cleaning and remediation of materials will depend on the condition of the space and materials being remediated.

e. Immediately after award of the contract, prepare a preliminary visual assessment report using the standard microbial assessment form (Appendix A) to document the differences in the pre-remediation condition of the work areas as compared to the government provided Microbial Assessment Survey.Coordinate inspection with contracting officer. Only address the differences between the pre-remediation condition of the work areas and the government provided Microbial Assessment Survey. If required to indicate the differences, include the HVAC systems inspection required elsewhere in this specification section. Submit this written pre-remediation condition report to the Contracting Officer for approval and instructions to proceed.

f. After approval of the preliminary visual assessment report and having instructions from the Contracting Officer to proceed, prepare a microbial remediation plan for approval by the Contractor's Certified Industrial Hygienist. Include an assessment of the risk for people occupying areas adjoining the remediation area while remediation work is occurring in the microbial remediation plan . Upon the Contractor's CIH approval of the plan, submit the plan to the Contracting Officer for approval.

g. The Contractor's CIH or IH must monitor the site on a daily basis while remediation work is in progress, identifying work and work practices that are not in compliance with the approved microbial remediation plan, and performing all inspections required by this specification. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the contract.

h. This specification section includes the protocol regarding proper disposal of the removed building material components from within the work site.

i. Use proper cleaning procedures, engineering controls, and apply best management practices to remove microbial growth and spore fallout from all surfaces and building materials to minimize the further release of microbial spores. Address semi-porous and nonporous surfaces within the facility in each cleaning phase of the project. Damp wipe and HEPA vacuum all surfaces, at a minimum. Remove and dispose of porous building materials that are supporting microbial growth.

1.3.2 Security Requirements

Prior to granting access to any work area (i.e., building, area, room, or space) for mold remediation work, a determination must be made by the government agency whether classified or controlled unclassified information (paper material or electronic media) or equipment is contained in the work area(s).

It may be necessary depending on the sensitivity of the work area or the information contained in the area to authorize the Government activity or tenant command responsible for the work area to provide their own appropriately cleared military or government personnel to properly remove or secure any classified or controlled unclassified information, electronic media or equipment located in their work area(s). Prior authorization would be required and the area would need to be evaluated to ensure it is safe for personnel to enter and all personnel must utilize the required PPE to safely enter the work area.

a. If Contractor personnel require access to classified information or spaces to perform mold remediation work, the Government must issue the Contractor facility a Facility Clearance Level (FCL) (Contract Security Classification Specification) prior to the initiation of the work under the contract. If the Contractor facility does not possess a valid FCL issued by the Defense Security Service (DSS), the Government will be required to submit a sponsorship request to DSS requesting that the Contractor be processed for and issued a current FCL at the appropriate level.

b. Access to classified information (paper material, electronic media, and equipment) must only be granted to authorized and appropriately cleared government and U.S. contractor personnel that possess a personnel security clearance commensurate with the level of information contained in the work area that requires a mold remediation effort.

c. Access to Controlled Unclassified information (i.e., For Official Use Only, Sensitive but Unclassified, Privacy Act Information, Export Controlled unclassified) can be granted to DOD cleared contractors, consultants and grantees that are conducting official business for the DOD or DON. Non-cleared U.S. contractor personnel who only require access to controlled unclassified information can be granted access if they get a favorable trustworthiness determination on an individual Favorable Tier 1 investigation and fingerprint result submitted on their behalf by the government agency issuing the contract.

d. Classified information and controlled unclassified information must be safeguarded / secured, reproduced, and destroyed in accordance with SECNAV M-5510.36.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Refer to Section 01 33 00 SUBMITTAL PROCEDURES for requirements when a classification other than "G" or "S" are used. Submittals not having a classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Ventilation System Mold Remediator Qualifications (VSMR); G

Preliminary Visual Assessment Report; G

Microbial Remediation Plan; G

Respiratory Protection Program; G

Worker Records;

Certified Industrial Hygienist (CIH)/Industrial Hygienist (IH) Qualifications; G

Microbial Remediation Supervisor Qualifications; G

SD-03 Product Data

Disinfectants or Biocide Sanitizing Solutions; G

Fungicidal Agents, (EPA); G

Personal Protective Equipment (PPE); G

Pressure Differential Measuring Instrument;

Safety Data Sheets (SDS) for All Materials; G

Dehumidifiers;

Air Filtration Units;

SD-06 Test Reports

IH Daily Reports; G

SD-11 Closeout Submittals

Submittals at Completion of Remediation Work; G

1.4.1 Preconstruction Submittals

Within 10 days from the award of the contract and prior to the start of the work, submit to the Contracting Officer one copy of the following items as a digital file for review.

