Department of the Army

New York District

Corps of Engineers

26 Federal Plaza, RM 16-300

New York, NY 10278-0090

Ft. Drum Wellfield Expansion – D-B RFP

Fort Drum, New York

U.S. Army Corps of Engineers, New York District

Contract No.: W912DS19D0012

Order No.: W912DS23F0020

Final Design-Build Request for Proposal

June 2026

Sustainable
Structural
Mechanical
Fire Protection
Electrical
Civil
Controls
Architecture

COLBY COMPANY, LLC
CCE
engineering & design

47A York St
Portland, Maine
04101 USA
colbycoengineering.com

Table of Contents

PROJECT PROGRAM

CHAPTER 1 & 2	PROJECT DESCRIPTION AND PROJECT OBJECTIVES
CHAPTER 3	SITE ANALYSIS
CHAPTER 4	SPACE TABULATION FORM
CHAPTER 5	ROOM REQUIREMENTS - NOT APPLICABLE
CHAPTER 6	ENGINEERING SYSTEMS REQUIREMENTS
CHAPTER 7	APPLICABLE CRITERIA

DIVISION 01 - GENERAL REQUIREMENTS

01 11 00	SUMMARY OF WORK
01 14 00	WORK RESTRICTIONS
01 30 00	ADMINISTRATIVE REQUIREMENTS
01 32 01.10 18	PROJECT SCHEDULE-MILCON
01 33 00	SUBMITTAL PROCEDURES
01 33 16.00 10	DESIGN DATA (DESIGN AFTER AWARD)
01 33 29	SUSTAINABILITY REQUIREMENTS AND REPORTING
01 35 26	GOVERNMENTAL SAFETY REQUIREMENTS
01 42 00	SOURCES FOR REFERENCE PUBLICATIONS
01 45 00	QUALITY CONTROL
01 45 00.15. 10	RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)
01 45 35	SPECIAL INSPECTIONS
01 50 00	TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
01 57 19	TEMPORARY ENVIRONMENTAL CONTROLS
01 58 00	PROJECT IDENTIFICATION
01 74 19	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
01 78 00	CLOSEOUT SUBMITTALS
01 78 23	OPERATION AND MAINTENANCE DATA

PERFORMANCE TECHNICAL SPECIFICATIONS

A10 FOUNDATIONS
B10 SUPERSTRUCTURE
B20 EXTERIOR ENCLOSURE
B30 ROOFING
C10 INTERIOR CONSTRUCTION
C30 INTERIOR FINISHES
D20 PLUMBING
D30 HVAC
D50 ELECTRICAL
G10 SITE PREPARATIONS
G20 SITE IMPROVEMENTS
G30 SITE CIVIL/MECHANICAL UTILITIES
G40 SITE ELECTRICAL UTILITIES
Z10 GENERAL PERFORMANCE TECHNICAL SPECIFICATION

PRESCRIPTIVE SPECIFICATIONS

[-- Not used --]

APPENDICES

APPENDIX A - RFP DRAWINGS
APPENDIX B - FORT DRUM INSTALLATION STANDARDS
APPENDIX C - SITE INVESTIGATION REPORTS
APPENDIX D - REFERENCE DRAWINGS

DIVISION 01 GENERAL REQUIREMENTS

TABLE OF CONTENTS

1.0	PROJECT DESCRIPTION	1
1.1	Section Organization	1
2.0	PROJECT OBJECTIVES	1
2.1	Mission Statement	1
2.2	Project Design	1
2.3	Facility Function	2
2.4	Project Specific Priorities	2
2.5	Appropriate Design	4
2.6	Workflow Process	5
2.7	Special Design Challenges	5
2.8	Adaptability and Flexibility	5
3.0	SITE ANALYSIS	1
3.1	Existing Site Conditions	1
3.2	Site Development Requirements	3
3.3	Construction Phasing, Staging, and Contractor Access	4
4.0	BUILDING REQUIREMENTS	1
4.1	Space Tabulation	1
4.2	Space Relationships	1
4.3	Exterior Character	1
5.0	ROOM REQUIREMENTS	1
6.0	ENGINEERING SYSTEM REQUIREMENTS	1
7.0	APPLICABLE CRITERIA	1
7.1	Industry Criteria	1
7.2	Military Criteria	15

1.0 PROJECT DESCRIPTION

This project will provide potable water to the 10th Mountain Division that will enhance the protection and resilience of critical assets and capabilities. A lack of potable water would significantly impact the Northeast Regional Network Enterprise Center (NEC), the 86th Infantry Brigade Combat Team (Vermont Army National Guard), 91st Military Police Battalion, 925th Contracting Battalion, Army Field Support Battalion-Drum, 308th Military Intelligence Battalion, and U.S. Army Medical Department Activity. This project contributes to mission assurance by ensuring no disruption to daily operations, deployments, training and living conditions which would detract from the mission. The project contributes to resiliency by eliminating the need to procure water from a public, off-post source.

This project will support the installation water demands by designing and constructing five potable groundwater production wells with telemetry, pumps and well house structure enclosures. Each of the five well house sites will include fencing a gate and a generator connection with the exception of well house #2. A single permanently mounted generator and automatic transfer switch will be provided at well house #2 The project includes constructing HDPE DIPS water main pipes from the new water production well field area to the water treatment plant and construction of overhead electric three phase power distribution to the well sites and then underground power distribution to the well house as well as underground communications duct banks.

1.1 Section Organization

This Section is organized under seven major chapters.

Chapter 1 - Describes the scope of the project.

Chapter 2 - Defines project objectives.

Chapter 3 – Describes the site analysis.

Chapter 4 - Describes the building requirements.

Chapter 5 - Provides additional room requirements - not applicable to this project.

Chapter 6 - Contains Army Standard Design Criteria, generally applicable to all facility types, installation and project specific criteria unless otherwise indicated in Section. Criteria in Chapter 6 follows industry standard ASTM Uniformat II.

Chapter 7 - Lists applicable industry and government design criteria, generally applicable to all facility types, unless otherwise indicated in the Section and is not an all-inclusive list. Other industry and government standards may also be used, where necessary to produce professional designs, unless they conflict with those listed.

2.0 PROJECT OBJECTIVES

2.1 Mission Statement

The Army's objective is that buildings have a 25-year useful design life before a possible reuse/re-purpose or renovation requirement, to include normal sustainment, restoration, modernization activities and a 40-year building replacement life. Therefore, design and construction should provide an appropriate level of quality to ensure continued use of the facility over that time-period with the application of reasonable preventive maintenance and repairs.

Site infrastructure will have at least a 40-year life expectancy with industry-accepted maintenance and repair cycles.

Requirements stated in this Contract are minimums. Innovative, creative, and life cycle cost effective solutions, which meet or exceed these requirements are encouraged. Further, the OFFEROR is encouraged to seek solutions that will expedite construction (panelization, pre-engineered, etc.) and shorten the schedule. The Government’s intent is to emphasize the placement of funds into functional/operational requirements. Materials and methods should reflect this by choosing the most economical Type of Construction allowed by code for this occupancy/project allowing the funding to be reflected in the quality of interior/exterior finishes

2.2 Project Design

Provide overall project design per Section 01 33 16.00 10, Design Data (Design After Award). The Contractor’s Designer of Record (DOR) is responsible for continuing the development of the schematic design documents located in Appendix A RFP Drawings based on the criteria in the DBRFP. CAD drawings will be provided to the Contractor at project award which can be used at the Contractor’s risk.

2.2.1 Site Design

The project site is located within the Fort Drum Army Base located in Jefferson County, NY. The project will create five new wells, combining to produce a minimum of 500 gpm (gallons/minute). A new water main will tee off from the 16” water main entering the water treatment plant to the intersection of Elm Lane and Pleasant Street and then feed through a combination of services and mains to each individual well. The alignment of the water main has been thoroughly reviewed by the consultant, Fort Drum, and Army Corps of Engineers, and must be constructed as located in the Design Build RFP Drawings. The water main must be constructed of HDPE.

Electrical power will be fed from two separate sources to meet the resiliency requirements; one, an overhead three phase power is to be run from the intersection of Pleasant Street and Route 26 to the intersection with Elm Lane. The feed will continue overhead along Pleasant Street and well access driveways until it drops underground at poles located within 100 feet of each well. A second redundant feed will be run from VSFT38A to FT72A for Well #10 (Existing) to a utility pole located near the intersection of Main Tank Trail and Elm Lane. From this location the power will run overhead on utility poles to Well #2. The feed will continue overhead along Pleasant Street and well access driveways until it drops underground at poles located within 100 feet of each well.

Communications will be run from each well in underground duct banks back to a new manhole (CMH-3) located at the intersection of Pleasant Street and Elm Lane. From CMH-3 communications will run underground to the intersection of Elm Lane and Main Tank Trail into CMH-1. From CMH-1 it is believed that there are existing conduits that can be utilized to run the communications back to the water treatment plant. The DB Contractor will need to verify that there are existing conduits that can be used for the communications cabling.

2.2.2 Building Designs

Contractor and Contractor's Designer of Record must be responsible to provide oversight, inspection and overall project coordination throughout. Design and construction approvals are required through review, comment, resolution, and concurrence by the Government.

Design Submittals must be in accordance with Design Submittal Procedures in the Specifications, and other sections of this RFP. Delegated designs and proprietary materials specified in design documents must comply with DOD regulations.

2.3 Facility Function

This project will support the installation water demands by constructing five potable groundwater production wells with telemetry, pumps and well house structure enclosures. Each of the five well house sites will include access roads, fencing, a hydrant, a fire department connection, a gate, and a generator connection. Signage above the fire department connections at each well house will indicate that the FDC is not for fire fighting purposes.

2.4 Project Specific Priorities

The project specific priorities are as follows:

The watermain and utility alignment.

Required output from the 5 total wells equals a minimum of 500 gallons per minute.

2.4.1 Sustainable Design and Construction

Design and construct the project to comply with sustainability requirements identified in Section 01 33 29, *Sustainability Requirements and Reporting* and in accordance with UFC 1-200-02, *High Performance and Sustainable Building Requirements*.

2.4.2 Storm Water Management - Low Impact Development (LID)

Low Impact Development (LID) is required to be implemented in accordance with the Department of Defense (DoD) LID Policy. LID is a form of storm water management that infiltrates stormwater into the ground close to its source.

In January 2010, Deputy Under Secretary of Defense, issued Department of Defense (DoD) policy on implementation of storm water requirements under Energy Independence and Security Act (EISA) Section 438. This policy directs DoD to implement EISA Section 438 Environmental Protection Agency (EPA) technical guidance in accordance with DoD Policy on Implementing EISA Section 438. UFC 3-210-10, Low Impact Development, was developed to provide the minimum technical requirements to

comply with DoD Policy on implementation of storm water requirements under EISA Section 438.

Use UFC 3-210-10 to comply with DoD, EISA 438, Fort Drum and Army Corps of Engineers LID Policy.

LID features will be associated with the well houses and gravel driveways (i.e., bio swales, infiltration, rainwater harvesting). Coordinate requirements for those systems in other parts of this RFP.

Comply with UFC 3-210-10, *Low Impact Development.* Additional specific LID and stormwater management requirements are found in RFP Parts 3 and 4, Section G30. In addition to LID, comply with Federal, State and Local stormwater regulations.

The project will likely create approximately 1.3 acres or more in new impervious area. It will be necessary to provide LID treatment of these new impervious surfaces. Specifically, the new impervious areas are associated with access driveways and well houses. A series of test pit and infiltration tests must be completed in these areas to determine the seasonal high groundwater elevation and potential infiltration rate of the soils. The design build team must select and design appropriate LID measures for each of the proposed treatment areas.

2.4.3 Energy Efficiency

Incorporate energy efficiency in accordance with UFC 1-200-02, *High Performance and Sustainable Building Requirements*. Per UFC 1-200-02, Table 1-1 Building Requirements and Thresholds, the new well house buildings will be designed to achieve at least a 30% energy consumption reduction from ASHRAE 90.1 baseline. The building will meet current IECC and ASHRAE Envelope Requirements for Climate Zone 5A.

2.4.4 Building Commissioning

Building Commissioning is not required.

2.4.5 Accessibility Requirements

The new well house buildings will not be designed per 2015 ABAAS Architectural Barriers Act Accessibility Standards, per Section 203.5 *Machinery Spaces*. Spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment shall not be required to comply with these requirements or to be on an accessible route.

2.4.6 Antiterrorism Criteria

Based on UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings, the new well pump houses are exempt from Anti-Terrorism/Force Protection (ATFP) requirements because they are classified as unoccupied buildings. The standards outlined in this UFC are intended to protect personnel within inhabited facilities, which are defined as being routinely occupied by 11 or more personnel. Since a well pump house does not meet this occupancy threshold, the mandatory requirements for standoff distances and structural hardening are not applicable.

2.4.7 Cybersecurity

Design, acquire and execute all control systems (including systems separate from management utility monitoring and control system) in accordance with UFC 4-010-06 Cybersecurity of Facility-Related

Control Systems and as required by individual Facilities Engineering Command (FEC) or Installation implementation policy.

Provide all designer submissions and deliverables as outlined in UFC 4-010-06. Provide a fully tailored Unified Facility Guide Spec 25 05 11 (UFGS 25 05 11) for each FRCS identified. Ensure the latest DoD, Component, and installation's policies and guidance are met for the requirements. Submit documentation required in accordance with the UFC for all FRCS. All design submittals and deliverables must be reviewed and approved by the Government at all stages of the design. All required construction submittals must be submitted and approved per the approved Unified Facility Guide Specs for each FRCS.

The Contractor is not responsible for achieving an ATO for any of the FRCS systems, but must provide artifacts noted in the UFC and UFGS in support of the ATO effort.

Facility Classification:

Based upon the C-I-A levels that the information system owner provided, the facility classification for the Fort Drum Wells Field Expansion Project is **Mission Essential**.

Facility-Related Control Systems:

The following facility-related control system is planned for the current project:

- Water Telemetry Control System (WTCS)
  - May be referenced as Supervisory Control and Data Acquisition (SCADA)
  - Per the System Owner, this control system has been given C-I-A impact levels of MODERATE-MODERATE-MODERATE.
  - Trane Tracer SC+ is stated to be the only controller that will integrate into the existing system.
  - Controls for pumps or miscellaneous equipment will integrate with the water telemetry/SCADA system.
- Insertion type Magnetic Flowmeter.

Interface with the Base System Owner (SO) for each system via COR\RFI to define existing system requirements, Confidentiality Integrity Availability (CIA) Impact Ratings, transport cybersecurity requirements (existing enclave, standalone, etc.), existing authority to operate (ATO), local installation cyber-requirements and other items that may impact the security posture of the system or scope and level of work required.

2.4.8 Secured Areas

The scope of this project does not include a secured area and is not required for this project.

2.5 Appropriate Design

The exterior wall system will have split-face concrete masonry units (CMU) in a tan color. The door will be finished in a charcoal black color with louvers and associated door and louver flashing to match the door color. The mortar tone will be a light gray color aluminum gray for sealants. The Standing Seam Metal roof system and associated flashing will have a gray tweed finish color. The interior will be finished with unpainted plywood for the walls and ceiling and a sealed concrete floor. Providing samples for approval from Fort Drum's Public Works Department is required prior to installation.

The design of the water main, overhead electric, underground electric and underground communications must follow all applicable details in Appendix A. All tracer wire vaults for electric and communications must be located in the shoulder or off to the side of the gravel road. Additionally, the water main must be constructed with HDPE DIPS pipe.

2.6 Workflow Process

Work performed on the site should follow the requirements outlined in Specification Section 01 14 00. The intent of the 5 well houses and sites are to be a utility building that is visited infrequently for testing and maintenance purposes. The well house sites need to be maintained and accessible.

2.6.1 Hours of Operation

Fort Drum will be in operation during the execution of the project and access will be maintained for personnel including parking areas and walkways. All efforts shall be made to minimize impact to the operations of Fort Drum.

2.6.2 Staffing/Occupancy

The five well houses are to be above ground structures. They will not be sprinklers and there are no fire alarms. A fire extinguisher will be provided inside next to the personnel door. The overall height is approximately 15 feet at the top of the high roof. The number of stories is one. The building footprint is approximately 196 square feet.

The well houses will have a construction type VB - any materials permitted by code, unprotected.

Per NFPA 101, these buildings will be classified as General Industrial occupancies that are unoccupied.

Per IBC, these buildings will be classified as Utility (Group U) occupancies that are unoccupied.

2.7 Special Design Challenges

The water main is proposed to be directionally bored under the South Branch of Beaver Creek in the vicinity of STA 508+00 to eliminate any environmental impacts to the stream. The stream is currently bridged by a pre-cast concrete box culvert.

There are temporary wetland impacts noted throughout the design plans for additional clearing required for overhead utility poles and associated three phase power. Additional impacts can be found where the underground communications duct bank and water main have been routed off to one side of the road.

The five wells must produce a combined volume of 500 gallons per minute (gpm). Each well must be equipped with a variable frequency drive (VFD) and tied into the water treatment plant control system. The VFD’s are adjusted by the water treatment plant operator to maintain water elevations within the three water storage tanks located on the base.

2.8 Adaptability and Flexibility

Not applicable.

3.0 SITE ANALYSIS

This section includes the description of all site related information broken out into Existing Site Conditions and Site Development Requirements.

3.1 Existing Site Conditions

3.1.1 Natural Constraints

Topography: See drawings in Part 6 for detailed existing conditions. The plans are a compilation of existing ground survey (2023), GIS data and aerial photography. The project follows the path of several existing gravel roads; Main Tank Trail, Elm Lane, Pleasant Street. The majority of the work is located in the shoulder and just off the edge of these roadways. The topography around the Main Tank Trail is relatively flat as it abuts an active airfield. Portions of the Main Tank Trail are located well east of the runway to cross deep, 60-80 ft, ravines. The northern end of the Main Tank Trail slopes downward to the intersection of Elm Lane which is lower and is constructed approximately 3-5 feet above the existing ground. Pleasant Street commences at NYS Route 26 and roughly parallels the Main Tank Trail a mile to the north. It is constructed 3-5 feet above the existing ground. Topography around Pleasant Street and Elm Lane generally slopes east to west with many small stream culvert crossings and two large box culvert crossings for more significant brooks.

Vegetation: The vegetation along the Main Tank Trail is mostly grass pasture as it directly abuts an active airfield. The vegetation along Elm Lane and Pleasant Street consists of a dense mixture of coniferous and deciduous trees.

Natural Resources (Threatened and Endangered Species/Critical Habitat, Migratory Bird, and Essential Fish Habitat): The natural resources around the installation are well known to the Fort Drum Environmental Department (ED). The ED will provide documentation and assist in the permitting for the potential impacts to all natural resources.

Wetlands: Freshwater wetlands are abundant throughout the site and have been, for the most part, delineated by the ED. Additional wetlands are within the scope and will need to be delineated by the ED.

Reference Geotechnical Soils Report if applicable. A reference geotech report is available and can be found in Attachment C, Field Investigation Report .

Unexploded Ordnance (UXO) Survey or Evaluation Reports must be coordinated with Fort Drum prior to the commencement of construction.

3.1.2 Man made

Existing Vehicular Access and Circulation: Three existing gravel roads provide access to the majority of the project; Main Tank Trail, Elm Lane and Pleasant Street. See drawings in Part 6.

Site Utilities: An existing 16” non-potable water main flows east to west across the airfield into the existing water treatment plant. Existing underground electric and communications are located east of the Main Tank Trail and in the vicinity of the Main Tank Trail and Elm Lane intersection. Overhead electric exists along NYS Route 26 in the vicinity of the Pleasant Street intersection.

Site Drainage & Storm Water Runoff (hydrology): The project is linear and follows the path of several existing gravel roads; Main Tank Trail, Elm Lane, Pleasant Street. New impervious areas will be created by the construction of well access roads and driveways that serve each well. The amount of new impervious area created by the project will require LID Stormwater Treatment.

Existing Buildings: The majority of the site is located along or just off from existing gravel roads and the airfield. The only existing building in close proximity to the project is the existing water treatment plant, Building 2025 and elevated water storage tank.

Existing water storage tank, Building 2025 and Water Treatment Plant.

Fencing: Existing chain link security fencing exists around the water treatment plan and airfield. See drawings in Part 6.

Adjacent Land Use: The land east of Main Tank Trail is an active airfield. The three gravel roads within the project area are used by tanks to access exercise areas located through the installation.
Cultural Resources (historical, archeological): Cultural resources do exist within Fort Drum. Coordination with the Fort Drum Environmental Department (ED) is necessary to understand if the project infringes within any of these areas.

Permits: All existing land use, stormwater, natural and cultural resources, and well field groundwater withdrawal permits are held by the ED and Fort Drum. Coordination with the ED to update and obtain these permits is critical in the development of this design. The design build contractor must engage with and provide technical plans and permitting data as required by the ED to complete and obtain those permits. The water withdrawal permit has been submitted to the New York Department of Health (NYDOH) and the New York Department of Environmental Conservation (NYCDEC) for a modification of Ft. Drum's existing water withdrawal permit based on the field investigation testing for this project. A water

quality certification will be required. The review for this application is anticipated to be 90 days. A Wetland Permit will be required. The review for this application is anticipated to be 120 days. A SPEDS Stormwater Permit will also be required for this project. The review for this application is anticipated to be 90 days. Additional permitting, including but not limited to, the NYSDOT for electric utility work in the right of way, National Grid and utility connection permits that are required for the construction of the project are the contractor's responsibility. The DOR is responsible for completing and submitting the engineer certificate report which is required to be stamped by a New York licensed engineer.

3.2 Site Development Requirements

3.2.1 Facility Footprint

The building area footprint is 196 sf for each of the five well houses.

3.2.2 Vehicular Access and Circulation

Service Access and Parking: Each well house must be designed to accommodate maintenance trucks, trucks pulling a portable generator and a mobile crane large enough to pull out the existing well pump.

Utilities: The proposed utilities must include a water main that connects all new well houses to the water treatment plant. The water main must be capable of carrying the maximum flow and be equipped with adequate isolation valves. Additionally, the water main must follow the alignment as depicted on the drawings in Part 6.

The power to the well houses must be fed from two different sources to ensure that it is resilient. The drawings reflect an overhead alignment from the intersection of Elm Lane and Main Tank Trail to the well houses as well as an overhead feed from the intersection of Pleasant Street and NYS Route 26 to the well houses.

Communications must run from each well house to the water treatment plant. The drawings depict an alternative that utilizes a combination of existing conduits and new duct banks. See drawings in Part 6.

Signage: The contractor is to provide and install all required signage with review and approval prior to installation from Ft. Drum.

Site Drainage & Storm Water Runoff (hydrology): Based on the 30% design the project will introduce approximately 1.3 acres of new impervious area for the construction of the new access roads and five well houses. Low Impact Development (LID) Best Management Practices are required to provide stormwater treatment for all new impervious areas in accordance with UFC, EISA 438, State and Local permit requirements.

Dewatering: Portions of this project will require dewatering and work within seasonal streams. All dewatering practices must be carried out in compliance with all federal, state and local permit requirements.

Site Clearing: There is a significant amount of clearing required with this project dictated by the Fort Drum and UFC clear space requirements for overhead electric utilities. The areas of clearing must be coordinated with the ED and required land use permits. Timing of the clearing must be scheduled to ensure compliance with Federal Endangered Species as well as other permit requirements.

Fencing (perimeter security): New security fencing will be required around each well house. A minimum 10 foot clear distance must be maintained from the fence line to the edge of woods. Construction of the security fence must be in accordance with the UFC. See drawings in Part 6.

Permits: All required permitting is the responsibility of the contractor. However, all environmental permitting must be coordinated with the Fort Drum Environmental Department with the DB team providing necessary technical support throughout the project.

Sustainable Development: The project must utilize Low Impact Development (LID) stormwater strategies to provide treatment of all new impervious areas. Provide submittals in support of Section 01 33 29, *Sustainability Requirements and Reporting*.

3.3 Construction Phasing, Staging, and Contractor Access

Work performed on the site should follow the requirements outlined in Specification Section 01 14 00 and these guidelines. The contractor will have to coordinate with Ft. Drum during the training seasons that occur on base at specific locations which will impact the project area close to the airfield and OTC. The work performed along Main Tank Trail and in the limits of the airfield are required to be coordinated with the Ft. Drum Airfield and must follow the requirements to work in/around the airfield. The work must also be phased to not disturbed the bat species in the area, requirements for this have been attached to Specification Section 01 14 00. Work performed to the exterior of the buildings is to be coordinated with the occupants to minimize disruption at entry points, but does not have a prescribed sequence. The location of Contractor laydown and storage will need to be coordinated during construction for different areas of work. Work shall be sequenced in the manner that is most efficient and cost effective.

Construction Access / Lay down Area: The location of the construction access and laydown areas must be coordinated with Fort Drum.

4.0 BUILDING REQUIREMENTS

Each of the five pump houses will be composed of a single room to house potable groundwater production wells with telemetry, pumps, and associated infrastructure.

4.1 Space Tabulation

Each of the five pump houses will be composed of a single room that is approximately 196 sf.

4.2 Space Relationships

Defining space relationships is not required for this project due to the single program and single room arrangement of the pump houses.

4.3 Exterior Character

The exterior wall system will have split-face concrete masonry units (CMU) in a tan color. The door will be finished in a charcoal black color with louvers and associated door and louver flashing to match the door color. The mortar tone will be a light gray color aluminum gray for sealants. The Standing Seam Metal roof system and associated flashing will have a gray tweed finish color. The interior will be finished with unpainted plywood for the walls and ceiling and a sealed concrete floor. Providing samples for approval from Fort Drum's Public Works Department is required prior to installation.

Surface mounted building signage must be provided on two separate vertical faces of the building. Signage must also be approved by Fort Drum's Public Works department prior to installation.

5.0 ROOM REQUIREMENTS

This chapter is not applicable to this project. (Chapter 5)

6.0 ENGINEERING SYSTEM REQUIREMENTS

6. ENGINEERING SYSTEMS REQUIREMENTS

A10 FOUNDATIONS

SYSTEM DESCRIPTION

Provide the building foundation system in accordance with Unified Facilities Criteria (UFC) 3-301-01, *Structural Engineering* and UFC 3-220-01, *Geotechnical Engineering*. Design foundations to suit subsurface conditions, capable of transmitting all building loads to the ground.

See Engineering Systems Requirements (ESR) Section B10, *Superstructure*, for additional loading criteria.

In addition, design the structure in accordance with the following loading criteria:

Importance Factors

Use Risk Category II in Table 2-2 of UFC 3-301-01 for determining Importance Factors for seismic and snow design.

Wind Exposure: Base wind design on Exposure B.

A10 GENERAL

GOVERNMENT PROVIDED GEOTECHNICAL INFORMATION

Subsurface soil information, including a geotechnical report are included in other portions of this RFP.

The included subsurface information is only for the Contractor's information and is not guaranteed to fully represent all subsurface conditions. The Government will not be responsible for any interpretation or conclusion by the Contractor drawn from the data or information.

The included geotechnical report accompanying the subsurface information is provided only to better convey data (boring logs, testing, and other data) or to document observed site conditions. The assumptions, analysis, and recommendations of any accompanying report were developed for preliminary planning purposes only and may not reflect present project requirements. The Contractor may retain a Geotechnical Engineer experienced and licensed in the geographic region of the project to interpret the Government provided information as related to the design concept and develop geotechnical requirements to support design and construction.

Anticipate minor variations in subsurface conditions between borings. The Contractor is responsible for costs associated with the site preparation, ground improvement and foundations except as allowed by Contract Clause Federal Acquisition Regulation (FAR) 52.236-2, "Differing Site Conditions". The Contractor's Geotechnical Engineer may perform additional subsurface investigation/testing as required to adequately determine all applicable geotechnical factors including the type and capacity of the project foundations. The Contractor's Geotechnical Engineer may evaluate the provided information and any additional information obtained and prepare a report as described in other portions of this RFP. The minimum requirements for the subsurface investigation and report are as

required by Facilities Criteria (FC) 1-300-09N with associated references.

Provide personnel under the supervision of a registered Professional Engineer to inspect excavations and soil/groundwater conditions throughout construction. The Engineer is required to perform pre-construction and periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the Contractor and the Contracting Officer, is required to update the excavation, sheeting, shoring and dewatering plans as construction progresses to reflect actual site conditions and is required to submit the updated plan and a written report (with professional stamp) at least monthly informing the Contractor and Contracting Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer must be available to meet with the Contracting Officer at any time throughout the Contract duration. Provide the services of the Engineer at no additional cost to the Government. It is important to note that the presence of loose or compressible soils may result in excessive settlement that could impact the performance of surface bearing structures and supporting facilities such as foundations, slabs, pavements, sidewalks, and utilities. The magnitude and duration of consolidation settlement will be dependent on the composition, depth, and thickness of the compressible soils as well as the successful bidder's design concept. The Contractor's Geotechnical Engineer, if retained by the Contractor, is responsible for evaluating potential global settlement due to designed grade increases and final structural loads. The Contractor's Geotechnical Engineer must develop any settlement mitigation procedures (such as preloading, surcharging, fill monitoring programs, and ground improvement systems) needed to maintain global settlements within tolerable limits. Surcharge material, if required, must remain in place for a minimum of 90 days.

SEISMIC DESIGN

A site-specific seismic ground motion study is not required.

Use the seismic site classification DEFAULT.

A1010 STANDARD FOUNDATIONS

As determined by the Designer of Record to be applicable, provide a Standard foundation. "Standard Foundations" are shallow or deep foundations as specifically addressed in International Building Code (IBC) Chapter 18. Do not use masonry unit footings, steel grillage footings, timber footings or wood foundations. Treated timber piles may be used if determined acceptable by the Designer of Record.

A1020 SPECIAL FOUNDATIONS

As determined by the Designer of Record to be applicable, provide a Special foundation. "Special Foundations" are any foundations that are not specifically "Standard Foundations", or a combination of Standard Foundations and a site improvement/ground modification system. Examples of site improvement/ground modification systems include surcharging, stone columns, rammed aggregate piers, impact densification, compaction grouting, vibroflotation, and other similar systems. As "Special Foundation" techniques or systems typically require the use of specialty contractors, a Professional Engineer must establish installation and acceptance criteria and supervise the installation. The Designer of Record must submit justification for use, including acceptable evidence of previous successful installation in similar conditions, methods and equipment used in their installation, proposed testing and inspection to be used, supporting test data, calculations and any other information related to the structural properties and load capacity of such system. The allowable stresses for piles/piers must not exceed those limitations specified in UFC 1-200-01.

A1030 GROUND FLOOR SLABS

As determined by the Designer of Record, provide soil supported concrete slab on ground. Where slab on ground is below the existing adjacent exterior grade, provide water/damp-proofing and a perimeter drainage system to remove ground water from the area immediately adjacent to the buildings. Provide perimeter and under slab insulation in accordance with UFC 3-101-01, *Architecture*.

6. ENGINEERING SYSTEMS REQUIREMENTS

B10 SUPERSTRUCTURE

SYSTEM DESCRIPTION

The superstructure consists of structural elements above the foundation that provide support for vertical loads and resistance to lateral loads.

This section includes the requirements for the superstructure of the building, including floor and roof framing, columns, interior load-bearing walls and the main lateral-force resisting system. Exterior load bearing walls are addressed in Section B20.

Provide the building framing system in accordance with Unified Facilities Criteria (UFC) 3-301-01, *Structural Engineering*.

Importance Factors

Use Risk Category II in Table 2-2 of UFC 3-301-01, *Structural Engineering* for determining Importance Factors for seismic, snow, and wind design.

Seismic Design Category

The Seismic Design Category is B.

Wind Exposure

Base wind on Exposure B.

B1010 FLOOR CONSTRUCTION

The floor construction must include reinforced concrete slab-on-grade construction. The floor slab must be supported on subgrade prepared as recommended by the geotechnical report.

B1020 ROOF CONSTRUCTION

The roof construction must include wood deck on wood framing.

The roof deck must be supported on concrete masonry walls at the perimeter.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

B20 EXTERIOR ENCLOSURE

SYSTEM DESCRIPTION

This system consists of the exterior shell of the facility, which includes all vertical and horizontal exterior closure such as exterior walls and exterior doors. This system excludes roofing (See System B30, *Roofing*). Include load bearing exterior walls here, and not in System B10, *Superstructure*. Structural frame elements at exterior such as columns, beams, and spandrels are included in Superstructure, with only the applied exterior finishes (e.g., paint, stucco) being included here. Finishes to the inside face of walls which are not an integral part of the wall construction will be included in System C30, *Interior finishes*.

GENERAL SYSTEMS REQUIREMENTS

B2010 EXTERIOR WALLS

Provide a single thickness, barrier wall composed of the Exterior Closure construction indicated below.

B201001 EXTERIOR CLOSURE

Provide Exterior Closure system as described below.Provide split face concrete masonry unit veneer as the Exterior Closure.

B201002 EXTERIOR WALL BACKUP CONSTRUCTION

Not applicable.

B201003 INSULATION & VAPOR RETARDER

Provide continuous insulation, vapor retarder, water-resistive barrier, and air barrier to meet or exceed requirements of project's energy savings requirements as indicated by applicable American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) 90.1 calculations called for in Unified Facilities Criteria (UFC) 1-200-02, *High Performance and Sustainable Building Requirements*, and meeting minimum building envelope insulation requirements of UFC 3-101-01, *Architecture*.

Provide a continuous air barrier to control air leakage into, and out of conditioned spaces. The air barrier must encompass all elements of the facility that are exposed to the outside environment or outside environmental conditions such as roof, walls, floors, and compartmentalized unconditioned portions of the facility such as garages, and negatively pressurized spaces. Permanently seal penetrations through the air barrier, joints in the air barrier, adjoining construction, and transitions to different air barrier materials.

Confirm air barrier compliance with Air Barrier Performance Test in RFP Part 4 B20, *Exterior Enclosure*.

Provide a vapor pressure analysis and hygrothermal analysis in accordance with UFC 3-101-01, *Architecture.* Determine if a moisture barrier/ vapor retarder is required and where it would be located.

Include analysis and conclusion in the design analysis for the project, refer to Part 2 Section 01 33 10.05 20*, Design Submittal Procedures*. If required by the analysis, provide a moisture barrier/ vapor retarder to restrict the flow of moisture through the exterior enclosure.

Include written and graphic descriptions of exterior enclosure barrier materials and location within the wall as a part of the Contractor provided design analysis. Identify in the analysis the continuous boundary limits of the air barrier and of the zone or zones to be field tested for building air tightness.

Provide contract drawings that indicate each exterior enclosure barrier location and the materials that make up the barriers. Detail the following barrier conditions;

1. Typical conditions at wall sections.
2. Barrier treatment at wall openings.
3. Intersections with other exterior enclosure assemblies and materials. Include intersections at roof and floors.
4. Intersections with counter flashing.
5. Inside and outside corners.
6. Preservation of air and water tightness at anchors for materials that cover the barrier.
7. Treatment to seal barrier penetrations such as conduits, pipes, electric boxes, and fixtures.
8. Indicate air barrier perimeter, if facility is segmented into areas that are not within the air barrier envelope.

B201004 PARAPETS

Not applicable.

B201005 EXTERIOR LOUVERS & SCREENS

Provide exterior louvers and screens, where required and detailed to integrate with the architecture of the building, as appropriate to the design of the building.

B201006 BALCONY WALLS & HANDRAILS

Provide roof fall protection anchor complying with Occupational Safety and Health Administration (OSHA) requirements for roof hatch access and operation fall protection.

B201007 EXTERIOR SOFFITS

Provide exterior sheet metal flashed vented soffit system.

B201009 EXTERIOR PAINTING AND COATINGS

Not applicable.

B201010 EXTERIOR JOINT SEALANTS

Provide exterior application of joint sealants to seal joints and prepare for finish material installation.

B201011 SUN CONTROL DEVICES (EXTERIOR)

Not applicable.

B201012 SCREEN WALL

Not applicable.

B2020 EXTERIOR WINDOWS

Not applicable.

B202001 WINDOWS

Not applicable.

B202002 STOREFRONTS

Not applicable.

B202003 CURTAIN WALLS

Not applicable.

B202004 EXTERIOR GLAZING

Not applicable.

B202090 OTHER EXTERIOR WINDOWS

Not applicable.

B2030 EXTERIOR DOORS

Provide an insulated hollow metal solid door assembly. Exterior doors and frames must be non-corroding prefinished galvanized steel.

Provide Heavy Duty Doors - American National Standards Institute/Steel Door Institute (ANSI/SDI) A250.8, Level 2, physical performance Level B, Model 1.

B203001 SOLID DOORS

Not applicable.

B203002 GLAZED DOORS

Not applicable.

B203004 OVERHEAD ROLL-UP AND OVERHEAD SECTIONAL DOORS

Not applicable.

B203006 BLAST RESISTANT DOORS

Not applicable.

B203008 EXTERIOR DOOR HARDWARE

Provide the services of a certified door hardware consultant to prepare the door hardware schedule.

Provide hardware keying compatible with the existing Base-wide keying system. Provide replacement interchangeable cores compatible with the Best Lock system.

Provide door hardware finish of stainless steel.

B203090 OTHER EXTERIOR SPECIALTY DOORS

Not applicable.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

B30 ROOFING

B30 GENERAL SYSTEM DESCRIPTION

Provide watertight roof systems compatible with the facility function, construction, and service conditions. Provide complete cold roof system design and construction services for the entire new facility roof system, including all ancillary and incidental work necessary for a complete, new, watertight roof system installation. Refer to Appendix A, RFP Drawings, for Cold Roof Design information.

Submittal Requirements: Components of a minimum roof submittal include the roof plan, method of drainage, standard details and details unique to the project, wind load calculations and requirements.

Provide a Pre-Design Roofing Conference (if required in RFP Part 4) and Pre-Roofing Conference to assure roof design and construction is properly coordinated before construction begins.

Refer to Unified Facilities Criteria (UFC) 3-110-03, *Roofing*, UFC 3-101-01, *Architecture*, and UFC 1-200-02, *High Performance Sustainable Building Requirements* for additional roofing requirements.

B3010 ROOF COVERINGS

B301001 STEEP SLOPE ROOFING SYSTEMS

Steep slope roofing systems are preferred over low slope roofing systems. Steep slope roofing systems that are acceptable include metal.

Provide a roofing system that resists wind uplift pressures calculated in accordance with American Society of Civil Engineers (ASCE) 7. Uplift resistance must be validated by applicable Factory Mutual (FM), Underwriters Laboratories (UL) or American Society for Testing and Materials (ASTM) uplift resistance test procedures. Steel panels must be aluminum-zinc alloy coated steel conforming to ASTM A 792/A 792M, AZ 55m coating.

B301002 LOW SLOPE ROOFING SYSTEMS

Not Applicable.

B301003 ROOF INSULATION AND FILL

Provide roof insulation values no less than in accordance with UFC 1-200-02, *High Performance and Sustainable Building Requirements* and UFC 3-101-01, *Architecture*.

B301004 FLASHINGS AND TRIM

Flashing and sheet metal work includes sheet metal roofing. Flashings must be Steel Sheet, Aluminum Zinc-coated - ASTM A792/A792M, minimum of 0.70 mm (24 gauge) Pre-Finished

Aluminum. Finish must be baked-on factory applied color coating of polyvinylidene fluoride (PVF2) or other equivalent fluorocarbon coating with a minimum thickness of 0.8 to 1.3 mils.

B301005 GUTTERS AND DOWNSPOUTS

Not Applicable.

B301006 ROOF OPENINGS AND SUPPORTS

Roof access hatch will satisfy OSHA and roof access requirements per code. Primarily, the roof access hatch will be used to provide access to the wellheads for the installation and removal of well components and periodic well development efforts. Provide insulated roof hatch and insulated roof hatch curb with slam latch and safety tie off roof anchor to be provided. Ensure attachment fasteners are self-sealing to maintain roof integrity. Standard neoprene washers are not to be used in the attachment of the roof hatch.

B301090 OTHER ROOFING

Provide ice breaks. Ensure attachment fasteners are self-sealing to maintain roof integrity. Standard neoprene washers are not to be used in the attachment of the ice breaks.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

C10 INTERIOR CONSTRUCTION

SYSTEM DESCRIPTION

Interior construction includes general system requirements and specialties listed below.

Provide durable construction appropriate for the building function. Acoustic properties of materials, as well as durability, must be considered during material selection.

GENERAL SYSTEM REQUIREMENTS

Areas of the Project subject to abuse require that "impact resistant" systems be provided.

C1010 PARTITIONS

All interior partitions must be 3/4-inch thick pressure treated plywood on the interior face over, a vapor barrier over, 2x6 pressure treated wood studs. 5-1/2” mineral wool insulation; R-16.9 minimum to be provided within the wall cavity of the 2x6 pressure treated wood studs. Continuous extruded polyisocyanurate insulation with an R-value of 10 will also be provided between the split face CMU exterior wall and the interior wall partition described above.

C101001 FIXED PARTITIONS

Not Applicable.

C101002 DEMOUNTABLE PARTITIONS

Not Applicable.

C101003 RETRACTABLE PARTITIONS

Not Applicable.

C101004 INTERIOR GUARDRAILS AND SCREENS

Not Applicable.

C101005 INTERIOR WINDOWS

Not Applicable.

C101006 GLAZED PARTITIONS & STOREFRONTS

Not Applicable.

C101007 INTERIOR GLAZING

Not Applicable.

C1020 INTERIOR DOORS

Not Applicable.

C102001 STANDARD INTERIOR DOORS
Not Applicable.

C102002 GLAZED INTERIOR DOORS
Not Applicable.

C102003 FIRE DOORS
Not Applicable.

C102004 SLIDING AND FOLDING DOORS
Not Applicable.

C102005 INTERIOR OVERHEAD DOORS
Not Applicable.

C102006 INTERIOR GATES
Not Applicable.

C102007 INTERIOR DOOR HARDWARE
Not Applicable.

C102090 OTHER INTERIOR SPECIALTY DOORS
Not Applicable.