1.4.1.1 Preliminary Visual Assessment Report

A written report to document the pre-remediation condition of the work areas compared to the government provided Microbial Assessment Survey and the results of the HVAC systems inspection.

1.4.1.2 Microbial Remediation Plan

Submit a job-specific, detailed plan Approved by the Contractor's CIH to the Contracting Officer for final approval prior to start of work. Address the following items in the plan at a minimum:

a. Description of materials to be remediated, providing location and quantities (map if available), and methods to be used for remediation.

b. Products: Disinfectants, detergents, biocides, sanitizing solutions, and fungicidal agents, (EPA).

c. Containment procedures to include description and locations of engineering controls and decontamination unit to include entry and exit procedures (provide sketch of floor plan showing location of

containment barriers and decontamination units). Include locations of AFUs and AFU discharges to the outside.

d. Description of personal protective equipment to be used during the remediation.

e. Construction barricades and barriers in occupied areas.

f. HVAC Shut down and start-up procedures.

g. HVAC Evaluation and remediation procedures.

h. Moisture and relative humidity control procedures and equipment.

i. Packaging and disposal procedures.

j. Safety Precautions to include lockout / tag-out, fall protection, confined space entry procedures, and fire protection.

k. Description of the method to be employed to control cross contamination of areas not in the work area. Include a risk assessment related to the suitability of people to occupy areas adjoining the remediation area while remediation activities are ongoing.

l. IH Quality Control procedures to include visual inspection.

m. Procedures to control, abate, and dispose of Asbestos Containing Materials (ACM), Presumed Asbestos Containing Materials (PACM) and Lead Based Paint (LBP) coincident with microbial remediation. ACM, PACM, and LBP must be identified before work begins; Identify the presence, location, and quantity of ACM,PACM, and LBP therein pursuant to paragraphs (g),(k)(1) of 29 CFR 1926.1101 and for lead 29 CFR 1926.62.

1.4.1.3 Respiratory Protection Program

Provide written copy of Contractor's Respiratory Protection program.

1.4.1.4 Worker Records

Provide the following documents for all workers, including supervisory personnel. If new workers are added to the crew, provide the same documentation for them.

a. Employee Fit test records and Physician medical evaluation approval records.

b. Employee Instruction and Release Form: Provide documentation showing that each employee has been instructed on the following items:

(1) Use and fit of respirators (for employees entering and working in the containment).

(2) Protective clothing.

(3) Protective measures.

(4) Safety and Emergency Egress Procedures.

(5) Site specific plans and training such as fall protection, Lock out/tag out, confined space, or other appropriate safety and health programs that address specific risks of the affected work areas.

(6) Microbial remediation hazards and practices including engineering controls and isolation. Training should include "hands on" training for microbial remediation supervisors.

(7) Workers' release forms stating the potential hazards involved with the scope of the work.

c. Worker Training Certification: Submit copies of training certificates for each employee indicating that the employee has received training at the appropriate level for the work prescribed in the description of work.

1.4.1.5 Certified Industrial Hygienist (CIH)/Industrial Hygienist (IH) Qualifications

Submit the name, address, and telephone number of the Certified Industrial Hygienist (CIH) and Industrial Hygienist (IH). Provide copies of board certificates, resume to document field experience, and evidence that the CIH and IH have successfully completed training in microbial investigation and remediation.

1.4.1.6 Microbial Remediation Supervisor Qualifications

Onsite supervisor must have one of the following certifications: Certified Microbial Remediator (CMR), Certified Microbial Remediation Supervisor (CMRS), or Applied Microbial Remediation Specialist (AMRS). Submit copies of supervisory training certificates.

1.4.2 Product Data

Within 10 days of contract award, submit product data for items identified for use in Microbial Remediation Plan.

1.4.3 IH Daily Reports

Prepare a written IH Daily Report for each day that microbial remediation work is being accomplished. Submit the IH Daily Report to the Contracting Officer by 1000 hours of the following day. The IH Daily Report at a minimum must include measurements of differential pressure and temperature and relative humidity in work areas, and detail any non-compliance issues observed.

1.4.4 Submittals at Completion of Remediation Work

Within 14 days of completion, provide the following information:

a. Daily Project Logs.

b. IH Daily Reports.

c. Photographic Logs.

d. Contractor's Industrial Hygienist Report certifying the microbial

remediation is complete.

1.5 RECORD KEEPING

A Daily Project Log must form a permanent record of the project. Secure and maintain these logs and any other required documentation as part of the permanent project file.

1.5.1 Daily Project Log

The Microbial Remediation Supervisor must maintain a Daily Project Log. The Daily Project Log must be used each day of the project to document the following information.

a. Date.

b. Name of Microbial Remediation Supervisor.

c. Name of Industrial Hygienist monitoring work area.

d. Number of workers on site.

e. Equipment utilized.

f. Brief description of daily work activities.

g. Listing of any non-compliance noted, emergencies, stop work orders (with detailed explanation), exhaust system pressure differential recordings and descriptions of any other significant events.

PART 2 PRODUCTS

2.1 DISINFECTANTS, BIOCIDES, SANITIZING SOLUTIONS AND FUNGICIDAL AGENTS, (EPA)

Must be EPA Registered for the use detailed in the Microbial Remediation Plan and used in accordance with the manufacturer's specifications. Provide SDS sheets to the Contracting Officer for any chemicals that are used during the performance of the work for approval.

2.2 HAZARD COMMUNICATION

Adhere to all parts of 29 CFR 1926.59 and provide the Contracting Officer with a copy of the Safety Data Sheets (SDS) for all materials brought to the site.

PART 3 EXECUTION

3.1 EQUIPMENT

Provide manufacturer's certificate of compliance for all equipment used to contain the microbial contamination.

3.1.1 Respirators

Select respirators from those approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services. Provide personnel engaged in set-up, pre-cleaning, cleanup, handling, and removal of contaminated materials with the appropriate

respiratory protection as specified in 29 CFR 1910.134. Microbial remediation plan must consider Table 17.1 in AIHA IMOM08-679 "Recognition, Evaluation, and Control of Indoor Mold", which lists the minimum levels of respiratory protection based on the activity and size of the remediated area.

3.1.2 Protective Clothing

Provide all workers with protective clothing as appropriate for the work being accomplished, as required by the Microbial Remediation Plan.

3.1.3 Warning Signs and Labels

Provide bilingual warning signs printed in English and Spanish at all approaches to the work areas IICRC S500. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Warning signs may be in the form of continuous plastic tape. The warning signs must have black characters on a yellow background.

WARNING
DO NOT ENTER
MICROBIAL REMEDIATION WORK IN PROGRESS

Alternate wording for the warning signs may be approved by the Contracting Officer.

3.1.4 Dehumidifiers

Install and use dehumidifiers as needed during the remediation to maintain relative humidity below 60 percent in the work area. Drain the condensate water to a permanent drain, or empty as needed to prevent water overflowing from the dehumidifiers. IHFOM, CH 13, Sec. 3

3.1.5 Air Filtration Units (AFU)

Install and use AFUs with HEPA filters, and manufacturer specified pre-filters, as part of the exhaust ventilation system to develop and maintain the specified desired air pressure differential inside the enclosed work area relative to the outside areas. Acquire and pay for any licenses needed for use of any equipment, including but not limited to, air pressure differential systems and air filtration systems.

a. Replace HEPA filters and pre-filters for AFUs as required to maintain pressurization performance requirements during demolition and cleaning. Do not reuse filters. Bag used filters at a minimum in clear 6 mil (IHFOM, CH 13, Sec. 3) polyethylene bags within the containment and disposed as contaminated waste.

b. Discharge air from any AFUs located in the work area containment to the outside environment when creating a negative pressure containment to create a negative pressure relative to the outside and adjacent work areas not undergoing active remediation of 0.02 inch H2O to 0.04 inch H20 AIHA IMOM08-679. Discharge air in excess of that required for creating the proper negative pressure to the work area. The AFUs must provide four to six air changes per hour in the work area (ANSI/IICRC S520). Under no circumstances may air from AFUs discharge to an occupied area. Coordinate location of window sashes or doors required for discharge openings with the Contracting Officer. Exhaust

discharge openings may be constructed of plywood, and the seals around such opening must be airtight.

c. Seal all exhaust and intake openings in AFUs with one layer of 6 mil (IHFOM, CH 13, Sec. 3) polyethylene sheeting when not in use.

3.1.6 Vacuum Cleaners Equipped with HEPA Filters

Provide vacuum cleaners equipped with HEPA filters designed for continuous operation in order to complete the work in a timely and efficient manner.

a. Provide nozzle attachments as required to adequately remove all dust. As a minimum, include crevice and extended bristle brush nozzles. Only use a vacuum equipped with a HEPA filter.

b. Provide sufficient vacuum cleaners equipped with HEPA filters designed for continuous operation in the work area during microbial remediation inside the containment area.

c. Provide additional vacuum cleaners equipped with HEPA filters in the enclosed work area during remediation or cleaning work as required by the size (area) of the containment and to maintain timely progress of the work.