C102091 OTHER INTERIOR PERSONNEL DOORS
Not Applicable.

C1030 SPECIALTIES
Not Applicable.

C103001 COMPARTMENTS, CUBICLES, & TOILET PARTITIONS
Not Applicable.

C103002 TOILET AND BATH ACCESSORIES
Not Applicable.

C103003 MARKER BOARDS AND TACK BOARDS
Not Applicable.

C103004 IDENTIFYING DEVICES
Not Applicable.

C103005 LOCKERS

Not Applicable.

C103006 SHELVING

Not Applicable.

C103007 FIRE EXTINGUISHER CABINETS

Not Applicable.

C103008 COUNTERS

Not Applicable.

C103009 CABINETS

Not Applicable.

C103010 CASEWORK

Not Applicable.

C103011 CLOSETS

Not Applicable.

C103012 FIRESTOPPING PENETRATIONS

Not Applicable.

C103013 SPRAYED FIRE-RESISTIVE MATERIALS

Not Applicable.

C103014 ENTRANCE FLOOR GRILLES AND MATS

Not Applicable.

C103015 ORNAMENTAL METAL WORK

Not Applicable.

C103090 OTHER INTERIOR SPECIALTIES

Not Applicable.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

C30 INTERIOR FINISHES

SYSTEM DESCRIPTION

Interior finishes include wall finishes, floor finishes, wall base finishes, and ceiling finishes.

Provide aesthetically pleasing, functional, durable finishes appropriate to the buildings function. Consider acoustic properties of materials, as well as durability and ease of maintenance during material selection. Maximize the use of sustainable materials.

GENERAL SYSTEMS REQUIREMENTS

C3010 WALL FINISHES

All interior wall finish materials must be 3/4” moisture resistant plywood sheathing.

C3020 FLOOR FINISHES

Provide floor finish materials to meet the following requirements;
a. Concrete Floor Requirements

Finish concrete surface smooth enough to meet the minimum requirements of this RFP or the floor finish manufacturer's smoothness requirements, whichever is the most restrictive. Provide 3 coats of the manufacturer's approved sealer for exposed concrete floors that are not required to have an applied floor finish.

C3030 CEILING FINISHES

Ceiling finish material must be 3/4” moisture resistant plywood sheathing.

C3040 INTERIOR COATINGS AND SPECIAL FINISHES

Not Applicable.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

D20 PLUMBING

Refer to Part 4 Section D20 for performance requirements of the building elements included in the plumbing system

SYSTEM DESCRIPTION

The plumbing system for the wellhouses consists of potable and non-potable cold water piping and equipment - including submersible well pumps - piping insulation, waste and vent piping systems, and other specialty piping and equipment in and within 5 feet of the building.

GENERAL SYSTEM REQUIREMENTS

Provide working space around equipment. Provide necessary fittings, connections and accessories required for a complete and usable system. Install equipment in accordance with the criteria of PTS section D20 and the manufacturer's recommendations. Design and install in accordance with International Plumbing Code (IPC) and UFC 3-420-01, *Plumbing Systems*. Where the word "should" is used in manufacturers' recommendations, substitute the word "must".

D2020 DOMESTIC WATER DISTRIBUTION

Perform a flow test to determine system requirements. Refer to PTS section G301002 1.1 for flow test requirements.

D202001 PIPES AND FITTINGS

Provide steel piping and fittings for above ground piping and HDPE piping and fittings for buried piping.

D202002 VALVES & HYDRANTS

Provide a water test header located on the building exterior of each wellhouse where it is accessible from the gravel driveway. Provide isolation valves on branch take-offs from the mains.

D202003 DOMESTIC WATER EQUIPMENT

Refer to ESR section G30 for water meter requirements.

Provide submersible well pumps with variable frequency drives for domestic water distribution system. Pumps must be sized to deliver water from bottom of well to the top of the existing water tower, accounting for both the elevation differences and the friction losses through the piping and the existing water treatment plant. The existing water tower is approximately 185 feet tall and the height difference between the bottom of the new wells and the top of the water tower is estimated to be approximately 450 feet; refer to civil drawings and documents for additional information.

The final design parameters are the responsibility of the designer of record. Variable frequency drives are required for the well pumps, to both match the design of the existing well pumps on the Base and to

prevent cavitation from occurring at the new pumps.

D202004 INSULATION & IDENTIFICATION

Provide mineral fiber insulation with vapor barrier on domestic hot water supply and recirculation piping. Provide cellular glass insulation with vapor barrier on domestic cold water supply piping. Provide identification for piping and equipment. Insulation must prevent condensation from forming on the outside of piping, fittings, and equipment.

D202090 OTHER DOMESTIC WATER SUPPLY

Provide piping supports in accordance with the IPC. Provide inspections, disinfection, and testing in accordance with the IPC.

D2030 SANITARY WASTE

D203003 FLOOR DRAINS

Provide floor drains in each wellhouse. Floor drain discharge to be daylighted to the exterior see design plans for location. Final design to be determined by the designer of record. DOR must ensure that discharge location does not create a safety hazard to facility personnel or vehicles in the event of icing. Refer to civil Drawings and Documentation for additional information.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

D30 HVAC

Refer to Part 4 Section D30 for performance requirements of the building elements included in the HVAC system.

SYSTEM DESCRIPTION

Provide complete and usable heating and ventilating (H&V) systems that attains the following objectives: occupant comfort, indoor air quality, acceptable noise levels, energy efficiency, reliable operation, and ease of maintenance. Design and install in accordance with UFC 3-401-01, *Mechanical Engineering* and related UFCs. These UFCs incorporate provisions of the International Code Council's International Mechanical Code (IMC) and ASHRAE design guidance with supplemental requirements. Provide automatic controls for HVAC system controls.

Provide H&V systems for wellhouses with exhaust fans, make-up air louvers, and electric unit heaters. Provide units in each wellhouse for temperature control.

GENERAL SYSTEM REQUIREMENTS

Provide working space around equipment. Provide required fittings, connections and accessories required for a complete and usable system. Install equipment in accordance with the criteria in PTS Section D30 and the manufacturers' recommendations. Where the word "should" is used in manufacturer's instructions, substitute the word "must".

Provide air conditioning and heating for spaces as indicated and for the following Design conditions:

Outside Conditions (based on ASHRAE weather station WMO: 743700):

Summer	83.8	Degrees F dry bulb	Winter	-4.9	Degrees F
	69.7	Degrees F wet bulb			

Heating & Ventilating Inside Conditions:

Summer	85	Degrees F dry bulb	Winter	55	Degrees F
	8	Air changes per hour			

D3040 DISTRIBUTION SYSTEMS

D304001 AIR DISTRIBUTION, HEATING & COOLING

Provide insulated, galvanized steel ductwork constructed, braced, reinforced, installed, supported, and sealed in accordance with the IMC and Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) standards.

D304007 EXHAUST SYSTEMS

Provide ductwork constructed, braced, reinforced, installed, supported, and sealed to seal Class A in

accordance with the IMC and SMACNA standards.

Provide ducted exhaust ventilation systems and exhaust fans to serve well house spaces. Provide in-line centrifugal exhaust fans.

D3050 TERMINAL & PACKAGE UNITS

D305005 ELECTRIC HEATING

Provide electric unit heaters for heating the well houses. Each well house must be provided with a primary and a back-up unit heater. The back-up unit heater must have a separate thermostat set to 4°F (adjustable) below the design heating temperature.

D3060 CONTROLS AND INSTRUMENTATION

D306001 HVAC CONTROLS

D306001 1.2 ELECTRONIC CONTROLS

Provide electronic controls with programmable thermostats for the HVAC systems and equipment. Provide automatic controls of the new submersible well pumps described under section D20. Provide monitoring and fully automatic control of the submersible well pumps at the existing Water Telemetry Control System (WTCS), via the Trane Tracer SC+ Supervisory Control and Data Acquisition (SCADA) system. The WTCS will also monitor the well house temperature via a space temperature sensor, and alarm when out of setpoint. Refer to electrical sections for communications cabling requirements.

D3070 SYSTEMS TESTING AND BALANCING

Provide complete Testing and Balancing (TAB) of air and domestic water distribution systems and HVAC equipment, and performance verification testing (PVT) of HVAC controls systems, including well pump controls. Performance verification testing of the well pumps and associated controls must be witnessed by the Contracting Officer's Representative (COR).

D3090 OTHER HVAC SYSTEMS AND EQUIPMENT

D309001 GENERAL CONSTRUCTION ITEMS

Provide additional access to mechanical equipment in wellhouse through roof hatch; refer to architectural and structural sections for requirements. Keep hatch opening clear of mechanical and plumbing equipment, piping, ductwork, and controls wiring.

-- End of Section --

6. ENGINEERING SYSTEMS REQUIREMENTS

D50 ELECTRICAL

SYSTEM DESCRIPTION

This project includes the construction of buildings and structures as listed below. Refer to site plans for building locations.

Installation of five potable ground water production wells in five well houses. Provide new power distribution, lighting and grounding systems for each well house.

Provide an interior electrical system consisting of Service Entrance Wiring and Equipment, Dry Type Transformers, Conduits, Feeder and Branch Circuits, Motor Control Equipment, Lighting and Branch Wiring, Communications, Security and Alarm Systems, Stand-by Generator Connection, Emergency Lighting and Power, Grounding, including accessories and devices as necessary and required for a complete and usable system. This section covers installations out to the building 5 foot line.

Provide each well house with a 480V, 3-phase utility service with radial power distribution.

Select electrical characteristics of the power system to provide a safe, efficient, and economical distribution of power based upon the size and types of electrical loads to be served. Use distribution and utilization voltages of the highest level that is practical for the load to be served.

Provide a minimum of 20 percent spare circuit and load capacity at all levels of the power distribution system including any stand-by power systems.

Provide an interior distribution system consisting of insulated conductors in conduit.

GENERAL SYSTEM REQUIREMENTS

Provide an Electrical System complete in place, tested and approved, as specified throughout this RFP, as needed for a complete, usable and proper installation. Install all equipment in accordance with the criteria of PTS Section D50 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "must".

This section of the RFP includes all electrical work on or within the building out to the 5 foot line. Electrical site work outside the 5 foot line is covered in section G40.

SUSTAINABILITY
Provide electrical systems and components that support project sustainability and energy goals.

SEISMIC BRACING
Bracing of electrical equipment to resist seismic events is not required based on site seismic design criteria and building importance factor.

ELECTRICAL TESTING
Test new electrical equipment in accordance with NETA acceptance testing specifications. Test existing electrical equipment remaining in service in accordance with NETA maintenance testing specifications.

PERFORMANCE AND VERIFICATION
Perform tests and inspections in accordance with RFP Part 3 Chapter 2; UFGS Section 01 33 29, *Sustainability Requirements and Reporting* and UFC 1-200-02, *High Performance and Sustainable Building Requirements*.

D5010 ELECTRICAL SERVICE AND DISTRIBUTION

D501001 MAIN TRANSFORMERS

Main transformer(s) are defined in Section G40, *Site Electrical Utilities*.

D501002 SERVICE ENTRANCE EQUIPMENT

Provide underground service into the facility.

Provide a main distribution panel as service equipment. Provide each main distribution panel with digital metering.

Provide energy usage monitoring by using digital metering with current transformers on the incoming service equipment. Monitor the total power usage at the service entrance. Monitored output must report to and be compatible with the Direct Digital Controls (DDC) system.

D501003 INTERIOR DISTRIBUTION TRANSFORMERS

Provide dry type transformers to step down secondary voltages for general purpose outlets and other low voltage equipment.

D501004 PANELBOARDS

Provide distribution and branch circuit panelboards to serve loads as required.

D501090 OTHER SERVICE AND DISTRIBUTION

Provide transient voltage surge protective devices (SPD) at the following locations service entrance.

D5020 LIGHTING AND BRANCH WIRING

Provide electrical connections for all systems requiring electrical service.

Provide lighting and general purpose receptacles throughout all spaces as required.

Provide dedicated circuits and connections for the following special outlets: Well Pumps.

D502001 BRANCH WIRING

Provide insulated conductors in conduit branch wiring.

D502002 LIGHTING EQUIPMENT

Provide a complete lighting system consisting of emergency lighting and area lighting consisting of LED lighting including manual switches.

D5030 COMMUNICATIONS AND SECURITY

The Room Requirements Section identifies locations for communications and security systems and equipment, unless noted otherwise in the following sub-elements.

D503001 TELECOMMUNICATIONS SYSTEMS

Provide a complete building entrance facility, backbone distribution system, and horizontal distribution system including, but not necessarily limited to, all wiring, grounding, backboards, connector blocks, patch panels, fiber optic distribution panels, terminators for all fiber optic cables, outlet boxes, and data jacks cover plates. The contractor must use Juniper switches in all the well house data racks without substitution. Part numbers must be Juniper EX4100-F-12P Fanless Switch with Juniper EX4100-F-12-RME Rack Mounted Ears. Quantity of 5 each.

Provide Category 6A Unshielded Twisted Pair (UTP) copper cable for horizontal voice and data cables.

D5090 OTHER ELECTRICAL SERVICES

D509001 GENERAL CONSTRUCTION ITEMS (ELECTRICAL)

Provide General Construction Items (Electrical) including, but not necessarily limited to, all connections, fittings, boxes and associated equipment needed by this and other sections of this RFP as required for a complete and usable system.

Provide firestopping for conduits, cable trays and busways that penetrate fire-rated walls, fire-rated partitions, or fire-rated floors in accordance with Section C10, Interior Construction.

D509002 EMERGENCY LIGHTING AND POWER

Provide power and wiring for emergency lights and exit lights throughout the facility.

Use stand-alone emergency lighting units for emergency lighting.

Provide emergency lighting units with self-testing and diagnostic control features.

Provide a single permanent diesel generator, 480 volt, 3 phase with 24 hour belly tank with automatic transfer switch at well house #2 and a connection receptacle and manual transfer switch at each of the other well houses. The generator must provide 24 hours of emergency power. Diesel fuel engines greater than 50 break horsepower (bhp) must comply with the requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition (CI) Engines (17CCR 93115) adopted by the California Air Resource Board (CARB). For additional information go to http:www.sdapcd.org .

D509003 GROUNDING SYSTEMS

Provide a complete grounding system for the facility electrical and telecommunications systems.

D509005 ELECTRIC HEATING

Provide power wiring and connections as required for electric heating systems and equipment.

D509006 ENERGY MANAGEMENT CONTROL SYSTEM

Provide power wiring and connections as required for systems and equipment. Coordinate connection requirements with service entrance energy monitoring equipment.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

SYSTEM DESCRIPTION

The site preparation activities consist of site clearing, demolition, salvage, relocation, earthwork, and hazardous waste remediation to ready the site for other work associated with the project.

GENERAL SYSTEM REQUIREMENTS

Develop the project site and perform off-site work necessary to meet the requirements of the project, antiterrorism criteria, local codes, reference standards, technical specifications and performance criteria.

A partial topographic survey of the existing site was performed in 2023 and is included in Part 6. The Existing Conditions Plan has been provided to show the location of existing facilities, areas of new work required by this RFP and the character of the sites. Prior to starting work, physically verify the location of all existing utilities and prepare a survey of the entire water main alignment and well site areas as well as culvert crossings and wetland delineation to provide a quality final design. The existence, size, and location of the utilities are not guaranteed by the surveys provided. Verify the location of all utilities prior to construction. Electronic files of the provided site plans will be provided to the Contractor only after award of the Contract.

The existence, size, and location of the utilities are not guaranteed by the provided site plans. Verify the location of all utilities prior to construction.

Unless otherwise noted, provide new facilities at the locations indicated on the drawings in Part 6.

Minimize the impact of construction activity on operations and neighboring facilities.

Identify and obtain permits to comply with federal, state, and local regulatory requirements associated with the work. Submit a complete Permits Record of Decision (PROD) form with the first design submittal package. Determine correct permit fees and pay said fees. Forward copies of permits, permit applications, and the completed PROD form to the Government's Civil Reviewer and Environmental Reviewer. Perform work in accordance with the obtained permits.

Jurisdictional non-tidal wetlands have been identified on the project site by the Fort Drum Environmental Department (ED). The ED will delineate and flag all wetlands within the scope of this project. The contractor must field locate these delineated wetlands and indicate them on the design plans. Perform non-tidal wetlands work in accordance with the permits obtained as required by UFC 3-201-01, *Civil Engineering*.

Coordinate and obtain the Contracting Officer's approval for proposed haul route(s), work site access point(s), employee parking location(s) and material laydown and storage area(s).

Refer to Site Analysis and Building Requirements Sections for additional site preparation functional program information.

GOVERNMENT PROVIDED GEOTECHNICAL INFORMATION

The included subsurface information is only for the Contractor's information and is not guaranteed to fully represent all subsurface conditions. The Government will not be responsible for any

interpretation or conclusion by the Contractor drawn from the data or information.

The included geotechnical report accompanying the subsurface information, such as boring logs or testing reports, is provided only to better convey data or to document observed site conditions. The assumptions, analysis, and recommendations of any accompanying report were developed for preliminary planning purposes only and may not reflect present project requirements. Retain a Geotechnical Engineer experienced and licensed in the geographic region of the project to interpret the Government provided information as related to the Contractor's own design concept and develop geotechnical requirements to support design and construction.

Anticipate minor variations in subsurface conditions between borings. The Contractor is responsible for costs associated with the site preparation, ground improvement and foundations except as allowed by Contract Clause Federal Acquisition Regulation (FAR) 52.236-2, "Differing Site Conditions". The Contractor's Geotechnical Engineer must perform additional subsurface investigation/testing as required to adequately determine geotechnical factors including the type and capacity of the project foundations. The Contractor's Geotechnical Engineer is required to evaluate the provided information and any additional information obtained and prepare a report as described in other portions of this RFP. The minimum requirements for the subsurface investigation and report are as required by FC 1-300-09N with associated references.

Perform the soils investigation at the site for use in the design and construction of the new facilities. Perform, at Contractor's expense, subsurface exploration, investigation, testing, and analysis for the design and construction of features such as the building foundations, pavement section(s), stormwater management facility(ies), and utility structure foundations. Prepare a report including laboratory analysis of samples and recommendations for foundation and pavement design by a Professional Engineer as specified and in accordance with UFC 3-201-01, *Civil Engineering.*

As a minimum, the successful bidder's Geotechnical Engineer must perform additional subsurface exploration and supplementary laboratory testing as necessary to support the design concept. Observed site conditions which may present a challenge during design/construction include - some soils that will be exposed after completion of stripping may be be soft and at or near the groundwater elevation. Anticipate these marginal subgrade support conditions and incorporate measures into the design and construction procedures to obtain required soil support while maintaining progress for completion on schedule.

Provide personnel under the supervision of a registered Professional Engineer to inspect excavations and soil/groundwater conditions throughout construction. The Engineer is required to perform pre-construction and periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the Contractor and the Contracting Officer, is required to update the excavation, sheeting, shoring and dewatering plans as construction progresses to reflect actual site conditions and is required to submit the updated plan and a written report (with professional stamp) at least monthly informing the Contractor and Contracting Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer must be available to meet with the Contracting Officer at any time throughout the Contract duration. Provide the services of the Engineer at no additional cost to the Government. It is important to note that the presence of loose or compressible soils may result in excessive settlement that could impact the performance of surface bearing structures and supporting facilities such as foundations, slabs, pavements, sidewalks, and utilities. The magnitude and duration of consolidation settlement will be dependent on the composition, depth, and thickness of the compressible soils as well as the successful bidder's design concept. The Contractor's Geotechnical Engineer is responsible for evaluating potential global settlement due to designed grade increases and final structural loads. The Contractor's Geotechnical Engineer must develop any settlement mitigation procedures (such as preloading, surcharging, fill monitoring programs, and ground improvement systems) needed to maintain global settlements within tolerable limits. Surcharge

material, if required, must remain in place for a minimum of 90 days.

G1010 SITE CLEARING

Install erosion and sediment control devices prior to beginning clearing or grubbing operations.

If approved by the Government clearing and grubbing may be allowed to accommodate construction equipment within the designated construction laydown area.

G101001 CLEARING

The project site does not have saleable timber.

Timber on the project site noted for clearing and grubbing will become the property of the Contractor. Remove timber from the project site and dispose of it off installation.

G101002 TREE REMOVAL

Remove trees designated by permit or waiver from local governing agency as required for project construction. Timing of tree removal may be restricted by permits. Contractor to schedule clearing consistent with permit requirements.

G101003 STUMP REMOVAL

Remove all stumps under building foundations, roads, parking areas, hard stands, and storage areas as required for project construction to a depth of 5 feet below the finished grade.

G101004 GRUBBING

G101005 SELECTIVE THINNING

G101006 DEBRIS DISPOSAL

Waste materials will become the property of the Contractor; transport, dispose of or recycle waste materials in accordance with Part 2 Section 01 57 19, *Temporary Environmental Controls*.

G1020 SITE DEMOLITION & RELOCATIONS

The items to be reused or relocated include topsoil.

G102001 BUILDING MASS DEMOLITION

G102002 ABOVEGROUND SITE DEMOLITION

Preserve aboveground site elements as shown on the drawings in Part 6.

G102002 1.1 ABOVEGROUND STORAGE TANKS

The project site does not require aboveground storage tank work.

G102003 UNDERGROUND SITE DEMOLITION

Preserve the following underground site elements: existing utilities required for proposed project and existing utilities that are to remain.

Remove utilities as indicated on the drawings in Part 6. Remove all appurtenances associated with the utility to be removed so there is no presence of the utility at ground surface.

Any conduits to be abandoned must remove the wiring.

G102003 1.1 UNDERGROUND STORAGE TANKS

The project site does not require underground storage tank removal.

G102004 BUILDING RELOCATION

There are no building elements to be relocated.

G102005 UTILITY RELOCATION

Relocate utilities as indicated on the drawings in Part 6.

G102006 FENCING RELOCATION

Relocate or reuse existing fence and its appurtenances as indicated on the drawings in Part 6.

G102007 SITE CLEANUP

Waste materials will become the property of the Contractor; transport, dispose of or recycle waste materials in accordance with Part 2 Section 01 57 19, *Temporary Environmental Controls*.

G102007 1.1 SPILLS

G102090 OTHER SITE DEMOLITION & RELOCATIONS

G1030 SITE EARTHWORK

G103001 GRADING

G103002 COMMON EXCAVATION

G103003 ROCK EXCAVATION

Hard materials and rock may be encountered.

Blasting will not be permitted.

G103004 FILL & BORROW

Common fill in the quantities required is likely available provided that existing excavated material meet the requirements of common fill as dictated by the UFC and Fort Drum material requirements.

Backfill and fill material in the quantities required is not available at the project site.

Select fill in the quantities required is not available at the project site

Top soil in the quantities required is likely available by the required excavations for the project.

G103004 1.1 REQUIREMENTS FOR OFF SITE SOIL

For each borrow site, provide borrow site testing for hazardous materials characteristics from a composite sample of material, collected in accordance with standard soil sampling techniques. Do not bring material onsite until tests results have been received and approved by the Contracting Officer. All fill brought from outside of Fort Drum to be used within the Fort Drum boundary shall come from a source with a valid New York State mining permit. These sources must have been subjected to an archaeological review and a determination of "no effect" issued from the New York State Office of Historic Preservation

G103005 COMPACTION

G103006 SOIL STABILIZATION

The following methods of soil stabilization will not be allowed: cement,lime slurry, asphalt, and pressure grouting.

G103007 SLOPE STABILIZATION

Provide slope stabilization through appropriate grading and site design for a minimum factor of safety of 1.5 or slope that does not exceed the maximum slope per local code requirements. The following techniques for slope stabilization will not be allowed: gabions.

G103008 SOIL TREATMENT

No chemical soil treatment is required.

G103009 SHORING

G103010 TEMPORARY DEWATERING

G103011 TEMPORARY EROSION & SEDIMENT CONTROL

Obtain Erosion and Sediment Control permit required for the proposed work in conjunction with the ED from the EPA, State of NY State Department of Environmental Conservation and Fort Drum.

G103090 OTHER SITE EARTHWORK

G1040 HAZARDOUS WASTE REMEDIATION

The contractor to verify that the project site does not require hazardous waste remediation.

G1040 1.1 CONTAMINATED SOIL AND GROUNDWATER

The contractor to verify that the project site does not require contaminated soil or groundwater work.

If required perform contaminated soil or groundwater work in accordance with the specifications and plans provided in Parts 5 and 6.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

G20 SITE IMPROVEMENTS

SYSTEM DESCRIPTION

Provide site improvements that support project sustainability goals of & Part 2 UFGS Section 01 33 29, *Sustainability Requirements and Reporting*.

The site improvements consist of supporting the installation's water demands by constructing five potable groundwater production wells with telemetry, pumps and well house structure enclosures. Each of the five well house sites will include fencing a gate and a generator connection with the exception of well house #2. A single permanently mounted generator and automatic transfer switch will be provided at well house #2. The project includes constructing HDPE DIPS DR 11 water main pipes from the new water production well field area to the water treatment plant as well as constructing underground and overhead electric three phase power distribution and underground communications duct banks. Provide a design by a licensed Professional Engineer familiar with conditions local to the project site.

GENERAL SYSTEMS REQUIREMENTS

Provide site improvements as required to provide five new water production wells and associated water main, electrical and communications infrastructure to produce a useable facility that meets functional and operational requirements, incorporates all applicable anti-terrorism, force protection and physical security requirements and blends into the existing environment.

Provide accessibility in conformance with requirements of UFC 1-200-01 , *DoD Building Code (General Building Requirements).*

Identify and obtain, in conjunction with the Fort Drum Environmental Department (ED), permits to comply with federal, state, and local regulatory requirements associated with this work. Complete the Permits Record of Decision (PROD) form with the first design submittal package. Determine correct permit fees and pay said fees. Forward copies of permits, permit applications, and the completed PROD form to the Government's Civil Reviewer. Perform work in accordance with the obtained permits.

Minimize the impact of construction activity on operations and neighboring facilities.

Locate new site improvements at locations indicated on the drawings in another part of this RFP. If specific locations are not provided, site the improvements to develop appropriate and positive relationships with other facilities and to conform to existing development patterns.

Refer to Site Analysis and Building Requirements Sections for additional site improvement functional program information.

G2010 ROADWAYS

Provide roadways, as required, to allow for safe, convenient and logical circulation, while discouraging through traffic. Design gravel driveways based on the maximum load anticipated, which is likely a mobile crane used for removal and replacement of the well pump. over the life of the project (50years) as well as the existing soil conditions at the site.

Provide new gravel driveways as required by soil conditions and determined by the Designer of Record. Design gravel sections in accordance with UFC 3-201-01 *Civil Engineering*.

Provide other roadway improvements including signage as required by Fort Drum and the UFC.

G201001 BASES & SUBBASES

The following materials will not be allowed for base or subbase courses: sand-clay, lime rock, shell, or crushed concrete.

G201002 CURBS & GUTTERS

No curbs or gutters are required to be constructed as part of this project.

G201003 PAVED SURFACES

There are no paved surfaces associated with this project.

G201004 MARKING & SIGNAGE

Fort Drum to provide road signage.

Provide temporary signage throughout construction to meet phasing requirements indicated in the project program. Provide temporary signage in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

Building signage to be surface mounted. Approval from Fort Drum's Public Works Department prior to installation is required. Refer to Architectural drawing A-201 for approximate location of building signage.

G201005 GUARDRAILS & BARRIERS

Provide guardrails, wheelstops, and bollards in accordance with UFC 3-201-01, *Civil Engineering*.

G201090 OTHER ROADWAYS

G2020 PARKING LOTS

Provide, at each well house parking for maintenance vehicles, portable generator and mobile crane (to remove existing well pump). The design of the gravel driveway must ensure that the maximum anticipated loading can be accommodated over the design life of the project.

G202001 BASES & SUBBASES

Crushed concrete meeting specified gradation for aggregate base or subbase courses may not be used.

G202002 CURBS & GUTTERS

No curbs or gutters are required to be constructed as part of this project.

G202003 PAVED SURFACES

There are no paved surfaces associated with this project.

G202004 MARKING & SIGNAGE

Provide permanent and temporary signage (regulatory, warning and guidance) and other traffic control devices as required to facilitate proper utilization of the parking areas at each well house.

Provide temporary signage to meet phasing requirements indicated in the Project Program. Provide temporary signage in accordance with the MUTCD.

G202005 GUARDRAILS & BARRIERS

Provide guardrails, wheel stops, and bollards in accordance with UFC 3-201-01, *Civil Engineering*.

G202006 RESURFACING

There is no asphalt pavement resurfacing associated with this project.

G202007 MISCELLANEOUS STRUCTURES AND EQUIPMENT

G2040 SITE DEVELOPMENT

G204001 FENCING & GATES

Provide zinc-coated steel chain link security fence as indicated on the drawings in Part 6.

For the security fence, provide one single line fence surrounding the well house. Provide security clear zones as shown on the drawings in Part 6. Ensure that the fabric height is at least 8’-0” feet Provide outriggers and three strands of barbed wire. Design security fencing in accordance with UFC 4-022-03, *Security Fences and Gates*.

G204005 SIGNAGE

Fort Drum to provide road signage.

G204090 OTHER SITE IMPROVEMENTS

G2050 LANDSCAPING

G205001 FINE GRADING AND SOIL PREPARATION

Provide 4" of topsoil for lawn areas and fine grade.

G205002 EROSION CONTROL MEASURES

Prevent erosion from occurring by providing erosion control measures as required by city, state and federal requirements.

G205004 SEEDING SPRIGGING AND SODDING

Seed areas indicated to be turfed in Part 6. Restore existing turf areas disturbed by Contractor operations that are to remain as turf areas. Restore by means of seeding and provide same guarantee and maintenance as would be required for new landscape areas. Turfgrass species must match existing.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

G30 SITE CIVIL/MECHANICAL UTILITIES

SYSTEM DESCRIPTION

The site civil/mechanical utility systems include water supply systems, storm drainage systems, and associated appurtenances which are more than 5 feet (1.5 meters) outside the building.

GENERAL SYSTEM REQUIREMENTS

Develop the site to provide water, fire protection, , storm drainage, heating, services that meet the requirements of each regulatory agency that governs and issues permits for the construction and operation of these systems. Site design is required to comply with UFC 3-210-10, *Low Impact Development*, as well as state or local stormwater management regulations and project sustainability goals.

Provide each system complete and ready for operation.

Physically verify the location of existing above and below ground utilities prior to starting work.

Identify and obtain permits, in conjunction with Fort Drum Environmental Department (ED), to comply with all federal, state, and local regulatory requirements associated with this work. Complete the Permits Record of Decision (PROD) form with the first design submittal package. Determine correct permit fees and pay said fees. Forward copies of permits, permit applications, and the completed PROD form to the Government's Civil/Mechanical Reviewer. Perform work in accordance with the obtained permits.

Minimize the impact of construction activity on facility operations and neighboring facilities.

Utility connection points are indicated on the drawings in Part 6. Obtain final approvals from the Government's Civil/Mechanical Reviewer and the Contracting Officer for utility connection points associated with this work.

Coordinate with the local utility providers and pay fees or charges required to connect to their utility.

Disciplines involved in site work design must coordinate utility locations with the Civil Engineer.

Refer to Site Analysis and Building Requirements Sections for additional site civil/mechanical utilities information.

Provide fittings, connections and accessories required for a complete and usable system. Install equipment in accordance with PTS Section G30 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "must".

See UFGS 01 78 23 OPERATION AND MAINTENANCE DATA for additional requirements.

Provide site civil/mechanical utility systems and components that support project sustainability goals

of Part 2 UFGS Section 01 33 29, *Sustainability Requirements and Reporting*.

G3010 WATER SUPPLY

The new water system is an extension of the existing water system to the five new wells. The existing water system serving the project site is owned by the Federal Government and operated and maintained by Fort Drum. Provide the new water system and connections to the existing water system in accordance with Fort Drum and UFC 3-230-01 *Water Storage, Distribution, and Transmission*; whichever is more stringent.

Notify Fort Drum, the utility provider, of the additional demand generated by the proposed well field on the water treatment plant. Provide a copy of all correspondence with the Fort Drum Water Treatment Plant to the Government's Civil/Mechanical Reviewer.

Provide connection to the existing water distribution system at the point indicated on the drawings in Part 6.

Design the new water system so that water consumption is measured at a minimum, by one meter for each facility. Ensure the meter is easily accessible, but not obvious.

Install sufficient potable and non-potable water meters to identify system losses and individual facilities use. Enable meter data to be collected and automatically transferred to a Meter Data Management (MDM) module in CIRCUITS for utility and energy management within an environment protected from cyber attack.Meter data management to be tied into Fort Drum BMS/(SCADA) at the head end in Building 4000 in Fort Drum DPW.

G301001 WELL SYSTEMS

Provide a potable water well system capable of producing a guaranteed capacity of 500 gallons per minute. Provide a minimum of five wells.

G301002 POTABLE WATER DISTRIBUTION

G301003 POTABLE WATER STORAGE

G301004 FIRE PROTECTION WATER DISTRIBUTION

G301005 FIRE PROTECTION WATER STORAGE

G301006 NON-POTABLE WATER DISTRIBUTION

Connect the new non-potable water distribution system to the distribution system upstream of the water treatment plant at the point indicated on the drawings in Part 6.

G301007 PUMPING STATIONS

A package booster pump station is not required. The well pumps are to provide adequate volume and pressures to move the water from each well through the water treatment plant and to the top of the elevated water storage tank (maximum water elevation). The water tower is 185 feet from the ground to the overflow/full mark. Water Tower #1 is full at elevation 860.7 ft, the ground elevation at the base of the base of the tower is 675.5-676. The typical operating range of Water Tower #1 fluctuates between 856.7 and 860.7

Provide automatic control to start and stop the pump system.

Provide a telemetering system consistent with the existing water treatment plant and recording equipment to a location manned 24 hours a day for the transmission and recording of pump operation. Transmit alarms to a location manned 24 hours a day.

Provide electrical connections for a portable emergency generator hook-up at each well house sized to start up and maintain the total rated running capacity of the station, including the pumps, controls, lighting, ventilation and other auxiliary equipment except for Well House #2. Provide a permanent generator sized to start up and maintain the total rated running capacity of the station, including the pumps, controls, lighting, ventilation, and other auxiliary equipment.

G301008 PACKAGED WATER TREATMENT PLANTS

G301090 OTHER WATER SUPPLY

G3020 SANITARY SEWER

G302001 SANITARY SEWER PIPING

G302002 SANITARY SEWER MANHOLES & CLEANOUTS

G302003 LIFT STATIONS AND PUMPING STATIONS

G302004 PACKAGED SANITARY SEWER TREATMENT PLANTS

G302005 SEPTIC TANKS

G302006 DRAIN FIELDS

G302090 OTHER SANITARY SEWER

G3030 STORM SEWER

Provide new storm sewer systems that meet Low Impact Development Standards at each new well house that provides stormwater collection and treatment to the maximum extent practicable. The following codes: UFC 3-201-01 *Civil Engineering*; UFC 3-210-10 *Low Impact Development*, New York State Department of Environmental Quality state stormwater management laws and local stormwater management laws and regulations and project sustainability goals apply to this project.

G303001 STORM SEWER PIPING

G303002 STORM SEWER STRUCTURES

G303003 LIFT STATIONS

Stormwater pump stations are not allowed.

G303004 CULVERTS

The following materials for culvert piping are not allowed: corrugated steel

G303005 HEADWALLS

G303006 EROSION & SEDIMENT CONTROL MEASURES

G303007 STORM WATER MANAGEMENT

Provide stormwater management that complies with state stormwater regulations, UFC 3-201-01 *Civil Engineering*, UFC 3-210-10 and *Low Impact Development*; whichever is more stringent. Provide Low Impact Development (LID) features in accordance with UFC 3-210-10 *Low Impact Development*. The following LID features may be used: bioretention, dry wells, filter/buffer strips, grassed swales, bioretention swales, wet swales, rain gardens,][permeable pavement or pavers. The use of rain barrels, cisterns, permeable pavement/pavers, and tree box filters are not allowed for this project.

Major renovation projects are defined as having a storm water component and exceeding $5 million and major construction projects are defined as exceeding $750,000. If LID is not implemented to the Maximum Extent Technically Feasible (METF), as defined in UFC 3-210-10, a waiver request must be approved by the Regional Engineer. Coordinate waiver review and approval with the Civil Technical Discipline Coordinator (TDC).

The Contractor must coordinate State Stormwater Management and regulatory permits required for the proposed work from the Installation Environmental Group. Coordinate reports, submittals, and permit applications through the Contracting Officer.

G3040 HEATING DISTRIBUTION

-- End of Section --

6. ENGINEERING SYSTEMS REQUIREMENTS

G40 SITE ELECTRICAL UTILITIES

SYSTEM DESCRIPTION

Provide a new site electrical utility system to each of the five well houses.

The site electrical utility system consists of all power, telecommunications and fiber optic cabling from the existing distribution system point of connection including all connections, accessories and devices as necessary and required for a complete and usable system. This section covers installations up to within 5 feet (1.5 meters) of new (or existing) building location.

GENERAL SYSTEM REQUIREMENTS

Provide an Electrical System complete in place, tested and approved, as specified throughout this RFP, as needed for a complete, usable and proper installation. Install all equipment in accordance with PTS Section G40 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "must".

Provide site electrical utilities systems and components that support project sustainability goals of Part 2 UFGS Section 01 33 29, *Sustainability Requirements and Reporting*.

G4010 ELECTRICAL DISTRIBUTION

Connect to the existing 13.2 kV, three phase, three wire, 60 Hertz electrical power system. The connection point must be overhead at Pole P-387 and underground at Manhole VSFT38A and extended to a SF6 Insulated Pad Mounted Interrupter Switchgear and then to each well house site overhead. Transition to underground in concrete encased ductbanks to a Pad Mounted Transformers at each well house site.

Coordinate with utility for the available fault current at the point of connection or assume to be an infinite bus.

G401002 TRANSFORMERS

Provide a three phase pad mounted transformer to feed each well house facility.

Provide the following features:

1. Dead-Front Design with ANSI specific front plate spacing
2. Radial feed switch
3. Three surge arresters for radial feed circuits.
4. Biodegradable less-flammable liquid-insulated

G401003 SWITCHES, CONTROLS AND DEVICES

Provide SF6 Insulated Pad Mounted Switchgear configured with the existing overhead and or underground distribution system as follows: Provide switchgear with 4 switched ways.

Provide pole top switches at risers for each well house configured with the new overhead distribution system.

G401004 OVERHEAD ELECTRIC CONDUCTORS

Provide a three phase overhead pole line from the existing system to each well house.

G401005 TOWERS, POLES, CROSSARMS AND INSULATORS

Provide 40’ high Class 2 wood poles for overhead power distribution.

G401006 UNDERGROUND ELECTRIC CONDUCTORS

Provide a medium voltage and a 600 volt secondary underground electrical power distribution systems to meet the connection requirements as indicated in paragraph G4010 "Electrical Distribution". Provide fused cut-outs on connections to overhead distribution systems.

G401007 DUCTBANKS, MANHOLES, HANDHOLES AND RACEWAYS

Provide a system of concrete encased ductbanks, handholes and manholes for all underground power wiring.

G401008 GROUNDING SYSTEMS

Provide a complete grounding system for the electrical power distribution system.

G4030 SITE COMMUNICATION AND SECURITY

Provide a site communication and security system including, but not necessarily limited to, Voice and Data Telecommunications Systems, including all conduit and wiring, underground structures, termination equipment, poles and structures, and grounding systems as required for a complete and usable system.

G403001 TELECOMMUNICATIONS SYSTEMS

The connection point for the site telecommunications systems must be at Building 2025 within Switch Node 10 and extended to the project site underground in a system of manholes and concrete encased ductbanks to each of the well houses.

Provide 288 strand single mode fiber optic cable between the connection point and the manhole as indicated on the drawings.

G403003 CABLES AND WIRING

Cables and wiring for site telecommunications and security systems are required as stated in their respective categories.

G403004 DUCTBANKS, MANHOLES AND HANDHOLES

Provide a system of concrete encased ductbanks, manholes, and handholes for site telecommunications and security.

G403009 GROUNDING SYSTEMS

Provide a complete grounding system for all site communications and security systems.

-- End of Section --

7.0 APPLICABLE CRITERIA

Although a specific document version or date may be indicated, use criteria from the most current references, including any applicable addenda, unless otherwise stated in the contract or task order, as of the date of the Contractor's latest accepted proposal or date of issue of the contract or task order solicitation, whichever is later. In the event of conflict between References and/or Applicable Military Criteria, apply the most stringent requirement, unless otherwise specifically noted in the contract or task order.

7.1 Industry Criteria

Applicable design and construction criteria references are listed in Table 1 below. This list is not intended to include all criteria that may apply or to restrict design and construction to only those references listed. References cited herein are not necessarily incorporated in their entirety. Refer to specific design requirements established in Paragraph 6 for applicability extents or limits. Refer also to Paragraph 2 for additional facility-specific applicable criteria.