3.2 GENERAL REQUIREMENTS

3.2.1 Pre-Microbial Remediation Work Conference

Meet with the Contracting Officer prior to beginning work to discuss in detail the Microbial Remediation Plan, including work procedures and safety precautions. Once approved by the Contracting Officer, the plan will be enforced as if a part of this specification. Any variances to the specification as a result of the plan must be specifically identified to allow for free discussion and approved by the Contracting Officer in writing prior to starting work. Before work in areas with Asbestos Containing Materials (ACM), Presumed Asbestos Containing Materials (PACM) and Lead begins, identify the presence, location, and quantity of ACM, PACM and Lead. Ensure proper notification of regulatory authorities. Consult with Contracting Officer to obtain facility ACM / LBP surveys. Mitigate any disturbance of painted/coated surfaces in accordance with 29 CFR 1926.62, 29 CFR 1926.1126 and 29 CFR 1926.1127.

3.2.2 Containment Entry / Exit Procedure

Ensure that each worker and authorized visitor follows entry and exit procedures detailed in the Microbial Remediation Plan.

3.3 REMOVAL PROCEDURES

3.3.1 Protection of Existing Work Areas

Perform work in a manner to minimize the damage or contamination to areas outside or directly adjacent to the work area. Inspect areas inside and outside proposed work areas to identify existing damage and notify Contracting Officer prior to start of work.

Where materials outside work area are damaged or contaminated as a result of the Contractors work efforts as verified by the Contracting Officer using visual inspection or sample analysis, it must be restored to its

original condition or decontaminated by the Contractor at no expense to the Government as deemed appropriate by the Contracting officer. Should adjacent or outside areas become contaminated as a result of the Contractors work efforts, stop work immediately. Clean the newly contaminated areas at no additional expense to the Government. The work may proceed at the discretion of the Contracting Officer once the area has been verified by visual inspection as restored.

3.3.2 Remediation of Fungally Contaminated Building Materials

The removal of contaminated materials must follow in general the listed sequence of work. The Contractor may make changes to improve work flow with the approval of the Contracting Officer.

a. Provide level of containment and PPE required by the Microbial Remediation Plan.

b. Disable all HVAC units and exhaust fans in the area to be remediated. Cover and seal all supply vents, return vents, and air handling units in the project area using two layers of 6 mil poly (IHFOM, CH 13, Sec. 3).

c. Protect materials to remain in work area. Where possible, clean all materials to be salvaged in place to prevent possible cross-contamination created by moving materials through non-remediation areas.

d. Remove undamaged items and materials to be cleaned and salvaged from the work area. Store materials in an area with relative humidity maintained below 60 percent and where temperatures will not damage the material. Notify Contracting Officer of existing damage to items prior to removal.

e. Set up containments, including protection of materials remaining within the containment and AFUs. Notify Contracting Officer that the area is prepared for remediation activities.

f. Pre-demolition inspection by the Contracting Officer.

g. Demolition and removal / cleaning of contaminated materials.

h. Post-remediation inspection by the Contracting Officer.

i. Perform final cleaning in the containment.

j. Clean carpet in the containment if salvageable.

k. Clearance inspection by the Contracting Officer.

l. Duct and HVAC cleaning, if necessary.

m. Deconstruction of containment, removal of AFUs.

n. Return previously items that were removed and cleaned to the occupied area.

3.3.3 Remediation Procedures

3.3.3.1 Remediation of Non-Porous Materials

Method of remediating non-porous items:

a. HEPA vacuum all surfaces.

b. Damp wipe all surfaces using clean water or a detergent solution.

c. Ensure all cleaned surfaces are dried thoroughly.

3.3.3.2 Semi-Porous Materials (Unfinished Wood)

Use this method for remediating unfinished wood-based items, including wood and wood framing in wall cavities:

a. Cleaning

(1) HEPA vacuum all surfaces.

(2) Scrub surfaces with a brush and detergent to remove mold.

(3) Ensure all cleaned surfaces are dried thoroughly.

(4) HEPA vacuum all surfaces to remove dust.

(5) Repair finishes as required to match original.

b. Removal

Where unfinished wood product has been structurally damaged, remove and replace with an equivalent product. This includes wall studs and sheathing, such as OSB used in flooring, wall, or roof construction. Lightly mist mold contaminated material before removal.

3.3.3.3 Semi-Porous Materials

Use this method for surface cleaning semi-porous materials such as concrete, vinyl wall covering, linoleum, leather furniture, and finished wood products:

a. HEPA vacuum all surfaces.

b. Damp wipe surfaces using clean water or a detergent solution. Avoid over-wetting the material. Ensure all materials are dried thoroughly.

3.3.3.4 Porous Materials

a. Carpet

(1) Removal: Remove carpet that has remained wet for 48-hours or longer (AIHA IMOM08-679). If carpet has dried out, lightly mist before removal.

(2) Cleaning (for carpet that has been wet for less than 48-hours) AIHA IMOM08-679: Use a dry absorbent compound cleaning method as designated by IICRC S100. This method uses an absorbent compound to dissolve, suspend and absorb carpet soils. It does not add

moisture back into the carpet. Ensure carpet is dried thoroughly after cleaning

b. Gypsum Wallboard (GWB)

(1) Removal: Remove Gypsum Wallboard that has remained wet for 48-hours or longer (AIHA IMOM08-679), or has visible mold growth. Where removal of GWB exposes insulation, remove the insulation. Lightly mist all contaminated materials before removal.

(2) Surface Cleaning: Where GWB has a small amount of surface mold growth and the GWB is structurally sound, a surface cleaning method may be used with the permission of the Contracting Officer. HEPA vacuum all surfaces and wipe down with a detergent solution. Do not use surface cleaning where mold growth penetrates wallboard substrate. Thoroughly dry the cleaned areas and paint to lock down any residual spores.

c. Ceiling Tile

(1) Removal: Remove ceiling tile that has remained wet for 48-hours or longer, or has visible mold growth (AIHA IMOM08-679). If ceiling tile has dried out lightly mist before removal.

d. Paper/Electronic Media and Sensitive Equipment

Classified and Controlled Unclassified Information whether it is paper, electronic media or equipment must be properly safeguarded / secured until it is properly destroyed in accordance with SECNAV M-5510.36 and it cannot be discarded without utilizing the proper destruction methods. Contractor personnel cannot be granted access to classified information or Controlled Unclassified Information until they have met the security requirements stated in the paragraph SECURITY REQUIREMENTS.

(1) Removal: Only papers or documents that are unclassified and do not contain controlled unclassified information can be discarded in the trash. Classified and Controlled Unclassified information must be destroyed by appropriately cleared military, government or contractor personnel using an approved DOD destruction method for that specific level of information. Discard paper materials that have remained wet for 48-hours or longer, or that have visible mold growth. Paper materials that have been wet for less than 48-hours may be allowed to dry if approved by the Contracting Officer.

(2) Containment: Where paper materials, such as personnel records must be retained, the following containment methods may be used with the permission of the Contracting Officer. The method of containment for paper products shall be:

(a) Thoroughly dry the paper material. Safeguard Classified and Controlled Unclassified Information at all times in a GSA approved security container, restricted area, vault, or under the direct physical control of appropriately cleared personnel.

(b) Where routine access to the material is required, a copy shall be made. Contractor personnel shall not reproduce copies of classified information or controlled unclassified information

without the prior written approval of the Contracting Officer and the Government Agency Security department with responsibility for the work area. If approval is obtained, only appropriately cleared Contractor personnel shall be authorized to reproduce the information and they must use only DOD authorized reproduction equipment.

(c) When not in use, secure the classified and controlled unclassified information in an approved GSA security container, restricted area, or vault. Limit access to the container to only appropriately cleared personnel. Implement an access procedure involving opening the container in a secure area with provision for capturing mold spores and respiratory protection for workers opening the container for these materials. Store the container in an area where the relative humidity is maintained below 60 percent to prevent further mold growth.

e. Textiles

(1) Discard textiles with visible mold growth.

(2) Clean textile based items, including clothing, linens, and toys that do not have visible mold growth, but have been wet, in standard commercial or residential washing machines with standard washing machine detergent.

(3) Dry all items completely before returning to the building / house.

(a) When possible, use dryers to dry items.

(b) If dryers will cause irreversible harm to the item, hang the item on a drying rack in a temperature and humidity controlled space. Discard items not dry within 48-hours (AIHA IMOM08-679).

f. Upholstered Furniture

(1) Removal: Discard upholstered furniture that has remained wet for 48-hours or longer (AIHA IMOM08-679), or that have visible mold growth.

(2) Cleaning: Clean upholstered furniture that has been exposed to mold spores but does not have visible mold growth by HEPA vacuuming upholstery and wood or metal structure, followed by a damp wipe of semi-porous or non-porous portions of the furniture. Dry furniture thoroughly after cleaning.