Table 1: Industry Criteria

AIR CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE (AHRI)	
ANSI/AHRI/CSA 310/380	Standard for Packaged Terminal Air-Conditioners and Heat Pumps (CSA-C744-04)
ANSI/AHRI 430	Central Station Air Handling Units
ANSI/AHRI 440	Performance Rating of Room Fan-Coils
ANSI/AHRI 880	Performance Rating of Air Terminals
AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)	
ANSI/AMCA 210 ANSI/ASHRAE 51-07	Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating
AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)	
AAMA 605.1-75	Specification for High Performance Organic Coatings on Architectural Extrusions and Panels

AAMA 607.1-77	Voluntary Guide Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum
AAMA 1503-09	Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections
AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)	
AFBMA 9:1990 (R2008)	Load Ratings and Fatigue Life for Ball Bearings
AFBMA 11:1990 (R2008)	Load Ratings and Fatigue Life for Roller Bearings
AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA)	
	Comparison of Fatigue Assessment Techniques for Heat Recovery Steam Generators
	Determining and Testing Boiler Efficiency for Commercial/Institutional Packages Boilers
	Specification Design Life Requirements and Implications Relative to Boilers
	Steam Source Book
AMERICAN CONCRETE INSTITUTE	
ACI 302.2R-06	Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
ACI 315	Details and Detailing of Concrete Reinforcement
ACI 318-19	Building Code Requirements for Structural Concrete and Commentary
ACI 355.2	Qualification of Post-Installed Mechanical Anchors in Concrete

AAMA 1503-09	Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections
AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)	
AFBMA 9:1990 (R2008)	Load Ratings and Fatigue Life for Ball Bearings
AFBMA 11:1990 (R2008)	Load Ratings and Fatigue Life for Roller Bearings
AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA)	
ACI 355.4	Acceptance Criteria for Qualification of Post-Installed Anchors in Concrete
ACI SP-66 (04)	ACI Detailing Manual
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)	
AISC 201	AISC Certification Program for Structural Steel Fabricators
AISC 303	Code of Standard Practice for Steel Buildings and Bridges
AISC 325	Steel Construction Manual
AISC 341	Seismic Design Manual
AISC 360	Specification for Structural Steel Buildings
AISC DESIGN GUIDE 10	Erection Bracing of Low-Rise Structural Steel Buildings

AMERICAN IRON AND STEEL INSTITUTE (AISI)	
AISI D100	Cold-Formed Steel Design Manual
AISI S100	North American Specification for the Design of Cold-Formed Steel Structural Members
AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)	
ANSI/IEEE C2	National Electrical Safety Code
AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)	
ASCE/SEI 7-22	Minimum Design Loads for Buildings and Other Structures
AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS (ASHRAE)	
ASHRAE Guideline 0	The Commissioning Process
ASHRAE Guideline 1.1	HVAC&R Technical Requirements for The Commissioning Process
ASHRAE Standard 15	Safety Standard for Refrigeration Systems
ASHRAE Standard 55	Thermal Environmental Conditions for Human Occupancy
ASHRAE Standard 62.1	Ventilation for Acceptable Indoor Air Quality
ASHRAE Standard 90.1	ANSI/ASHRAE/IES 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings
ASHRAE Standard 135	BACnet – A Data Communication Protocol for Building Automation and Control Networks

ASHRAE Standard 189.1	Standard for the Design of High-Performance Green Buildings (ANSI Approved; USGBC and IES Co- sponsored)
ASHRAE Standard 189.1	Standard for the Design of High-Performance Green Buildings (ANSI Approved; USGBC and IES Co- sponsored)
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)	
ASME B31 (Series)	Piping Code Series, Various Dates (Current Versions)
ASME BPVC, Section VII	Boiler and Pressure Vessel Code: Section VII, “Care of Power Boilers”
AMERICAN WATER WORKS ASSOCIATION (AWWA)	
	AWWA Standards: Full Set of Standards
AMERICAN WELDING SOCIETY (AWS)	
WHB	Welding Handbook
AWS D1.1	Structural Welding Codes – Steel
AWS D1.8	Structural Welding Code – Seismic Supplement
AMERICAN WOOD COUNCIL (AWC)	
ANSI/AWC NDS	National Design Specification (NDS) for Wood Construction with Commentary
ARCHITECTURAL WOODWORK INSTITUTE (AWI)	
	Architectural Woodwork Standards
ASSOCIATION FOR MATERIALS PROTECTION AND PERFORMANCE (AMPP)	
NACE-SP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems

NACE-SP0185	Extruded Polyolefin Resin Coating Systems with Soft Adhesives for Underground or Submerged Pipe
NACE-SP0286	Electrical Isolation of Cathodically Protected Pipelines
SSPC-QP 1	Society for Protective Coatings certification for an industrial painter's ability to apply coatings to complex industrial and marine coatings.
SSPC-QP 2, Category "A"	Society for Protective Coatings certification for industrial paint contractors that demonstrates their ability to safely remove hazardous paint using negative air containment.
SSPC-QP 3	Society for Protective Coatings certification standard that evaluates one's ability to apply protective coatings and prepare surfaces in a shop facility.
SSPC QP-5	Society for Protective Coatings accreditation program that evaluates the quality of inspection companies that work in the industrial coating and lining industry.
ASTM INTERNATIONAL	
ASTM A123	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM C1060-11a	Standard Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings
ASTM E779-10	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E1300-12	Standard Practice for Determining Load Resistance of Glass in Buildings
ASTM E1827-11	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
ASTM F2248-12	Standard Practice for Specifying an Equivalent 3-Second Duration Design Loading for Blast Resistant Glazing Fabricated with Laminated Glass

ASTM F2912-11	Standard Specification for Glazing and Glazing Systems Subject to Airblast Loadings
BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)	
ANSI/BHMA A156 Series	ANSI/BHMA A156 Series Standards, Various Dates (Current Versions)
BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL	
	Telecommunications Distribution Methods Manual
	Outside Plant Design Reference Manual
CODE OF FEDERAL REGULATIONS (CFR)	
49 CFR 192	Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards
10 CFR 430	Energy Conservation Program for Consumer Products
CONSUMER ELECTRONICS ASSOCIATION (CEA)	
CEA 709.1-C (ANSI)	Control Network Protocol Specification
CEA 709.3 R (ANSI)	Free-Topology Twisted-Pair Channel Specification
CEA 852-B (ANSI)	Tunneling Device Area Network Protocols Over Internet Protocol Channels
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)	
IEEE/ASTM SI_10	American National Standard for Metric Practice

IEEE Standard 1100	IEEE Emerald Book: IEEE Recommended Practice for Powering and Grounding Electronic Equipment
INTERNATIONAL BUILDING CODE (IBC)	
IBC: 2024	International Building Code
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)	
ISO 6781	Qualitative Detection of Thermal Irregularities in Building Envelopes – Infrared Method
LONMARK INTERNATIONAL (LONMARK)	
	LonMark Interoperability Guidelines
	LonMark Resource Files (LMRFs)
METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA)	
MBMA MBSM	Metal Building Systems Manual
MIDWEST INSULATION CONTRACTORS ASSOCIATION (MICA)	
	National Commercial and Industrial Insulation Standards Manual, 7th Edition
NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)	
PST-TAB-2005	Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)	

NFPA 01	Fire Code
NFPA 03	Standards for Commissioning of Fire Protection and Life Safety Systems
NFPA 04	Standard for Integrated Fire Protection and Life Safety System Testing
NFPA 10	Standard for Portable Fire Extinguishers
NFPA 13	Standard for the Installation of Sprinkler Systems
NFPA 14	Standard for the Installation of Standpipe and Hose Systems
NFPA 17	Standard for Dry Chemical Extinguishing Systems
NFPA 20	Standard for the Installation of Stationary Pumps for Fire Protection
NFPA 24	Standard for the Installation of Private Fire Service Mains and Their Appurtenances
NFPA 25	Standard for the Inspection, Testing And Maintenance of Water-Based Fire Protection Systems
NFPA 30	Flammable and Combustible Liquids Code
NFPA 31	Standard for the Installation of Oil-Burning Equipment
NFPA 33	Standard for Spray Application Using Flammable or Combustible Materials
NFPA 51B	Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 54	National Fuel Gas Code

NFPA 58	Liquefied Petroleum Gas Code
NFPA 70	National Electrical Code
NFPA 70E	Standard for Electrical Safety in the Workplace
NFPA 72	National Fire Alarm and Signaling Code
NFPA 75	Standard for the Fire Protection of Information Technology Equipment
NFPA 76	Standard for the Fire Protection of Telecommunications Facilities
NFPA 80	Standard for Fire Doors and Other Opening Protectives
NFPA 90A	Standard for the Installation of Air-Conditioning and Ventilating Systems
NFPA 91	Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids
NFPA 96	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
NFPA 101	Life Safety Code
NFPA 170	Standard for Fire Safety and Emergency Symbols
NFPA 241	Standard for Safeguarding Construction, Alteration, and Demolition Operations
NFPA 291	Recommended Practice for Fire Flow Testing and Marking of Hydrants
NFPA 780	Standard for the Installation of Lightning Protection Systems
NFPA 850	Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations

NFPA 855	Standard for the Installation of Stationary Energy Storage Systems
NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)	
The NRCA Roofing Manual	
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)	
29 CFR 1926	Safety and Health Regulations for Construction
PLUMBING AND DRAINAGE INSTITUTE (PDI)	
PDI G101	Testing and Rating Procedure for Grease Interceptors
PDI WH201	Water Hammer Arrestors Standard
PRECAST CONCRETE INSTITUTE	
	PCI Design Handbook
SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)	
	HVAC Duct Construction Standards - Metal and Flexible
	Architectural Sheet Metal Manual
	HVAC Systems - Testing, Adjusting and Balancing
STATE & LOCAL REGULATIONS	
	State Specific Environmental Control Requirements

	State Specific Sedimentation and Erosion Control Design Requirements
	State Specific Storm Water Management Requirements
GREAT LAKES - UPPER MISSISSIPPI RIVER BOARD OF STATE AND PROVINCIAL PUBLIC HEALTH AND ENVIRONMENTAL MANAGERS	
10 States Standards	10 States Standards Recommended Standards for Water Works, 2022
NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH)	
State Sanitary Code Subpart 5	State Sanitary Code Subpart 5, Public Water Supplies, September 8, 2023 (10 NYCRR Part 5, Subpart 5-1)
STEEL DOOR INSTITUTE (SDI)	
ANSI/SDI A250.8 (R2008)	SDI-100 Recommended Specifications for Standard Steel Doors and Frames
STEEL DECK INSTITUTE (SDI)	
SDI DDM04	Steel Deck Institute Diaphragm Design Manual, Fourth Edition
SDI RD	Standard for Steel Roof Deck
SDI MOC3	Manual of Construction with Steel Deck, Third Edition
STEEL JOIST INSTITUTE (SJI)	

SJI LOAD TABLES	Catalogue of Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders
SJI MANUAL	Open Web Steel Joist Construction
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA)	
TIA-568 Set	Commercial Building Telecommunications Cabling Standard Set
TIA-569-E	Telecommunications Pathways and Spaces
TIA-606	Administration Standard for the Telecommunications Infrastructure
TIA-607	Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises, Edition B with Addendum
THE MASONRY SOCIETY	
TMS 402/602	Building Code Requirements and Specification for Masonry Structures and Related Commentaries
TMS 1700-17	Guide for Condition Assessment of Masonry Facades
UNDERWRITERS LABORATORIES (UL)	
UL 96A	Standard for Installation Requirements for Lightning Protection Systems
UL 300	Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment
U.S. ACCESS BOARD	

ADA/ABAAG	Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines, Excluded are: (a) Facilities, or portions of facilities, on a military installation that are designed and constructed for use exclusively by able-bodied military personnel. (See Paragraph 3 for any reference to this exclusion). (b) Reserve and National Guard facilities, or portions of such facilities, owned by or under the control of the Department of Defense, that are designed and constructed for use exclusively able-bodied military personnel. (See paragraph 3 for any reference to this exclusion).by
U.S. GREEN BUILDING COUNCIL (USGBC)	
LEED v4	LEED Reference Guide for Green Building Design and Construction v4

7.2 Military Criteria

The project shall conform to the following criteria. Certain design impacts and features due to these criteria are noted for the benefit of the offeror; however, all requirements of the referenced criteria will be applicable, whether noted or not, unless otherwise specified herein.

Table 2: Military Criteria

LAWS, POLICIES, REGULATIONS, AND OTHER CRITERIA	
ARMY REGULATIONS	
AR 405-70	Utilization of Real Property Administrative Space Criteria and Assignment Guidelines
EISA07	Energy Independence and Security Act of 2007
EO 12770	Metric Usage In Federal Government (a) Metric design and construction is required except when it increases construction cost. Offeror to determine the most cost-efficient system of measurement to be used for the project.
ECB 2018-17	New Requirements for Visual Notification for Mass Notification Systems
EPACT05	Energy Policy Act of 2005 / Public Law 109-58
CORPS OF ENGINEERS (COE)	
COE EM 385-1-1	Safety and Health Requirements Manual
DEPARTMENT OF DEFENSE (DOD)	
Architectural Barriers Act	Architectural Barriers Act Standards with DEPSECDEF Memorandum 31 Oct 2008, "Access for People with Disabilities"
UFAS	Uniform Federal Accessibility Standards (UFAS)
Military Handbook 1013/1A	Design Guidance for Physical Security of Facilities

DEPARTMENT OF JUSTICE (DOJ)	
	Americans with Disabilities Act Accessibility Guidelines (ADAAG)
FORT DRUM PUBLIC WORKS	
	Fort Drum Public Works Utility Standards, June 20, 2020
PROTECTIVE DESIGN CENTER (PDC)	
PDC TR 06-08	Single Degree of Freedom Structural Response Limits
PDC TR 10-02	Blast Resistant Design Methodology for Window Systems Designed Statically and Dynamically
UNIFIED FACILITIES CRITERIA (UFC)	
UFC 1-200-01	DoD Building Code (General Building Requirements) (a) References to applicable International construction codes, such as: International Building Code (IBC), International Mechanical Code (IMC), International Residential Code (IRC), International Plumbing Code (IPC), and International Energy Conservation Code (IECC) are located within this UFC. (b) Always utilize the latest edition of this document, regardless of references in this RFP or in other publications.
UFC 1-200-02	High Performance and Sustainable Building Requirements
UFC 1-300-07A	Design Build Technical Requirements
UFC 3-101-01	Architecture
UFC 3-110-03	Roofing
UFC 3-120-01	Sign Standards
UFC 3-120-10	Interior Design

UFC 3-201-01	Civil Engineering
UFC 3-210-01	Low Impact Development
UFC 3-220-01	Geotechnical Engineering
UFC 3-230-01	Water Storage, Distribution, and Transmission
UFC 3-240-01	Mechanical Engineering
UFC 3-250-01	Pavement Design for Roads and Parking Areas
UFC 3-250-03	Manual for Flexible Pavements
UFC 3-250-09FA	Aggregate Surfaced Roads and Airfields Areas
UFC 3-260-01	Airfield and Heliport Planning and Design
UFC 3-270-04	Concrete Repair
UFC 3-301-01	Structural Engineering
UFC 3-401-01	Mechanical Engineering
UFC 3-410-01	Heating, Ventilating, and Air Conditioning Systems
UFC 3-410-02	Direct Digital Control for HVAC and Other Building Control Systems
UFC 3-420-01	Plumbing Systems
UFC 3-430-01FA	Heating and Cooling Distribution Systems
UFC 3-440-01	Facility-Scale Renewable Energy Systems
UFC 3-470-01	Utility Monitoring and Control System (UMCS) Front End and Integrati
UFC-3-501-01	Electrical Engineering
UFC 3-520-01	Interior Electrical Systems
UFC 3-530-01	Interior and Exterior Lighting Systems and Controls

UFC-3-550-01	Exterior Electrical Power Distribution
UFC-3-580-01	Information and Communications Technology Infrastructure Planning and Design
UFC-3-600-01	Fire Protection Engineering for Facilities
UFC 3-601-02	Fire Protection System Inspection, Testing and Maintenance
UFC 4-010-01	DoD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS
UFC 4-010-06	Cybersecurity of Facility-Related Control Systems (10 October 2023)
UFC 4-021-01	Design and O&M: Mass Notification Systems
UFC 4-022-03	Security Fences and Gates
UFC 4-023-03	Design of Buildings to Resist Progressive Collapse
UFC 4-214-02	Dept. of the Army Facilities Standardization Program TACTICAL EQUIPMENT MAINTENANCE FACILITIES (TEMFA) STANDARD DESIGN
UFC 33-011-13	Potable Water Supply Wells
UNITED STATES ARMY CORPS OF ENGINEERS (USACE)	
IPS Building Standards	Fort Drum Installation Planning Standards, Final Edition, February 2016, Updated May 2017
U.S. GENERAL SERVICES ADMINISTRATION (GSA)	
FS RR-F-191	Fencing and Wire and Post Metal (and Gates, Chain-link Fence Fabric, and Accessories)

PROJECT TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

01 11 00	02/24, CHG 1: 05/25	SUMMARY OF WORK
01 14 00	11/22, CHG 5: 05/25	WORK RESTRICTIONS
01 30 00	11/20, CHG 5: 02/25	ADMINISTRATIVE REQUIREMENTS
01 32 01.10 18	08/23, CHG 1: 08/24	PROJECT SCHEDULE - MILCON
01 33 00	08/18, CHG 4: 02/21	SUBMITTAL PROCEDURES
01 33 16.00 10	05/16	DESIGN DATA (DESIGN AFTER AWARD)
01 33 29	02/21, CHG 1: 08/25	SUSTAINABILITY REQUIREMENTS AND REPORTING
01 35 26	05/24, CHG 1: 05/25	GOVERNMENTAL SAFETY REQUIREMENTS
01 42 00	05/24	SOURCES FOR REFERENCE PUBLICATIONS
01 45 00	08/23, CHG 3: 08/25	QUALITY CONTROL
01 45 00.15 10	11/23	RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)
01 45 35	05/24	SPECIAL INSPECTIONS
01 50 00	11/20, CHG 3: 08/24	TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
01 57 19	08/22, CHG 2: 08/25	TEMPORARY ENVIRONMENTAL CONTROLS
01 58 00	08/19, CHG 5: 08/22	PROJECT IDENTIFICATION
01 74 19	02/19, CHG 3: 11/21	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
01 78 00	05/19, CHG 1: 08/21	CLOSEOUT SUBMITTALS
01 78 23	05/23, CHG 2: 11/25	OPERATION AND MAINTENANCE DATA

-- End of Project Table of Contents --

SECTION 01 11 00

SUMMARY OF WORK
02/24, CHG 1: 05/25

PART 1 GENERAL

1.1 FAR 52.211-10, COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK

a. The Contractor is required to (i) commence work under this contract within five (5) calendar days after the date the Contractor receives the Notice to Proceed, (ii) prosecute the work diligently, and (iii) complete the entire work ready for use, not later than 716 calendar days after the date the Contractor receives the notice to proceed. The time stated for completion must include final cleanup of the premises.

b. The Contractor must furnish all labor, materials, equipment, and services for the following work: shown in the plans and specifications.

c. All work must be in accordance with the drawings and specifications or instructions attached hereto and made a part thereof, or to be furnished hereafter by the Contracting Officer and subject, in every detail, to his supervision, direction, and instructions.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Salvage Plan; G, RO

1.3 WORK COVERED BY CONTRACT DOCUMENTS

1.3.1 Project Description

The work as descibred in Request for Proposal includes constructing potable groundwater production wells with telemetry, pumps and well house structure enclosures. Including electric power distribution, telecom distribution,and a water main.

1.3.2 Location

TThe work is located at the Fort Drum, New York, approximately as indicated in drawing plan. The site of the work is on a military reservation and all rules and regulations issued by the Commanding Officer covering general safety, security, and sanitary requirements, etc., must be observed by the Contractor. The exact location will be shown by the Contracting Officer.

1.4 DFARS 236.204, DISCLOSURE OF THE MAGNITUDE OF CONSTRUCTION PROJECTS

This project is estimated between $10,000,000.00 and $25,000,000.00

1.5 EXISTING WORK

In addition to FAR 52.236-9 Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements:

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

b. 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.

c. At Contractor's own expense, immediately restore to service and repair any damage caused by Contractor's workmen to the existing piping and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems (including telephone). Provide immediate notification of the Contracting Officer and verbal procedures to restore. Immediately assemble personnel, equipment and material necessary to restore. Compliance with Contract Documents for quality installation must be included. The work must proceed at 24-hours per day until satisfactorily restored service is achieved. Fixing loose ends requires Contracting Officer approval to perform during normal working hours. The request to perform repairs during normal working hours requires Contractor's written approval. The write up of procedures to repair must be submitted to the Contracting officer.

d. Repair any damage including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

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 72 hours prior to excavating, to mark utilities, and within sufficient time required if work occurs on a Monday or after a Holiday. 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.

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.

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

Not used.

-- End of Section --

SECTION 01 14 00

WORK RESTRICTIONS
11/22, CHG 5: 05/25

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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

List of Contact Personnel

SD-07 Certificates

3Rs Explosive Safety Education Training Certificate (annual submission required)

1.3 CONTRACTOR ACCESS AND USE OF PREMISES

1.3.1 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, including delivery vehicles, are clearly identified with their company name.

1.3.1.1 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.

1.3.1.2 GATE ACCESS FORMS FOR ENTERING FORT DRUM

Gate Access is coordinated with the Contracting Officer's Representative. Required forms for access will be provided after award.

1. On the date of arrival, contractors must inprocess at the Ft Drum Inprocessing Center adjacent to the Main Gate (Rt 11/Interstate 781). All individuals are required to have a valid photo Id, and if driving, proof of insurance and registration. A Fort Drum Resident Office representative will sponsor the Contractor. **It is highly recommended that the Contractor contract Contracting Officer to coordinate the time they plan to arrive to minimize wait time at the Inprocessing Center.

1.3.1.3 DoD ID Credential

(1) Each employee who requires access to Fort Drum to perform work under any contract, at any tier, must obtain a DoD identification credential to obtain access to Fort Drum. A DoD identification credential is required if the employee requires access to Fort Drum.

(2) The Contractor shall provide information as required by the Fort Drum Chief, Physical Security to enable the Government to conduct a criminal history background check (CHBC) on Contractor employees who require access to Fort Drum. If the CHBC is not adverse, a 30 day temporary access pass will be prepared by the Fort Drum Physical Security Division. The Contractor employee will make an appointment for a Local Access Badge (LAB) if access is needed longer than 30 days. A LAB will be issued for a period of no longer than 365 days. If the CHBC is adverse, the employee will be denied access. If access is denied for any reason, the Contractor’s employee may request a waiver from the installation and will not be allowed access until the waiver is requested and approved. Waiver denials may be appealed through the Directorate of Emergency Services. The final determination to allow entry and the issuance of a DoD credential rests with the Garrison Commander or designee, the Director, Emergency Services.

(3) If an employee no longer needs a DoD identification credential for any reason (e.g. quits his/her job or no longer performs under the contract), the Contractor is required to collect the DoD identification credential from the employee and surrender it to the Fort Drum Physical Security Division within four (4) calendar days of such change. If the DoD identification credential cannot be returned within the required time frame for any reason, the Contractor shall immediately notify the Physical Security Division verbally, followed up in writing
the next work day. Email notification is authorized. An employee’s inability to obtain entrance to a Government installation because he/she does not have the required identification badge or visitor’s pass shall not excuse timely performance of the requirements of this contract. DoD identification credentials are currently issued at the Fort Drum Physical Security Division located in the Fort Drum MP Station. The Government may change the location at which DoD identification credential are issued or returned, with or without advance notice to the contractor.

(4) A DoD identification credential will not be reproduced or copied by the contractor, its subcontractors, or their employees. If an employee’s DoD identification credential is lost, stolen, or

reproduced, the Contractor shall verbally report the loss, theft, or reproduction to the Fort Drum Physical Security Division on the day such loss, theft, or reproduction is discovered, followed by a written report of the circumstances to the Fort Drum Physical Security Division within two (2) calendar days.

(5) Each Contractor employee shall wear the DoD identification credential while performing work under the contract. The DoD identification credential shall be worn on the upper front of the outer garment unless precluded by OSHA regulation(s). The DoD identification credential will not be used for access to any Government installation except for performance of work under the contract for which is was issued.

(6) The Contractor shall, upon expiration or termination of the contract, collect all DoD identification credentials and turn them into the Fort Drum Physical Security Division.

1.3.1.4 Search And Control

Fort Drum is a controlled access post. All vehicles and personnel are subject to search and seizure of contraband and/or unauthorized Government property. Contractor vehicles (Contractor owned and personal), Contractor employees, and their personal property shall be subject to searches and seizure of contraband and/or unauthorized Government property upon entering or leaving the Installation. The search and seizure provisions of AR 190-16 shall apply to Contractor personnel entering or leaving Fort Drum.

1.3.1.5 Security Badges

Contractor personnel shall wear a distinctive Contractor furnished security (ID) badge readily identifying the individual as a Contractor employee. The badge shall be worn in a conspicuous place at all times when performing work under the contract. A listing of issued identification badges shall be
furnished to the Contracting Officer prior to contract performance date and updated quarterly to reflect Contractor and Subcontractor personnel changes. Badges shall be worn and displayed on outer clothing and shall contain at a minimum, the following information:

Photograph of Employee
Title of Contract
Name of Worker
Contractor's Name
Contractor's Phone Number

1.3.1.6 Real ID Act

1.3.1.6.1 Policy

State-issued driver’s licenses and identification cards from States not meeting the standards can no longer be used for accessing Federal facilities including Army installations unless the issuing state’s compliance deadline has been extended by the Department of Homeland Security (DHS).

Individuals who do not possess a driver’s license or identification card compliant with the REAL ID Act and do not possess an acceptable alternate identification credential, must be escorted or denied access.

1.3.1.7 Site And Building Security And Vehicle Identification

a. The Contractor is responsible for the security of the areas within the contract limits. When the Government takes possession of certain areas, the Contractor is responsible for the areas remaining under Contractor control.

b. The Contract must maintain continual base security with personnel security guard and temporary fences. Wherever there are fence disruptions due to the construction of this project, the Contractor must continually monitor and maintain the fence.

c. The Contractor is responsible for furnishing an identification required by Fort Drum to each employee in accordance with paragraph titled IDENTIFICATION OF EMPLOYEES. The Contractor must provide an updated list of all employees working on the site. This list must be provided on a monthly basis or when requested by the Contracting Office throughout the duration of this contract.

d. The Contractor is responsible for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification must immediately be delivered to the Contracting Officer for cancellation upon release of any employees. When required by the Contracting Officer, the Contractor must obtain and submit fingerprints of all persons employed or to be employed on the project.

e. The Contractor and subcontractors must register all company and private vehicles that will be used in the execution of this contract with the Installation Provost Marshall's office prior to start of work by the Contractor/subcontractor. Entry to the installation requires the following prior coordination with the Contracting Officer or designated representative; current vehicle registration, proof of insurance, valid driver's license for the vehicle driver, and procure identification for other personnel. Contractors/Subcontractors and their employees requiring access to the installation will be required to comply with the installation access control policy/procedures. The government will not be responsible for damages due to delay/stoppages caused by failure to comply.

f. All vehicles and personnel are subject to search and seizure of contraband and/or unauthorized government property. Contractor vehicles (Contractor-owned and personal), contractor personnel, and their personal property must be subject to searches upon entering of leaving the installation. The search and seizure provisions of AR 190-22 must apply to contractor personnel entering or leaving Fort Drum or activities/installations in the Fort Drum AR 5-9 area of responsibility which require access by Contractor personnel in performance of this contract.

1.3.1.8 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. The

Contracting Officer will identify designated smoking areas.

1.3.2 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 , , excluding Government holidays.

1.3.3 Work Outside Regular Hours

Work outside regular working hours requires Contracting Officer approval. Make application 15 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 accordance with requirements of EM 385-1-1. Make utility cutovers after normal working hours or on Saturdays, Sundays, and Government holidays unless directed otherwise.

1.3.4 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, telephone service, electric service, air conditioning, heating, fire alarm, are considered utility cutovers pursuant to the paragraph WORK OUTSIDE REGULAR HOURS.Such interruptions are further limited to 4 hours. This time limit includes time for deactivation and reactivation.

d. Operation of Station Utilities: Do not operate nor disturb the setting of control devices in the station utilities system, including water, sewer, electrical, and steam services. The Government will operate the control devices as required for normal conduct of the work. Notify the Contracting Officer giving reasonable advance notice when such operation is required.

1.4 ARMY AND ARMY NATIONAL GUARD REQUIREMENTS AND RESTRICTIONS

1.4.1 3Rs Explosive Safety Education Training Certificate

All Contractor and subcontractor employees requiring access to Army or Army National Guard installations, facilities, and areas for the performance of a contract or subcontract must complete the 3Rs (Recognize, Retreat, Report) Explosives Safety Education Program training. Complete the training within 30 calendar days after the date of receipt of a written notice of award. The Contractor is responsible for ensuring that all subcontractor employees complete the training before access to the installation is required for performance of the subcontract. The Contractor is also responsible for ensuring that all contractor and subcontractor employees renew the training annually for the duration of the performance period of the contract or subcontract. Submit certificates of completion for each Contractor and subcontractor employee

subject to this requirement to the Contracting Officer's Representative (COR) or to the Contracting Officer, if a COR is not assigned, within 5 calendar days after completion of training. 3Rs Explosives Safety Education Program training is available at the following website: https://www.denix.osd.mil/uxo/3rs-training/.

1.5 EXCAVATION PERMITS

a. The COR shall coordinate with the Contractor to issue necessary excavation and utility clearances. The Contractor shall request such clearances in writing to the COR not less than 10 calendar days prior to the date in which commencement of actual digging is anticipated (Exhibit D, Data Item #D014). The Contractor shall utilize a Web based excavation permit system by inputting data into a government system located in several government facilities. The Contractor will mark/stake the construction area immediately prior to requesting the excavation permit. A date for issuance of the excavation permit shall then be scheduled and the Contractor notified. Fort Drum will locate and mark government owned utilities. It shall be contractor's responsibility to have privately owned utilities located and marked through DIG SAFELY NY (UFPO). The Government shall provide written certification that the Fort Drum owned utilities have been located and marked prior to approval of the Permit. It shall be the Contractor's responsibility to protect all utilities that lie in areas where excavation is required, by hand digging or other measures as necessary. All costs for repair and temporary utilities required due to disruption of service shall be borne by the Contractor.

See attached Excavation Permit Policy.

1.6 ENDANGERED SPECIES RESTRICTIONS

The IMPLEMENTING INSTRUMENT FOR ENDANGERED SPECIES ACT CONSULTATION REQUIREMENTS FOR THE FEDERALLY-ENDANGERED INDIANA BAT AND THE FEDERALLY-THREATENED NORTHERN LONG-EARED BAT ON FORT DRUM MILITARY INSTALLATION is included as an attachment for reference on work restrictions specifically for tree removal activities.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

Attachments:

Garrison Policy Memorandum #17-11, Excavation Permits

IMPLEMENTING INSTRUMENT FOR ENDANGERED SPECIES ACT CONSULTATION REQUIREMENTS FOR THE FEDERALLY-ENDANGERED INDIANA BAT AND THE FEDERALLY-THREATENED NORTHERN LONG-EARED BAT ON FORT DRUM MILITARY INSTALLATION -- End of Section --

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS
11/20, CHG 5: 02/25

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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. 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, 1600x1200x24 bit true color minimum resolution in JPEG file format showing the sequence and progress of work. Take a minimum of 20 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 one set of digital photographs in the agency construction management system of record, 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 the submission in the agency construction management system of record 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 28.307-2 Liability, during the entire period of performance under this contract. Provide other insurance coverage as required by New York State law and 52.228-5 - Insurance - Work on a Government Installation.

a. Before commencing work under this contract, the Contractor must notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance must contain an endorsement to the effect that cancellation or material change adversely affecting the Government's interest cannot be effective for such a period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than 30 days after written notice thereof to the Contracting Officer.

b. The Contractor must insert the substance of this clause, including this paragraph (b), in subcontracts under this contract that require work on a Government installation and must require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor must maintain a copy of all subcontractors' proofs of required insurance, and must make copies available to the Contracting Officer upon request.

c. This insurance will be included at no additional cost to the government.

1.6 VETERANS EMPLOYMENT EMPHASIS FOR U.S. ARMY CORPS OF ENGINEERS CONTRACTS

In addition to complying with the requirements outlined in FAR Part 22.13, FAR Provision 52.222-38, FAR Clause 52.222-35, FAR Clause 52.222-37, DFARS 222.13 and Department of Labor regulations, U.S. Army Corps of Engineers (USACE) Contractors and subcontractors at all tiers are encouraged to promote the training and employment of U.S. veterans while performing under a USACE contract. While no set-aside, evaluation preference, or incentive applies to the solicitation or performance under the resultant contract, USACE Contractors are encouraged to seek out highly qualified veterans to perform services under this contract.

The following resources are available to assist USACE Contractors in their outreach efforts:

Federal Veteran employment information at
http://www.fedshirevets.gov/index.aspx
Department of Labor Veterans Employment Assistance
https://www.dol.gov/vets/
Department of Veterans Affairs-VOW to Hire Heroes Act
http://benefits.va.gov/vow/
Army Wounded Warrior Program-
http://wtc.army.mil/modules/employers/index.html
U.S. Chamber of Commerce Foundation-Hiring Our Heroes
http://www.hiringourheroes.org/

1.7 PROJECT MANAGER

Provide a Project Manager with minimum of 15 years of construction experience in similar size project as a project manager. Project manager will serve as the Governments' sole point of contact in all matters relating to work including, but not limited to, contract compliance,

progress of work, overall project scheduling, financial matters, and change orders. Performs all project management duties of the project and attend all job meetings. Individual must be on site a minimum of one days per week and authorized to negotiate changes. The Contracting Officer may request proof of the project manager's qualifications at any point in the project if the performance of the superintendent is in question.

Project manager must be capable of reading, writing, and conversing fluently in the English language.

1.8 SUPERVISION

1.8.1 Superintendent Qualifications

Provide project superintendent with a minimum of 10 years experience in construction with at least 5 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.

1.8.2 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.

1.8.3 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.

1.8.4 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 or excess costs or damages by the Contractor.

1.9 SUPERINTENDENCE OF SUBCONTRACTORS

a. The Contractor shall be required to furnish the following, in addition to the superintendence required by the Contract Clause titled,

"SUPERINTENDENCE BY THE CONTRACTOR".

(1) If more than 50% and less than 70% of the value of the contract work is subcontracted, one superintendent shall be provided at the site and on the Contractor's payroll to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

(2) If 70% or more of the value of the work is subcontracted, the Contractor shall be required to furnish two such superintendents to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

b. If the Contracting Officer, at any time after 50% of the subcontracted work has been completed, finds that satisfactory progress is being made, he may waive all or part of the above requirement for additional superintendence subject to the right of the Contracting Officer to reinstate such requirement if at any time during the progress of the remaining work he finds that satisfactory progress is not being made.

1.10 PHYSICAL DATA (FAR 52.236-4)(APR 1984)

Data and information furnished or referred to below is for the Contractor's information only. The Government will not be responsible for interpretation of or conclusion drawn from the data or information by the Contractor.

a. Weather Conditions: Climatological data determined from records of the
U.S. Weather Bureau Station, Fort Drum, NY:
Mean Annual Temperature: 46.3 degrees F
Mean Annual Precipitation: 38.5 inches
See also paragraph TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

b. Transportation Facilities:

1. Railroads: Conrail serves the locality of the proposed work. Railhead is located approximately 15 miles from the project site. The Contractor must make all arrangements at his expense for the use of sidings necessary for the delivery of materials, equipment, supplies, and other facilities required for completion of the work. The Contractor's use of sidings must be arranged so as not to interrupt or delay the operation of the Military reservation.

2. Highways and Roads: Routes US 11 and NYS Routes 26 & 3 serve the locality of the proposed work. Roads within the military reservation proposed to be used by the Contractor, must be subject to prior approval of the Post authorities and such roads, if used, must be maintained throughout construction and must be restored to as good condition as existed prior to their use.

The Contractor may make use of old NYS Routes 29 and 37, but usage by other vehicles may not be interrupted without prior approval from the Contracting Officer and in compliance with paragraph 19(b). The Contractor must also construct such temporary haul roads and bridges as may be necessary for the conduct of his work. Such temporary construction must be restored to its original condition. All costs for the use of existing

transportation facilities, for the construction of temporary facilities, and for maintenance, repair, removal and restoration must be borne by the Contractor.

1.11 PRECONSTRUCTION CONFERENCE

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.

The Contractor must provide at this conference the following items as indicated:

a. Initial Project Schedule; Section 01 32 01.10 18 PROJECT SCHEDULE.

b. Accident Prevention Plan (APP); Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS.

c. Contractor Quality Control (CQC) Plan; Section 01 45 00 QUALITY CONTROL.

d. List of Contact Personnel; Section 01 14 00 WORK RESTRICTIONS.

e. Letter appointing Superintendent.

1.11.1 Attendees

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

1.12 SUBMISSION OF CLAIMS

The following must be submitted to the Contracting Officer at the following address: U.S. Army Corps of Engineers, Room 16-300, New York District, 26 Federal Plaza, New York, New York 10278-0090:

a. Claims referencing or mentioning the Contracting Disputes Act of 1978.

b. Requests for a written decision by the Contracting Officer.

c. Claims certified in accordance with the Contract Disputes Act of 1978.

No other Government representative is authorized to accept such requests. A copy must also be provided to the Authorized Representative of the Contracting Officer.

Provide the Contracting Officer with a copy of any requests for additional time, money or interpretation of contract requirements which were provided to the Authorized Representative of the Contracting Officer and which have

not been resolved after 90 days.

1.13 (S-102) CONTRACTOR SUPPLY and USE OF ELECTRONIC SOFTWARE FOR PROCESSING DAVIS-BACON ACT CERTIFIED LABOR PAYROLLS (April 2011)

The Contractor is encouraged to use a commercially-available electronic system to process and submit certified payrolls electronically to the Government. The requirements for preparing, processing and providing certified labor payrolls are established by the Davis-Bacon Act as stated in FAR 52.222-8, PAYROLLS AND BASIC RECORDS and FAR 52.222-13, COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS.

If the Contractor elects to use an electronic Davis-Bacon payroll processing system, then the Contractor must be responsible for obtaining and providing for all access, licenses, and other services required to provide for receipt, processing, certifying, electronically transmitting to the Government, and storing weekly payrolls and other data required for the Contractor to comply with Davis-Bacon and related Act regulations. When the Contractor uses an electronic Davis-Bacon payroll system, the electronic payroll service shall be used by the Contractor to prepare, process, and maintain the relevant payrolls and basic records during all work under this construction contract and the electronic payroll service must be capable of preserving these payrolls and related basic records for the required three years after contract completion. If the Contractor chooses to use an electronic Davis-Bacon payroll system, then the Contractor must obtain and provide electronic system access to the Government, as required to comply with the Davis-Bacon and related Act regulations over the duration of this construction contract. The access must include electronic review access by the Government contract administration office to the electronic payroll processing system used by the Contractor.

The Contractor's provision and use of an electronic payroll processing system must meet the following basic functional criteria: Commercially available; compliant with appropriate Davis Bacon Act payroll provisions in the FAR; able to accommodate the required numbers of employees and subcontractors planned to be employed under the contract; demonstrated security of data and data entry rights; ability to produce Contractor-certified electronic versions of weekly payroll data; ability to identify erroneous entries and track the data/time of all versions of the certified Davis Bacon payrolls submitted to the Government over the life of the contract; capable of generating a durable record copy, that is, a CD or DVD and PDF file record of data from the system database at end of the contract closeout. This durable record copy of data from the electronic Davis-Bacon payroll processing system must be provided to the Government during contract closeout.

All Contractor-incurred costs related to the Contractor's provision and use of an electronic payroll processing service must be included in the Contractor's price for the overall work under the contract. The costs for Davis-Bacon Act compliance using electronic payroll processing services must not be a separately bid/proposed or reimbursed item under this contract.

1.14 DESIGNATION OF PROPERTY ADMINISTRATOR

The Chief, Property and Accounting Section, U.S. Army Engineer District, New York, Federal Building, 26 Federal Plaza, New York, N.Y. 10278-0090 is designated as Property Administrator, in connection with this contract.

1.15 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, , Contractor, key subcontractors and the Designer of Record (DOR) (regardless of whether the contract is a design-build are required to participate in the Partnering process.

1.15.1 Facilitated (Formal) Partnering

a. Within 35 calendar days after award and prior to the start of work, host a Formal Partnering session with key personnel from the project team including both Contractor and Government personnel. All costs associated with the Partnering session including the third-party independent Facilitator Consultant, meeting room and other incidental items are the responsibility of the Contractor.

b. Before the Facilitated (Formal) Partnering session, coordinate with the Facilitator all requirements for incidental items (such as audio-visual equipment, easels, flipchart paper, colored markers, note pads, pens/pencils, colored flash cards) and have these items available at the Partnering session. Provide copies of any documents required for distribution to all attendees. Participants will bear their own costs for meals, lodging and transportation associated with Partnering.

c. The Initial Partnering Session must be a duration of one day and be held at a location off base as agreed to by the Contracting Officer. Partnering session may take place concurrently with the Meeting.

d. Facilitator must be experienced in conducting corporate Partnering sessions and must be a third-party independent facilitating consultant - not an employee of the Contractor. The Facilitator is responsible for leading all aspects of the Partnering session necessary to achieve the Partnering goal.

e. An outcome of the Partnering session must be an escalation matrix and developing a Construction Joint Risk Register agreed upon by both the Government and Contractor, which identifies key Government and Contractor decision makers by name and anticipated decision durations.

f. Host follow-on Partnering Sessions at three- to six-month intervals or more frequently if needed and lasting generally a half day or less. Attendees need only be those required to resolve current issues. The same Facilitator used in the Initial Partnering session must lead the follow-on sessions unless an alternative is permitted by the Contractor Officer. All costs associated with follow-on Partnering sessions are the responsibility of the Contractor.

g. Provide a completed partnering agreement to all participants within 30 days of partnering session.

1.16 ELECTRONIC MAIL (E-MAIL) ADDRESS

Establish and maintain electronic mail (e-mail) capability along with the capability to open various electronic attachments as text files, pdf files, and other similar formats. Within 10 days after contract award, provide the Contracting Officer the email addresses required for electronic communications from the Contracting Officer related to this contract including, but not limited to contract documents, invoice information, request for proposals, and other correspondence. The Contracting Officer may also use email to notify the Contractor of base access conditions when emergency conditions warrant, such as hurricanes or terrorist threats. Multiple email addresses are not allowed.