3.4 DETAILED SEQUENCE OF WORK FOR MOLD REMOVAL UNDER CONTAINMENT

3.4.1 Preparation for Remediation Work

a. Provide level of containment and PPE required for the remediation based on the Microbial Remediation Plan.

b. Disable all HVAC units and exhaust fans in the area to be remediated.

c. Remove undamaged materials from the work area if they are to be salvaged but cannot be cleaned in place. Store materials in an area with relative humidity maintained below 60 percent (IHFOM, CH 13, Sec. 3) and where temperatures will not damage the

material. Notify Contracting Officer of existing damage to items prior to removal. Clean materials using procedures detailed in Remediation Procedures.

d. Remove supply diffusers, return grilles and exhaust grilles. Clean diffusers and grilles using procedures detailed in Remediation Procedures.

e. Construct containment barriers. Existing walls can be used as a portion of the containment barriers if existing openings in walls (such as doors, wall openings, vents) are sealed using 6 mil polyethylene.

f. Install the AFUs and dehumidifiers.

g. Seal supply, return, and exhaust openings with 6 mil polyethylene sheeting and protect intakes to air handling units. Air handling units are to remain off.

h. Install all equipment needed for removal work in the containment area to minimize egress during demolition.

i. The Contracting Officer will inspect the containment to verify that the containment is properly constructed and the containment area has an overall negative pressure of 0.02 to 0.04 inch water column AIHA IMOM08-679 relative to the outside and adjacent work areas not undergoing active remediation, prior to beginning demolition work.

3.4.2 Demolition

a. Remove mold contaminated materials to be discarded, such as paper, and furniture. Double bag material in 6 mil (IHFOM, CH 13, Sec. 3) poly bags. Seal poly bags using duct tape inside the containment. HEPA vacuum bags before removing them from the containment or airlock. When possible, pass the bags directly from the containment or airlock to the outside. Transport bags to a dumpster. Do not leave the bags at the building / house.

b. Lightly mist all contaminated materials that are being discarded to minimize generation of airborne mold spores during demolition/removal.

c. Remove contaminated gypsum wallboard (GWB) at the preliminary limits of demolition specified in the Microbial Remediation Plan. Inspect back side of removed GWB. If mold is observed on the back side of the GWB, report this condition to the Contracting Officer. After obtaining Contracting Officer approval, continue removing GWB until no mold is observed. If hidden mold is discovered that will extend past the extents of the containment, stop work immediately and reconstruct the containment to extend past the suspected contamination. Re-evaluate level of containment and PPE. Continue to operate AFUs during reconfiguring of containment.

d. Remove drywall by cutting in pieces as large as possible to minimize aerosolization of fungal spores. Drywall screws can either be backed out during removal or later during cleanup.

e. Use dust collection attachments on all power tools, such as sanders, saws, to capture dust created when using the tools. Outlet of dust collector should discharge into inlet of AFU.

f. Remove fiberglass insulation behind removed gypsum board.

g. If wood studs are contaminated, HEPA vacuum all surfaces, scrub them with a brush and detergent to remove mold. After scrubbing studs, HEPA vacuum again to remove any remaining dust. Replace wood studs with damage severe enough to reduce the structural capacity of the member. Prior to removal of any structural member consult with the Contracting Officer.

h. Clean all metal framing with a dilute detergent solution. Clean metal framing with light rust using steel wool and coat with a rust inhibiting paint. Replace metal framing with rust damage severe enough to reduce the structural capacity of the member. Prior to removal of any structural material, consult with the Contracting Officer.

i. Remove contaminated carpet scheduled for removal.

j. Place removed gypsum board, insulation, carpet and remaining debris in two layers of 6 mil (IHFOM, CH 13, Sec. 3) poly bags. Seal poly bags using duct tape inside the containment. HEPA vacuum bags before removing them from the containment or airlock. When possible pass the bags directly from the containment or airlock to the outside. Transport bags to a dumpster. Do not leave the bags at the building / house.

k. Remediation workers must HEPA vacuum their PPE, then remove their PPE within the airlock chamber. Discard disposable coverall suits into a 6 mil (IHFOM, CH 13, Sec. 3) poly bag.

3.4.3 Post-Demolition Inspection

a. The Contracting Officer will inspect the containment area to verify that all contaminated materials have been removed.

b. Allow a minimum of 12-hours after completion of removal work, with AFUs operating, for airborne dust in the containment to settle or be removed by the AFUs.

3.4.4 Cleaning after Demolition, and Cleaning of Settled Spores from Porous / Non-Porous Materials

a. Continue to operate AFUs during cleaning.

b. Clean exposed surfaces.

(1) HEPA vacuum all surfaces.

(2) Damp wipe all non-porous exposed surfaces including polyethylene sheets used to protect materials, external surfaces of ductwork, studs, and floors with clean rag and clean potable water or detergent solution.

(3) Remove poly sheeting inside the containment.

(4) HEPA vacuum all surfaces protected by poly sheeting.

(5) Damp wipe non-porous surfaces protected by poly sheeting with

clean water or a detergent solution.

(6) Clean carpet using procedures previously specified in paragraph POROUS MATERIALS above.

c. Final clearance inspection will be conducted by Contracting Officer. Clearance inspections will be performed using the procedures detailed in Post-Remediation Inspection. If areas fail final clearance inspections, additional corrective actions taken by the contractor must be at no additional cost to the Government. Maintain containments in place until spaces are inspected and accepted by the Government as being fully remediated. The Government will determine whether additional cleaning is required by the Contractor and whether the clearance process will be repeated.

3.5 DUCT AND HVAC SYSTEM CLEANING

3.5.1 Contractor Qualifications

a. The HVAC cleaning contractor must be a certified member of NADCA.

b. The HVAC cleaning contractor must have at least one individual with Ventilation System Mold Remediator Qualifications certified by NADCA onsite during duct and HVAC system cleaning.

3.5.2 Inspection

IH must visually inspect the HVAC system serving all work areas (or as required in the initial Microbial Assessment Survey performed by the Government), and determine if additional remediation is needed to clean the HVAC system, thus preventing re-contamination. Coordinate inspection with the contracting officer. Notify the Contracting Officer of the inspection results. The Contractor must receive written approval from the Contracting Officer before proceeding with HVAC microbial remediation.

3.5.3 HVAC Microbial Remediation

Conduct the following actions if authorized by the Contracting Officer.

a. Follow requirements of the NADCA ACR "Standard for Assessment, Cleaning, and Restoration of HVAC Systems" and/or NAMRI APR guidelines.

b. Using a "gassing" or "fogging" method of cleaning with gaseous chlorine dioxide or ozone is not allowed.

c. Disable all HVAC equipment prior to cleaning any component of the system.

d. Use this method for cleaning the air handling units, terminal units, blowers and exhaust fans:

(1) Construct a limited containment around equipment to be cleaned. Provide appropriate PPE for workers.

(2) Remove filters. Seal filters in 6 mil (IHFOM, CH 13, Sec. 3) poly bags for disposal.

(3) Disassemble units as necessary to clean components. Contractor is responsible for correctly reassembling equipment after cleaning.

(4) Clean disassembled components within the containment or in a separate two chamber cleaning containment. Seal disassembled components in 6 mil (IHFOM, CH 13, Sec. 3) poly bags for transport out of building / house. HEPA vacuum bags before removing them from the containment or airlock.

(5) HEPA vacuum all surfaces.

(6) Damp wipe all non-porous surfaces and components with clean water or a detergent solution.

e. Use this method for cleaning HVAC coils:

(1) Clean coils using a method which will render the coil visibly clean. Coil cleaners must be non-acidic / alkaline, detergent based. Clean condensate drain pans. The drain for the condensate drain pan must be operational during the cleaning.

(2) Rinse coils and drain pans with clean water to remove any latent residues.

(3) Cleaning methods must not cause damage to the coil surface or fins.

(4) Cleaning must restore the coil pressure drop to within 10 percent of the pressure drop measured when the coil was first installed. If the original pressure drop is not known, the coil is considered clean only if the coil is free of foreign matter and chemical residue.

f. Use this method for cleaning the duct system:

(1) During cleaning, connect a vacuum collection system to the downstream end of the section being cleaned. The vacuum collection device must be of sufficient power to render all areas of duct being cleaned under negative pressure relative to rooms and areas of duct not being cleaned. Verify negative pressure at the furthest point from the collection system with a micromanometer and include verification measurements in the IH Daily Report.

(2) Equip the vacuum collection systems with HEPA filters. Exhaust the vacuum collection systems directly to the outside.

(3) Use mechanical agitation devices to dislodge debris adhered to the ductwork, such that debris may be safely conveyed to vacuum collection devices. Cleaning methods must not damage the integrity of the ductwork, nor damage porous surface materials such as liners inside the ductwork.

(4) HEPA vacuum duct surfaces.

(5) When possible, damp wipe metal duct surfaces with clean water or detergent solution. Do not wet fibrous glass thermal or acoustical insulation.

(6) Identify areas where there is evidence of damage to or uncleanable mold in duct insulation. The Contracting Officer will make the decision to discard the insulation, if necessary.

g. Final clearance of HVAC and duct system will be based on a visual assessment (no visible dust, no visible mold) by Contracting Officer. If HVAC fails final clearance inspection, additional corrective actions taken by the contractor will be at no additional cost to the Government.