It is the Contractor's responsibility to make timely distribution of all Contracting Officer initiated e-mail with its own organization including field office(s). Promptly notify the Contracting Officer, in writing, of any changes to this email address.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 GENERAL MEETING REQUIREMENTS

3.1.1 Preparatory and Initial Phase meeting checklists

See Section 01 45 00 QUALITY CONTROL for Preparatory and Initial Phase meeting checklists. Contractor is responsible for phase and progress meetings to include:

a. Meeting notification to participants

b. Prepare agenda for meetings

c. Use phase checklists for Preparatory and Initial Phase meetings

d. Physical arrangements for meetings

e. Preside at meetings

f. Record minutes recording proceedings and decisions

g. Copy and send minutes to:

(1) Meeting participants

(2) Project parties affected by decisions

(3) Contracting Officer (No later than 3 working days)

3.1.2 Weekly Progress Meetings Agenda

See section 01 32 01.10 18 PROJECT SCHEDULE for the weekly progress meeting. Modify agenda as needed for on-going work.

a. Review minutes from previous progress meetings

b. Review RMS CM Contractor Action Item Report

c. Review work progress since previous meeting

d. Review current definable features of work:

-- Identify phases of current features of work

-- Identify pending phase changes

-- Identify features for discussion in next scheduled meeting

e. Discuss problem prevention:

(1) Field observations

(2) Deficiencies and tracking

(3) Procedures working well

(4) Problems, conflicts

(5) Methods to improve

f. Review construction schedule:

(1) Identify delays

(2) Discuss proposed corrective actions to regain schedule

g. Submittals and Requests for Information (design interpretation):

(1) Review submittal register

(2) Identify submittals to expedite as required

h. Review off-site activities:

(1) Fabrications

(2) Material and equipment delivery schedule

i. Review Testing:

(1) Type, Schedule

(2) Received Results

j. Review changes to construction schedule:

(1) Planned progress during succeeding work period

(2) Coordination of various schedules

(3) Effect of changes on construction and completion date

k. Review site safety

l. Discuss maintaining contract quality for materials and workmanship

m. Discuss pending modifications, changes and substitutions

n. Discuss other business, as appropriate

-- End of Section --

G/C	#	ACTIVITY DESCRIPTION	ACTION OFFICER	DUE DATE	STATUS			ACTUAL COMPLETION DATE	COMMENTS
					Working	Urgent	Complete		
G+C	1	Above Ceiling Inspection (conducted, deficiencies cleared, completed)							
G+C	2	Above Ceiling Inspection (conducted, deficiencies cleared, completed)							
G+C	3	Above Ceiling Inspection (conducted, deficiencies cleared, completed)							
G+C	4	Above Ceiling Inspection (conducted, deficiencies cleared, completed)							
G+C	5	Above Ceiling Inspection (conducted, deficiencies cleared, completed)							
G+C	6	Above Ceiling Inspection (conducted, deficiencies cleared, completed)							
G+C	7	CQX/QA Mechanical & Electrical Systems Testing (conducted, verified)							
G+C	8	Commissioning (preliminary, functional & final testing of systems completed, pre-commissioning plan submitted, approved, team identified, coordinated w/CX reps, test records, reports submitted)							
C	9	Valve Tags, Charts, Diagrams (approved tags, posted properly)							
G+C	10	Communications (installation of phone, cable, fiber optics, testing, coordinate punch-out w/DPW/BCE Communications or other contractors/vendors, i.e. GCI, elevator)							

LEGEND: G = Government Action C = Contractor Action

G/C	#	ACTIVITY DESCRIPTION	ACTION OFFICER	DUE DATE	STATUS			ACTUAL COMPLETION DATE	COMMENTS
					Working	Urgent	Complete		
C	11	Excess Materials (inventory, spare parts, tools, quantities as spec'd, DD250, itemized list, where located/stored)							
G+C	12	Government or Contractor Furnished Equipment (date of delivery, installation, POC's)							
C	13	Landscaping/Turfing (coordinate w/DPW/BCE landscaper, utilities, irrigation system, maintenance requirements)							
C	14	Exterior (parking lots, pavement, striping, handicap signs, wheel stops, light standards, vehicle plug-in, sidewalks, fencing, bollards-safety markings, dumpster enclosures, transformer enclosure, locks)							
G or C	15	Signage (interior, exterior, directory, facility name and number, billboard)							
C	16	Keys/Tags/Box/Construction Cores (numbers req'd as spec'd, POC for turnover, key control, location, construction cores, coordination w/DPW/BCE locksmith, bldg manager, sign shops)							
C	17	Final Cleaning (spec'd waxing of floors, access controlled, bldg secured)							
C	18	Installed Property Equipment List (mechanical and electrical)							

LEGEND: G = Government Action C = Contractor Action

G/C	#	ACTIVITY DESCRIPTION	ACTION OFFICER	DUE DATE	STATUS			ACTUAL COMPLETION DATE	COMMENTS
					Working	Urgent	Complete		
G	19	Draft/Preliminary/Interim DD Form 1354 (coordinate w/DPW/BCE real property)							
G	20	DD Form 1354I (w/installed property list, noted deficiencies & correction dates at final inspection) *note* - hand delivered							
G	21	Submittals Closeout (outstanding, delinquent, transfer to DPW/BCE)							
C	22	Submittal Register Cleared							
G+C	23	Warranty Conference (Corps schedules w/contractor input, contractor provides booklet w/all-inclusive warranties, procedures, response order of priority, POC's phone #'s, attendees to include bldg manager, service desk, reserved room large enough for attendees)							
G+C	24	Warranty follow-up Inspections (4, 9 month & 1-yr inspections, warranty call log/procedures, contractor response times, etc.)							
C	25	Equipment Warranty Tags (type submitted &							
		approved, correct warranty date posted)							
C+G	26	As-builts (red line preliminary, final, CADD files submitted, approved, required # of copies, format as spec'd, CD's, etc.)							

LEGEND: G = Government Action C = Contractor Action

G/C	#	ACTIVITY DESCRIPTION	ACTION OFFICER	DUE DATE	STATUS			ACTUAL COMPLETION DATE	COMMENTS
					Working	Urgent	Complete		
C	27	CQC completion inspection and Punch List (submitted w/scheduled dates for completion of item, coordinate w/QAR. No pre-final inspection scheduled w/o this.)							
G+C	24	Warranty follow-up Inspections (4, 9 month & 1-yr inspections, warranty call log/procedures, contractor response times, etc.)							
C	25	Equipment Warranty Tags (type submitted & approved, correct warranty date posted)							
C+G	26	As-builts (red line preliminary, final, CADD files submitted, approved, required # of copies, format as spec'd, CD's, etc.)							
C	27	CQC completion inspection and Punch List (submitted w/scheduled dates for completion of item, coordinate w/QAR. No pre-final inspection scheduled w/o this.)							
C	28	Master Issue and Deficiency Log (cleared or with correction suspense dates)							
G	29	Final Quantities (verified if applicable)							
C,G	30	Snow Plow Crew (coordinate POC for "Site Familiarization Drive Through")							

LEGEND: G = Government Action C = Contractor Action

G/C	#	ACTIVITY DESCRIPTION	ACTION OFFICER	DUE DATE	STATUS			ACTUAL COMPLETION DATE	COMMENTS
					Working	Urgent	Complete		
G	31	Pre-final Inspection (CQC punch list received, phased by facilities, floors, mechanical rooms, etc., to include facility exterior prior to snow fall, do not schedule on early Monday or Late Friday)							
C+G	32	Beneficial Occupancy Date (BOD)							
G	33	Final Inspection (w/DD Form 1354 for signature)							
C+G	34	Final Utility Meter Readings (disconnection of meters, coordinate w/CQC, QAR, CDE/DPW utilities)							
C	35	Demobilization (winter, spring)							
C+G	36	Final Payment (withholdings/retainage /liquidated damages assessed)							
G	37	User Move-In Date (partial acceptance)							
G	38	Ribbon Cutting (if applicable)							
C+G	39	Final Payrolls(closed out)							
G	40	Release of Claims							
G+C	41	Contractor Performance Evaluation (DD2626)							
G+ AE	42	AE Performance Evaluation (DD2631)							
G+C	43	After Action Review [(AAR) (Government action, Lessons Learned, scheduled, who attends)]							

LEGEND: G = Government Action C = Contractor Action

G/C	#	ACTIVITY DESCRIPTION	ACTION OFFICER	DUE DATE	STATUS			ACTUAL COMPLETION DATE	COMMENTS
					Working	Urgent	Complete		
		CRITICAL PATH ISSUES:							

SECTION 01 32 01.10 18

PROJECT SCHEDULE - MILCON
08/23, CHG 1: 08/24

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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Project Scheduler Qualifications; G, RO

Preliminary Project Schedule; G, RO

Initial Project Schedule; G, RO

Periodic Schedule Update; G, RO

1.3 PROJECT SCHEDULER QUALIFICATIONS

Submit scheduler qualifications to Government for review and rejection or approval. Designate an authorized scheduler to be responsible for the preparation of the schedule and all required updating and production of reports. The authorized representative must have a minimum of 5-years experience scheduling construction projects similar in size and nature to this project with scheduling software that meets the requirements of this

specification. The scheduler must have extensive comprehensive knowledge of CPM scheduling, principles, application, and obtain the skill/knowledge on following and adhering to this Contract, specification and drawing.

The Designated Project Scheduler must have prepared and maintained at least five previous construction schedules of similar size and complexity to this Contract, utilizing the most recent version of Oracle Primavera P6. During the entire Contract duration, the Government may require the Project Scheduler to be present at the contractor's project site office/trailers as often as needed to develop, maintain and provide the Government with a fully completed detail status-to-date schedule.

Scheduler is to obtain the sole project responsibilities of schedule updates, status, perform maintenance, query & forward weekly-monthly reports and maintain detail healthy schedules on a weekly and monthly basis. This sole responsibility is not to be shared with other project roles and responsibilities.

PART 2 PRODUCTS

2.1 SOFTWARE

Primavera P6 will be 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 Government Default Software

The Government utilizes recent version of Primavera P6.

2.1.2 Contractor Software

The version of Primavera P6 scheduling software used by the contractor must be commercially available from the software vendor for purchase with vendor software support agreements available. One of many uses of the software is to routinely create the required SDEF file, which must be created and supported by the software manufacturer.

2.1.2.1 Primavera

Primavera P6 must provide the "xer" export file in a version of P6 importable by the Government system. Consult with the Government for version verification. Verify at the SEKO meeting which version of P6 is in use by the Government. Export the schedule in a version of P6 no newer than that used by the Government.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Consult with the Government for a Primavera P6 .xer Design Build Template. Begin developing the construction Schedule at time Government Approves first design package, example "Govt Approval of 30% Design Completions. Continue development per phase.

All schedules will achieve 100% Project Controls for all parties, throughout the entire project duration. All Permits, regardless of whom is the responsible party, must be captured and started on the NTP date.

On-site work will begin at time Government Approval received of both the Preliminary schedule. Work will continue at time Government Approves the Initial Baseline Schedule.

Preliminary schedule is due within 15 calendar days of contractor signed Notice To Proceed. Initial Baseline schedule is due within 42 calendar days of contractor has signed Notice To Proceed.

Prepare for approval detailed Project Schedules, as specified herein, pursuant to FAR Clause 52.236-15 Schedules for Construction Contracts. Show in the detail schedules the accurate sequence to perform the work and dates contemplated for starting and completing all schedule activities. The scheduling, status, updates and maintenance of the entire project for the entire duration is required.

The scheduling and weekly status, updating and maintenance of project is the responsibility of the Contractor, to be reviewed, commented, rejected or approved by the Government. Contractor management personnel must actively participate in its development. Subcontractors and suppliers working on the project must also contribute with 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).

Throughout the entire project duration of the project, monthly schedule submissions are due on the first of each month, regardless of progress performance percentage. Throughout the project duration, at Governments direction submit a detail recovery or re-baseline schedule with in 10 calendar days.

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 objective of this meeting is for the Government to review with the contractor the requirements of the scheduling specification, communicate the Government's expectations regarding detail schedule development, submissions, and management, project controls, maintenance, and answer any questions the Contractor may have regarding the schedule requirements. Consult with the Government for project template(s).

3.1.2 Project Schedules

Submit separate Detail Preliminary, Initial Baseline and Monthly Project Schedules. Detail Preliminary Schedule is due within 15 calendars day of signed NTP Acknowledgement.

Detail Initial Baseline Schedule is due within 42 calendar days of signed NTP Acknowledgement. Throughout the entire duration of the project schedules are to be updated, status and maintained on a weekly basis. Periodic schedule updates are due on the first of each month. Consult with the Government with questions.

3.1.3 Approved Project Schedule

Use the Government Approved Project Schedule to accurately measure the progress of the work and aid in evaluating time extensions, and to provide the basis of all progress payments. Develop the detail schedule realistically-accurately, cost load solely on-site physical work activities and activity associate schedule data.

The schedule will provide the basis for all progress payments. When Contractor fails to submit schedules within the time prescribed, the Contracting Officer will withhold approval of progress payments until the Contractor submits the required schedule.

3.1.4 Schedule Status Reports

Provide and perform Schedule Updates and Status Report(s) weekly and monthly. If in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, within 3 calendar days the Contractor must take steps necessary to improve its progress, without additional cost to the Government. In this circumstance, the Contracting Officer will require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction planned, resources and to submit for approval a supplementary/recovery/re-baseline schedule. The Contracting Officer will have the final decision on which methods will be utilized.

3.1.5 Default Terms

Failure of the Contractor to comply with the requirements of this Contract will be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, the Contracting Officer will terminate the Contractor's right to proceed with the work, or separable parts of it, in accordance with the default terms of the Contract.

3.1.6 Adhering to Contract Documents

Review comments made by the Government and any other parties on the detail creation, development, status, update, maintenance of all schedules do not relieve the Contractor from compliance with requirements of these Contract Documents.

3.2 BASIS FOR PAYMENT AND COST LOADING

The detailedschedule 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 in RMS to the schedule data date.

3.2.1 Activity Cost Loading

Cost load solely end of each Design Package at time Government Approves. Example: Govt Approval Received 30% Design, is to be cost loaded 30% of total design cost, Govt Approval Received 60% Design Package, is to be cost loaded additional 30% of total design cost, equaling 60% of total design cost, same cost loading requirement for each design package.

Cost load solely on-stie physical work activities. Activity cost loading must be reasonable, realistic, accurate and without any form of front-end loading. As directed from a Contracting Officer, within two calendar days provide additional documentation to demonstrate cost accuracy. Activities with a negative cost loading is not allowed.

Testing activities must be cost loaded. Testing and Close-Out activities will be 100% paid at 100% complete.

Do not include field overhead positions as individual pay items. Evenly disperse overhead costs and profit to each activity over the duration of the project.Activities such as General Conditions or similar, are prohibited from obtaining cost.

It is the discretion of the Government of which activities are to be cost loaded. Cost of activities will be reviewed, rejected or approved by the Government. When directed by the Government contractor must apply and or reallocate activity cost appropriately.

3.2.2 Drawings Activities

Layout, Shop, Schematic and Coordination drawings activities are prohibited from cost loading. Drawings activities are paid with the associated on-site physical work activity.

3.2.3 Mobilization and Demobilization Cost

Under a separate WBS for each Mobilization and Demobilization include detail activities with reasonable. Realistic and accurate cost. Not all activities will obtain cost. Front-end loading is prohibited. Provide the Government with detail documentation and cost of Mobilization and Demobilization prior to submitting a Preliminary Schedule.

3.2.4 Cost Loading Testing Activities

Systems where Testing and Approvals are required must be cost loaded no less than 5 percent of the procurement and install cost.

Activity(ies) for "Government Approval Received Final Testing Report" shall be valued no less than $50,000.00.

3.2.5 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, design submittals, and paragraph O&M MANUALS.

3.2.6 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 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 and accurate 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.

Activity Durations are consecutive workdays. The use of sporadic, random and start-stop-restart logic are prohibited. At time of activity start, contractor is to adhere to baseline original durations.

Float does not extend activity original durations. Activities where actual durations have exceeded original duration will required to be split/separated, including cost, duration and associated activity data.

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. Critical activities are to be identify, captured in all schedules. 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. Lumping or nesting of more than one activity is prohibited.

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. Submission and approval of O & M manuals.

e. Submission and approval of as-built drawings.

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

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

h. Submission of TAB specialist design review report.

i. Submission and approval of fire protection specialist.

j. Submission and approval of , Controls testing plan, performance and verificatoin testing plan, test data, and reports: Develop the schedule logic associated with testing of mechanical systems to a level of detail consistent with the contract testing requirements. All tasks associated with building testing will be completed prior to submission of performance and verificaton testing reports and subsequent contract completion.

   These activities may include but are not limited to: air and water balancing, functional performance testing, controls testing, and performance verification testing. Include other systems testing, if required. Include additional performance and verification testing 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).

k. Contractor's pre-final inspection.

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

m. Government's pre-final inspection.

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

o. Final inspection.

p. All Sub-Contractor Buy-outs activities

q. Submission, Review, and Approval activities of the Preliminary and Initial Baseline schedules.

r. Required meetings, conferences, and including 3-Phase Preparatory Meetings.

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 USACE).

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 affect 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." Must be a "Finish On" constraint date.

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.

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, discuss the reason during the SEKO meeting.

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. Minimum three calendars required: 7 workdays without holidays and weather days, 5 workdays with holidays, 5 workdays with holiday and weather days. Utilize additional calendars as project requires.

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, each activity must have at least a start-to-start or finish-to-start relationship with its predecessor and a finish-to-finish or finish-to-start relationship with its successor.

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.

All Original Duration are consecutive workdays. The use of sporadic, random, start-stop-restart-etc Original Durations are prohibited. Float does not extend Original Durations. Activities where the Actual Duration has exceeded the Original Duration will be split / separated into two more additional activities, to include Duration, cost and associated data.

3.3.16 Leads, Lags, and Start to Finish Relationships

Lags are not to be used unless approved by the Government on a case-by-case basis prior to incorporating the schedules. 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 upon the Government's verification of completion and correction of all punch list work identified during Government pre-final inspection(s).

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 upon the Government's approval.

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 upon the Government's approval of all O & M manuals.

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 hours) 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.

3.3.22 Activity Grouping, Lumping, Combining, Nesting

Activities are prohibited from Grouping, Lumping, Combining, and Nesting. Refrain from listing a single high-level activity in place of two or more activities. Example: Forming, Tie of Rebar, Pouring and Curing are 4 separate activities.

3.3.23 WBS and Activities

WBS (Work Breakdown Structure) is to be detailed. Fifteen or less activities per WBS. Greater than fifteen activities will require Contracting Officer Approval and are not to exceed fifteen activities. Utilize work Area, Section, Sub-section, Sectors locations to properly WBS and Activity(ies) exact location.

3.3.24 Activity Excessive Actual Durations

Activity Actual Duration greater than Original Duration must be divided into separate activities. Divide activity Original Duration, cost and associated data. Newly separated activities are to be added to the Approved Baseline schedule. Resubmit Baseline schedule for Contracting Officer Approval.

3.3.25 Activity Actual Start

The Actual Start of activities for the sole purpose of collecting the cost of the material is prohibited. Material is paid at time of install is in progress and verified.

3.3.26 Activity Early Start and Late Start

Notify the Government of Early Start(s). Prior to an early start, the activity must have all resources readily available. Activity early start does not extend the original duration and must maintain the baseline

schedule original durations.

Notify the Government of Late Start(s). Prior to a late start, the activity must have all resources readily available.

Activity start date, float does not extend baseline specified Original Durations. The activity must maintain the baseline schedule's original duration.

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 15 calendar days after the NTP is acknowledged, submit the Preliminary Project Schedule defining the planned operations detailed for the first 90 calendar days for review, rejection, or approval. Payments will begin at time Government Approves the Detail Preliminary Project Schedule. Only 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. Code activities that are summary in nature, after the first 90 calendar days, with the following activity codes: Bid Item (CLIN) code (BIDI), Responsibility Code (RESP), and Feature of Work code (FOW)..

3.4.2 Initial Deatil Project Schedule Submission

Submit the Initial Project Schedule for approval within 42 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.

3.5 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 is to be determined at SEKO meeting.

3.5.2 Narrative Report

Provide a Narrative Report with each schedule submission. Four copies of the schedules showing codes, values, categories, numbers, and other items, etc., as required. 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. If the longest path changes from a monthly update to the next, provide an explanation of the factors driving the change.

h. Respond to USACE 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. Provide two set(s) of hardcopy reports. 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. Payments can only be distributed with a Government Approved Periodic Schedule Update.

3.7 WEEKLY PROGRESS MEETINGS

Status, Update and Maintain a healthy schedule on the last workday of each week. On the first work days of each week prior to 10 A.M. forward 3 reports and the P6 .XER to the Government.

Reports: 1. Activities In-Progress, 2. Three Week Look Ahead, and 3. Longest Path. Compare all reports to the Government approved baseline schedule.

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 and Submittals.

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 delays, analysis, fragnets, and time extensions to the Contracting Officer in accordance with the contract provisions and clauses for approval, within 10 days of any possible duration and or cost deviations occurring. Also prepare a time impact analysis for each Government request for proposal (RFP).

Following Requirements are due within 10 workday of impact, delay or initial discovery:

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 concurrence 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.

a. Notwithstanding other provisions of this contract, it is mutually understood that the time extensions for changes in the work will depend upon the extent by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements so delayed and that the remaining contract completion dates for all other portions of the work will not be altered and may further provide for an equitable readjustment of liquidated damages under the new completion schedule. (FAR 52.212 6)

b. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER:

1. This provision specifies the procedure for determination of time extension for usually severe weather in accordance with the contract clause entitled “Default: (Fixed Price Construction).” In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

    a. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

    b. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

2. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY WORK DAYS BASED ON (5) DAY WORK WEEK											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(13)	(11)	(4)	(5)	(4)	(5)	(4)	(4)	(5)	(6)	(6)	(9)

3. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor’s scheduled workday. The number of actual adverse weather delay days must include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 2 above, the Contracting Officer will convert qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled “Default (Fixed Price Construction)”.

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 TRANSFER OF SCHEDULE DATA INTO RESIDENT MANAGEMENT SYSTEM

Ensure schedule data is uploaded to RMS. This data is additional supporting data in a form and detail required by the Contracting Officer pursuant to FAR 52.232-5 Payments under Fixed-Price Construction Contracts. The receipt of a proper payment request pursuant to FAR 52.232-27 Prompt Payment for Construction Contracts is contingent upon the Government receiving both acceptable and approvable hard copies and matching electronic versions of the application for progress payment.

3.12 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. Begin Testing Activity IDs with "T-".

k. Activity Names must have a verb-noun structure and contain the most defining and detailed description within the first 30 characters. Refer and utilize schedule specification verbiage. Activity Names verbiage and acronyms are to be consistent and accurate throughout the schedule(s). It is the discretion of the Government which verbiage and acronyms will be utilized.

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

= m. Schedule Review comments made by the Contractor, Government and or other parties on the schedule(s) do not relieve the Contractor from compliance with requirements of the Contract Documents.

-- End of Section --

SECTION 01 33 00

SUBMITTAL PROCEDURES
08/18, CHG 4: 02/21

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 Explosive Safety Submission ESS Work 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 Safety Data Sheets(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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. 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 (DA)

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 10 DESIGN DATA (DESIGN AFTER AWARD). Generally, list design submittals under SD-05 Design Data.

1.4.2.2 Government Conformance Review of Design (CR)

The Government will review all intermediate and final design submittals for conformance with the technical requirements of the Solicitation. Section 01 33 16.00 10 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 10 DESIGN DATA (DESIGN AFTER AWARD).

1.4.2.3 Designer of Record Approved/Government Conformance Review (DA/CR)

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 (DA/GA)

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."

1.5 PREPARATION

1.5.1 Transmittal Form

Use the ENG Form 4025-R transmittal form for submitting both Government-approved and information-only submittals. Submit in accordance with the instructions on the reverse side of the form. These forms or similar forms are included in the RMS CM software that the Contractor is required to use for this contract. 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.

1.5.2 Submittal Format

1.5.2.1 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.

1.5.2.2 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.

1.5.2.2.1 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.

Reserve a blank space, on the right-hand side of each sheet for the Government disposition stamp.

1.5.2.3 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.

1.5.2.3.1 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.

1.5.2.3.2 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.

1.5.2.3.3 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.

1.5.2.4 Format of SD-04 Samples

1.5.2.4.1 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.

1.5.2.4.2 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.

1.5.2.4.3 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.

1.5.2.5 Format of SD-05 Design Data

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

1.5.2.6 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.

1.5.2.7 Format of SD-07 Certificates

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

1.5.2.8 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.

1.5.2.8.1 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.

1.5.2.9 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.

1.5.2.10 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.

1.5.2.11 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.

1.5.3 Source Drawings for Shop Drawings

1.5.3.1 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.

1.5.3.2 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).

1.5.4 Electronic File Format

Provide submittals in electronic format, with the exception of material samples required for SD-04 Samples items. In addition to the electronic submittal, provide three hard copies of the submittals if requested. 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 on an optical disc or through an electronic file sharing system such as the DOD SAFE Web Application located at the following website: https://safe.apps.mil/.

1.6 QUANTITY OF SUBMITTALS

1.6.1 Number of SD-01 Preconstruction Submittal Copies

Unless otherwise specified, submit two sets of administrative submittals.

1.6.2 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.

1.7 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 copies of information-only submittals.

1.8 PROJECT SUBMITTAL REGISTER

A sample Project Submittal Register showing items of equipment and

materials for when submittals are required by the specifications is provided as "Attachment A - Submittal Register."

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 Section 01 45 00.15 10 RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE(RMS CM). 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 in the Government-furnished submittal register program or equivalent fields in the program used by the Contractor 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)	RMS – The following Submittal Classifications are populated in RMS when the SpecsIntact Submittal Data File is pulled into RMS)
G	Submittal requires Government Approval	G	GA
BLANK	Submittal is For Information Only(FIO)	BLANK	FIO
DA	Submittal requires Designer of Record Approval	D	DA
CR	Submittal requires Government Conformance Review	C	CR
DA/CR	Submittal requires Designer of Record Approval and Government Conformance Review	R	DA/CR
DA/GA	Submittal requires Designer of Record Approval and Government Approval	A	DA/GA

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.

"

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 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. .

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 30 calendar days after the date of submission.

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 10 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. Electronic copie(s) of the submittal will be

retained by the Contracting Officer and copie(s) 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 thatthe general method of construction, materials, detailing, and other information are satisfactory. 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 on Form ENG 4025: "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

-- End of Section --

APPENDIX A

SUBMITTAL REGISTER

LEFT BLANK INTENTIONALLY

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Ft Drum Wells Field Design-Build RFP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 11 00	SD-01 Preconstruction Submittals															
			Salvage Plan	1.7	G	RO												
		01 14 00	SD-01 Preconstruction Submittals															
			List of Contact Personnel	1.3.1.1														
			SD-07 Certificates															
			3Rs Explosive Safety Education	1.4.1														
			Training Certificate															
		01 30 00	SD-01 Preconstruction Submittals															
			View Location Map	1.3														
			Progress and Completion	1.4														
			Pictures															
		01 32 01.10 18	SD-01 Preconstruction Submittals															
			Project Scheduler Qualifications	1.3	G	RO												
			Preliminary Project Schedule	3.4.1	G	RO												
			Initial Project Schedule	3.4.2	G	RO												
			Periodic Schedule Update	3.6.2	G	RO												
		01 33 00	SD-01 Preconstruction Submittals															
			Submittal Register	1.8	G													
		01 33 16.00 10	SD-01 Preconstruction Submittals															
			Advanced Modeling Project	1.7.2	C	RO												
			Execution Plan (PxP)															
			Design Quality Control Plan	1.5.1	G	RO												
			Initial Design Conference	1.5.2.2														
			Preconstruction Conference	1.5.2.5														
			DCM Procedures	3.5.1	G	RO												
			Submittal Register	3.8.4	G	RO												

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Ft Drum Wells Field Design-Build RFP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 33 16.00 10	SD-05 Design Data															
			Design and Code Checklists	1.7.1	C	RO												
			Sustainable Design	2.5	C	RO												
			Interim Design Submittals	3.2.1	R	RO												
			Conference Documentation	3.7.3														
			Final Design Submittals	3.8	R	RO												
			Design Complete Documents	3.9	C	RO												
			SD-11 Closeout Submittals															
			DD Form 1354	3.8.5	A	RO												
		01 33 29	SD-01 Preconstruction Submittals															
			Preliminary High Performance	1.5.3.2	G	RO												
			and Sustainable Building Checklist															
			Sustainability Action Plan	1.4.1	G	RO												
			Preliminary Sustainability	1.5.3.2	G	RO												
			eNotebook															
			SD-05 Design Data															
			Interim Design High Performance	1.5.3.2	G	RO												
			and Sustainable Building Checklist															
			Interim Design Sustainability	1.5.3.2	G	RO												
			eNotebook															
			Final Design Sustainability	1.5.3.2	G	RO												
			eNotebook															
			SD-11 Closeout Submittals															
			Final High Performance and	1.5.3.2	G													
			Sustainable Building Checklist															
			Final Sustainability eNotebook	1.5.3.2	G	RO												

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Ft Drum Wells Field Design-Build RFP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 33 29	Amended Final Sustainability		G	RO												
			eNotebook															
		01 35 26	SD-01 Preconstruction Submittals															
			Accident Prevention Plan (APP)	1.8.1	G	RO												
			Design															
			Accident Prevention Plan (APP)	1.8.2	G	RO												
			Construction															
			SD-06 Test Reports															
			Accident Reports	1.12.2	G	RO												
			LHE Inspection Reports	1.12.3														
			Monthly Exposure Reports	1.5	G	RO												
			SD-07 Certificates															
			Activity Hazard Analysis (AHA)	1.9	G	RO												
			Certificate of Compliance	1.12.4														
			Hot Work Permit	1.13														
			License Certificates	1.14														
			Portable Gauge Operations	1.14.1	G	RO												
			Planning Worksheet															
			Radiography Operation Planning	1.14.1	G	RO												
			Work Sheet															
			Standard Lift Plan	1.12.4.2	G	RO												
			Critical Lift Plan	1.12.4.2	G	RO												
		01 45 00	SD-01 Preconstruction Submittals															
			Contractor Quality Control (CQC)	1.5.2	G													
			Plan															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Ft Drum Wells Field Design-Build RFP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 45 00	Additional Requirements For	1.5.2.2	G													
			Design Quality Control (DQC) Plan															
			SD-05 Design Data															
			Design Quality Control	1.12.2														
			Discipline-Specific Checklists	1.5.2.2														
			SD-06 Test Reports															
			Verification Statement	1.12.3														
		01 45 35	SD-06 Test Reports															
			Special Inspection Daily Reports	3.1.1														
			Special Inspection Daily Reports	3.1.2														
			Special Inspection Biweekly	3.1.1														
			Reports															
			SD-07 Certificates															
			Special Inspector	1.5	G	RO												
			SD-11 Closeout Submittals															
			Interim Report	3.1.2	G	RO												
			Comprehensive Final Report	3.1.2	G	RO												
			Final Report	3.1.3	G	RO												
		01 50 00	SD-01 Preconstruction Submittals															
			Construction Site Plan	1.3	G	RO												
			Traffic Control Plan	3.3.1	G	RO												
			Haul Road Plan	2.2.1	G	RO												
			Contractor Computer	1.6.1.4	G	RO												
			Cybersecurity Compliance															
			Statements															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Ft Drum Wells Field Design-Build RFP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 50 00	Contractor Temporary Network	1.6.6	G	RO												
			Cybersecurity Compliance															
			Statements															
			SD-06 Test Reports															
			Backflow Preventer Tests	3.4														
			SD-07 Certificates															
			Backflow Tester	1.4.1														
			Backflow Preventers	1.4														
		01 57 19	SD-01 Preconstruction Submittals															
			Storage Material Inventory	1.5.1														
			Preconstruction Survey	1.6.1														
			Regulatory Notifications	1.6.2														
			Environmental Manager	1.6.4														
			Qualifications															
			Employee Training Records	1.6.5														
			Environmental Protection Plan	1.7	G	RO												
			Dirt and Dust Control Plan	1.7.9.1														
			Solid Waste Management Permit	1.10														
			Stormwater Pollution Prevention	3.2.1.1	G	RO												
			Plan															
			Stormwater Notice of Intent	3.2.1.2														
			Spill Prevention Control And		G	RO												
			Countermeasure (SPCC) Plan															
			SD-06 Test Reports															
			Monthly Solid Waste Disposal	1.10.1	G	RO												
			Report															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Ft Drum Wells Field Design-Build RFP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 57 19	Inspection Reports	3.2.1.3														
			SD-07 Certificates															
			Employee Training Records	1.6.5	G	RO												
			Erosion and Sediment Control	1.6.5														
			Inspector															
			SD-11 Closeout Submittals															
			Regulatory Notifications	1.6.2	G	RO												
			Assembled Employee Training	1.6.5	G	RO												
			Records															
			Solid Waste Management Permit	1.10	G	RO												
			Stormwater Pollution Prevention	3.2.1.4	G	RO												
			Plan Compliance Notebook															
			Stormwater Notice of Termination	3.2.1.5	G	RO												
			As-Built Topographic Survey	3.2.1.5														
			Waste Determination	3.7.1	G	RO												
			Documentation															
			Project Solid Waste Disposal	3.7.2.1	G	RO												
			Documentation Report															
			Sales Documentation	3.7.2.1	G	RO												
			Contractor Certification	3.7.2.1														
		01 58 00	SD-02 Shop Drawings															
			Sign Legend Orders	1.3.1	G	RO												
		01 74 19	SD-01 Preconstruction Submittals															
			Construction Waste Management	1.6	G	RO												
			Plan															
			SD-06 Test Reports															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Ft Drum Wells Field Design-Build RFP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 74 19	Quarterly Reports	1.8.2														
			Annual Report	1.8.3														
			SD-11 Closeout Submittals															
			Final Construction Waste	1.9	S													
			Diversion Report															
		01 78 00	SD-03 Product Data															
			Warranty Management Plan	1.8.1														
			Warranty Tags	1.8.5														
			Spare Parts Data	1.6														
			SD-08 Manufacturer's Instructions															
			Instructions	1.8.1														
			SD-10 Operation and Maintenance															
			Data															
			Operation and Maintenance	3.7	G	RO												
			Manuals															
			SD-11 Closeout Submittals															
			As-Built Drawings	3.1	G	RO												
			Record Drawings	3.3	G	RO												
			Record Model	2.2	G	RO												
			As-Built Record of Equipment	3.6														
			and Materials															
			Warranted Equipment and	1.8.1														
			Materials															
			Final Approved Shop Drawings	3.4	G	RO												
			Construction Contract	3.5	G	RO												
			Specifications															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Ft Drum Wells Field Design-Build RFP

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 78 00	Certification of EPA Designated	2.3	G	RO												
			Items															
			Certification Of USDA Designated	2.4	G	RO												
			Items															
			Interim DD FORM 1354	3.9.1	G		RO											
			List Of Installed Building	3.9.2														
			Equipment Items For DD Form															
			1354															
		01 78 23	SD-10 Operation and Maintenance															
			Data															
			Facility Data Workbook	1.4	G	RO												
			Training Plan	3.1.1	G	RO												
			Training Outline	3.1.3	G	RO												
			Training Content	3.1.2	G	RO												
			Operation And Maintenance	3.2.1	G	RO												
			Manual, Progress Submittal															
			Operation And Maintenance	3.2.2	G	RO												
			Manual, Prefinal Submittal															
			Operation And Maintenance	3.2.3	G	RO												
			Manual, Final Submittal															
			SD-11 Closeout Submittals															
			Validation of Training Completion	3.1.5	G	RO												
			Training Plan	3.1.1	G	RO												
			Record Drawings And Utility	1.6.6.7	G	RO												
			Systems															

LEFT BLANK INTENTIONALLY

APPENDIX B

Eng Form 4025-R

LEFT BLANK INTENTIONALLY

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE

For use of this form, see ER 415-1-10; the proponent agency is CECW-CE.

DATE	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (*This section will be initiated by the contractor*)

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____

SPECIFICATION SEC. NO. (*Cover only one section with each transmittal*)	PROJECT TITLE AND LOCATION	THIS TRANSMITTAL IS FOR: (*Check one*) ☐ FIO ☐ GA ☐ DA ☐ CR ☐ DA/CR ☐ DA/GA

ITEM NO. (*See Note 3*) a.	DESCRIPTION OF SUBMITTAL ITEM (*Type size, model number/etc.*) b.	SUBMITTAL TYPE CODE (*See Note 8*) c.	NO. OF COPIES d.	CONTRACT DOCUMENT REFERENCE SPEC. PARA. NO. e.	CONTRACT DOCUMENT REFERENCE DRAWING SHEET NO. f.	CONTRACTOR REVIEW CODE g.	VARIATION Enter "Y" if requesting a variation (*See Note 6*) h.	USACE ACTION CODE (*Note 9*) i.

REMARKS	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

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (*List by item No.*)	NAME AND TITLE OF APPROVING AUTHORITY	SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each Transmittal shall be numbered consecutively. The Transmittal Number typically includes two parts separated by a dash (-). The first part is the specification section number. The second part is a sequential number for the submittals under that spec section. If the Transmittal is a resubmittal, then add a decimal point to the end of the original Transmittal Number and begin numbering the resubmittal packages sequentially after the decimal.

3. The "Item No." for each entry on this form will be the same "Item No." as indicated on ENG FORM 4288-R.

4. Submittals requiring expeditious handling will be submitted on a separate ENG Form 4025-R.

5. Items transmitted on each transmittal form will be from the same specification section. Do not combine submittal information from different specification sections in a single transmittal.

6. If the data submitted are intentionally in variance with the contract requirements, indicate a variation in column h, and enter a statement in the Remarks block describing he detailed reason for the variation.

7. ENG Form 4025-R is self-transmitting - a letter of transmittal is not required.

8. When submittal items are transmitted, indicate the "Submittal Type" (*SD-01 through SD-11*) in column c of Section I.
   Submittal types are the following:
   SD-01 - Preconstruction SD-02 - Shop Drawings SD-03 - Product Data SD-04 - Samples SD-05 - Design Data SD-06 - Test Reports
   SD-07 - Certificates SD-08 - Manufacturer's Instructions SD-09 - Manufacturer's Field Reports SD-10 - O&M Data SD-11 - Closeout

9. For each submittal item, the Contractor will assign Submittal Action Codes in column g of Section I. The U.S. Army Corps of Engineers approving authority will assign Submittal Action Codes in column i of Section I. The Submittal Action Codes are:
   A -- Approved as submitted.
   B -- Approved, except as noted on drawings. Resubmission not required.
   C -- Approved, except as noted on drawings. Refer to attached comments. Resubmission required.
   D -- Will be returned by separate correspondence.
   E -- Disapproved. Refer to attached comments.
   F -- Receipt acknowledged.
   X -- Receipt acknowledged, does not comply with contract requirements, as noted.
   G -- Other action required *(Specify)*
   K -- Government concurs with intermediate design. (*For D-B contracts*)
   R -- Design submittal is acceptable for release for construction. (*For D-B contracts*)

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract.

SECTION 01 33 16.00 10

DESIGN DATA (DESIGN AFTER AWARD)
05/16

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.

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 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 1110-1-2909	(2012) Engineering and Design -- Geospatial Data and Systems
ERDC/ITL TR-19-6	(2019) A/E/C Graphics Standard, Release 2.1
ERDC/ITL TR-19-7	(2019) A/E/C CAD Standard - Release 6.1

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-200-02	(2020; Change 3, 2025) High Performance and Sustainable Building Requirements
UFC 1-300-02	(2014; with Change 3, 2021) Unified Facilities Guide Specifications (UFGS)

	Format Standard
UFC 3-101-01	(2020; with Change 4, 2024) Architecture
UFC 4-010-01	(2018; with Change 3, 2024) DoD Minimum Antiterrorism Standards for Buildings

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://www.buildingsmart.org/standards/bsi-standards/industry-foundation-classes/ . 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 Bentley AECOsim and InRoads Workspace

The Workspace is contained within the A/E/C Work Structure. It is comprised of a collection of content libraries and supporting files that define and embody a BIM standard. Libraries include content such as wall types, standard steel shapes, furniture, HVAC fittings, and sprinkler heads. The Workspace also contains sheet libraries such as print/plot configurations, font and text style libraries, and sheet borders and title blocks. The Workspace includes pre-defined datagroup parameters.

1.3.9.2 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, https://cadbimcenter.erdc.dren.mil/.

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 at the project site , 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 may be scheduled and conducted at the project installation after the Post Award Conference and 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.

1.5.2.3 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.

1.5.2.4 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.

1.5.2.5 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

Each submittal includes an associated approval level designation as defined in the following table:

Approval Level Designation	Definition
G	Government approval
no designation	for information only
D	Designer of Record approval
C	Government Conformance Review of Design
R	Designer of Record Approval and Government Conformance Review
A	Designer of Record Approval and Government Approval

When used, a designation following the approval level designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Advanced Modeling Project Execution Plan (PxP); C, RO

Design Quality Control Plan; G, RO

Initial Design Conference

Preconstruction Conference

DCM Procedures; G, RO

Submittal Register; G, RO

SD-05 Design Data

Design and Code Checklists; C, RO

Sustainable Design; C, RO

Interim Design Submittals; R, RO

Conference Documentation

Final Design Submittals; R, RO

Design Complete Documents; C, RO

SD-11 Closeout Submittals

DD Form 1354; A, RO

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 USACE ADVANCED MODELING PROJECT EXECUTION PLAN (PxP) Template located at the USACE CAD/BIM Technology Center website 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 located at the USACE CAD/BIM Technology Center website 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 on disc-based (DVD±R/RW) media. Provide the full submittal on one single disc whenever possible. When separation of the submittal is required separate deliverables onto separate media. Document any media divisions in the PxP for approval by the Contracting Officer.

a. Directly print identification of contents onto storage media. Do not provide adhesived labels. Include the name of the submittal, project, project location, Contract number, Designer of Record firm/Prime Contractor company's name, title of submission, and security classification (in accordance with the applicable security classification labeling regulations) on the label. If multiple discs are provided, clearly document the contents of each disc on the label.

b. Include the name and contact information of the individual who produced the final data disc to ensure that any problems with the data or media can be easily resolved.

c. When browsed on any computer, the disc displays the following folders and their associated content:

(1) Submittal files (containing all submittal data)

(2) All supporting documents associated with the submittal

(3) Readme containing one TXT, PDF, or HTML file with general use information, organizational instructions, and basic preparer contact information.

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. Insert the Submittal Register into the file where specified by Section 01 33 00 SUBMITTAL PROCEDURES and bookmark.

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).

1.8.4 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, Version 2023.

2.1.2.2 Government Furnished CIM

The GFM includes Autodesk Civil3D, Version 2023.

2.1.2.3 Government Furnished GIS

The Installation's most current Standard GIS Database SDSFIE Adaptation will be furnished, including features and attributes relating to current project. Documentation of the required attributes and schema definitions will be provided with the GIS Template.

GIS source data and product data remain the property of the US Government. Be prepared to explain and demonstrate the company's process for protecting all geospatial data, including but not limited to geometry, attributes, metadata, topologies, and relational database schemas and operations used in association with this contract. Signing a non-disclosure agreement attesting to the same before source data are released may be required. Obtain further information about security and nondisclosure requirements from the Contracting Officer.

a. Some installation map data, source and/or product, may be considered by the Government to be "Controlled Unclassified Information" (CUI) also known as "Sensitive but Unclassified" (SBU). Release of this information to any third party without the explicit consent of the Contracting Officer is not authorized.

b. Return all source information to the Government or destroy upon completion of this contract.

2.1.2.4 Government Furnished CAD

The GFM includes Autodesk AutoCAD, Version 2023.

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,CIMand 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 USACE BIM/CIM Advanced Modeling Submittal Checklist and include with each submittal. Download the Checklist from the USACE CAD/BIM Technology Center website (https://cadbimcenter.erdc.dren.mil/).

2.2.3 Advanced Modeling Electronic Files

Include all Advanced Modeling files associated with the contract scope of work.

2.2.3.1 3D Interactive Review Model

Provide a copy of each BIM Model in an approved interactive review format. Use Autodesk Navisworks or other Government Approved format documented in the PxP for the 3D Interactive Review Model format.

2.2.3.2 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.

2.2.3.3 Quality Control (QC) Reports

As a minimum, include the following reports:

2.2.3.3.1 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.

b. 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.

2.2.3.3.2 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.

2.2.3.3.3 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.

2.2.3.3.4 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).

2.2.3.3.5 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. 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.Seal required by the registered engineer or the registered architect is required to be a New York seal.

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.

d. Specification verfication reports such as brackets, Reference, and Submittal report.

e. Submittal register in .csv format and excel from SpecIntact

2.4.4 Specification Deliverable

Submit a bundled specification package in PDF format for each design package. As a minimum, bookmark each specification section in the bundled package. 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 and current Army SDD Policy Update.

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.

2.5.1.1 Civil

Include soil analysis and survey data, site design, site improvements, paving, grading and drainage, water, , contaminant containment, utilities systems analysis and design, and provisions for airfields, 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 (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 functional layout, 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 systems analysis and design.

2.5.1.5 Mechanical

Include heating and ventilation systems plumbing, energy conservation, noise and vibration control, and process systems design.

2.5.1.6 Electrical

Include power generation, transmission and distribution systems, lighting (interior and exterior), voice and video communications, utilities monitoring control systems (UMCS), lightning and static electricity protection systems analysis and design.

2.5.1.7 Physical Security

Include fencing, protective lighting, locks, andclear zones.

2.5.1.8 Cybersecurity

Include cybersecurity for systems being modified and impacted by the project scope of work.

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.

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 Interim Design Submittals

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.

3.2.1.1 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.

3.2.1.2 Fast-Tracking

Identify the project elements that will be fast-tracked in the Design Quality Control Plan.

3.2.1.3 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.

3.2.1.4 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.

3.2.2 Final Design Submissions

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.

3.2.3 Design Complete Submittals

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.

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 2023. 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 version 2023. 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, Version 3.5Autodesk AutoCAD Civil 3D, Version 2023 Bentley MicroStation, Version 2023 in compliance with SDSFIE, Version 3.1 and appropriate ISO 19115-1 metadata.

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 TR-19-6 and ERDC/ITL TR-19-7. Most recent version at the time of Contract award. Autodesk AutoCAD Template Files Most recent version at the time of Contract award. Download form the CAD/BIM Technology Center website as part of the A/E/C Work Structure.

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 TR-19-6 and NCS BIM Implementation section, part "2.0 Clarifications."ERDC/ITL TR-19-7.

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 USACE M3 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 TR-19-6.

b. All content produced with layer-centric BIM or CIM authoring software must be compliant with ERDC/ITL TR-19-7 and ERDC/ITL TR-19-6.

3.4.1.3 USACE Platform Configuration Standards

USACE Revit Templates, most recent version at the time of Contract award. Download from the USACE CAD/BIM Technology Center website and, if required, upgrade to the Contract approved software version.

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 BIM Coordinate System

a. Coordinate System: State Plane

b. Zone (for State Plane or UTM): Central

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

3.4.1.6 CIM Coordinate System

a. Coordinate System: State Plane

b. Zone (for State Plane or UTM): Central

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 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.

3.4.1.8 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.

3.4.1.9 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 footprints, 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 geo-referenced 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: State Plane

b. Zone (for State Plane or UTM): Central

c. Horizontal Datum: NAD 83/2011

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 TR-19-7 and ERDC/ITL TR-19-6.

. Autodesk AutoCAD Template Files, Most recent version at the time of Contract award. Download form the CAD/BIM Technology Center website as part of the A/E/C Work Structure.

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 interim design deliverables that include drawings, specifications, and design analysis for the part of design that the Contractor considers ready for review.

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.

3.6.1 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.

3.6.1.1 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.

3.6.1.2 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.

3.6.1.3 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.

3.6.2 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. Layout plan

e. Grading and drainage plan

f. Utility Plan: Identify and locate water lines, force mains, and other subsurface utility features

g. Road and parking area profiles

h. 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.

i. Civil details sheet

j. Erosion and Sediment Control Plan

k. Landscape, planting and turfing

l. Site specific civil calculations

3.6.3 Structural Systems

3.6.3.1 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 must 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.

3.6.4 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. 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.

c. Door and window schedules, finish schedules, hardware schedules, special signage and graphic requirements and all required 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).

3.6.5 Interior Design

3.6.5.1 Structural Interior Design (SID) Requirements3.6.5.1.1 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:3.6.5.1.1.1 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 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 the piping and well pumps.

d. Show locations and general arrangement of plumbing fixtures and major equipment.

e. Plan and isometric riser diagrams of all areas including cold water, waste and vent piping.

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 HVAC Systems

3.6.7.1 Design Analysis

Provide complete design calculations for mechanical systems. Include computations for sizing equipment, 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.

3.6.7.2 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)
Exhaust fans and specialized exhaust systems
Thermostat location
Location of all air handling equipment
Air balancing information
Flue size and location

3.6.7.3 Equipment Schedule

Provide 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

3.6.7.4 Details

Provide construction details, sections, elevations, etc., only where required for clarification of methods and materials of design.

3.6.7.5 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.

3.6.8 Electrical Systems

3.6.8.1 Design Analysis

Include lighting calculations to determine maintained foot-candle levels, electrical load analysis and calculations, electrical short circuit and protective device coordination analysis and calculations and arc fault calculations. Also provide service entrance and feeder calculations showing continuous and non-continuous load information and ambient temperature factors. DOR to provide lighting power density calculations indicating compliance with ASHRAE 90.1.

3.6.8.2 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.

3.6.8.3 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.

3.6.8.4 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

3.6.8.5 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

3.6.8.6 Details

Provide construction details, sections, elevations only where required for clarification of methods and materials of design.

3.6.9 Telecommunications

Provide site wide telecommunicaions riser diagram outlining system distribution including conduits and cables required. Provide detailed information within specifications and drawings on data racks and equipment within well houses.

3.6.9.1 Cybersecurity

Provide cybersecurity design submittals in accordance with UFC 4-010-06 Cybersecurity of Facility-Related Control Systems (FRCS).

3.7 INTERIM DESIGN REQUIREMENTS

At least one interim design submittal, 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 01.10 18 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.

3.7.1 Submission Review

After receipt of an Interim Design submission, the Government requires 14 calendar days after receipt of the submission to review and comment on the interim design submittal. For smaller design packages, especially those that involve only one or a few separate design disciplines, the parties may agree on a shorter review period or alternative review methods (e.g., over-the -shoulder or electronic file sharing), through the partnering process.

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.

3.7.2 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.

3.7.3 Conference Documentation

3.7.3.1 Minutes and Comment Process

Provide meeting minutes within three 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.

3.7.3.2 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.

3.8 FINAL DESIGN REQUIREMENTS

Provide final design submittals 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.

3.8.1 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.

3.8.1.1 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.

3.8.2 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.

3.8.3 Specifications

Provide specifications 100 percent complete and in final form.

3.8.4 Submittal Register

Provide an updated, cumulative submittal register with each design package that identifies the design and construction submittals required by that design package.

3.8.5 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.

3.9 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 documents. 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 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.

-- End of Section --

SECTION 01 33 29

SUSTAINABILITY REQUIREMENTS AND REPORTING
02/21, CHG 1: 08/25

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. For references without a year, use the current published version.

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE)

HPSB Guiding Principles	Guiding Principles for Sustainable Federal Buildings and Determining Compliance with the Guiding Principles for Sustainable Federal Buildings

INTERNATIONAL CODE COUNCIL (ICC)

ICC IgCC	(2018) 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 3-600-01	(2016; with Change 6, 2021) Fire Protection Engineering for Facilities

U.S. DEPARTMENT OF ENERGY (DOE)

Energy Star	Energy Star Energy Efficiency Labeling System (FEMP)
FEMP	Federal Energy Management Program (FEMP) Energy-Efficient Product Procurement

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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Preliminary High Performance and Sustainable Building Checklist; G, RO

Sustainability Action Plan; G, RO

Preliminary Sustainability eNotebook; G, RO

SD-05 Design Data

Interim Design High Performance and Sustainable Building Checklist; G, RO

Interim Design Sustainability eNotebook; G, RO

Final Design Sustainability eNotebook; G, RO

SD-11 Closeout Submittals

Final High Performance and Sustainable Building Checklist; G,

Final Sustainability eNotebook; G, RO

Amended Final Sustainability eNotebook; G, RO

1.4 GUIDING PRINCIPLES VALIDATION (GPV)

Guiding Principles Validation (GPV) is the project delivery team's self-assessment of UFC 1-200-02 compliance requirements, which includes meeting Federally-required tracking and reporting requirements, in order to report a sustainable Federal building. The use of a third-party certification is additional and not required..

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.

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 GPVsustainability 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. Preliminary Sustainability eNotebook

b. Submit preliminary Sustainability eNotebook with updated Preliminary High Performance and Sustainable Building Checklist at the first post award meeting in accordance with Section 01 30 00 ADMINISTRATIVE REQUIREMENTS.

c. Interim Design Sustainability eNotebook

d. Submit updated Sustainability eNotebook with updated Interim Design High Performance and Sustainable Building Checklist with the final design. 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.

e. Final Design Sustainability eNotebook

f. Construction Quality Control Meetings.

g. Provide up-to-date GP documentation in the Sustainability eNotebook for each meeting.

h. Final Sustainability eNotebook

i. Submit updated Sustainability eNotebook with updated Final High Performance and Sustainable Building Checklist, at Beneficial Occupancy Date (BOD). Final progress payment retainage may be held by Contracting Officer until Final Sustainability construction phase documentation is complete.

1.6 DOCUMENTATION REQUIREMENTSa. 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 each performance goal cited in UFC 1-200-02 paragraph "Integrated Design Process", along with other comprehensive design goals and ensures incorporation and integration of these goals throughout the planning, design, construction, and life cycle of the building..

(2) Demonstrate integration of the goals into design and construction.

1.6.2 Energy Efficient Products

Provide only energy-using products that are Energy Star Certified by the Environmental Protection Agency (EPA) or that meet or exceed the efficiency standard designated by the Federal Energy Management Program (FEMP). Where Energy Star or FEMP requirements 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.energystar.gov/.

For construction submittal documentation, provide proof that product is labeled energy efficient and complies with the cited requirements.

1.6.3 Stormwater Management

Develop and incorporate stormwater requirements into the documents. Service processes, as proof of this tracking requirement.

1.6.4 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.

1.6.5 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.

1.6.5.1 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.

1.6.6 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.

1.6.7 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.

1.6.8 Waste Material Management (Recycling – Construction)

Divert demolition and construction debris in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

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

c. Refer to Section 01 30 00 ADMINISTRATIVE PROCEDURES for Post Award Meetings.

d. Post Award Meeting

e. Design Quality Assurance Meetings

f. Design Complete Review Meetings

g. 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.

h. Facility Turnover Meetings

i. 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

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
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.)
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

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
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

-- End of Section --

SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS
05/24, CHG 1: 05/25

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)

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 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) 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

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 1915	Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP) Design; G, RO

Accident Prevention Plan (APP) Construction; G, RO

SD-06 Test Reports

Accident Reports; G, RO

LHE Inspection Reports

Monthly Exposure Reports; G, RO

SD-07 Certificates

Activity Hazard Analysis (AHA); G, RO

Certificate of Compliance

Hot Work Permit

License Certificates

Portable Gauge Operations Planning Worksheet; G, RO

Radiography Operation Planning Work Sheet; G, RO

Standard Lift Plan; G, RO

Critical Lift Plan; G, RO

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 day 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. Submit the hours via the agency construction management system of record.

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, 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 will:

(1) Are designated on an ENG Form 6282.

(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 Contract Site Safety And Health Officer(s)(SSHOs) Minimum Requirements

Provide a minimum of one Level One SSHO that meets the requirements of EM 385-1-1 for this project.

1.7.4 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.

1.7.5 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, 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 15 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, 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, 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:

1.9 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 at least 15 working days 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 KO or COR	Complete Final Accident Report on ENG 3394 and provide to KO or COR

Table Accident Reporting Required Timeline		
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. Complete the applicable USACE Accident Report, ENG Form 3394, and 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. All accidents are reportable, regardless of whether or not it is recordable.

b. Near Misses: For Army projects, report all "Near Misses" to the Contracting Officer, using local accident reporting procedures, within 24 hours. The Contracting Officer will provide the Contractor the required forms. 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 utilized to perform work under this Contract in accordance with Section 16-7 of the EM 385-1-1. Post completed certificate on the crane.

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 for routine crane lifts and use the Critical Lift Plan ENR Form 6213 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. Submit lift plans to the Contracting Officer for approval within 15 calendar days in advance of planned lift.

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 Fire Division. 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 Fire Division phone number. Report any fire, no matter how small, to the responsible Fire Division 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. All manholes and handholes are considered confined space. 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 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 Part 1910.1000). If material(s) that can be hazardous to human health upon disturbance are encountered during demolition, repair, renovation, or construction operations, stop portions of work that would disturb the material and notify the Contracting Officer immediately. Within 14 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 at least 30 days in advance. At a minimum, the written request must include the location of the outage, utilities being affected, duration of outage, any necessary sketches, and a description of the means to fulfill energy isolation requirements in accordance with EM 385-1-1. 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, 29 CFR 1915, 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. 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.

-- End of Section --

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS
05/24

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/

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191
Ph: 800-548-2723; 703-295-6300
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
Fax: 404-321-5478
E-mail: ashrae@ashrae.org
Internet: https://www.ashrae.org/

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)
520 N. Northwest Highway
Park Ridge, IL 60068
Ph: 847-699-2929
E-mail: customerservice@assp.org
Internet: https://www.assp.org/

AMERICAN WATER WORKS ASSOCIATION (AWWA)
6666 W. Quincy Avenue
Denver, CO 80235 USA

Ph: 303-794-7711 or 800-926-7337
Fax: 303-347-0804
Internet: https://www.awwa.org/

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/

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE)
722 Jackson Place
Washington DC 20506
Internet: https://www.whitehouse.gov/administration/eop/ceq

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/

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 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 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

U.S. ARMY CORPS OF ENGINEERS (USACE)
CRD-C DOCUMENTS available on Internet: https://www.wbdg.org/army
THE CAD/BIM TECHNOLOGY CENTER FOR FACILITIES, INFRASTRUCTURE, AND ENVIRONMENT (USACE)on Internet:
https://cadbimcenter.erdc.dren.mil/
Order Other Documents from:
Official Publications of the Headquarters, USACE
E-mail: hqpublications@usace.army.mil
Internet: http://www.publications.usace.army.mil/
or
https://www.hnc.usace.army.mil/Missions/Engineering-Directorate/TECHINFO/

U.S. DEPARTMENT OF AGRICULTURE (USDA)
Order AMS Publications from:
AGRICULTURAL MARKETING SERVICE (AMS)
Seed Regulatory and Testing Branch
801 Summit Crossing Place, Suite C
Gastonia, NC 28054-2193
Ph: 704-810-8884
E-mail: PA@usda.gov
Internet: https://www.ams.usda.gov/
Order Other Publications from:
USDA Rural Development
Rural Utilities Service
STOP 1510, Rm 5135
1400 Independence Avenue SW
Washington, DC 20250-1510
Phone: (202) 720-9540
Internet:
https://www.rd.usda.gov/about-rd/agencies/rural-utilities-service

U.S. DEPARTMENT OF DEFENSE (DOD)
Order DOD Documents from:
Room 3A750-The Pentagon
1400 Defense Pentagon
Washington, DC 20301-1400
Ph: 703-571-3343
Fax: 215-697-1462
E-mail: customerservice@ntis.gov
Internet: https://www.ntis.gov/
Obtain Military Specifications, Standards and Related Publications from:
Acquisition Streamlining and Standardization Information System (ASSIST)
Department of Defense Single Stock Point (DODSSP)
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/ffc/dod/unified-facilities-criteria-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. FEDERAL HIGHWAY ADMINISTRATION (FHWA)
1200 New Jersey Ave., SE
Washington, DC 20590
Ph: 202-366-4000
E-mail: ExecSecretariat.FHWA@dot.gov
Internet: https://highways.dot.gov/
Order from:
Superintendent of Documents
U.S. Government Publishing Office (GPO)
732 N. Capitol Street, NW
Washington, DC 20401
Ph: 202-512-1800 or 866-512-1800
Bookstore: 202-512-0132
Internet: https://www.gpo.gov/

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
8601 Adelphi Road
College Park, MD 20740-6001
Ph: 866-272-6272
Internet: https://www.archives.gov/
Order documents from:
Superintendent of Documents
U.S. Government Publishing Office (GPO)
732 N. Capitol Street, NW
Washington, DC 20401
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 --

SECTION 01 45 00

QUALITY CONTROL
08/23, CHG 3: 08/25

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 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 E329	(2025a) Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

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. 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

SD-06 Test Reports

Verification Statement

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. 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 and incorporate into the relevant QC Plan. 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, 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. Special Inspections.

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. 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, 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, 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 and all quality control 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.

1.5.2 Contractor Quality Control (CQC) Plan

Submit no later than 30 days, 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, 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 and 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. . 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. 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.

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, 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 Quality Control (QC) Manager

1.6.1.1 Duties

Provide a QC Manager at the work site to implement and manage the QC program. 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 Coordination and Mutual Understanding Meeting, 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.

1.6.1.2 Qualifications

The QC Manager must possess at least a Bachelor's degree in engineering, architecture, or construction management, with a current professional engineer registration and a minimum of 10 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 4 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.

1.6.1.3 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. Contact the Contracting Officer for information on the next scheduled class.

The Construction Quality Management Training certificate expires after 5 years. If the QC Manager's certificate has expired, retake the course to remain current.

1.6.2 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.

1.6.3 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.

1.6.3.1 Qualifications

1.6.3.2 Responsibilities

a. Be responsible for the design integrity, professional design standards, and all design services required.

1.6.4 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.

1.6.5 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 directly employed by the Prime Contractor and cannot be employed by a supplier or subcontractor on this project. 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**
Civil	2-1. Graduate Civil Engineer or Construction Manager with a professional engineer registration in the state of New York, and 2-2. 2 years experience in the type of work being performed on this project or technician with 5 years related experience	3-1. Area of Responsibility: Civil 3-2. Frequency of QC surveillance and inspection will be three times during installation and full time final inspection.

Electrical	2-1. Graduate Electrical Engineer with a professional engineer registration in the state of New York, and 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: Electrical 3-2. Frequency of QC surveillance and inspection will be three times during installation and full time during final inspection.
Structural	2-1. Graduate Civil Engineer (with Structural Track or Focus) or Construction Manager with a professional engineer registration in the state of New York, and 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: Structural 3-2. Frequency of QC surveillance and inspection will be three times during during installation and full time during final inspection.

1.6.6 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.

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 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 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., 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. 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 2 weeks 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 or establish an 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 Laboratory Accreditation Authorities
1.9.2 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 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.

1.12 DOCUMENTATION AND INFORMATION FOR THE CONTRACTING OFFICER

1.12.1 Construction Documentation

Prepare a Construction Production Report and a Contractor Quality Control Report for each day that work is performed. Attach the Construction Production Report 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.
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. Special Inspection reports.

h. 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 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.

PART 3 EXECUTION

Not used.

-- End of Section --

CONTRACTORS QUALITY CONTROL REPORT (QCR) DAILY LOG OF CONSTRUCTION	REPORT NUMBER Page 1 of 3
	DATE Date - Day of Week
PROJECT	CONTRACT NUMBER
CONTRACTOR	WEATHER Weather Caused No Delay Temperature Min °F Max °F No Precipitation No Wind

QC NARRATIVES

Activities in Progress:

Addtional Activities and Remarks (i.e., Submittal Actions, Misc Remarks)

Delivery of Equipment and Materials

Description & Location of Work (Also Indicate days of no work and reasons)

Follow-Up Phase Inspection Performed, Results & Corrective Action Taken

List Contractors and Subs Working This Day & Area of Responsiblity

CONTRACTORS QUALITY CONTROL REPORT (QCR) DAILY LOG OF CONSTRUCTION	REPORT NUMBER Page 2 of 3
	DATE
PROJECT	CONTRACT NUMBER

PREP/INITIAL DATES (Preparatory and initial dates held and advance notice)

Preparatory Inspections held today

No preparatory inspections held today

Initial Inspections held today

No initial inspections held today

ACTIVITY START/FINISH

Activity No	Description

No activities were started or finished today

QC REQUIREMENTS

Requirement No	Type	Description	Results

No QC requirements were completed today

ISSUED QA/QC DEFICIENCY (Describe QA and QC Deficiency items issued)

Item No	Location	Description

No QC Deficiency items were issued today

CORRECTED QA/QC DEFICIENCY (Report QC and QA Deficiency items corrected)

Item No	Location	Description

No QC Deficiency items were corrected today

CONTRACTORS ON SITE (Report first and/or last day contractors were on site)

Name	First Day	Last Day

No Contractors had their first or last day on the site

LABOR HOURS

Employer	Labor Classification	Number of Employees	Hours Worked
	FLOOR-COVERING-TILE LAYER		
	LABORERS		
	CONCRETING SUPERVISOR		

CONTRACTORS QUALITY CONTROL REPORT (QCR)
DAILY LOG OF CONSTRUCTION

REPORT NUMBER

DATE

PROJECT

CONTRACT NUMBER

.

LABORERS
PAINTERS
CARPENTER
CONSTRUCTION INSPECTOR
LABORERS
IRONWORKER
IRON & STEEL WORK SUPERVSR
PIPE FITTER
DUCT INSTALLER
SPRINKLER FITTER
ELECTRICIAN
CARPENTER
CARPENTER FOREMAN

Total hrs worked to date: XXXXXX Hrs worked MTD: XXXXXXX Total: XXXX XXXX

EQUIPMENT HOURS

Serial Number	Description	Idle Hours	Operating Hours

No equipment hours reported today

Total operating hrs to date: XXXX Idle hrs MTD: 0.0 Opr hrs MTD: XX Total:

MISHAP REPORTING

(Describe mishaps)

No mishaps reported today

CONTRACTOR CERTIFICATION

On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this Reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC REPRESENTATIVE'S SIGNATURE	DATE	SUPERINTENDENT'S INITIALS	DATE

US Army Corps of Engineers

Deficiency Items Issued - by QC

Date of Report

Project Name

RMS Contract ID

Resident Office Name

Item Number	Description	Location	Status	Date Issued	Age (days)

SECTION 01 45 00.15 10

RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)
11/23

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this section 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 MEASUREMENT AND PAYMENT

The work of this section is not measured for payment. The Contractor is responsible for the work of this section, without any direct compensation other than the payment received for contract items.

1.3 CONTRACT ADMINISTRATION

The Government will use the Resident Management System (RMS) to assist in its monitoring and administration of this contract. The Government accesses the system using the Government Mode of RMS (RMS GM) and the Contractor accesses the system using the Contractor Mode (RMS CM). The term RMS will be used in the remainder of this section for both RMS GM and RMS CM. The joint Government-Contractor use of RMS facilitates electronic exchange of information and overall management of the contract. The Contractor accesses RMS to record, maintain, input, track, and electronically share information with the Government throughout the contract period in the following areas:

Administration
Finances
Quality Control
Submittal Monitoring
Scheduling
Closeout
Import/Export of Data

The Contractor must be prepared to transition from the Resident Management System (RMS) to the new Construction Management Platform (CMP) at any time during the period of performance of this contract, once the USACE enterprise implements this change. The Contractor's obligation to transition from RMS to the CMP system is a requirement of this contract. Therefore, additional time or cost increase to complete this transition will not be considered. In the event of the transition, RMS project information will be migrated to CMP by the government and available in the CMP system. After the transition, the Contractor must utilize the CMP system to perform all contract administration functions previously required in RMS, including all areas listed above. After the transition, “RMS” and “CMP” will be synonymous for all “Resident Management System” and “RMS” references in this contract’s specification. To facilitate the

transition from RMS to CMP, online training for the CMP system will be made available to the Contractor with enough time to train staff, prior to the transition occurring.

1.3.1 Correspondence and Electronic Communications

For ease and speed of communications, exchange correspondence and other documents in electronic format to the maximum extent feasible. Some documents such as correspondence, including pay requests and payrolls, may be required in paper format with original signatures. Paper documents will govern in the event of discrepancy with the electronic version. Contracting Officer will determine which documents require submission of paper copies.

1.3.2 Other Factors

Other portions of this document have a direct relationship to the reporting accomplished through RMS. Particular attention is directed to FAR 52.236-15 Schedules for Construction Contracts; FAR 52.232-27 Prompt Payment for Construction Contracts; FAR 52.232-5 Payments Under Fixed-Priced Construction Contracts; Section 01 32 01.10 18 PROJECT SCHEDULE; Section 01 33 00 SUBMITTAL PROCEDURES; Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS; and Section 01 45 00 QUALITY CONTROL.

1.4 RMS SOFTWARE

RMS is a web based application. Download, install and be able to utilize the latest version of RMS within 7 calendar days of receipt of the Notice to Proceed. RMS software, user manuals, access and installation instructions, program updates and training information are available from the RMS website (https://rms.usace.army.mil). The Government and the Contractor will have different access authorities to the same contract database through RMS. The common database will be updated automatically each time a user finalizes an entry or change.

1.5 CONTRACT DATABASE - GOVERNMENT

The Government will enter the basic contract award data in RMS prior to granting the Contractor access. The Government entries into RMS will generally be related to submittal reviews, correspondence status, and Quality Assurance(QA)comments, as well as other miscellaneous administrative information.

1.6 CONTRACT DATABASE - CONTRACTOR

Contractor entries into RMS establish, maintain, and update data throughout the duration of the contract. Contractor entries generally include prime and subcontractor information, daily reports, submittals, RFI's, schedule updates and payment requests. RMS includes the ability to import attachments and export reports in many of the modules, including submittals. The Contractor responsibilities for entries in RMS typically include the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

Enter all current Contractor administrative data and information into RMS within 7 calendar days of receiving access to the contract in RMS. This

includes, but is not limited to, Contractor's name, address, telephone numbers, management staff, and other required items.

1.6.1.2 Subcontractor Information

Enter all missing subcontractor administrative data and information into RMS CM within seven calendar days of receiving access to the Contract in RMS or within seven calendar days of the signing of the subcontractor agreement for agreements signed at a later date. This includes name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor is listed separately for each trade to be performed.

1.6.1.3 Correspondence

Identify all Contractor correspondence to the Government with a serial number. Prefix correspondence initiated by the Contractor's site office with "S". Prefix letters initiated by the Contractor's home (main) office with "H". Letters are numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C" or "RFP".

1.6.1.4 Equipment

Enter and maintain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates in accordance with Section 01 45 00 QUALITY CONTROL.

1.6.1.5 Reports

Track the status of the project using the reports available in RMS. The value of these reports reflects the quality of the data input. These reports include but are not limited to the Progress Payment Request worksheet, Quality Control (QC) comments, Deficiency Tracking Log, Submittal Register Status, and Three-Phase Control worksheets in accordance with Section 01 32 01.10 18 PROJECT SCHEDULE, 01 33 00 SUBMITTAL PROCEDURES, and 01 45 00 QUALITY CONTROL.

1.6.1.6 Request For Information (RFI)

Create and track all Requests For Information (RFI) in the RMS Administration Module for Government review and response. Provide status at weekly progress meeting in accordance with Section 01 32 01.10 18 PROJECT SCHEDULE.

1.6.2 Finances

1.6.2.1 Pay Activity Data

Develop and enter a list of pay activities in conjunction with the project schedule in accordance with Section 01 32 01.10 18 PROJECT SCHEDULE. The sum of pay activities equals the total Contract amount, including modifications. Each pay activity must be assigned to a Contract Line Item Number (CLIN). The sum of the activities assigned to a CLIN equals the amount of each CLIN.

1.6.2.2 Payment Requests

Prepare all progress payment requests using RMS. Update the work

completed under the Contract at least monthly, measured as percent or as specific quantities. After the update, generate a payment request and prompt payment certification using RMS. Submit the signed prompt payment certification and payment request as well as supporting data, either electronically or by hard copy.

1.6.3 Quality Control (QC)

Enter and track implementation of the 3-phase QC Control System, QC testing, transferred and installed property and warranties in RMS. Link each deficiency and QC test to a pay activity. Prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements in RMS. Maintain all data on a daily basis. Ensure that RMS reflects all quality control methods, tests and actions contained within the Contractor Quality Control (CQC) Plan and Government review comments. Provide within seven calendar days of Government acceptance of the CQC Plan.

1.6.3.1 Quality Control (QC) Reports

The Contractor's Quality Control (QC) Daily Report in RMS is the official report. The Contractor can use other supplemental formats to record QC data, but information from any supplemental formats are to be consolidated and entered into the RMS QC Daily Report. Any supplemental information may be entered into RMS as an attachment to the report. QC Daily Reports must be finalized and signed in RMS within 24 hours after the date covered by the report. Provide the Government a printed signed copy of the QC Daily Report, unless waived by the Contracting Officer.

1.6.3.2 Deficiency Tracking

Use the QC Daily Report Module to enter and track deficiencies. Deficiencies identified and entered into RMS by the Contractor or the Government will be sequentially numbered with a QC or QA prefix for tracking purposes. Enter each deficiency into RMS the same day that the deficiency is identified. Monitor, track and resolve all QC and QA entered deficiencies. A deficiency is not considered to be corrected until the Government indicates concurrence in RMS.

1.6.3.3 Three-Phase Control Meetings

Maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS, and upload meeting minutes of the meetings. Worksheets for the three-phase control meetings are generated within RMS.

1.6.3.4 Labor and Equipment Hours

Enter labor and equipment exposure hours on a daily basis. Roll up the labor and equipment exposure data into a monthly exposure report.

1.6.3.5 Accident/Safety Reporting

Both the Contractor and the Government enter safety related comments in RMS as a deficiency. The Contractor must monitor, track and show resolution for safety issues in the QC Daily Report area of the RMS QC Module. In addition, follow all reporting requirements for accidents and incidents as required in EM 385-1-1, Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS and as required by any other applicable Federal, State or local agencies.

1.6.3.6 Definable Features of Work

Enter each feature of work, as defined in the approved CQC Plan, into the RMS QC Module. A feature of work may be associated with a single or multiple pay activities, however a pay activity is only to be linked to a single feature of work.

1.6.3.7 Activity Hazard Analysis

Import activity hazard analysis electronic document files into the RMS QC Module utilizing the document package manager. Prepare activity hazard analysis in accordance with Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS.

1.6.4 Submittal Management

Enter all current submittal register data and information into RMS within seven calendar days of receiving access to the Contract in RMS. Contractor is responsible for entering Activity Numbers for each submittal item corresponding to their Schedule. The Contractor will import the information shown in the submittal register following the specification Section 01 33 00 SUBMITTAL PROCEDURES unless otherwise directed by the Contracting Officer. Group electronic submittal documents into transmittal packages to send to the Government, except very large electronic files, samples, spare parts, mock ups, color boards, or where hard copies are specifically required. Track transmittals and update the submittal register in RMS on a daily basis throughout the duration of the Contract. Submit hard copies of all submittals unless waived by the Contracting Officer.

Enter all submittals as listed in the approved design's submittal register within 14 calendar days of design approval for construction.

Contractor may request submittals to be added to RMS throughout the lifecycle of the project. Approval/disapproval of Contractor requests is at the discretion of the Contracting Officer. Submittals entry into RMS must be updated daily or as practical for performance of the Contract, as approved by the Contracting Officer.

1.6.5 Schedule

Enter and update the contract project schedule in RMS by either manually entering all schedule data or by importing the Standard Data Exchange Format (SDEF) file, based on the requirements in Section 01 32 01.10 18 PROJECT SCHEDULE.

1.6.6 Closeout

Closeout documents, processes and forms are managed and tracked in RMS by both the Contractor and the Government. Ensure that all closeout documents are entered, completed and documented within RMS.

1.7 IMPLEMENTATION

Use of RMS as described in the preceding paragraphs is mandatory. Ensure that sufficient resources are available to maintain contract data within the RMS system. RMS is an integral part of the Contractor's required management of quality control.

1.8 NOTIFICATION OF NONCOMPLIANCE

Take corrective action within seven calendar days after receipt of notice of RMS non-compliance by the Contracting Officer.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 01 45 35

SPECIAL INSPECTIONS
05/24

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 CODE COUNCIL (ICC)

ICC IBC	(2024) International Building Code

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-301-01	(2023; with Change 4, 2025) Structural Engineering

1.2 GENERAL REQUIREMENTS

Perform Special Inspections in accordance with the Statement of Special Inspections, Schedule of Special Inspections, Chapter 17 of ICC IBC, and UFC 3-301-01. The Statement of Special Inspections and Schedule of Special Inspections are included as an attachment to this specification. Special Inspections are to be performed by an independent third party and are intended to ensure that the work of the Prime Contractor is in accordance with the Contract Documents and applicable building codes. Special inspections do not take the place of the three phases of control inspections performed by the Contractor's QC Manager or any testing and inspections required by other sections of the specifications.

Structural observations will be performed by the Structural Engineer of Record (SER). The Contractor must provide notification to the Contracting Officer and Structural Engineer of Record (SER) 14 days prior to the following points of construction to allow for structural observation:

a. After excavation, base preparation, and foundation rebar placement.

b. After utility, conduit, piping, and slab reinforcing placement before slab concrete placement.

c. After CMU wall and reinforcing placement before grouting.

d. After roof framing and sheathing placement before flashing and roofing.

1.3 DEFINITIONS

1.3.1 Continuous Special Inspections

Continuous Special Inspections is the constant monitoring of specific tasks by a special inspector. These inspections must be carried out continuously over the duration of the particular tasks.

1.3.2 Perform

Perform these tasks for each weld, fastener or bolted connection, and noted required verification.

1.3.3 Observe

Observe these items randomly during the course of each work day to insure that applicable requirements are being met. Observe these Special Inspections items on a periodic daily basis. Operations need not be delayed pending these inspections.

1.3.4 Special Inspector (SI)

A qualified person retained by the Contractor and approved by the Contracting Officer as having the competence necessary to inspect a particular type of construction requiring Special Inspections. The SI must be an independent third party hired directly by the Prime Contractor.

1.3.5 Associate Special Inspector (ASI)

A qualified person who assists the SI in performing Special Inspections but who must perform inspection under the direct supervision of the SI and who cannot perform inspections without the SI on site.

1.3.6 Third Party

A Special inspector must not be an employee of the Contractor or of any Sub-Contractor performing the work to be inspected.

1.3.7 Contracting Officer

The Government official having overall authority for administrative contracting actions. Certain contracting actions may be delegated to the Contracting Officer's Representative (COR).

1.3.8 Quality Control (QC) Manager

An individual retained by the Prime Contractor and qualified in accordance with the Section 01 45 00 QUALITY CONTROL having the overall responsibility for the Contractor's QC organization.

1.3.9 Structural Engineer of Record (SER)

A registered design professional retained by the Prime Contractor responsible for the overall design and review of submittal documents prepared by others. The SER is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws in the state in which the design professional works. The SER is also referred to as the Engineer of Record (EOR) in design documents.

1.3.10 Statement of Special Inspections (SSI)

A document developed by the SER identifying the materials, systems, components and work required to have Special Inspections. This statement is included at the end of this specification.

1.3.11 Schedule of Special Inspections (SSI)

A schedule which lists each of the required Special Inspections, the extent to which each Special Inspection is to be performed, and the required frequency for each in accordance with ICC IBC Chapter 17. This schedule is included at the end of this specification.

1.3.12 Definable Feature of Work (DFOW)

An inspection group that is separate and distinct from other inspection groups, having inspection requirements or inspectors that are unique.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

SD-06 Test Reports

Special Inspection Daily Reports

Special Inspection Biweekly Reports

SD-07 Certificates

Special Inspector Qualifications; G, RO

SD-11 Closeout Submittals

Interim Report of Special Inspections from each DFOW; G, RO

Comprehensive Final Report of Special Inspections; G, RO

Final Report of Structural Observations where required; G, RO

1.5 SPECIAL INSPECTOR QUALIFICATIONS

Submit qualifications for each special inspector according to the following certification requirements. The Government will consider alternate equivalent certification upon request. Without written acceptance deviations to the following qualifications are not approved.

1.5.1 Concrete Construction

1.5.1.1 Special Inspector

a. ICC Reinforced Concrete Special Inspector Certificate with one year of related experience, or

b. ACI Concrete Construction Special Inspector, or

c. Registered Professional Engineer with 3 years of related experience

1.5.1.2 Associate Special Inspector

a. ACI Concrete Construction Special Inspector-in-Training, or

b. Engineer-In-Training with one year of related experience

1.5.2 Masonry Construction

1.5.2.1 Special Inspector

a. ICC Structural Masonry Special Inspector Certificate with one year of related experience, or

b. Registered Professional Engineer with 3 years of related experience

1.5.2.2 Associate Special Inspector

Engineer-In-Training with one year of related experience.

1.5.3 Wood

1.5.3.1 Special Inspector

a. ICC Commercial Building Inspector Certificate with one year of related experience, or

b. ICC Residential Building Inspector with one year of experience, or

c. Registered Professional Engineer with 3 years of related experience

1.5.3.2 Associate Special Inspector

Engineer-In-Training with one year of related experience.

1.5.4 Verification of Site Soil Condition, Fill Placement and Load-Bearing Requirements

1.5.4.1 Special Inspector

a. ICC Soils Special Inspector Certificate with one year of related experience, or

b. National Institute for Certification in Engineering Technologies (NICET) Soils Technician Level II Certificate in Construction Material Testing, or

c. Geologist-In-Training with 3 years of related experience, or

d. Registered Professional Engineer with 3 years of related experience

1.5.4.2 Associate Special Inspector

a. NICET Soils Technician Level I Certificate in Construction Material Testing with one year of related experience, or

b. Engineer-In-Training with one year of related experience

PART 2 PRODUCTS

PART 3 EXECUTION

3.1 RESPONSIBILITIES

3.1.1 Quality Control Manager

a. Supervise all Special Inspectors required by the Contract Documents and the IBC.

b. Verify the qualifications of all the Special Inspectors.

c. Verify the qualifications of all fabricators.

d. Maintain a 3-ring binder for the Special Inspector's special inspection daily reports and special inspection biweekly reports. This binder must be located in a conspicuous place in the project trailer/office to allow review by the Contracting Officer and the SER.

e. e. Maintain a rework items list that includes discrepancies noted on the Special Inspector's daily report.

3.1.2 Special Inspectors

a. Inspect all elements of the project which the special inspector is qualified to inspect and which are identified in the Schedule of Special Inspections.

b. Attend preparatory phase meetings related to the Definable Feature of Work (DFOW) which the Special Inspector is qualified to inspect.

c. Submit a copy of the special inspection daily reports to the QC Manager.

d. Report discrepancies that are observed during Special Inspections to the QC Manager for correction. If discrepancies are not corrected before the special inspector leaves the site the observed discrepancies must be documented in the daily report.

e. Submit a biweekly Special Inspection Report until all inspections are complete. A report is required for each biweekly period in which Special Inspections activity occurs, and must include the following:

(1) A brief summary of the work performed during the reporting time frame.

(2) Changes from and discrepancies with the drawings, specifications that were observed during the reporting period.

(3) Discrepancies which were resolved or corrected.

(4) A list of nonconforming items requiring resolution.

(5) All applicable test result, including nondestructive testing reports.

f. At the completion of each DFOW requiring Special Inspections, submit an interim report of Special Inspections that documents the Special Inspections completed for that DFOW. Identify the inspector responsible for each item inspected and corrections of all discrepancies noted in the daily reports. The interim report of Special Inspections must be signed and dated and it must indicate the certification of the Special Inspector qualifying them to conduct the inspection.

g. At the completion of the project, submit a comprehensive final report of Special Inspections that documents the Special Inspections completed for the project and corrections of all discrepancies noted in the daily reports. The comprehensive final report of Special Inspections must be signed and dated and it must indicate the certification of the Special Inspector qualifying them to conduct the inspection.