3.6 FIRE PROTECTION

Provide portable fire extinguishers within the containment area and outside the decontamination unit. Fire extinguishers Must be rated for the class of fire hazards in the work area and must be sized for coverage of the areas within the containment. At a minimum, one 10 pound ABC fire extinguisher for every 1,000 square feet must be strategically placed around the containment. Personnel must be trained for emergency egress and the use of fire extinguishers. Notify fire officials of work activities as required. IICRC S500

3.7 CONSTRUCTION BARRIERS

a. Provide interior shoring, bracing, or support to prevent movement, settlement, or collapse of structure, element, adjacent facilities, or work to remain. Shoring, bracing or support necessary for structural wood studs or metal framing must to be removed and replaced when they cannot be cleaned.

b. Do not disturb microbial-contaminated building materials while isolating work areas. This precaution prevents the release of microbial spores.

c. Workers must wear respirators and other PPE as outlined in the microbial remediation plan when installing critical barriers where microbial contaminated surfaces (walls or surfaces with visible settled dusts) are likely to be disturbed. Operate an AFU if disturbance is likely during setup.

d. Monitor the air pressure differential across work area containments. The monitoring system must be in place before the start of remedial activities. Verification by the Industrial Hygienist is required prior to the start of the microbial remediation.

3.8 QUALITY ASSURANCE / QUALITY CONTROL REQUIREMENTS

3.8.1 Contractor Qualifications

Work must be performed by a qualified remediation contractor. Contractor must carry insurance that specifically covers mold remediation.

a. Remediation contractor's on-site supervisor must have one of the following certifications: Certified Microbial Remediator (CMR), Certified Microbial Remediation Supervisor (CMRS), or Applied Microbial Remediation Specialist (AMRS). Qualified supervisor must be onsite whenever active remediation is being performed. Set-up activities may be performed without supervisor present; qualified supervisor must review set-up prior to start of work.

b. Mold remediation workers must be given training in PPE and mold remediation activities as required for their particular job. Microbial remediation plan must provide details of worker training.

3.8.2 Waste Management and Removal

Keep the site and work area free from accumulations of dust, waste materials, or rubbish caused by Contractor operations and free from any flammable materials or other sources of fire hazard. Remove all waste materials and rubbish from and about the work site in strict accordance with the specifications and applicable codes and regulations.

3.8.3 Post-Remediation Inspection

Clean up all debris and dust in interior spaces outside the work area resulting from the Contractor's remediation work.

After all visible accumulations of material and debris are removed from the containment, provide the Contracting Officer a 24-hour notice for a final clearance visual inspection. The Contracting Officer and Contractor's Industrial Hygienist must conduct a thorough visual inspection of the work area. If during this inspection any visible debris or microbial contamination are observed, the Contractor must re-clean the work area without additional cost to the Government.

3.8.3.1 Clearance

a. Clearance Criteria

   Clearance will be based on visual assessment (all visible mold removed, all visible dust removed, based on a "white glove" test) by Contracting Officer. "White glove" test will consist of wiping the surface with a clean cloth of color suitable to reveal expected type of dust. For most surfaces, a white cloth is suitable. For GWB dust, a dark cloth may be more appropriate.

   Clearance will be based on air sampling. Compare results of remediation area samples with the results of samples collected in outdoor air and adjacent areas providing makeup air. Concentrations of fungal species in the remediation areas must be less than the clearance criteria.

b. Failed remediation areas will be recleaned at no additional cost to the Government and the AFUs kept in operation another 12-hours, followed by another visual assessment. Subsequent failures will follow the same routine until a pass condition is secured.

3.9 CLEAN-UP AND DISPOSAL

3.9.1 Disposal of Material

Dispose of contaminated bagged waste materials removed during this remediation as general construction debris. Follow all applicable local, State, and Federal requirements for the disposal of this material.

3.9.2 Material Packaging

Place waste, as waste is removed, into a disposal container promptly. Disposal containers must consist of at a minimum, two layers of clear 6 mil (IHFOM, CH 13, Sec. 3) polyethylene bags. Tape bags in a gooseneck fashion to form an airtight seal and label appropriately. Bag waste from vacuums equipped with HEPA filters in 6 mil (IHFOM, CH 13, Sec. 3)

polyethylene bags.

3.9.3 Building Exit (Waste Disposal)

HEPA vacuum and damp wipe bags of contaminated waste material prior to removal from the building.. When possible pass the bags directly from the containment or airlock to the outside. Transport bags to a dumpster.

3.9.4 Hazardous Material

Should the Contractor encounter any hazardous materials, notify the Contracting Officer immediately for direction.

Separate hazardous waste from non-hazardous waste to be recycled or reclaimed to the greatest extent practicable and exclude hazardous waste from waste reduction calculations in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

ATT-1 - Microbial Assessment Visual Field Report Form

ATTACHED IN APPENDIX A

-- End of Section --