3.1.3 Structural Engineer of Record (SER)

a. Develop the Statement of Special Inspections and the Schedule of Special Inspections as defined in Chapter 17 of ICC IBC. Submit the Statement of Special Inspections and the Schedule of Special Inspections for approval by the Contracting Officer.

The Statement of Special Inspections must include the following information:

(1) List of Architectural Components that are part of the Designated Seismic System.

(2) List of Mechanical Components that are part of the Designated Seismic System.

(3) List of the Electrical Components that are part of the Designated Seismic System.

(4) List of periodic walk-down inspections required by UFC 3-301-01.

(5) List of elements that are part of the progressive collapse resisting system.

Develop Schedule of Special Inspections using the template located on the Whole Building Design Guide website at: www.wbdg.org/dod/ufgs/ufgs-01-45-35

b. Prior to the start of structural observations submit a written statement identifying the frequency and extent of structural observations.

c. At the conclusion of the structural observations submit a final report of structural observations indicating that the structural observation site visits have been made and identify any reported deficiencies which, to the best of the structural observer's knowledge, have not

been resolved.

3.2 DEFECTIVE WORK

Check work as it progresses, but failure to detect any defective work or materials must in no way prevent later rejection if defective work or materials are discovered, nor obligate the Contracting Officer to accept the defective work or materials.

-- End of Section --

Project:	Ft. Drum Wells Field
Location:	Ft. Drum, NY
Project #:	408.007.002
Date:	1/13/2026

STATEMENT OF SPECIAL INSPECTIONS

Seismic Design Category:	B
Risk Category:	II
Number of Stories above Grade:	1
Height of Highest Occupied Roof or Floor	12

Hazardous Occupancy or attached to such? No Group H Occupancies

Special Inspector of Record (SIOR)

A Special Inspector of Record (SIOR) **IS NOT** required (per UFGS 01 45 35, Section 1.3.7)

Lateral Force Resisting System (LFRS)

2024 IBC 1704.3.2 and 1704.3.3

Following is a listing of critical elements of the main wind/seismic force-resisting system for this structure. Carefully inspect these elements as part of the roles and responsiblities of the Special Inspector (reference the Schedule of Special Inspections for inspection checklists).

Vertical LFRS Elements	Notes
Ordinary Reinforced Concrete Shear Walls	

Horizontal LFRS Elements	Notes

Project: Ft. Drum Wells Field
Location: Ft. Drum, NY
Project #: 408.007.002
Date: 1/13/2026

Designated Seismic Systems (DSS)

(2024 IBC 1705.13.4) (ASCE 7-22, 13.2.3, C13.2.2) (UFC 3-301-1, 2-5.3)

ELECTRICAL Components that are part of the Designated Seismic System (DSS) , which require a Certificate of Compliance
N/A
N/A
N/A
N/A
N/A

If additional space is required, append an additional sheet listing the remaining DSS

MECHANICAL/PLUMBING Components that are part of the Designated Seismic System (DSS), which require a Certificate of Compliance
N/A
N/A
N/A
N/A
N/A
N/A

If additional space is required, append an additional sheet listing the remaining DSS

OTHER Designated Seismic Systems (DSS) requiring a Certificate of Compliance
N/A
N/A
N/A
N/A
N/A
N/A

Final Walk-Down Inspection and Report

(UFC 3 301 01 SECTION 2-5.4)

Final Walk Down Inspection of non-structural Designated Seismic Systems does not apply to this project (no Designated Seismic Systems)

- m
-

SCHEDULE OF SPECIAL INSPECTIONS

Reference UFGS 01 45 35 for all requirements not noted as part of this schedule.

INSPECTION DEFINITIONS:

PERFORM: Perform these tasks for each weld, fastener or bolted connection, and required verification.

OBSERVE: Observe these items randomly during the course of each work day to insure that applicable requirements are being met. Operations need not be delayed pending these inspections at contractor's risk.

DOCUMENT: Document, with a report, that the work has been performed in accordance with the contract documents. This is in addition to any other reports required in the Special Inspections guide specification.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

PERIODIC: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

The Seismic Design Category for this project is: ☐ A, ☒ B, ☐ C, ☐ D, ☐ E, ☐ F (check appropriate box)

DESIGNER NOTES (delete this box after reviewing):

1. This schedule contains minimum requirements. Do not delete applicable inspection tasks unless notes in blue indicate it is acceptable to do so.
2. Blue text = designers notes. The designer must review and edit all blue text in this schedule prior to inserting this schedule into the special inspections spec (UFGS 01 45 35).
3. Check section boxes with ANY inspection tasks applicable to your project. You may choose to delete unchecked sections or leave them in the schedule unchecked.
4. Individual rows/tasks that are not applicable to the project may be left in the section, as the inspector can determine whether they occur/apply (e.g. metal trusses in the light gauge framing section for example).
5. Design discipline sections are color coded for easier reference by designers. This schedule does NOT need to be printed in color.
6. When finished editing, delete this note box and save this schedule as a PDF and insert into the project specifications (special inspections section).

A. STRUCTURAL STEEL – WELDING

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

STEEL INSPECTION PRIOR TO WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-1 and Table C-N5.4-1		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify that the welding procedures specification (WPS) is available	**PERFORM**	
2. Verify manufacturer certifications for welding consumables are available	**PERFORM**	
3. Verify material identification	**PERFORM**	Type and grade.
4. Verify use of qualified welders	**PERFORM**	Welding by welders, welding operators, and tack welders who are qualified in conformance with requirements.
5. Welder Identification System	OBSERVE	✓ Fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. ✓ Die stamping of members subjected to fatigue shall be prohibited unless approved by the engineer of record.
6. Fit-up of groove welds (including joint geometry)	OBSERVE	✓ Joint preparation ✓ Dimensions (alignment, root opening, root face, bevel) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location) ✓ Backing type and fit (if applicable)
7. Fit-up of CJP groove welds of HSS T-, Y-, and K-connections without backing (including joint geometry	**PERFORM**	✓ Joint preparations ✓ Dimensions (alignment, root opening, root face, bevel) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location)
8. Configuration and finish of access holes	OBSERVE	
9. Fit-up of fillet welds	OBSERVE	✓ Dimensions (alignment, gaps at root) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location)
STEEL INSPECTION DURING WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-2 and Table C-N5.4-2		
TASK	INSPECTION TYPE	DESCRIPTION
10. Control and handling of welding consumables	OBSERVE	✓ Packaging ✓ Electrode atmospheric exposure control
11. No welding over cracked tack welds	OBSERVE	
12. Environmental conditions	OBSERVE	✓ Wind speed within limits ✓ Precipitation and temperature

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

STEEL INSPECTION DURING WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-2 and Table C-N5.4-2		
TASK	INSPECTION TYPE	DESCRIPTION
13. Welding Procedures Specification followed	OBSERVE	✓ Settings on welding equipment ✓ Travel speed ✓ Selected welding materials ✓ Shielding gas type/flow rate ✓ Preheat applied ✓ Interpass temperature maintained (min./max.) ✓ Proper position (F, V, H, OH) ✓ Intermix of filler metals avoided
14. Welding techniques	OBSERVE	✓ Interpass and final cleaning ✓ Each pass within profile limitations ✓ Each pass meets quality requirements
STEEL INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-3 and Table C-N5.4-3		
TASK	INSPECTION TYPE[1]	DESCRIPTION
15. Welds cleaned	OBSERVE	✓
16. Verify size, length, and location of all welds	**PERFORM**	✓ Size, length, and location of all welds conform to the requirements of the construction drawings.
17. Verify welds meet visual acceptance criteria	**PERFORM AND DOCUMENT**	✓ Crack prohibition ✓ Weld/base-metal fusion ✓ Crater cross section ✓ Weld profiles ✓ Weld size ✓ Undercut ✓ Porosity
18. Check for arc strikes	**PERFORM**	
19. Visually inspect *k*-area	**PERFORM**	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75 mm) of the weld
20. Verify backing removed, weld tabs removed and finished, and fillet welds added where required	**PERFORM**	
21. Repair activities	**PERFORM AND DOCUMENT**	
22. Acceptance or rejection of welded joint or member	**PERFORM AND DOCUMENT**	
23. No prohibited welds have been added without the approval of the engineer of record	OBSERVE	

END SECTION

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

B. STRUCTURAL STEEL – BOLTING

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

STEEL INSPECTION TASKS PRIOR TO BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.6-1 and Table C-N5.6-1		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify manufacture's certifications available for fastener materials	**PERFORM**	
2. Fasteners marked in accordance with ASTM requirements	OBSERVE	
3. Proper fasteners selected for joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	OBSERVE	
4. Proper bolting procedure selected for joint detail	OBSERVE	
5. Connecting elements, including appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	OBSERVE	
6. Pre-installation verification testing for each fastener assembly performed by installation personnel, carefully observing and documenting the installation methods.	OBSERVE	Check if the fastener assemblies and the installation methods are capable of achieving 105%, or more, of the minimum required bolt pretension.
7. Proper storage provided for bolts, nuts, washers, and other fastener components	OBSERVE	
STEEL INSPECTION TASKS DURING BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.6-2 and Table C-N5.6-2		
TASK	INSPECTION TYPE	DESCRIPTION
8. Fastener assemblies of suitable condition, placed in all holes and washers (if required) are positioned as required	OBSERVE	
9. Joint brought to the snug-tight condition prior to pretensioning operation	OBSERVE	
10. Fastener component not turned by the wrench prevented from rotating	OBSERVE	
11. Bolts are pretensioned in accordance with RCSC *Specification*, progressing systematically from the most rigid point toward the free edges	OBSERVE	
STEEL INSPECTION TASKS AFTER BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.6.3 and Table C-N5.6-3		
TASK	INSPECTION TYPE	DESCRIPTION
12. Acceptance or rejection of all bolted connections	**DOCUMENT**	

END SECTION

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

C. STRUCTURAL STEEL - NONDESTRUCTIVE TESTING

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

NONDESTRUCTIVE TESTING OF WELDED JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Section N5.5		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify use of qualified nondestructive testing personnel	**PERFORM**	Visual weld inspection and nondestructive testing (NDT) shall be conducted by personnel qualified in accordance with AWS D1.8 Clause 7.2
2. CJP groove welds	OBSERVE	**[NOTE: DOR must delete this row if Section D (SEISMIC PROVISIONS SECTION) is checked]** Dye penetrant testing (DT) and ultrasonic testing (UT) shall be performed on 20% of CJP groove welds for materials greater than 5/16" (8 mm) thick. Testing rate must be increased to 100% if greater than 5% of welds tested have unacceptable defects.
3. Welded joints subject to fatigue	OBSERVE	Dye penetrant testing (DT) and Ultrasonic testing (UT) shall be performed on 100% of welded joints identified on contract drawings as being subject to fatigue. Table A-3.1 in AISC 360-22 provides Fatigue Design Parameters for welded joints that must be checked.

END SECTION

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

D. STRUCTURAL STEEL – AISC 341 REQUIREMENTS (SEISMIC PROVISIONS)

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

NONDESTRUCTIVE TESTING OF WELDED JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 341-22: Section J7.2		
TASK	INSPECTION TYPE[1]	DESCRIPTION
[NOTE: DOR may uncheck this section for projects NOT designed in accordance with AISC 341 (Seismic Provisions) or for projects designed according to AISC 341, but using an R value equal to 3]		
4. CJP groove welds	OBSERVE	Ultrasonic testing (UT) shall be performed on 100% of complete-joint-penetration (CJP) groove welds in materials 5/16 in. (8 mm) thick or greater. UT in materials less than 5/16 in. (8 mm) thick is not required. Welds shall be inspected by UT in compliance with AWS D1.8/D1.8M. Magnetic particle testing (MT) shall be performed on 25% of all beam-to-column CJP groove welds. Welds shall be inspected by MT in compliance with AWS D1.8/ D1.8M. For ordinary moment frames in structures in risk categories I or II, UT and MT of CJP groove welds shall be required only for demand critical welds.
5. Beam cope and access hole.	OBSERVE	At welded splices and connections, thermally cut surfaces of beam copes and access holes shall be tested using magnetic particle testing (MT) or dye penetrant testing (DT), when the flange thickness exceeds 1 1/2 in. for rolled shapes, or when the web thickness exceeds 1 1/2 in. for built-up shapes.
6. *k*-area NDT (AISC 341 Table J7.1 and AWS D1.8 Clause 7.4)	**PERFORM AND DOCUMENT**	Where welding of doubler plates, continuity plates or stiffeners has been performed in the *k*-area, the web shall be tested for cracks using magnetic particle testing (MT). The MT inspection area shall include the *k*-area base metal within 3 in. of the weld. The MT shall be performed no sooner than 48 hours following completion of the welding.
7. Placement of reinforcing or contouring fillet welds (Table J7.1)	**PERFORM AND DOCUMENT**	
8. Weld tab removal sites	OBSERVE	At the end of welds where weld tabs have been removed, magnetic particle testing shall be performed on the same beam-to-column joints receiving UT.

END SECTION

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports

E. STRUCTURAL STEEL - COMPOSITE CONSTRUCTION[1]

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

COMPOSITE CONSTRUCTION PRIOR TO PLACING CONCRETE – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22: Table N5.4-2, AISC 341-22: Table J10.1		
TASK	INSPECTION TYPE	DESCRIPTION
1. Placement and installation of steel headed stud anchors	**PERFORM**	
2. Material identification of reinforcing steel (Type/Grade)	OBSERVE	
3. Determination of carbon equivalent for reinforcing steel other than ASTM A706	OBSERVE	
4. Proper reinforcing steel size, spacing, clearances, support, and orientation	OBSERVE	
5. Reinforcing steel has not been rebent in the field	OBSERVE	
6. Required reinforcing steel clearances have been provided	OBSERVE	
7. Reinforcing steel has been tied and supported as required	OBSERVE	
8. Composite member has required size	OBSERVE	

END SECTION

F. STRUCTURAL STEEL - OTHER INSPECTIONS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

OTHER STEEL INSPECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.1, AISC 360-22 Section N5.8, AISC 341-22: Tables J9.1 & J11.1		
TASK	INSPECTION TYPE [2]	DESCRIPTION
1. Verify anchor rods and other embedments supporting structural steel	**PERFORM**	Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.
2. Fabricated steel or erected steel frame	OBSERVE	Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection.
3. Check reduced beam sections (RBS) where/if they occur	**PERFORM AND DOCUMENT**	✓ Contour and finish ✓ Dimensional tolerances
4. Check protected zones	**PERFORM AND DOCUMENT**	No holes or unapproved attachments made by fabricator or erector
5. Check H-piles where/if they occur	**PERFORM AND DOCUMENT**	No holes or unapproved attachments made by the responsible contractor

END SECTION

G. STRUCTURAL COLD-FORMED METAL DECK PLACEMENT

[1] See Concrete Construction Section for all concrete related inspection of composite steel construction.

[2] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

METAL DECK INSPECTION PRIOR TO DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.1		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Verify compliance of materials (deck and all deck accessories) with construction documents, including profiles, material properties, and base metal thickness	**PERFORM**	
2. Acceptance or rejection of deck and deck accessories	**DOCUMENT**	
METAL DECK INSPECTION AFTER DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.2		
TASK	INSPECTION TYPE	DESCRIPTION
3. Verify compliance of deck and all deck accessory installation with construction documents	**PERFORM**	
4. Verify deck materials are represented by the mill certifications that comply with the construction documents	**PERFORM**	
5. Acceptance or rejection of installation of deck and deck accessories	**DOCUMENT**	
METAL DECK INSPECTION PRIOR TO WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.3		
TASK	INSPECTION TYPE	DESCRIPTION
6. Verify welding procedure specification (WPS) is available	**PERFORM**	
7. Verify manufacturer's certifications for welding consumables are available	**PERFORM**	
8. Material identification (type/grade)	OBSERVE	
9. Check welding equipment	**PERFORM**	

END SECTION

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

H. STRUCTURAL COLD-FORMED METAL DECK – WELDING

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

METAL DECK INSPECTION DURING WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.4		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Use of qualified welders	OBSERVE	
2. Control and handling of welding consumables	OBSERVE	
3. Environmental conditions (wind speed, moisture, temperature)	OBSERVE	
4. WPS followed	OBSERVE	
METAL DECK INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.5		
TASK	INSPECTION TYPE	DESCRIPTION
5. Verify size and location of welds, including support, sidelap, and perimeter welds.	**PERFORM**	
6. Verify welds meet visual acceptance criteria	**PERFORM**	
7. Verify repair activities	**PERFORM**	
8. Acceptance or rejection of welds	**DOCUMENT**	

END SECTION

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

I. STRUCTURAL COLD-FORMED METAL DECK – FASTENING

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

METAL DECK INSPECTION BEFORE MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.6		
TASK	INSPECTION TYPE	DESCRIPTION
1. Manufacturer installation instructions available for mechanical fasteners	OBSERVE	
2. Proper tools available for fastener installation	OBSERVE	
3. Proper storage for mechanical fasteners	OBSERVE	✓ Fasteners are located away from moisture and in a protected location, such as off the ground and away from excessive handling. ✓ Uncoated fasteners are stored in airtight containers to reduce corrosion and rust.
METAL DECK INSPECTION DURING MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.7		
TASK	INSPECTION TYPE	DESCRIPTION
4. Fasteners are positioned as required	OBSERVE	
5. Fasteners are installed in accordance with manufacturer's instructions	OBSERVE	
METAL DECK INSPECTION AFTER MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.3, SDI QA/QC-2022, Appendix 1, Table 1.8		
TASK	INSPECTION TYPE[1]	DESCRIPTION
6. Check spacing, type, and installation of support fasteners	**PERFORM**	
7. Check spacing, type, and installation of side-lap fasteners	**PERFORM**	
8. Check spacing, type, and installation of perimeter fasteners	**PERFORM**	
9. Verify repair activities	**PERFORM**	
10. Acceptance or rejection of mechanical fasteners	**DOCUMENT**	

END SECTION

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

J. STRUCTURAL COLD-FORMED STEEL FRAMING AND/OR COLD-FORMED TRUSSES

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

COLD-FORMED STEEL CONSTRUCTION AND CONNECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.2.5, 1705.12.2, 1705.12.3, 1705.13.3, 1705.13.9, UFC 4 023 03		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify compliance of trusses spanning 60-feet or greater where/if applicable	**PERFORM**	Verify that temporary and permanent truss restraint/bracing is installed in accordance with approved truss submittal package.
2. Welded connections (seismic and/or wind resisting system)	OBSERVE	Visually inspect all welds that are part of the main wind or seismic force resisting system, including shear walls, braces, collectors (drag struts), and hold-downs. **[NOTE: DOR must identify critical wind and/or seismic force resisting welds in the contract drawings so that the special inspector can confirm compliance.]**
3. Connections (seismic and/or wind resisting system)	OBSERVE	Visually inspect all screw attachment, bolting, anchoring and other fastening of components within the main wind or seismic force resisting system, including roof deck, roof framing, exterior wall covering, wall to roof/floor connections, braces, collectors (drag struts) and hold-downs. **[NOTE: DOR must identify critical wind and/or seismic force resisting connection/fastener components in the contract drawings so that the special inspector can confirm compliance.]**
4. Cold-formed steel (progressive collapse resisting system where/if applicable)	OBSERVE	Verify proper welding operations, screw attachment, bolting, anchoring and other fastening of components within the progressive collapse resisting system, including horizontal tie force elements, vertical tie force elements and bridging elements (UFC 4 023 03). **[NOTE: DOR must identify critical progressive collapse resisting connection/fastener components in the contract drawings so that the special inspector can confirm compliance.]**

END SECTION

K. STRUCTURAL OPEN-WEB STEEL JOISTS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

OPEN-WEB STEEL JOISTS AND JOIST GIRDERS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC TABLE 1705.2.4, 2024 IBC 2207.1, SJI 100 OR 200		
	INSPECTION TYPE[1]	DESCRIPTION
1. Installation of open-web steel joists and joist girders	OBSERVE	✓ End connections – welded or bolted for compliance with SJI 100 or 200 ✓ Bridging – horizontal and diagonal for compliance with SJI 100 or 200

END SECTION

[1] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to ensure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

L. STRUCTURAL CONCRETE CONSTRUCTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC TABLE 1705.3 (ACI 318-19 REFERENCES NOTED IN IBC TABLE)		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Inspect reinforcement, including prestressing tendons, and verify placement.	PERIODIC	Verify prior to placing concrete that reinforcement is of specified type, grade and size; that it is free of oil, dirt and unacceptable rust; that it is located and spaced properly; that specified cover has been provided; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that specified lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
2. Inspect reinforcing bar welding	PERIODIC	✓ Verify weldability of reinforcing bars other than ASTM A 706 ✓ Inspect single-pass fillet welds, maximum 5/16" in accordance with AWS D1.4
	CONTINUOUS	✓ Inspect welding of reinforcement for special moment frame, boundary elements of special shear walls, and coupling beams. ✓ Inspect welded reinforcement splices. ✓ Inspect welding of primary tension reinforcement in corbels.
	PERIODIC	✓ Inspect all other welds in accordance with AWS D1.4
3. Inspect cast-in-place anchors, post-installed drilled anchors, and adhesive anchors other than those in item 4 below	PERIODIC	✓ Verify prior to placing concrete that cast in place anchors and post installed drilled anchors have proper embedment, spacing and edge distance. ✓ Inspection requirements for adhesive anchors are different from those for other post-installed anchors and require assessment and qualification under the provisions of ACI 355.4 which may require proof loading.
4. Inspect post-installed adhesive anchors in horizontal or upward inclined orientations and	CONTINUOUS AND DOCUMENT	✓ Inspect as required per approved ICC-ES report

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.
CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC TABLE 1705.3 (ACI 318-19 REFERENCES NOTED IN IBC TABLE)		
TASK	INSPECTION TYPE [1]	DESCRIPTION
subject to sustained tension loading.		✓ Verify that installer is certified for installation of horizontal and overhead installation applications ✓ Verify proof loading as required by the contract documents
5. Verify use of required mix design	PERIODIC	Verify that all mixes used comply with the approved construction documents
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	CONTINUOUS	At the time fresh concrete is sampled to fabricate specimens for strength test, verify these tests are performed by qualified technicians.
7. Inspect concrete and/or shotcrete placement for proper application techniques	CONTINUOUS	Verify proper application techniques are used during concrete conveyance and that depositing avoids segregation or contamination. Verify that concrete is properly consolidated.
8. Verify maintenance of specified curing temperature and technique	PERIODIC	Inspect curing and cold weather, or hot weather protection procedures.
9. Inspect prestressed concrete	CONTINUOUS	Verify application of prestressing forces and grouting of bonded prestressing tendons.
10. Inspect erection of precast concrete members	PERIODIC	✓ Verify dimensional tolerances for precast members and interfacing members. ✓ Verify details of lifting devices, embedments, and related reinforcement required to resist temporary loads from handling, storage, transportation, and erection, if designed by the licensed design professional.
11. Inspect precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability element (MDE or HDE) in structures assigned to Seismic Design Category C, D, E, or F	**CONTINUOUS**	Inspect such connections and reinforcement in the field for: ✓ Installation of the embedded parts ✓ Completion of the continuity of reinforcement across joints. ✓ Completion of connections in the field
12. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5	PERIODIC	

CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC TABLE 1705.3 (ACI 318-19 REFERENCES NOTED IN IBC TABLE)		
TASK	INSPECTION TYPE [1]	DESCRIPTION
13. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	PERIODIC	See ACI 318 26.11.2
14. Inspect formwork for shape, location and dimensions of the concrete member being formed.	PERIODIC	Formwork fabrication and installation shall result in final structure that conforms to shapes, lines, and dimensions of the members as required by the construction documents.

END SECTION

M. STRUCTURAL - MASONRY CONSTRUCTION (ALL RISK CATEGORIES)

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH AT START OF CONSTRUCTION 2024 IBC 1705.4 (TMS 402/602-22 TABLE 3 & 4)		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Verify compliance with approved submittals prior to start	PERIODIC	
2. Verify proportions of site-mixed mortar.	PERIODIC	
3. Verify grade, type and size of reinforcement, connectors, and anchor bolts	PERIODIC	
4. Verify sample panel construction	PERIODIC	
MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH PRIOR TO GROUTING IBC 1705.4 (TMS 402/602-22 TABLE 4)		
TASK	INSPECTION TYPE	DESCRIPTION
5. Verify grout space	PERIODIC	
6. Verify placement of reinforcement, connectors, and anchor bolts	PERIODIC	
7. Verify proportions of site-prepared grout	PERIODIC	
MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH DURING CONSTRUCTION IBC 1705.4 (ACI 530-16 TABLE 4)		
TASK	INSPECTION TYPE	DESCRIPTION
8. Verify compliance of materials and procedures with the approved submittals	PERIODIC	
9. Verify placement of masonry units and mortar joint construction	PERIODIC	
10. Verify size and location of structural elements	PERIODIC	
11. Verify type, size and placement of reinforcement, connectors, anchor bolts, and anchorages, including details of anchorage of masonry to structural members, frames, or other construction	PERIODIC	
12. Verify type, size and location of veneer ties and movement joints	PERIODIC	Periodic inspection of veneers is required when the height of the veneer exceeds 60 ft (18.3 m) above grade plane. See Commentary in Appendix A.
MASONRY CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH DURING CONSTRUCTION IBC 1705.4 (ACI 530-16 TABLE 4)		
TASK	INSPECTION TYPE	DESCRIPTION
13. Verify installation of adhered veneer	PERIODIC	Periodic inspection of veneers is required when the height of the veneer exceeds 60 ft (18.3 m) above grade plane
14. Verify welding of reinforcement	**CONTINUOUS**	
15. Verify preparation, construction, and protection of masonry during cold weather (temperature	PERIODIC	

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

below 40°F (4.4°c) or hot weather (temp above 90°F (32.2°C))		
16. Verify placement of grout	**CONTINUOUS**	
17. Observe preparation of grout specimens, mortar specimens, and/or prisms	PERIODIC	

END SECTION

N. STRUCTURAL – WOOD CONSTRUCTION – SPECIALTY ITEMS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

WOOD CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.5		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. High-load diaphragms where applicable	PERIODIC	Verify thickness and grade of sheathing, size of framing members at panel edges, nail diameters and length, and the number of fastener lines and that fastener spacing is per approved contract documents.
2. Metal-plate connected wood trusses spanning 60 feet or greater	PERIODIC	Verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package
Mass timber elements in Type IV-A, IV-B, and IV-C construction. Refer to 2024 IBC 602.4 for details about Type IV construction		
3. Inspect anchorage and connections of mass timber construction to timber deep foundation systems	PERIODIC	
4. Inspect erection of mass timber construction	PERIODIC	
5. Inspect connections where installation methods are required to meet design loads		
a) Threaded fasteners	PERIODIC	✓ Verify use of proper installation equipment ✓ Verify use of pre-drilled holes where required ✓ Inspect screws, including diameter, length, head type, spacing, installation angle and depth
b) Adhesive anchors connections installed in horizontal or upwardly inclined orientation to resist sustained tension loads.	CONTINUOUS	
c) Adhesive anchors not defined in preceding cell	PERIODIC	
d) Bolted connections	PERIODIC	
e) Concealed connections	PERIODIC	

END SECTION

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.
CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

O. STRUCTURAL WOOD CONSTRUCTION - SEISMIC & WIND

THIS SECTION IS APPLICABLE IF BOX IS CHECKED: ☐

WOOD CONSTRUCTION SEISMIC AND WIND – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.12 & 1705.13.2		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Nailing, bolting, anchoring and other fastening of elements of the main wind/seismic force-resisting system	PERIODIC	Includes connectors for: shear wall sheathing, roof/floor sheathing, drag struts/collectors (double top plates), braces, hold downs, roof connections to exterior walls.
2. Field gluing operations of elements of the main wind/seismic force-resisting system	**CONTINUOUS**	

END SECTION

P. STRUCTURAL ISOLATION AND ENERGY DISSIPATION SYSTEMS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

ISOLATION AND ENERGY DISSIPATION SYSTEMS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.13.8, 1705.14.4		
TASK	INSPECTION TYPE[2]	DESCRIPTION
1. Verify fabrication and installation of isolator units and energy dissipation devices	PERFORM	Verify that fabrication and installation of isolator units and energy dissipation devices conform to manufacturer's recommendations and approved construction documents
2. Test of seismic isolation systems in seismically isolated structures	PERFORM	Seismic isolation systems in seismically isolated structures shall be tested in accordance with ASCE 7, Section 17.8

END SECTION

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

[2] **PERFORM**: Perform these tasks for each weld, fastener, or bolted connection, and required verification.

Q. GEOTECHNICAL - SOILS INSPECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒

SOILS INSPECTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.6 and TABLE 1705.6		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	PERIODIC	
2. Verify excavations are extended to proper depth and have reached proper material	PERIODIC	
3. Perform classification and testing of compacted fill materials	PERIODIC	
4. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly	PERIODIC	
5. During fill placement, verify use of proper materials and procedures in accordance with the provisions of the approved geotechnical report. Verify densities and lift thicknesses during placement and compaction of compacted fill	**CONTINUOUS**	

END SECTION

R. GEOTECHNICAL - DRIVEN DEEP FOUNDATION ELEMENTS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

DRIVEN DEEP FOUNDATION ELEMENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.7 and TABLE 1705.7		
TASK	INSPECTION TYPE	DESCRIPTION
1. Verify element materials, sizes and lengths comply with requirements	**CONTINUOUS**	
2. Inspect driving operations and maintain complete and accurate records for each element	**CONTINUOUS**	
3. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element	**CONTINUOUS**	
4. Determine capacities of test elements and conduct additional load tests if required.	**CONTINUOUS**	
5. For steel, concrete, concrete-filled, perform additional special inspections in accordance with the steel and concrete sections in this schedule		
6. For specialty elements, perform additional inspections as determined by the licensed design professional in responsible charge		In accordance with Statement of Special Inspections

END SECTION

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.
CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

S. GEOTECHNICAL - HELICAL PILE FOUNDATIONS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

HELICAL PILE FOUNDATIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.9		
TASK	INSPECTION TYPE	DESCRIPTION
1. Record installation equipment used, pile dimensions, tip elevations, final depth, final installation torque and other pertinent installation data as required. The approved geotechnical report and the contract documents prepared by the licensed design professional in responsible charge shall be used to determine compliance	**CONTINUOUS**	
2. Determine capacities of test elements and conduct additional load tests if required.	**CONTINUOUS**	

END SECTION

T. GEOTECHNICAL – CAST-IN-PLACE CONCRETE DEEP FOUNDATION ELEMENTS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

CAST-IN-PLACE CONCRETE DEEP FOUNDATION ELEMENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.8		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Inspect drilling operations and maintain complete and accurate records for each element	**CONTINUOUS**	
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes	**CONTINUOUS**	
3. For concrete elements, perform tests and additional special inspections in accordance with Concrete section of this schedule	**CONTINUOUS**	
4. Determine capacities of test elements and conduct additional load tests if required.	**CONTINUOUS**	

END SECTION

[1] **CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

U. FIRE PROTECTION - SPRAYED FIRE-RESISTANT MATERIALS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

SPRAYED FIRE RESISTANT MATERIALS (SFRM) – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.15		
TASK	INSPECTION TYPE [1]	DESCRIPTION
1. Check substrate condition	PERIODIC	Prior to application, confirm that surfaces have been prepared according to the approved fire-resistant design and manufacturer's instructions. See 2024 IBC 1705.15.2 and 1705.15.3 for more details.
2. Verify material thickness	PERIODIC	Verify SFRM thickness according to 2024 IBC 1705.15.4
3. Verify material density	PERIODIC	Verify SFRM density according to 2024 IBC 1705.15.5
4. Verify bond strength	PERIODIC	Verify bond strength of cured SFRM according to 2024 IBC 1705.15.6
5. Inspect the condition of finished application	PERIODIC	

END SECTION

V. FIRE PROTECTION - INTUMESCENT FIRE-RESISTIVE MATERIALS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

INTUMESCENT FIRE-RESISTIVE MATERIALS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.16		
TASK	INSPECTION TYPE	DESCRIPTION
1. Inspect according to AWCI 12-B and the contract documents	PERIODIC	Inspections shall be performed in accordance with AWCI 12-B, Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire-Resistive Materials. Inspections shall be performed during construction. Additional visual inspection shall be performed after rough installation and where applicable, prior to the concealment of electrical, automatic sprinkler, mechanical and plumbing systems.

END SECTION

W. FIRE PROTECTION – FIRE-RESISTANT PENETRATIONS AND JOINTS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

FIRE-RESISTANT PENETRATIONS AND JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.18		
TASK	INSPECTION TYPE	DESCRIPTION
1. Inspect of penetration firestop systems conducted in accordance with ASTM E2174.	PERIODIC	**[NOTE: This section applies to Risk Category III, IV, & V structures, or in fire areas containing Group R occupancies with an occupant load greater than 250. DOR may choose to uncheck this section where project is assigned to Risk Category I or II. Confirm Risk Category with licensed design professional in responsible charge]**
2. Inspecti of fire-resistant joint systems conducted in accordance with ASTM E2393	PERIODIC	

END SECTION

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

X. FIRE PROTECTION – SMOKE CONTROL

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

SMOKE CONTROL – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.19		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Verify device locations and perform leakage testing	PERIODIC	Perform during erection of ductwork and prior to concealment
2. Perform pressure difference testing, flow measurements and detection and control verification	PERIODIC	Perform prior to occupancy and after sufficient completion

END SECTION

Y. SEALANT – SEALING OF MASS TIMBER

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

SEALING OF MASS TIMBER – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.20		
TASK	INSPECTION TYPE	DESCRIPTION
1. Inspect sealants or adhesives	PERIODIC	Inspect sealants or adhesives where sealant and adhesive are required by 2024 IBC 703.7

END SECTION

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

Z. ARCHITECTURAL - EXTERIOR INSULATION AND FINISH SYSTEMS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.17		
TASK	INSPECTION TYPE[1]	DESCRIPTION
1. Water-resistive barrier coating applied over a sheathing substrate.	PERIODIC	Verify that water-resistive barrier coating complies with ASTM E2570. **[NOTE: Not required for EIFS applications installed over:** **a) a water-resistive barrier with a means of draining moisture to the exterior.** **b) masonry or concrete walls** **Uncheck this section in those cases]**

END SECTION

AA. ARCHITECTURAL – ARCHITECTURAL COMPONENTS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

ARCHITECTURAL COMPONENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE WITH 2024 IBC 1705.13.5, 1705.13.7 and TABLE 1705.13.7		
TASK	INSPECTION TYPE	DESCRIPTION
[NOTE: This section is not applicable to Seismic Design Categories A, B, & C. Uncheck this section if one of those categories applies. Confirm Seismic Design Category with the licensed design professional in responsible charge.]		
1. Erection and fastening of exterior cladding and interior and exterior veneer.	PERIODIC	Verify appropriate materials, fasteners and attachment at commencement of work and at completion. **[NOTE: Inspection not required if height is less than 30 feet or weight is less than 5psf]**
2. Interior and exterior non-load-bearing walls	PERIODIC	Verify appropriate materials, fasteners and attachment at commencement of work and at completion. **[NOTE: Inspection not required if interior non-load-bearing walls weigh less than 15psf]**
3. Access floors	PERIODIC	Verify that anchorage complies with approved construction documents.
4. Storage racks	PERIODIC	Steel storage racks and steel cantilevered storage racks that are 8 feet in height or greater shall be inspected for: ✓ Materials used, to verify compliance with one or more of the material test reports in accordance with the approved construction documents ✓ Fabricated storage rack elements ✓ Storage rack anchorage installation ✓ Completion of storage rack system Inspection of post-installed anchors shall comply with approved ICC-ES report. **[NOTE: Not required for racks less than 8 feet in height]**

END SECTION

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

BB. PLUMBING/MECHANICAL/ELECTRICAL - DESIGNATED SEISMIC SYSTEMS

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

PLUMBING, MECHANICAL AND ELECTRICAL – DESIGNATED SEISMIC SYSTEMS 2024 IBC 1705.13.6		
TASK	INSPECTION TYPE[1]	DESCRIPTION
[NOTE: This section is not applicable to Seismic Design Categories A or B. Uncheck this section if one of those categories applies. Confirm Seismic Design Category with licensed design professional in responsible charge.]		
1. Check anchorage of electrical equipment for emergency and standby power systems	PERIODIC	✓ Check for general conformance
2. Check anchorage of all other electrical equipment in Seismic Design Categories E and F only (See first page of this schedule for Seismic Design Category)	PERIODIC	✓ Check for general conformance
3. Check installation and anchorage of piping designed to carry hazardous materials and their associated mechanical units.	PERIODIC	✓ Check for general conformance
4. Check installation and anchorage of vibration isolation systems where the construction documents require a nominal clearance of ¼" or less between support framing and restraint.	PERIODIC	✓ Check for general conformance
5. Verify clearance between fire sprinkler piping and surrounding mechanical and electrical equipment, including ductwork, piping and their structural supports.	PERIODIC	✓ Check for minimum clearances noted in ASCE 7 13.2.3 or a nominal clearance of not less than 3 in.

END SECTION

[1] **PERIODIC**: Special inspection by a special inspector who is intermittently present where the work to be inspected has been or is being performed.

APPPENDIX A

Commentary on M12

Table 4 of TMS 602-22 does not have any Level 3 inspection requirements (for Risk Category IV structures). The leadership of the standard committee was contacted. They indicated that there are no requirements because veneers are covered under Part 4: Prescriptive Design Methods, and for prescriptive design there is never any Level 3 inspection requirement according to Table 3.1 of TMS 402-22. Although veneer is covered in Part 4, Chapter 13 of TMS 402-22, in Section 13.2.3, there is Engineered Design of Anchored Masonry Veneer and in Section 13.3.3, there is Engineered Design of Adhered Masonry Veneer. Engineered Design is covered in Part 3 of the standard, and for Part 3, Engineered Design, there are Level 3 inspection requirements in Table 3.1 of TMS 402-22. Upon further discussion, the leadership of the standard committee suggested to keep inspection Periodic for all Risk Category structures.

SECTION 01 50 00

TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
11/20, CHG 3: 08/24

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) National Electrical Code
NFPA 241	(2022; ERTA 22-1) Standard for Safeguarding Construction, Alteration, and Demolition Operations

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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Site Plan; G, RO

Traffic Control Plan; G, RO

Haul Road Plan; G, RO

Contractor Computer Cybersecurity Compliance Statements; G, RO

Contractor Temporary Network Cybersecurity Compliance Statements; G, RO

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 CONDITION OF READINESS (COR) LEVELS FOR WEATHER

The Condition of Readiness (COR) is based on the weather forecast and the potential for sustained winds 50 knots (58 mph) or greater. Contact the Contracting Officer for the current COR.

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 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 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 the template published at https://www.wbdg.org/dod/ufgs/ufgs-01-50-00. Each Statement must be signed by a cybersecurity representative for the relevant company.

1.6.2 Temporary IP Networks

Provide Government access to Contractor furnished temporary IP networks 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

1.6.4.1 Contractor Provided Wi-Fi Network

Provide standalone Wi-Fi network for authorized Government personnel. Network access must be available throughout the jobsite and for the entire Contract period. The Government will use the Wi-Fi service for coordination in the field and related activities. Do not attach or connect the temporary Wi-Fi network to Government networks or systems unrelated to construction activities.

Password information must adhere to requirements outlined in Paragraph PASSWORDS AND PASSPHRASES. Provide password and Wi-Fi network name (SSID) to the Contracting Officer for Government personnel access. Wi-Fi performance must be capable of handling bandwidth to support Government and Contractor activities, including drawing and model access onsite. Provide a point of contact for reporting Wi-Fi outages.

1.6.4.2 Temporary Wireless IP Networks Security

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 published at https://www.wbdg.org/dod/ufgs/ufgs-01-50-00. 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 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.

2.3.1 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, bronze, mounted gate valve and strainer, 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 to the Government 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 prevailing rates.

c. The point at which the Government will deliver such utilities or services and the quantity available is must be coordinated with the Contracting Officer. 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; and providing transformers; and make disconnections.

d. The Contractor must provide their own utilities.

3.2.3 Meters and Temporary Connections

Provide and maintain necessary temporary connections, distribution lines, and meter bases (Government will provide meters) required to measure the amount of each utility used for the purpose of determining charges. Notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired so that a utilities contract can be established. The Government will provide a meter and make the final hot connection after inspection and approval of the Contractor's temporary wiring installation. Do not make the final electrical connection.

3.2.4 Advance Deposit

An advance deposit for utilities consisting of an estimated month's usage or a minimum of $50.00 will be required. The last monthly bills for the fiscal year will normally be offset by the deposit and adjustments will be billed or returned as appropriate. Services to be rendered for the next fiscal year, beginning 1 October, will require a new deposit. Notification of the due date for this deposit will be mailed prior to the

end of the current fiscal year.

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, 5 working days before termination is desired. The Government will take a final meter reading, disconnect service, and remove the meters. 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 Telephone

Make arrangements and pay all costs for telephone 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 at least 15 calendar days prior to the proposed modification date, 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 and the MUTCD, Part VI. Make all notifications and obtain all permits required for modification to traffic movements outside Station'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, Life Safety Signage, overhead protection, and other items that may be required by the 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. Test and tag each reduced pressure backflow preventer upon initial installation (prior to continued water use) and quarterly 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 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.

3.5.2 Storage Area

Construct a temporary 6 foot high chain link fence around trailers and materials. Include plastic strip inserts, colored brown, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. 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.

3.5.3 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.

3.5.4 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.

3.5.5 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.

3.5.6 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.

3.5.6.1 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 GOVERNMENT FIELD OFFICE

3.6.1 Resident Engineer's Office

Provide the Government Resident Engineer and installation construction representative with a keyed, locking office, minimum 800-900 square feet in floor area (20 foot by 40 to 45 foot double-wide office trailer), located where directed and providing space heat, air conditioning unit, electric light and power, and toilet facilities consisting of a lavatory and with connections to water. Provide a minimum of 6 sets of keys. Provide one sanitary facility in accordance with EM 385-1-1, exclusively for government use. The field office must have a functional bathroom with running water and flush toilet internal to the structure. A portable restroom will not be accepted. The contractor shall be responsible for all costs for maintenance of, and disposal of sanitary wastes from, the Government's sanitary facility. Provide a mail slot in the door or a lockable mail box mounted on the surface of the door. Include a 5 CF refrigerator, 3 by 6 foot plastic folding table, fire extinguisher, first aid kit, coffee pot, 1000W microwave, high speed internet service, 4 by 8 foot plan table with plan rack, two 3 by 4 by 1 foot bookshelves, two 3 by 5 foot whiteboards with dry erase markers and erasers, minimum four, computer work spaces (with a standard size office desk and ergonomic task chair, garbage can, and two minimum 24 inch flat screen monitors), a conference room (with large conference table, minimum 10 ergonomic

conference chairs, and minimum 60" flat screen TV with HDMI hookup), a lockable, legal sized, four-drawer file cabinet. High speed internet must be supplied to each work station and the conference room (no less than 1.0 gbps download/ upload speed). Contractor shall pay all costs associated with this service including ISP fees. Contractor shall provide and install all required equipment (i.e., Switch, Hub, Ethernet NIC Cards, modems, etc.) for use with Government furnished field office computers).

At completion of the project, the office will remain the property of the Contractor and be removed from the site. Utilities must be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer. Compliance with safety and appearance requirements for temporary facilities stated in previous paragraphs is required.

3.6.2 Trailer-Type Mobile Office

The option is available to, furnish and maintain a trailer-type mobile office acceptable to the Contracting Officer to meet the requirements of the minimum facilities specified above. Securely anchor the trailer to the ground at all four corners to guard against movement during high winds. Coordinate requirements for proper anchoring with EM 385-1-1.

3.7 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.

3.8 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for 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.

3.9 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.

3.10 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.

-- End of Section --

SECTION 01 57 19

TEMPORARY ENVIRONMENTAL CONTROLS
08/22, CHG 2: 08/25

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 1910.1053	Respirable Crystalline Silica
29 CFR 1910.1200	Hazard Communication
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 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 122.26	Storm Water Discharges (Applicable to State NPDES Programs, see section 123.25)
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 262.11	Hazardous Waste Determination and Recordkeeping
40 CFR 268	Land Disposal Restrictions

40 CFR 273	Standards for Universal Waste Management
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 355	Emergency Planning and Notification
40 CFR 403	General Pretreatment Regulations for Existing and New Sources of Pollution
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

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 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.

1.2.3 Electronics Waste

Electronics waste is discarded electronic devices intended for salvage, recycling, or disposal.

1.2.4 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.

1.2.5 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.

1.2.6 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.

1.2.7 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).

1.2.8 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.

1.2.9 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.

1.2.10 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.

1.2.11 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.

1.2.12 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.

1.2.13 Regulated Waste

Regulated waste are solid wastes that have specific additional federal, state, or local controls for handling, storage, or disposal.

1.2.14 Sediment

Sediment is soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.15 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:

1.2.15.1 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 not 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.

1.2.15.2 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.

1.2.15.3 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.

1.2.15.4 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.

1.2.15.5 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 be included as recyclable only if the metal is 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.

1.2.15.6 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.

1.2.15.7 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.

1.2.15.8 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.

1.2.16 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.

1.2.17 Wastewater

Wastewater is the aqueous liquid waste generated by a project, to include both domestic wastewater (sewage) and industrial wastewater.

1.2.17.1 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.

1.2.18 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.

1.2.19 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.

1.2.20 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.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL

PROCEDURES:

SD-01 Preconstruction Submittals

Storage Material Inventory

Preconstruction Survey

Regulatory Notifications

Environmental Manager Qualifications

Employee Training Records

Environmental Protection Plan; G, RO

Dirt and Dust Control Plan

Solid Waste Management Permit

Stormwater Pollution Prevention Plan (SWPPP); G, RO

Stormwater Notice of Intent (for NPDES coverage under the general permit for construction activities)

Spill Prevention Control And Countermeasure (SPCC) Plan; G, RO

SD-06 Test Reports

Monthly Solid Waste Disposal Report; G, RO

Inspection Reports

SD-07 Certificates

Employee Training Records; G, RO

Erosion and Sediment Control Inspector Qualifications

SD-11 Closeout Submittals

Regulatory Notifications; G, RO

Assembled Employee Training Records; G, RO

Solid Waste Management Permit; G, RO

Stormwater Pollution Prevention Plan Compliance Notebook; G,RO

Stormwater Notice of Termination (for NPDES coverage under the general permit for construction activities); G, RO

As-Built Topographic Survey

Waste Determination Documentation; G, RO

Project Solid Waste Disposal Documentation Report; G, RO

Sales Documentation; G, RO

Contractor Certification

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS

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. 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.

1.4.1 Conformance with the Environmental Management System

Perform work under this contract consistent with the policy and objectives identified in the installation's 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. See paragraph EMPLOYEE TRAINING RECORDS.

1.5 SPECIAL ENVIRONMENTAL REQUIREMENTS

Comply with the special environmental requirements listed within the RFP.

1.5.1 Material Storage

Store plastic bags in 55 gallon covered drum(s). Do not seal the drum(s). Provide a label with a description of the contents and note on the label "TO BE DISPOSED OF BY RASO". Apply the label to the exterior surface of the cover and site of the drum(s). Provide a record copy of the label for each drum storage material inventory to the Contracting Officer.

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 days prior to commencement of work activities. Typically, regulatory notifications must be provided for the following (this listing is not all-inclusive): demolition, renovation, NPDES defined site work, construction, removal or use of a permitted air emissions source, and remediation of controlled substances (asbestos, hazardous waste, lead paint).

1.6.3 Environmental Brief

Attend an environmental brief to be included in the preconstruction meeting. 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 and installation Environmental Office to discuss the proposed Environmental Protection Plan (EPP) or equipment local requirement. 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), and other measures to be taken.

1.6.4 Environmental Manager

Appoint in writing an Environmental Manager for the project site. The Environmental Manager is directly responsible for coordinating contractor compliance with federal, state, local, and installation requirements. The Environmental Manager must ensure compliance with Hazardous Waste Program requirements (including hazardous waste handling, storage, manifesting, and disposal); implement the EPP; ensure environmental permits are obtained, maintained, and closed out; ensure compliance with Stormwater Program requirements; ensure compliance with Hazardous Materials (storage, handling, and reporting) requirements; and coordinate any remediation of regulated substances (lead, asbestos, PCB transformers). This can be a collateral position; however, the person in this position must be trained to adequately accomplish the following duties: ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure Contractor personnel are trained in 40 CFR requirements in accordance with their position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out. Submit Environmental Manager Qualifications to the Contracting Officer.

1.6.5 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. Submit these Assembled Employee Training Records to the Contracting Officer at the conclusion of the project, unless otherwise directed.

Train personnel to meet EPA 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 Qualifications as defined by EPA.

1.6.6 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.

1.6.7 COMPLIANCE WITH ENDANGERED SPECIES ACT AT FORT DRUM

Comply with the requirements listed below:

(1) The federally-endangered Indiana bat and the federally-threatened northern long eared bat are present on Fort Drum and must be considered in all actions. Actions on Fort Drum, must be in accordance with requirements negotiated with the US Fish & Wildlife Service under Section 7 of the Endangered Species Act. Projects involving ANY habitat modification (e.g., vegetation removal) must be addressed by Fort Drum's Fish and Wildlife Management Program. In general, no trees greater than 3 inches (diameter breast height) may be cut from 16 April - 15 October to avoid any direct adverse effects to these bats. Clearing of natural vegetation (e.g., shrubs and trees) less than 3 inches (diameter breast height) should typically occur between August 1 - April 15 to minimize the impact to migratory birds and to maintain foraging areas for bats. The contractor (and all subcontractors) must be responsible for coordination with Fort Drum's Fish & Wildlife Management Program to ensure compliance with the Endangered Species Act and all other applicable laws and regulations pertaining to wildlife. Overall the contractor (and all subcontractors) must minimize interference with, disturbance to, and damage to plants, fish, wildlife, and their habitats on and adjacent to the project area.

(2) Flagging or signs must be used to demarcate construction limits of a given project prior to any construction activity, vegetation, and/or tree clearing for a given project. Clearing must only occur within the flagged area, and flagging must be removed upon completion of the project.

(3) If any bats are discovered during the demolition or repair of buildings (to include work such as complete and partial building demolition, removal/replacement of roofs, siding, etc.), all work must cease and Fort Drum's Fish and Wildlife Management Program (772-4999 or 772-9636) must be immediately contacted. If the building has pre-existing known bat colonies, then Fort Drum's Fish and Wildlife Management Program must be contacted before demolition is to occur. (At this time, the only structures known to contain bat colonies are within the historic LeRay Area.).

(4) All bats found must be immediately reported to Fort Drum's Fish and Wildlife Management Program (772-4999 or 772-9636). Do not attempt to handle any live bats, regardless of condition. If a live bat is found in a building please contact 772-2072 or 772-4999.

(5) Light minimization measures are to be incorporated for all exterior lighting that may include but are not limited to full cutoffs, reflectors, shields, downward angling of lights and/or reduction of correlated color temperatures to reduce blue-rich, white light. See paragraph 1.55 for detailed requirementss that must be followed to the maximum extent possible.

(6) No night lighting for construction projects is authorized without prior coordination and authorization from the project manager and Fort Drum’s Fish and Wildlife Management Program.

(7) Project planning and design should attempt to minimize building footprints by combining infrastructure (i.e. roads, utility lines, etc.)

for multiple buildings or by constructing multi-story versus multiple or expanded single story buildings whenever possible.

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 within 15 days after notice to proceed and not less than 10 days before the preconstruction meeting. 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, solid waste management plan, wastewater management plan, contaminant prevention plan, traffic control plan 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 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 temporary excavations or embankments for haul roads, stream crossings, jurisdictional wetlands, material storage areas, structures, sanitary facilities, storm drains and conveyances, and stockpiles of excess soil.

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. 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).

1.7.6 Protection of the Environment from Waste Derived from Contractor Operations

This item consists 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.

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

Fort Drum 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

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 Installation 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.

Preserve the natural resources within the project boundaries and outside the limits of permanent work. 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.

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, or destroy trees or shrubs without the Contracting Officer's permission. 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 is responsible for any resultant damage.

Protect existing trees and critical root zones (CRZ) that are to remain to ensure they are not injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. Coordinate with the Contracting Officer and Installation Environmental Office to determine appropriate action for trees and other landscape features scarred or damaged by equipment operations.

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.

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.

3.2 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 Installation Environmental Office for any release of contaminated water.

3.2.1 Construction General Permit

Provide a Construction General Permit as required by 40 CFR 122.26 or the State of of New York General Permit. 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.

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 New York State General Permit for stormwater discharges from construction sites.

Include the following:

a. Comply with terms of the EPA and the State general permit for stormwater discharges from construction activities. Prepare SWPPP in accordance with EPA and the State requirements. Use EPA guide Developing your Stormwater Pollution Prevention Plan located at https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp to prepare the SWPPP.

b. Select applicable BMPs from EPA Fact Sheets located at https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#constr or in accordance with applicable state or local requirements.

c. Include a completed copy of the Notice of Intent, BMP Inspection Report Template, and Stormwater Notice of Termination, except for the effective date.

3.2.1.2 Stormwater Notice of Intent for Construction Activities

Prepare and submit the Notice of Intent for NPDES coverage under the general permit for construction activities to the Contracting Officer for review and approval.

Prepare and submit a Notice of Intent as a co-permittee to the Contracting Officer, for review and approval.

Submit the approved NOI and appropriate permit fees onto the appropriate federal or state agency for approval. No land disturbing activities may commence without permit coverage. Maintain an approved copy of the SWPPP at the onsite construction office, and continually update as regulations require, reflecting current site conditions.

3.2.1.3 Inspection Reports

Submit "Inspection Reports" to the Contracting Officer in accordance with EPA and the State New YorkConstruction General Permit.

3.2.1.4 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 EPA and the New York State Permitting Agency, 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.

3.2.1.5 Stormwater Notice of Termination for Construction Activities

Submit a Notice of Termination to the Contracting Officer for approval once construction is complete and final stabilization has been achieved on all portions of the site for which the permittee is responsible. Once approved, submit the Notice of Termination to the appropriate state or federal agency. Prepare as-built topographic survey information required by the permitting agency for certification of the stormwater management system, and provide 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 Compost Blankets, Geotextiles, temporary slope drains,. Stabilize slopes by sodding, seeding, or such combination of these methods necessary for effective erosion control. Use of hay bales is prohibited.

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: temporary diversion dikes, storm drain inlet protection,.

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.

3.2.5 Municipal Separate Storm Sewer System (MS4) Management

Comply with the Installation's MS4 permit requirements.

3.3 SURFACE AND GROUNDWATER

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 NY water quality standards and anti-degradation provisions . Do not discharge excavation ground water to the sanitary sewer, storm drains, or to surface waters without prior specific authorization in writing from the Installation 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 Installation Environmental Officer and the federal or state authority, 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.

3.4 PROTECTION OF CULTURAL RESOURCES

3.4.1 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 will 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 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. 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 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with 40 CFR 64 and state air emission and performance laws and standards.

3.5.1 Preconstruction Air Permits

Notify the Air Program Manager, through the Contracting Officer, at least 6 months 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.

Confirm that these permits have been obtained.

3.5.2 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.

3.5.3 Burning

Burning is prohibited on the Government premises.

3.5.4 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.

3.5.5 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.

3.5.6 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.

3.5.6.1 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.

3.5.6.2 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.

3.5.7 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.

3.6 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.

3.6.1 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.

3.6.2 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 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	as appropriate
C&D Debris Recycled	as appropriate
C&D Debris Composted	as appropriate
Total C&D Debris Generated	as appropriate
Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount)	as appropriate

3.7 WASTE MANAGEMENT AND DISPOSAL

3.7.1 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.

3.7.2 Solid Waste Management

3.7.2.1 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.

3.7.2.2 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, state, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill is the minimum acceptable offsite solid waste disposal option. Verify that the selected transporters and disposal facilities 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.

3.7.3 Releases/Spills of Oil and Hazardous Substances

3.7.3.1 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 Installation Command Duty Officer, the Installation Environmental Office, the Contracting Officer and the state or local authority.

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.

3.7.3.2 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.

3.7.4 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.

3.7.5 Wastewater

3.7.5.1 Disposal of Wastewater

Disposal of wastewater must be as specified below.

3.7.5.1.1 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 into the stormwater system or sanitary sewer system.. Dispose of the construction- related waste water off-Government property in accordance with 40 CFR 403, state, regional, and local laws and Prior to disposal, submit a WIS to the Installation Environmental Office and have the results reviewed and approved by the Contracting Officer prior to being discharged or disposed of off- Government property.

3.7.5.1.2 Surface Discharge

Surface discharge in accordance with federal, state, and local laws and regulations.

3.7.5.1.3 Land Application

Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing must be land- applied in accordance with federal, state, and local laws and regulations for land application.

3.8 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. 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.

3.9 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.

3.10 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.

3.11 PETROLEUM, OIL, LUBRICANT (POL) STORAGE AND FUELING

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.

3.11.1 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.

3.11.2 Oil Storage Including Fuel Tanks

Do not bring underground storage tanks to the installation for Contractor use during a project. Submit the SPCC plan to the Contracting Officer for approval.

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.

3.12 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.

3.13 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.

3.14 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 8 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 New York and Installation rules.

3.15 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.

-- End of Section --

SECTION 01 58 00

PROJECT IDENTIFICATION
08/19, CHG 5: 08/22

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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Sign Legend Orders; G, RO

1.3 PROJECT IDENTIFICATION SIGN

1.3.1 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 EP 310-1-6a and EP 310-1-6b, specifically Section 16. Submit the sign legend orders as described in Section 16 of EP 310-1-6a before erecting the signs.

Utilize the Example Graphic of Signage with Dimensions for MILCON Project and follow USACE policy provided in Engineering Pamphlet (EP) 310-1-6a, Sign Standards Manual, VOL 1 for guidelines on fabricating, locating, and mounting construction project signs (https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/EP_310-1-6a%20change%202.pdf).

a. Sample sign drawings together with mounting and fabrication details are provided at the end of this section. The signs must be erected within 15 calendar days after the date of Notice to Proceed. The project identification and safety performance signs are to be

displayed side-by-side and mounted for reading by passing viewers. The public safety sign shall be the same size as the project signs. The Contracting Officer will designate exact placement locations. Panels are fabricated using HDO (High Density Overlay) plywood with dimensional lumber uprights and bracing. The sign faces are non-reflecting vinyl. All legends are to be die-cut or computer-cut in the sizes and type-faces specified and applied to the white panel background following the graphic formats shown on the attached sheets. The Communications Red panel on the left side of the construction project sign with Corps signature (reverse version) is screen printed onto the white background.

b. The Contractor must maintain the signs in good condition throughout the construction period. No separate payment will be made for erecting and maintaining the signs and all costs in connection therewith will be considered the obligation of the Contractor. Upon completion of the project, the Contractor shall remove the signs from the project site.

1.3.2 Public Safety Sign

For the public safety sign, refer to the Warning Signs paragraph in section 01 50 00 TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

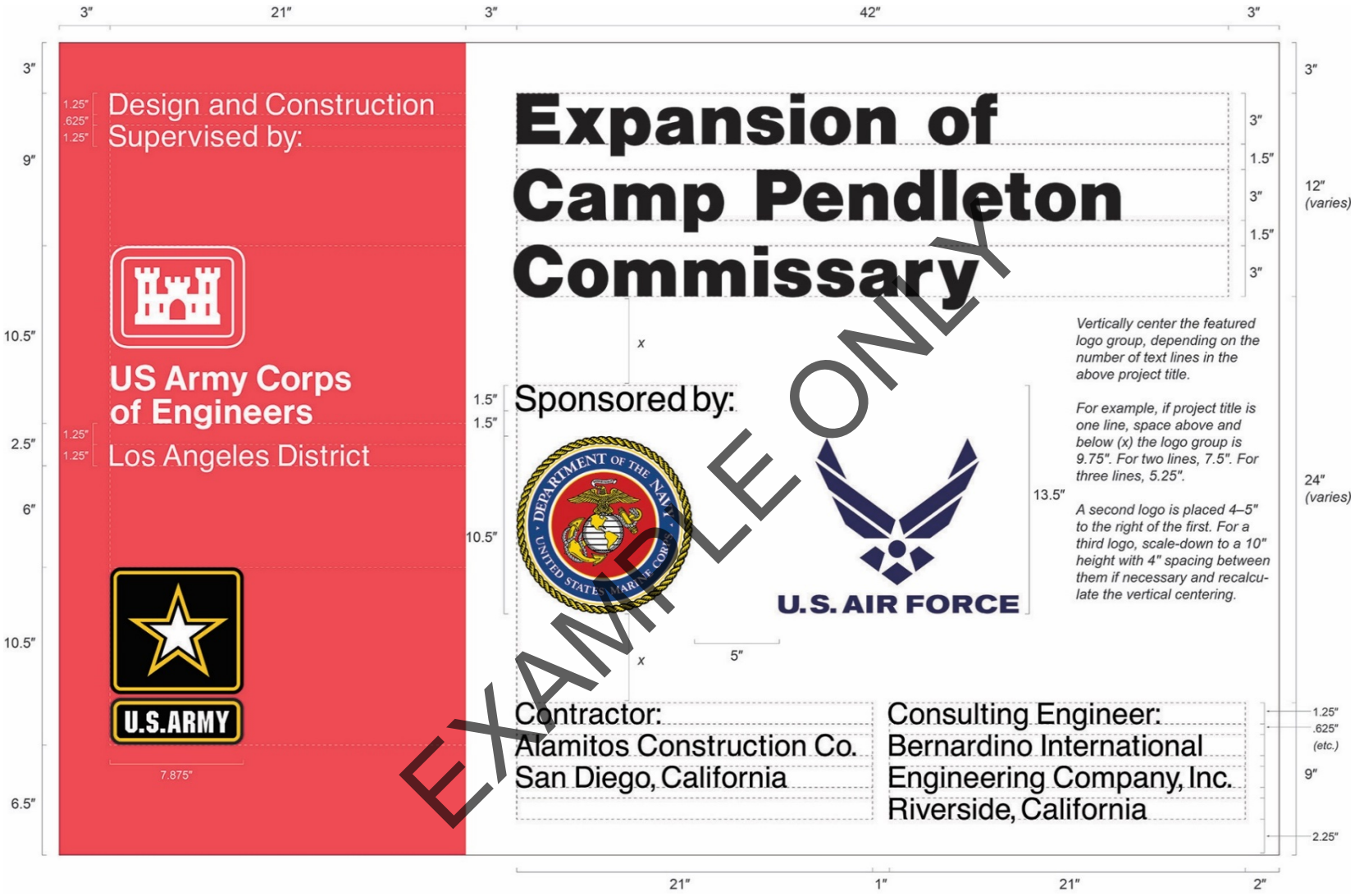
Not used.

-- End of Section --

ECB No. 2020-1

SUBJECT: USACE Construction Project Signs and Use of the Army Star

ATTACHMENT A: Example Graphic of Signage with Dimensions for MILCON Project



SAFETY PERFORMANCE SIGN

The graphic format, color, size and type-faces used on the sign are to be reproduced exactly as specified below. The title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend Group 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown. Safety record numbers are mounted on individual metal plates and are screw-mounted to the background to allow for daily revisions to posted safety performance record.

Legend Group1: Standard two-line title "safety is a Job Requirement", with (8" od.) Safety Green First Aid logo. Color: To match PMS 347
Typeface: 3" Helvetica Bold
Color: Black

Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

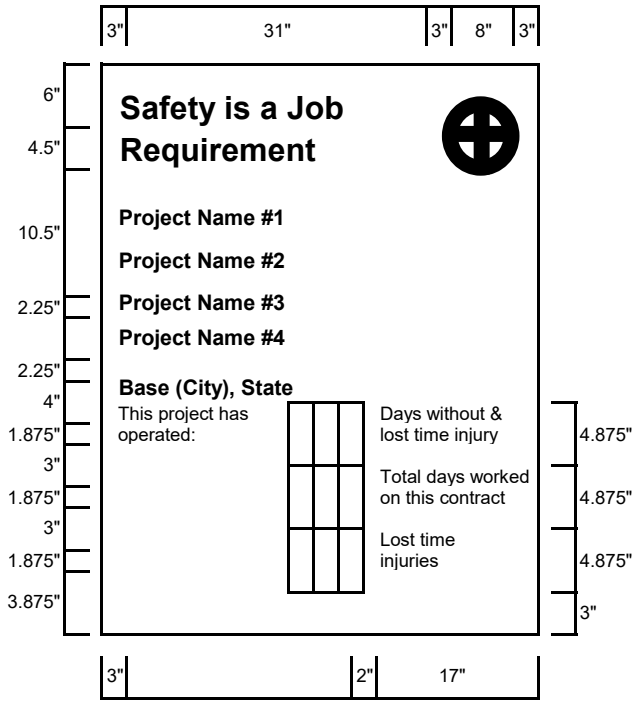
Legend Group 3: One - to two-line identification: name of prime contractor and city, state address.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 4: Standard safety record captions as shown.
Color: Black

Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060: aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5"x.5"

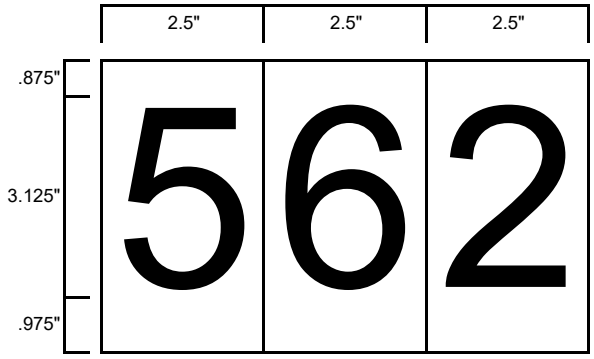
All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D. *



Dimensions inches.
See attached sheet for fabrication and mounting guidelines.

* Refer to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

Sign Type	Legend Size	Panel Size	Post Size	Specifications Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4"x4"	4"x4"	HDO-3	48"	WH/BK-GR



US ARMY

CORPS OF ENGINEERS, NEW YORK DISTRICT

Project Name #1 & 2
Project Name #3 & 4
Base (City), State

CONTRACTOR:
FUNDED BY:
COMPLETION DATE:

FOR YOUR SAFETY

1. DO NOT ENTER DESIGNATED WORK AREAS
2. OBEY ALL STATE AND LOCAL REQUIREMENTS CONCERNING PROHIBITED ACTIVITIES

DISTRICT ENGINEER: COL. ALEXANDER YOUNG

Fabrication and Mounting Guidelines

As Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer and shall conform to the size, format, and typographic standards shown on the attached sheets.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDD specifications provided in Appendix B. **

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on the attached sheets.

The 2'x4' Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8 (photographically enlarge from 6.875" to 10.5"). **

Drill and Insert six (6) .375" T-nuts from the front face of the HDD sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

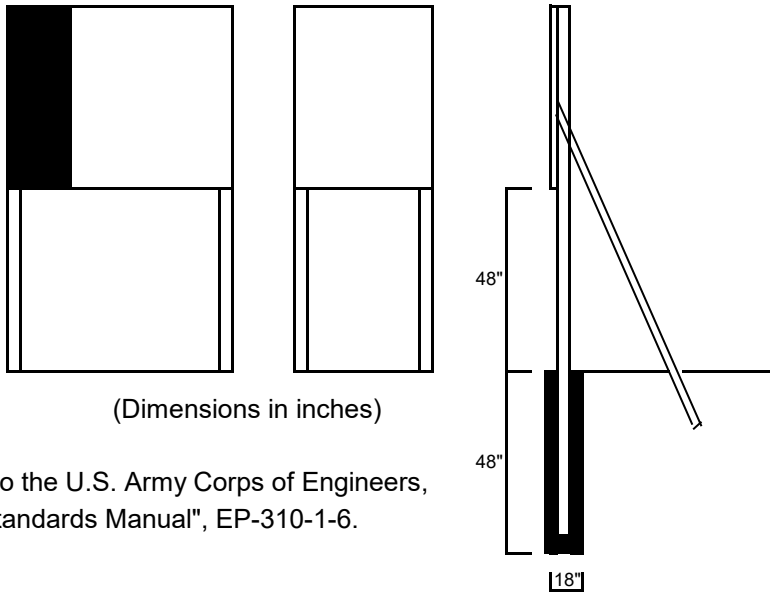
Apply graphic panel to prepared HDD plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4"x4" treated Douglas Fir or Southern Yellow Pine. No.1 or better. Post to be 12" long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4"x.375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4" hole. Local soil conditions and/or wind loading may require bolting additional 2"x4" struts on inside face of uprights to reinforce installation as shown.

Detailed specifications for HDD plywood panel preparation are provided in Appendix B.**

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.



(Dimensions in inches)

** Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EP-310-1-6.

Construction Project Sign
Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5a: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor /A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign
Legend Group 1: Project Title

1. _____
2. _____

Legend Group 2: Contractor/A&E

1. _____
2. _____

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
02/19, CHG 3: 11/21

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Co-mingle

The practice of placing unrelated materials together in a single container, usually for benefits of convenience and speed.

1.1.2 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.

1.1.3 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.

1.1.4 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).

1.1.5 Diversion

The practice of diverting waste from disposal in a landfill or incinerator, by means of eliminating or minimizing waste, or reuse of materials.

1.1.6 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.

1.1.7 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.

1.1.8 Reuse

The use of a product or materials again for the same purpose, in its

original form or with little enhancement or change.

1.1.9 Salvage

Usable, salable items derived from buildings undergoing demolition or deconstruction, parts from vehicles, machinery, other equipment, or other components.

1.1.10 Source Separation

The practice of administering and implementing a management strategy to identify and segregate unrelated waste at the first opportunity.

1.2 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.

1.3 CONSTRUCTION WASTE MANAGEMENT

Implement a Construction Waste Management Program for the project. Take a pro-active, responsible role in the management of 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.

1.3.1 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.

1.3.2 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.

1.3.3 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.

1.3.4 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 or commingling will be clearly marked on the containers.

1.3.5 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

c. Masonry and CMU

d. Concrete

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)

g. Glass

h. Paper

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. Beverage Containers

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Waste Management Plan; G, RO

SD-06 Test Reports

Quarterly Reports

Annual Report

SD-11 Closeout Submittals

Final Construction Waste Diversion Report; S

1.5 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.

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).

1.6 CONSTRUCTION WASTE MANAGEMENT PLAN

Submit Construction Waste Management Plan within 45 days after notice to proceed. Revise and resubmit Construction Waste Management Plan as necessary, in order for construction to begin.. 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 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.

e. Name of landfill and incinerator to be used.

f. 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.

g. 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.

h. Identification of materials that cannot be recycled or reused with an explanation or justification, to be approved by the Contracting Officer.

i. Description of the means by which materials identified in item (g) above will be protected from contamination.

j. 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).

k. Copy of training plan for subcontractors and other services to prevent contamination by co-mingling materials identified for diversion and waste materials.

Distribute copies of the waste management plan to each subcontractor, Quality Control Manager , and the Contracting Officer.

1.7 RECORDS (DOCUMENTATION)

1.7.1 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.

1.7.2 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.

1.8 REPORTS

1.8.1 General

Maintain current construction waste diversion information on site for periodic inspection by the Contracting Officer. Include in the 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.

1.8.2 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 not later than 15 calendar days after the preceding quarter has ended. Submit Quarterly Reports to the appropriate office or identified point of contact.

1.8.3 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 installation POC.

1.9 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 60 days prior to the Project Completion date.

1.10 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 either separate waste streams or use the co-mingling method 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 . Separate materials by one of the following methods:

1.10.1 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.

1.10.2 Co-Mingled Method

Place waste products and recyclable materials into a single container and then transport to an authorized recycling facility, which meets all applicable requirements to accept and dispose of recyclable materials in accordance with all applicable local, state and federal regulations. The Co-mingled materials must be sorted and processed in accordance with the approved Construction Waste Management Plan.

1.10.3 Other Methods

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

1.11 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:

1.11.1 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.

1.11.2 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. Do not crush lamps on site as this creates a hazardous waste stream with additional handling requirements.

1.11.3 Waste

Dispose by landfill or incineration only those waste materials with no practical use, economic benefit, or recycling opportunity.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used. -- End of Section --

SECTION 01 78 00

CLOSEOUT SUBMITTALS
05/19, CHG 1: 08/21

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	(2023) 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 and or red-lined PDF files. 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-designed" 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 Government furnished materials (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. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Warranty Management Plan

Warranty Tags

Spare Parts Data

SD-08 Manufacturer's Instructions

Posted Instructions

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals; G, RO

SD-11 Closeout Submittals

As-Built Drawings; G, RO

Record Drawings; G, RO

Record Model; G, RO

As-Built Record of Equipment and Materials

Warranted Equipment and Materials

Final Approved Shop Drawings; G, RO

Construction Contract Specifications; G, RO

Certification of EPA Designated Items; G, RO

Certification Of USDA Designated Items; G, RO

Interim DD FORM 1354; G, , ROList 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, maintenance and repair activities. List those items that may be standard to the normal maintenance of the system.

b. At acceptance of system testing, 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 be the same as the original line colors, line weights, lettering, layering conventions, and symbols.

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 tested systems, such as pumps, electrical systems, and mechanical 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 and warranty 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
(3) Recreational support.
(4) Air conditioning leak in part of building, if causing damage.
(5) Air conditioning system not cooling properly.

Code 1-Doors
(6) Overhead doors not operational, causing a security, fire, or safety problem.
(7) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors
(8) Overhead doors not operational.
(9) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical
(10) Power failure (entire area or any building operational after 1600 hours).
(11) Security lights
(12) Smoke detectors

Code 2-Electrical
(13) Power failure (no power to a room or part of building).
(14) Receptacle and lights (in a room or part of building).

Code 3-Electrical
(15) Street lights.

Code 1-Heat
(16) Area power failure affecting heat.
(17) Heater in unit not working.

Code 3-Interior
(18) Floors damaged.
(19) Paint chipping or peeling.
(20) Casework.

Code 1-Roof Leaks
(21) Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks
(22) Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

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 2022format 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 the same graphic standards specified for original drawings. 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 10 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 10 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 10 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 and FAR 52-223-17 Affirmative Procurement of 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)."

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)."

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 10 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 or 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 TR-19-6. 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 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 the same graphic standards specified for original drawings. 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 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., W91238-15-C-10A-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 CAD drawing files. Modify the as-built 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 TR-19-6. Jointly review the working as-built markup drawings with printouts from working as-built CAD drawing PDF files for accuracy and completeness. Monthly review of working as-built 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 and CAD drawings package for the entire project within 20 days of substantial completion of all phases of work. Submit one set of ANSI D size PDF and CAD files, two sets 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.

3.5 CONSTRUCTION CONTRACT SPECIFICATIONS

Submit final PDF file record construction contract specifications, including revisions thereto, 30 days after transfer of the completed facility.

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

Near the completion of Project, but a minimum of 60 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 Completed DD FORM 1354

For convenience, a blank fillable PDF DD FORM 1354 may be obtained at the following link:
www.esd.whs.mil/Portals/54/Documents/DD/forms/dd/dd1354.pdf

Submit the completed List of Installed Building Equipment items for DD FORM 1354. Attach this list to the updated DD FORM 1354.

-- End of Section --

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA
05/23, CHG 2: 11/25

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

U.S. DEPARTMENT OF DEFENSE (DOD)

FC 1-300-09N	(2024) Navy and Marine Corps Design

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-10 Operation and Maintenance Data

Facility Data Workbook; G, RO

Training Plan; G, RO

Training Outline; G, RO

Training Content; G, RO

Operation And Maintenance Manual, Progress Submittal; G, RO

Operation And Maintenance Manual, Prefinal Submittal; G, RO

Operation And Maintenance Manual, Final Submittal; G, RO

SD-11 Closeout Submittals

Validation of Training Completion; G, RO

Training Plan; G, RO

Record Drawings And Utility Systems; G, RO

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 Pre-Construction 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 Pre-Construction 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 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.

1.4 FACILITY DATA WORKBOOK

Develop an editable, electronic spreadsheet based on the equipment in the Operation and Maintenance Manuals that contains the information required to start a preventive maintenance program. As a minimum, provide Facility Data Workbook as a list of system equipment, location installed, warranty expiration date, manufacturer, model, and serial number.

1.5 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 compact disks (CD) or data digital versatile disk (DVD) 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.

1.5.1 CD or 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 Title

c. Activity and Location

d. Construction Contract Number

e. Prepared For: (Contracting Agency)

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

1.5.2 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.

1.6 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 at: www.wbdg.org/dod/ufgs/ufgs-01-78-23.

1.6.1 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.

1.6.2 Part 2: Facility Design and Construction

1.6.2.1 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 FC 1-300-09N and 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.

1.6.2.2 Basis of Design

Provide a copy of the contract Basis of Design.

1.6.2.3 Contract Documents, RFP, Amendments, and Modifications

Provide the contract construction documents complete, to include specifications, drawings, Request for Proposal, amendments, and modifications.

1.6.2.4 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
-------				

1.6.3 Part 3: Facilities, Systems, and Assemblies Information

1.6.3.1 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

1.6.3.2 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

1.6.3.3 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.

1.6.3.4 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.

1.6.3.5 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.

1.6.4 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:

1.6.4.1 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.

1.6.4.2 Operator Prestart

Provide procedures required to install, set up, and prepare each system for use.

1.6.4.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.6.4.4 Normal Operations

Provide Control Diagrams with data to explain operation and control of systems and specific equipment. Provide narrative description of Normal Operating Procedures.

1.6.4.5 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.

1.6.4.6 Operator Service Requirements

Provide instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gauge readings.

1.6.4.7 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.

1.6.4.8 Operating Log

Provide forms, sample logs, and instructions for maintaining necessary

operating records.

1.6.4.9 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 print out of all schedules and set points after testing and acceptance of the system.

d. Full as-built print out of software program.

e. Marking of system sensors and thermostats on the as-built floor plan and mechanical drawings with their control system designations.

1.6.4.10 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.

1.6.5 Routine Maintenance Requirements

1.6.5.1 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.

1.6.5.2 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.

1.6.6 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.

1.6.6.1 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.

1.6.6.2 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.

1.6.6.3 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.

1.6.6.4 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.

1.6.6.5 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.

1.6.6.6 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.

1.6.6.7 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.

1.6.6.8 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.

1.6.6.9 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.

1.6.7 Part 4: Facility Operations

1.6.7.1 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

1.6.7.2 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.

1.6.7.3 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.

1.6.7.4 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.

1.6.7.5 Maintenance Plans, Procedures, Checklists, Records, and Spare Parts Inventory

1.6.7.5.1 Maintenance Schedules

Include recommended maintenance schedules for systems and equipment.

1.6.7.5.2 Ongoing Testing Operational and Maintenance Record Keeping

Include ongoing testing and optimization procedures and documentation to monitor and improve the performance of facility systems.

1.6.7.5.3 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.

1.6.7.6 Utility Record Drawings

1.6.7.6.1 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.

1.6.7.6.2 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.

1.6.7.6.2.1 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.

1.6.7.6.2.2 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.

1.6.7.6.2.3 One-Line Diagrams and Meter Location of System

Provide one-line diagrams and design drawings that highlight meter locations on the site.

1.6.7.6.3 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.

1.6.8 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.

1.6.9 Part 6: TAB Report

Provide the final Test reports with evaluation and testing forms and records for each building system. Include relevant tested system assemblies test reports including installers checklists of assemblies. Provide all Testing 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.

1.6.10 Part 7: Regulatory Requirements

Provide information describing regulatory and policies compliance requirements or provide a reference to where it is stored.

1.6.11 Part 8: Permits

Provide information requiring frequently asked questions and associated answers or provide a reference to where it is stored.

1.6.12 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.

1.6.13 Part 10: Risk Category V

For equipment required to be seismically certified, documentation demonstrating compliance with certification requirements must be maintained in a file identified as "Equipment Seismic Certification Documentation" within the O&M Manual. This file must clearly state: "Replacement or modification of seismically certified components must be approved by a qualified professional engineer according to original certification criteria".

1.7 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:

1.7.1 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.

1.7.2 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

1.7.3 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 , 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.

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 Quality Control Manager (QC) prior to forwarding to the Contracting Officer. Also, coordinate the training schedule with the Contracting Officer and QC. 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 QC 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 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.

3.1.5 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.

3.1.6 Quality Control Coordination

Coordinate this training with the QCin 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 a minimum of 60 calendar days prior to the Project Completion date. 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 one hard copy of the Operation and Maintenance Manuals. The Final submittal is due at Project completion date. Any discrepancies discovered during the Government's review of the Prefinal submittal, including the Field Verification, must be corrected prior to the Final submission.

-- End of Section --

PERFORMANCE TECHNICAL SPECIFICATIONS

SECTION A10

FOUNDATIONS
12/18

A10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

A10 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

A10 1.1.1 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements).(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed there, which includes the following significant UFC(s): UFC 3-101-01, Architecture UFC 3-220-01, Geotechnical Engineering UFC 3-301-01, Structural Engineering

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS Section 31 00 00	Earthwork

A10 1.2 GENERAL REQUIREMENTS

A10 1.2.1 Earthwork

Prepare the following UFGS Specification as part of the project specification and include the prepared specification section in the design submittal for the project:

A10 1.2.2 Geotechnical Report

A10 1.2.2.1 Subsurface Soils Information

Any provided subsurface soil information is included for the Contractor's information only, and is not guaranteed to fully represent all subsurface conditions. The data included in this RFP is to assist in proposal preparation. Perform such subsurface exploration, investigation, testing, and analysis for the design and construction of the foundation system at no additional cost to the Government.

A10 1.2.2.2 Contractor-provided Geotechnical Engineer

Contractor may retain a Geotechnical Engineer experienced and licensed in the geographic region of the project to interpret any provided data as related to the design concept and develop requirements for bidding. Requirements stated in Parts 3 and 4 of the RFP take precedence over any content of any included geotechnical report. Additional requirements for the geotechnical design of this project are provided elsewhere in this RFP.

Coordinate all work by the Contractor-provided Geotechnical Engineer with the Contracting Officer and ensure that work does not conflict with Base operations. When providing the Foundation Work Design submittal, provide the Contractor's Geotechnical Report (an Adobe Acrobat PDF version on CD and two printed copies) for review and record keeping purposes. The report becomes the property of the Government. Provide the Geotechnical reports generated during construction, such as pile load tests or PDA results, pile driving results and analysis, to the Contracting Officer (an Adobe Acrobat PDF version and two printed copies) for record keeping purposes.

A10 1.2.2.3 Contractor-Provided Geotechnical Report

Contractor may submit a written Geotechnical report based upon Government-provided subsurface investigation data and all additional field and laboratory testing accomplished at the discretion of the Contractor's Geotechnical Engineer. The Geotechnical Report must include all requirements listed in UFC 3-220-01, *Geotechnical Engineering*, paragraph entitled "Section 1803 "Geotechnical Investigations"; in addition, include the following:

a. The project site description, vicinity map and site map indicating the location of borings and any other sampling locations. Provide 24 hour groundwater

observations for at least 20% of the borings, minimum one boring. Provide notes explaining any abbreviations or symbols used and describing any special site preparation requirements.

b. Results of all applicable field and laboratory testing, whether Government or Contractor-provided. Address existing subsurface conditions, selection and design of the foundation and floor slab, all underground construction including utility installation and all other site-specific requirements (such as soil stabilization and slope stability).

c. Engineering analysis, discussion and recommendations addressing:

1) Settlement analysis. Settlement must be limited as required in EM 1110-1-1904, *Settlement Analysis*

2) Bearing Capacity Analysis.

3) Foundation selection and construction considerations (shallow, deep, special); dimensions, and installation procedures.

4) Site preparation (earthwork procedures and equipment), compaction requirements, building slab preparation (as applicable), soil sensitivity to weather and equipment, groundwater influence on construction, mitigation of expansive soils or liquefaction potential, dewatering requirements, slope stability, and other necessary instructions.

5) Sheeting and shoring considerations, as applicable

6) Pavement design calculations with parameters defined, actual or assumed, and recommended thicknesses and materials, whether for design or for proposed modifications to the RFP provided pavement design

7) Haul routes and stockpile locations for earthwork, as applicable.

8) Calculations to support conclusions and recommendations.

9) Present recommendations on a structure-by-structure Basis.

Provide the Geotechnical Report signed by the Contractor-provided Geotechnical Engineer.

Submit report accompanied by a cover letter identifying any report recommendations of the report proposed to be adopted

into the design which are interpreted by the Contractor as a change condition to the Geotechnical or Pavement related requirements of the RFP.

A10 1.2.2.4 Geotechnical Site Data required in Design Drawings

The Contractor's final design drawings must include the Government-provided subsurface data presented in the RFP as noted below, as well as all additional borings and laboratory test data results performed by the Contractor. The data provided must include:

a. Logs of Borings and related summary of laboratory test results and groundwater observations. Provide 24-hour groundwater observations for at least 20% of the borings, minimum one boring. Provide notes explaining any abbreviations or symbols used and describing any special site preparation requirements.
b. Indicate locations of all borings on the drawings. Revise applicable design drawings to reference the Contractor’s Geotechnical Report as being a basis for design.

A10 1.3 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Provide verification of satisfactory construction and system performance of the foundations via Performance Verification Testing, and by field inspection, as detailed in this section of the RFP and in Part 2 Section 01 45 00, *Quality Control*. Provide special tests and special inspections in accordance with Part 2 Section 01 45 00.

A10 1.3.1 Earthwork

Perform quality assurance for earthwork in accordance with International Building Code (IBC) Chapter 17 and UFGS Section 31 00 00. A competent person, as defined by COE EM 385-1-1, under supervision of a registered Professional Engineer is required to provide inspection of excavations and soil/groundwater conditions throughout construction. The Engineer must perform periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the Contractor and the Contracting Officer, must update the excavation, sheeting, shoring, and dewatering plans as construction progresses to reflect actual site conditions and submit the updated plan and a written report (with professional stamp) at least monthly informing the Contractor and the Contracting Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer must be available to meet with the Contracting Officer at any time throughout the contract duration. The Contractor will bear all costs of the Engineer.

A10 1.4 DESIGN SUBMITTALS

Provide design submittals in accordance with Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Award*, UFC 3-220-01, *Geotechnical Engineering, and* UFC 1-200-01, *DoD Building Code (General Building Requirements)*.

UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. The DOR must edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS Section Z10, *General Performance Technical Specifications*.

UFGS Section 31 00 00 *Earthwork*

A10 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following submittals as a minimum:

All structural elements necessary for construction

Contractor-provided geotechnical report

Controlled fill or backfill material tests

As-Built drawings

A1010 STANDARD FOUNDATIONS

A1010 1.1 SHEETING AND SHORING

Provide sheeting and shoring as required. Provides sheeting and shoring plans signed by the Contractor's Geotechnical Engineer.

A1010 1.2.2 Warranty

Provide a 3-year written warranty against infestations or reinfestation by subterranean termites of the buildings or building additions constructed under this contract. Perform annual inspections of the building(s) or building addition(s). If live subterranean termite infestation or subterranean termite damage is discovered during the warranty period, and building conditions have not been altered in the interim:

a. Perform treatment as necessary for elimination of subterranean termite infestation;
b. Repair damage caused by termite infestation;
c. Reinspect the building approximately 180 calendar days after the repair.

A1010 1.2.3 Visual Inspection Guide

To maintain resistance to termites, complete the system and do not disturb, penetrate or damage during the remaining contract time period. Provide Manufacturer's Guidance for performing a visual assessment of the installed system to ensure the system provides the designed termite physical barrier.

A101001 WALL FOUNDATIONS

Provide foundation walls as required in accordance with the requirements of this section and other portions of this RFP.

A1020 SPECIAL FOUNDATIONS

A102004 DEWATERING

Dewater site for foundation construction as required by soil conditions and local subsurface and surface water, including rainfall, and considering any potential adverse impact on adjacent facilities, including settlement. Dewatering requirements and methods must be established by the Contractor's Geotechnical Engineer, based on his subsurface exploration and investigation.

A1030 GROUND FLOOR SLABS

A103001 STANDARD SLAB ON GROUND

If allowed by site conditions and recommended by the Contractor-provided Geotechnical Engineer, provide standard concrete slab on grade to meet the required loading requirement in accordance with the requirements of this section and other portions of this RFP.

Design and construct floor slab on grade in accordance with EM 1110-1-1904, Settlement Analysis, and so that any settlement of the floor slab will not result in harmful distortion of the floor, nor vertical misalignment of the floor with other building components (such as doorways and trenches), building utilities or with pile-supported building elements. If these above conditions cannot be met, provide a pile supported slab.

A103003 TRENCHES

Provide reinforced concrete trenches with water proof joints and seals to prevent ground water infiltration.

A103004 PITS AND BASES

Provide reinforced concrete pits and bases with water proof joints and seals to prevent ground water infiltration.

A103005 FOUNDATION DRAINAGE

A103005 1.1 PERIMETER FOUNDATION DRAINAGE

Provide a perimeter drainage system shall be provided to remove water away from the foundation of the facility and to be deposited in the

storm sewerage system of the site. Provide perforated pipe for the foundation drainage system of the type specified, and of a size sufficient to remove water from the foundation successfully. Provide one, or a combination of more than one, of the following types of pipe:

a. Corrugated Polyethylene (PE) Drainage Pipe: ASTM F 405, heavy duty, for pipe 3 to 6 inches in diameter inclusive; ASTM F 667 for pipe 8 to 24 inches in diameter. Fittings must be manufacturer's standard type and must conform to the indicated specifications.
b. Acrylonitrile-Butadiene-Styrene (ABS) Pipe: ASTM D 2751, with a maximum SDR of 35.
c. Polyvinyl Chloride (PVC) Pipe: ASTM F 758, Type PS 46, ASTM D 3034, or ASTM F 949 with a minimum pipe stiffness of 46 psi.

Installation includes wrapping the pipe with filter fabric sock and careful bedding of the pipe with appropriate fill material to ensure that the pipe does not become obstructed with the bedding material.

A103090 OTHER SLAB ON GROUND

A103090 1.1 BLOCK OR BOARD PERIMETER INSULATION

Provide only thermal insulating materials recommended by manufacturer for perimeter insulation. Provide one of the board or block thermal insulations listed below conforming to the following standards:

a. Extruded Preformed Cellular Polystyrene: ASTM C 578

Provide insulation to meet requirements of UFC 3-101-01, *Architecture*.

-- End of Section --

SECTION B10

SUPERSTRUCTURE
12/18

B10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

B10 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

B10 1.1.1 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-101-01, Architecture UFC 3-301-01, Structural Engineering)

B10 1.2 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Verify satisfactory construction and system performance via Performance Verification Testing, as detailed in this section of the RFP. Provide special tests and special inspections in accordance with Part 2 Section 01 45 00, *Quality Control*. The cost of all testing is included in the Contract.

B10 1.3 DESIGN SUBMITTALS

Provide design submittals in accordance with PTS Section Z10, *General*

Performance Technical Specifications, Part 2 Section 01 33 16.00 10, *Design After Award*, UFC 3-101-01, *Architecture*, and UFC 3-301-01, *Structural Engineering*.

B10 1.4 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following submittals as a minimum:

All structural elements necessary for construction of the superstructure.

B1010 FLOOR CONSTRUCTION

B101001 STRUCTURAL FRAME

Structural frame elements may include columns, girders, beams, trusses, joists, moment frames, shear walls, and bracing. See Section B20, *Exterior Enclosure*, for additional requirements for exterior walls used as load-bearing walls or shear walls.

B101002 STRUCTURAL INTERIOR WALLS

Provide structural interior walls as required in accordance with the requirements of this section and other portions of this RFP. See Section C10, *Interior Construction*, for additional requirements.

B101003 FLOOR DECKS AND SLABS

If required, provide floor decks as required in accordance with the requirements of this section and other portions of this RFP. Provide horizontal polystyrene insulation under the floor slab conforming to ASTM C578. Slab insulating product must have a minimum R-value as indicated by applicable ASHRAE 90.1 calculations called for in UFC 1-200-02, High Performance and Sustainable Building Requirements, and meeting minimum building envelope insulation requirements of UFC 3-101-01 Architecture and the energy design of the facility. Seal the joints in rigid insulation for additional moisture and air infiltration protection.

B1020 ROOF CONSTRUCTION

B102001 STRUCTURAL FRAME

Structural frame elements may include columns, girders, beams, trusses, joists, moment frames, shear walls, and bracing. See Section B20, *Exterior Enclosure*, for additional requirements for exterior walls used as load-bearing walls or shear walls.

B102003 ROOF DECKS AND SLABS

Provide roof deck as required in accordance with the requirements of this section and other portions of this RFP.

-- End of Section --

SECTION B20

EXTERIOR ENCLOSURE
06/23

B20 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

B20 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Federal Facility Criteria (FFC) at the Whole Building Design Guide (WBDG) website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the referenced standard at the time of contract award.

B20 1.1.1 Industry Standards and Codes

NATIONAL LUMBER GRADES AUTHORITY (NLGA)

B20 1.1.2 Government Standards

Military Handbook 1013/1A, *Design Guidance for Physical Security of Facilities*

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-101-01, Architecture)

B20 1.2 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Provide verification of satisfactory exterior enclosure system performance via Performance Verification Testing, and by field inspection as detailed in this section of the RFP. Provide special tests and special inspections in accordance with Part 2 Section 01 45 00, *Quality Control*. The cost of all testing is included in the Contract.

B20 1.2.1 Required Brick Masonry Testing and Field Samples

a. Where field testing is required, determine masonry strength in accordance with American Concrete Institute (ACI) 530.1.

B20 1.2.2 Air Barrier Field Sample

Designate a portion of the project that reveals the various edge, seam, transition, and penetration conditions that the air barrier is exposed to. Determine this location with the Contracting Officer and obtain approval of the sealing methods employed on the project from the air barrier Manufacturer. Leave sample area exposed to view as long as practical to serve as a construction standard and comparison of future air barrier construction on the project. Before construction covers the sample area, provide detailed photographs of the air barrier details for future reference.

B20 1.2.3 Air Barrier Performance

Provide air barrier inspection on all projects and air barrier performance testing when required in RFP Part 3, Section B20.

B20 1.2.3.1 Air Barrier Inspection

Coordinate all subcontractors that provide part of the air barrier construction to provide an air tight barrier. Review the air barrier prior to being covered by subsequent construction to confirm that the air barrier complies with the following requirements;

a. Prior to applying an air barrier, confirm that the substrate complies with conditions required by the applied air barrier material manufacturer.
b. Air barrier must create a continuous barrier, without gaps, "fish mouths", holes, unsealed seams, or unsealed penetrations.
c. Air barrier components are compatible and capable of being permanently connected to form an air tight barrier.

d. Construction of the air barrier complies with air barrier design as indicated in the Basis of Design and exterior enclosure barrier drawings.

e. Air barrier is installed in accordance with manufacturer's standard details available on the Air Barrier Association of America (ABAA) website named "Air Barrier Materials, Components, Assemblies & Systems" and found at the following web link; http://www.airbarrier.org/materials/assemblies_e.php

B20 1.3 DESIGN SUBMITTALS

Provide design submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Submittal*, UFC 3-101-01, *Architecture*, and UFC 3-301-01, *Structural Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR must edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS section Z10, *General Performance Technical Specifications*.

B20 1.4 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following submittals as a minimum;

Shop drawings for reinforcing steel in masonry walls, doors, door hardware, windows, storefront, curtainwall, glazing, paint, exterior enclosure barrier systems, and visible exterior materials.

All structural elements necessary for construction.

B20 1.4.1 Manufacturer's Verification Inspection Documentation for Galvanized Steel

Submit manufacturer's verification inspection documentation for all galvanized steel in accordance with ASTM A123, ASTM A 153, and ASTM A 653.

B20 1.4.3 Sustainable Construction Submittals

Submit sustainable construction submittals in accordance with Part 2 Section 01 33 29, *Sustainability Requirements and Reporting*.

B2010 EXTERIOR WALLS

Provide exterior wall construction that consists of exterior skin system of structural outside face elements wall systems that include; flashing (embedded, exposed, and thru-wall), a moisture barrier/ vapor retarder (if required), and insulation systems with an interior skin system that provides a protective finish on the inside face of exterior walls. Provide all components necessary for a shingled water resistive barrier to direct water that would penetrate the wall to be directed to the outside of the wall. Provide exterior enclosure components and barriers in accordance with UFC 3-101-01, *Architecture*.

Design all work to comply with UFC 3-101-01, *Architecture*, and UFC 3-301-01, *Structural Engineering*, and the following requirements:

a. Vapor Pressure and Hygrothermal Analysis - Perform a job specific vapor pressure and hygrothermal analysis in accordance with UFC 3-101-01, *Architecture*. The conclusion of the analysis must indicate if a moisture barrier/ vapor retarder is required, the appropriate locations of needed moisture barrier/ vapor retarder, and anticipated dew-point locations in the exterior enclosure during different critical times of the year.
b. Wind Loads - Provide wind load calculations for exterior cladding in accordance with UFC 1-200-01 and UFC 3-301-01 with comparative analysis of the cladding system to be provided.
c. Water Penetration - No water penetration must occur at a pressure of 8 psf (39 Kg/m2) of fixed area when tested in accordance with ASTM E 331.
d. Insulating Value – Comply with UFC 3-101-01, *Architecture*, for the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) 90.1 standards to determine the minimum insulating value of the complete wall system.

B201001 EXTERIOR CLOSURE

B201001 1.1 MASONRY VENEER EXTERIOR WALL CLOSURE COMPONENTS

B201001 1.1.3 Split Faced Masonry

ASTM C 90. Provide split faced units.

B201001 1.1.5 The Wall Cavity

Comply with UFC 3-101-01, *Architecture* and BIA Technical Notes 21A, 21B, 21C, 28B.

B201001 1.1.6 Through-Wall Flashing Components

Provide through-wall flashing over all openings, spandrels, shelf angles, lintels, and built-in structural steel members. Provide through-wall flashing below all openings, sills, and at the base of the wall. Provide a method of weeping water collected by the through-wall flashing to the outside of the wall.

a. Incorporate weep holes to align with through-wall flashing in cavity wall construction as required by UFC 3-101-01, *Architecture*, and BIA Technotes. Install flashing according to BIA Technotes 7, 7A, 7B, 21A, 21B, 21C, 28B, and SMACNA figures 4-1A and 4-1B. Extend metal drip edge flashing beyond the wall plane using a 1/4 inch (6 mm) preformed 45 degree angle turn down.
b. Provide flashing material as required by UFC 3-101-01, *Architecture* and the following: Provide flashing of 7 ounce copper flashing with a 3 ounce bituminous coating on each side or a fiberglass fabric bonded on each side of the copper sheet. Sixteen (16) ounce uncoated copper, 28 gauge Type 302 or 304 stainless steel is also acceptable. 'Flexible membrane flashing, plastic or PVC-based membrane flashing is prohibited. Lap and seal turndown solid metal drip edge flashing to through- wall flashing. Refer to "Flashing" in this section to find requirements for non-through-wall flashing.
c. Incorporate the through-wall flashing in the water resistive barrier and seal joints to flashing to form a shingled effect and direct water to the exterior to the exterior enclosure and away from back-up wall assembly.
d. Where flashing is not continuous, such as at masonry wall opening heads and sills, extend flashing four inches beyond each side of the opening and turn up ends to form a pan and prevent water from reentering the wall cavity.

B201001 1.10 OTHER EXTERIOR WALL CLOSURE

B201001 1.10.2 Concrete Unit Masonry

Masonry walls must comply with ACI 530.1. Load-bearing units: ASTM C90, Non-load bearing- units: ASTM C129, Type I or II. Provide split-faced units for exposed exterior walls. Provide water repellent admixture to masonry units where the exterior face of the units will not receive a waterproof coating such as paint. Mortar must conform to ASTM C 270, Type S. Test mortar in accordance with ASTM C 780. Provide water repellent admixture and color additive in mortar for masonry walls that will not receive a waterproof coating such as paint. Do not use admixtures containing chlorides. Provide air entrainment, not to exceed 12 percent, in mortar.

a. Adjustable Anchors for Structural Members - Use adjustable anchors to anchor masonry structural steel columns or beams. Weld the fixed portion of the anchors (steel anchor rods) to the structural steel member. Provide adjustable anchors 3/16 inch diameter steel wire, triangular-shaped. Anchors attached to steel must be 5/16 inch diameter steel bars placed to provide 1/16 inch play between flexible anchors and structural steel members.

b. Deformed Bars - ASTM A 615/A 615M, ASTM A 616/A 616M, ASTM A 617/A 617M, or ASTM A 706/A 706M.

B201003 INSULATION AND VAPOR RETARDER

Provide insulation, air barriers, water resistive barriers, and moisture barrier/ vapor retarders (if required) in the exterior enclosure to control heat loss/gain, air infiltration/diffusion, moisture infiltration/diffusion, and water infiltration.

Provide insulation, air barrier and water resistive barrier on all conditioned facilities and moisture barrier/ vapor retarders when required by the exterior enclosure vapor pressure and hygrothermal analysis. These barrier materials may be installed separately or combined if different air barrier, moisture barrier/ vapor retarder, and water resistive barrier functions can be consolidated in one material.

Provide exterior enclosure barriers that are durable and designed to last the life of the facility. Seal the continuous air and water resistive barrier in a flexible manner to allow for relative movement of adjacent building enclosure components. Support exterior enclosure barriers to withstand maximum positive and negative air pressure to be placed on the building without displacement or damage and transfer the load to the structure. Permanently seal penetrations, joints, holes, and transitions to adjoining construction in air and water resistive barriers as recommended by the material manufacturer. Do not compromise exterior enclosure barrier integrity at electrical boxes, fixture supports, and fasteners with holes through the exterior enclosure barriers that allow air or water leakage. Do not expose exterior enclosure barriers or retarders to environment conditions longer than is recommended by the manufacturer.

B201003 1.1 INSULATION SYSTEMS

Provide vertical rigid polyisocyanurate board wall insulating products conforming to ASTM C591 and type-1 mineral-fiber blanket insulation conforming to ASTM C 665. Wall insulating product must have a minimum R-value as indicated by applicable ASHRAE 90.1 calculations called for in UFC 1-200-02, *High Performance and Sustainable Building Requirements*, and meeting minimum building envelope insulation requirements of UFC 3-101-01 *Architecture* and the energy design of the facility. Seal the joints in rigid insulation within cavity/veneer walls for additional moisture and air infiltration protection.

B201003 1.2 AIR BARRIER

The building air barrier is a combination of various construction materials/ components that form a continuous air barrier seal on all six sides of a building. Use methods recommended by the manufacturer to seal joints and intersections for air-tightness of materials designated as part of the air barrier. Individual materials used in the continuous air barrier must have an air permeance not to exceed 0.004 cfm/ft2 at a pressure differential of 0.3 inches water (1.56lb/ft2), (0.02 L/s. m2 at 75 Pa) when tested in accordance with ASTM E 2178. If the air barrier is to be field tested, refer to the requirements in the paragraph entitled "Air Barrier Performance Testing" of this section for entire building minimum air permeance. Provide air barrier installation at windows in accordance with ASTM E 2112.

B201003 1.2.1 Exterior Enclosure Air Barrier Materials

Refer to Air Barrier Association of America (ABAA) to identify qualified materials with the appropriate performance for the air barrier. Utilize materials from the "ABAA Evaluated Air Barrier Materials" found at the following web link;

https://www.airbarrier.org/technical-information/evaluated-assemblies-2/

B201003 1.4 MOISTURE BARRIER/ VAPOR RETARDER

Provide a moisture barrier/ vapor retarder to slow or reduce the unintended movement of water vapor in and out of conditioned space, if required by exterior enclosure vapor pressure and hygrothermal analysis. Perform the analysis and provide a moisture barrier/ vapor retarders in accordance with UFC 3-101-01, *Architecture*. Choose the moisture barrier/ vapor retarder permeability as a function of climate, the characteristics of the materials that comprise the assembly, and the interior conditions. Select moisture barrier/ vapor retarders in accordance with ASTM C755.

B201005 EXTERIOR LOUVERS

If required, provide louvers, which are not an integral part of the mechanical equipment, exterior closures, grilles and screens, storm shutters, and other materials used for a variety of purposes including screening of equipment or as louvers for exterior doors.

Louvers, screens, grilles in must be selected in a color and design that is compatible with the fabric of the exterior architectural character as described below. For frame construction, install in accordance with ASTM E 2112.

B201005 1.1 WALL LOUVERS

Provide drainable blade type wall louvers with blade slopes of 45

degrees minimum, but provide wind driven rain rated louvers for wall louvered rooms without a floor drain within the room. Louvers must withstand a wind load of not less than 30 psf (146 Kg/m2), .08 inch thick 6063-T5 or T52 extruded aluminum in a factory-finished color in accordance with AAMA 2605 with a minimum coating thickness of 1.2 mil to match the building facade. Wall louvers must bear the AMCA certified ratings program seal for air performance and water penetration in accordance with AMCA 500, 500L (wind driven rain), and AMCA 511. Provide sill flashing with sloped drain pan at base of louver to collect moisture that migrates down the interior face of the louver. This sill flashing must drain water to the outside of the building. Louvers must have bird screens.

B201007 EXTERIOR SOFFITS

Exterior soffit system assemblies must include trim and necessary accessories including high performance coatings, if required. Installation must be crisp, fit and trim with tight joinery to back-up framing. Design soffits to be field assembled by lapping side edges of adjacent panels and mechanically attaching through panels to galvanized, non-load bearing framing conforming to ASTM A 653 (G60) and ASTM C 645, using concealed fasteners. Provide trim accessories of the same material and finish as the soffit material where soffit abuts other materials.

Use adequate backing material to assure snug joints and even face planes. Where soffits ventilate an attic space, or an otherwise unventilated space, provide a soffit/ridge/louver/ventilator ventilation system with air quantities complying to the IBC. For spaces intentionally not vented, provide sealed soffits to maintain the integrity of the air barrier and insulation barrier.

B201008 WALL FLASHING

Flashing must be aluminum or stainless steel. Aluminum must conform to ASTM B 209/B 209M, 0.040 inches thick and must be coated to match the item flashed. Stainless steel must conform to ASTM A 167, type 302 or 304, 2D finish, fully annealed, dead soft temper. Thickness must be a minimum of 0.018 inches. Incorporate the flashing in the water resistive barrier and seal joints to flashing to form a shingled effect and direct liquid water to the exterior of the exterior enclosure and away from back-up wall assembly.

B201009 EXTERIOR PAINTING AND SPECIAL COATINGS

Apply coatings directly to all non-prefinished surfaces of the exterior construction. Comply with Master Painters Institute requirements for surface degradation analysis, surface preparation, paint and coating selection, paint application restrictions for substrate materials, and paint application.

B201009 1.1 GENERAL REQUIREMENTS

Painting practices must comply with applicable federal, state and local laws enacted to insure compliance with Federal Clean Air Standards. Apply coating materials in accordance with Society for Protective Coatings (SSPC) PA 1. SSPC PA 1 methods are applicable to all

substrates.

Provide all paint in accordance with the Master Painter Institute (MPI) standards for the exterior architectural surface being finished. The current MPI, "Approved Product List" which lists paint by brand, label, product name and product code as of the date of contract award, will be used to determine compliance with the submittal requirements of this specification. The Contractor may choose to use a more current MPI "Approved Product List"; however, only one list may be used for the entire contract. All coats on a particular substrate, or a paint system, must be from a single manufacturer. No variation from the MPI Approved Products List is acceptable.

Select paint systems for the project in accordance with the MPI Architectural Painting Decision Tree available on the Whole Building Design Guide. Use this interactive MPI Decision Tree website to identify applicable paint system(s) for the project. The MPI Decision Tree identifies paint systems for each interior or exterior coated surface in "Normal" or "Aggressive" environmental conditions and generally lists the applicable paint systems in descending order of performance. The paint system at the top of each substrate list generally indicates the highest performing acceptable coating system.

Choose the "Aggressive" environmental conditions in the MPI Decision Tree for exterior systems that are used in moist humid conditions, abrasive conditions, chemical exposure conditions, or within five miles proximity of the ocean or a body of water. Also use "Aggressive " environmental conditions in interior spaces that are exposed to in moist humid conditions, abrasive conditions, chemical exposure conditions, such as bathrooms, shower rooms, kitchens, chemical storage area, swimming pools, laundry, sanitary areas, commercial kitchens, industrial production areas, and hospital operating rooms provide paint systems that comply with the MPI Decision Tree "Aggressive" environmental conditions.

Comply with the following requirements when determining the appropriate paint or coating system from the MPI Decision Tree:

a. If the MPI Decision Tree does not identify all paint system applicable to the facility, utilize the *MPI Architectural Painting, Exterior Systems Manual* to identify other appropriate paint systems for the project. Utilize the "Premium Grade" systems and comply with all limitations stated in the MPI "Approved Product List" for each paint product. Products having an MPI VOC Range E3 must be given preferential consideration over lower VOC Ranges. Use higher performing paint systems unless the lower performing paint system can be justified based on a lifecycle cost to include surface preparation, application, disposal, environmental impact, and required recoating cycles. Only use paint products that have been tested for MPI'S "DETAILED PERFORMANCE" or "EVALUATED PERFORMANCE ". Do not use products that have only been tested for "INTENDED USE".

b. If an "Aggressive" environmental condition option is not available in the MPI Decision Tree for a certain substrate, use the

"Normal" environmental condition option.

c. Refer to the Additional Exterior Paint and Coating System Requirements below for further system requirements.

Paints and coatings must comply with Master Painters Institute Green Performance Standard GPS-1-12 which is available at the following website;
http://www.specifygreen.com/EvrPerf/EnvironmentalPerformance.html .
Choose paints that provide performance, are environmentally friendly, and that conform to EPA or local environmental regulations, whichever requires the lowest VOC content.

B201009 1.1.1 MPI Gloss Levels

Gloss levels must comply with the MPI system of determining gloss as defined in the Evaluation sections of the MPI Manuals. Utilize the performance characteristics of the paint gloss and sheen to categorize paint rather than manufacturers' description of the product. The MPI Gloss Levels are indicated by the notation G1, G2, G3, G4, G5, G6, or G7.

The MPI Decision Tree indicates a default gloss level for each paint system, however consider the appearance, anticipated conditions, and need for cleaning when establishing the final gloss level for each coated surface of the project. Comply with the following guidance in choosing the appropriate gloss level.

a. Use G2 "Velvet-like" Flat for ceilings, residential walls away from human contact and low traffic areas.

b. Use G3 "Eggshell-like" in high traffic areas for ceilings and walls, when human contact with the wall is limited, and for dark accent colors.

c. Use G5 Semigloss for walls, doors and trim for high durability and clean ability and when a surface is expected to have routine human contact.

d. Use G6 Gloss only in special situations such as for piping identification or special effects.

The MPI gloss and sheen standard values are in accordance with ASTM D523, and are as follows:

Gloss Level Number	**Gloss@60 Degrees**	**Sheen@85 Degrees**
Gloss Level 1 (G1) - Matte or Flat	Max.5 units	Max.10 units

Gloss Level Number	Gloss@60 Degrees	Sheen@85 Degrees
Gloss Level 2 (G2) - "Velvet-like" Flat	Max. 10 units	10-35 units
Gloss Level 3 (G3) - "Eggshell-like"	Max. 10-25 units	10-35 units
Gloss Level 4 (G4) - "Satin-like"	Max. 20-35 units	Min. 35 units
Gloss Level 5 (G5) - Semi-Gloss	35-70 units	
Gloss Level 6 (G6) - Gloss	70-85 units	
Gloss Level 7 (G7) - High Gloss	More than 85 units	

B201009 1.1.2 MPI System Designations and Table Abbreviations

The MPI coating system number description is found in either the *MPI Architectural Painting Specification Manual* or the *Maintenance Repainting Manual* and defined as an exterior system

a. EXT - MPI short-term designation for an exterior coating system on a new surface.
b. REX - the MPI short term designation for an exterior coating system used in repainting projects or over existing coating systems.
c. DSD - the MPI short-term designation for Degree of Surface Degradation as defined in the Assessment sections in the *MPI Maintenance Repainting Manual*. Degree of Surface Degradation designates the MPI Standard for description and appearance of existing condition of surfaces to be painted. This DSD classification is used to determine the proper surface preparation necessary for painting.

B201009 1.1.3 Surface Preparation

Comply with the "Exterior Surface Preparation" section of the *MPI Architectural Painting Specification Manual,* or the Exterior Surface Preparation" section of the *MPI Maintenance Repainting Manual*. All suggestive language such as "may" or "should" are deleted from the standard and "must" inserted in its place. Suggestive language such as "recommended" or "advisable" is deleted from the standard and "require" or "required" inserted in its place. The results of these wording substitutions change this document to required procedures. For surface preparation, determine a MPI DSD Assessment of each surface and comply with the MPI Surface Preparation Requirements relating to the assessments. Not-withstanding MPI requirements, clean exterior ferrous metal that is exposed to weather conditions (wind,

precipitation, solar degradation, and humidity) to a SSPC SP 10 level (near white).

Remove dirt, splinters, loose particles, grease, oil, and other foreign matter and substances deleterious to coating performance as specified for each substrate before application of paint or surface treatments. For existing buildings, use MPI *Maintenance Repainting Manual* to determine the coatings that need to be removed. Remove deteriorated or loose coatings before repainting begins. Remove oil and grease prior to mechanical cleaning. Program cleaning so that dust and other contaminants will not fall on wet, newly painted surfaces. Spot-prime exposed ferrous metals such as nail heads on or in contact with surfaces to be painted with water-thinned paints with a suitable corrosion-inhibitive primer capable of preventing flash rusting and compatible with the coating specified for the adjacent areas.

B201010 EXTERIOR JOINT SEALANT

Provide sealant joint design, priming, tooling, masking, cleaning and application in accordance with the general requirements of *Sealants: A Professionals' Guide* from the Sealant, Waterproofing & Restoration Institute (SWRI). All sealant must conform to ASTM C 920.

Joints must include proper backing material for sealant support during application, control of sealant depth, and to act as a bond breaker. Use filler boards, backer rods and bond breaker tapes. Provide priming unless specifically not recommended by the sealant manufacturer. Applied sealant must be tooled. Tooling must not compact sealant too less than the minimum sealant thickness required. Mask adjacent surfaces to control sealant boundaries during sealant application.

B2030 EXTERIOR DOORS

Provide heavy duty insulated exterior steel doors and frames for service access. Door frames must be welded. Corner knockdown door frames are not permitted.

Use heavy-duty overhead holder and closer to protect doors from wind damage. Provide kickplates on the inside face of all exterior doors.

Weather-protect all exterior doors and related construction with low infiltration weatherstripping and sealants. Provide threshold with offset to stop water penetration while maintaining accessibility compliance.

Conform to the design criteria of ASCE 7.

See section B203008, EXTERIOR DOOR HARDWARE, for door hardware requirements. For all installations, provide a recessed key box (Knox Box) approximately 7 inches x 7 inches with 4-3/4 inches solid steel door at primary exterior entry for storage of keys and access cards accessible by the fire department.

B203001 SOLID DOORS

B203001 1.1 STEEL DOORS

Provide hardware preparation in accordance with American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA) A156.115. Doors must be hung in accordance with ASTM E2112.

B203001 1.1.1 Steel Doors

Steel doors must be American National Standards Institute/Steel Door Institute (ANSI/SDI) A250.8, Level 4, exterior, main entry doors, with a physical performance level of, Model 1.

Doors may be specified to be insulated. Door selection must be specified in the project program according to the following:

a. Heavy Duty Doors - physical performance Level B, Model 1

B203001 1.1.2 Insulated Steel Entry Door Systems

Provide insulated steel doors and frames with a core of polyurethane foam and an R factor of 10.0 or more (based on a k value of 0.16). Face sheets, edges, and frames of galvanized steel not lighter than 23 gage thick, 16 gage, and 16 gage respectively; for 16 gage thick for solid doors, with vinyl door bottom flashing. Frames must be a minimum 16 gage thick; with magnetic weatherstripping; nonremovable-pin hinges; thermal-break aluminum threshold. Doors and frames must receive phosphate treatment, rust-inhibitive primer, and baked acrylic enamel finish. Doors must have been tested in accordance with SDI/DOOR A250.4 and must have met the requirements for Level C. Prepare doors to receive specified hardware. Doors must be 1-3/4 inch thick.

B203001 1.1.3 Insulation Cores

Provide insulated cores of type specified, and provide an apparent U-factor of .48 in accordance with SDI 113 and must conform to:

a. Rigid Polyurethane Foam: ASTM C591, Type 1 or 2, foamed-in-place or in board form, with oxygen index of not less than 22 percent when tested in accordance with ASTM D2863; or
b. Rigid Polystyrene Foam Board: ASTM C578, Type I or II; or
c. Mineral board: ASTM C612, Type I.

B203001 1.1.5 Standard Steel Frames

ANSI/SDI A250.8. Form frames with welded corners for installation

in exterior walls. Form stops and beads of 20 gage steel. Set frames in accordance with ASTM A250.11.

B203001 1.1.6 Anchors

Anchor all frames with a minimum of three jamb anchors and base steel anchors per frame, zinc-coated or painted with rust-inhibitive paint, not lighter than 18 gage. Mortar infill frames in masonry walls, and infill with gypsum board compound at each jamb anchor in metal frame walls. Only use surface exposed bolted anchors in concrete walls.

B203001 1.1.7 Finishes

a. Exterior Doors, Factory-Primed and Field Painted Finish - Doors and frames must be factory primed with a rust inhibitive coating as specified in ANSI/SDI A250.8. Factory prime doors on six sides of the door. Manufacturer's primer and field painting must be compatible with finish system in the paragraph "EXTERIOR PAINTING AND SPECIAL COATINGS".

B203008 EXTERIOR DOOR HARDWARE

Provide the services of an Architectural Hardware Consultant (AHC), Certified Door Consultant (CDC), or an Electrified Hardware Consultant (EHC) to assist the Designer of Record in preparation of the door hardware schedule and product selection. The hardware consultant must sign and seal the door hardware construction submittal. Provide, as far as possible, door hardware of one manufacturer’s make. All hardware must be clearly and permanently marked by the manufacturer where it will be visible after installation.

B203008 1.1 HINGES

BHMA A156.1, size to match door size, but in no case less than 4-1/2 x 4-1/2 inches, with non-removable pin and anti-friction bearing hinges. Use two hinges for doors 60 inches or less in height and one additional hinge for each additional 30 inches, or fraction thereof, in door height.

B203008 1.2 PIVOTS

BHMA A156.4.

B203008 1.3 LOCKS AND LATCHES

Commercial (all construction except family housing) buildings locks and latches must be BHMA A 156.13, Series 1000, Operational Grade 1, Security Grade 2 for exterior building entrances and other high-use doors not requiring exit devices. Use BHMA A 156.2, Series 4000, Grade 1 for all Commercial buildings locks and latches not using Series 1000 hardware.

B203008 1.7 CYLINDERS AND CORES

If required, provide cylinders and cores for new locks, including locks provided under other sections of this specification. Cylinders and cores must have seven pin tumblers. Cylinders must be products of one manufacturer, and cores must be the products of one manufacturer. Rim cylinders, mortise cylinders, and knobs of bored locksets must have interchangeable cores, which are removable by special control keys. Stamp each interchangeable core with a key control symbol in a concealed place on the core.

B203008 1.8 KEYING SYSTEM

Provide a master key system for the facility, unless more than one tenant/tenant command must reside in a facility, or a grand master keying system, or great, grand master keying system if multiple tenants or buildings are required. The keying system must be an extension of the existing keying system for additions to existing facilities. The keying system must allow for construction interchangeable cores when subcontractors require keys during construction. If required, provide a key cabinet.

The Contractor must coordinate a keying system meeting. The Contractor's Project Manager, Superintendent, Hardware Subcontractor, Electrical Subcontractor (if keying hardware is electric), Designer of Record, Contracting Officer, Public Works Base Hardware Specialist, and the Using Activity must attend this meeting to establish the keying system for the project. This meeting is intended to identify Base limitations, the necessary security, and access control within the facility. The meeting must produce a marked up copy of the floor plan indicating the doors to receive locks and the doors to be keyed together, and any master keying or grand master keying.

B203008 1.9 KEYS

Furnish one file key, one duplicate key and one working key for each key exchange and for each master and grand master keying system.

B203008 1.10 LOCK TRIM

Cast, forged or heavy wrought construction and commercial plain in design.

B203008 1.10.2 Lever Handles

Provide lever handles in lieu of knobs as required by DoD Architectural Barriers Act (ABA) Standards. Lever handles must meet the test requirements of BHMA A 156.13 for mortise locks. All lever handles (mortise or cylinder) must be the freewheeling type.

B203008 1.11 DOOR BOLTS

BHMA A 156.16, Grade 1.

B203008 1.12 CLOSERS

BHMA A 156.4, Series C02000, Grade 1, with PT 4C, 1-1/2 inch piston, heavy duty forged arm, full size case. Provide closers for all exterior doors.

B203008 1.13 OVERHEAD HOLDERS

BHMA A 156.8, Grade 1. Provide for exterior doors for non-residential (commercial) construction.

B203008 1.14 DOOR PROTECTION PLATES

Kick plates must conform to BHMA A 156.6. Provide kick plates on all doors with closers. Provide mop plates on all doors in rooms with a mopable floor finish that do not have kick plates.

B203008 1.15 DOOR STOPS AND SILENCERS

BHMA A 156.16. Provide silencers, Type L03011, three per single door and four per double door, for doors in hollow metal frames.

B203008 1.16 THRESHOLDS

BHMA A 156.21. Provide thresholds with offset to stop water infiltration, while maintaining accessibility requirements.

B203008 1.17 WEATHERSTRIPPING

BHMA A 156.22. Air leakage of weatherstripped doors must not exceed 0.5 CFM of air per square foot of door for residential doors, and 1.25 CFM for non-residential doors (unless a more restrictive infiltration level is specified).

B203008 1.18 RAIN DRIPS

For all exterior doors that open to the outside, where the door swing area is not covered by an overhang, provide top and bottom rain drips complying with ANSI R3Y535 as a minimum. Greater weather sealing may be required by the geographic location of the project.

B203008 1.19 FINISHES

Provide one of the following hardware finish systems, and match the interior door hardware:

a. BHMA A156.18. Hardware must have BHMA 630 finish (satin stainless steel), unless specified otherwise. Provide items not

manufactured in stainless steel in BHMA 626 finish (satin chromium plated) over brass or bronze, except surface door closers which must have aluminum paint finish, and except steel hinges which must have BHMA 652 finish (satin chromium plated). Hinges for exterior doors must be stainless steel with BHMA 630 finish or chromium plated brass or bronze with BHMA 626 finish. Exit devices may be provided in BHMA 626 finish in lieu of BHMA 630 finish. Exposed parts of concealed closers must have finish to match lock and door trim. Hardware for aluminum doors must be finished to match the doors.

-- End of Section --

SECTION B30

ROOFING
06/23

B30 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

B30 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards that are referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Federal Facility Criteria (FFC) at the Whole Building Design Guide (WBDG) website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the standard at the time of contract award.

B30 1.1.1 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-101-01 Architecture UFC 3-110-03 Roofing)
UFC 1-200-02	High Performance and Sustainable Building Requirements

B30 1.1.2 Design Requirements

Wind Uplift Resistance: Determine the required wind uplift resistance based on American Society of Civil Engineers (ASCE) ASCE/SEI 7 wind loading calculations or applicable building code requirements and UFC 3-101-01 *Architecture* and UFC 3-110-03 *Roofing*. The specified Factory Mutual (FM) rating incorporates a safety factor of 2 over the maximum calculated uplift pressure. Therefore, a FM rating of 1-90 correlates to a maximum uplift calculation of 2.2 kPa, 45 psf. When a rated system is specified, ensure the specified roof system is capable of meeting the wind uplift resistance specified. Where non-rated systems may be allowed and used, delineate calculated values in the roof specification or drawings. Utilize independently tested and rated roof systems, such as Factory Mutual (FM), Underwriters Laboratory (UL), and Single Ply Roofing Industry (SPRI).

The complete roof system assembly must be rated and installed to resist wind loads calculated in accordance with ASCE/SEI 7 and validated by uplift resistance testing in accordance with Factory Mutual (FM) test procedures. Non-rated systems must not be installed, except as approved by the Contracting Officer. Submit licensed engineer's wind uplift calculations and substantiating data to validate any non-rated roof system.

B30 1.3 DESIGN SUBMITTALS

Provide design submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Submittal*, UFC 3-101-01, *Architecture* and UFC 3-110-03, *Roofing*.

B30 1.4 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following submittals as a minimum:

Test reports, color samples, certificates of conformance, warranties, close out documentation, and manufacturer's instructions for application and installation on all products used on the roof. Products used on the roof consist of but are not limited to structural deck, insulation, membrane or panels, Standing Seam Metal Roofing (SSMR), flashing, fasteners, nailers, accessories and equipment support curbs or equipment support stands for solar equipment, equipment roof plan, maintenance access and paths.

B3010 ROOF COVERINGS

Roof coverings must comply with the requirements of UFC 3-110-03, *Roofing*, and NRCA, *Roofing and Waterproofing Manual* found at http://www.nrca.net/rp/technical/manual/manual.aspx. Determine wind uplift using wind speed in accordance with ASCE/SEI 7.

Submit the INFORMATION CARD (see "Form 1" at the end of this section) Provide a typewritten card, laminated in plastic and framed in a weather-tight frame, or a photoengraved 0.032-inch (0.81 mm) thick aluminum card for the roof. This card must be a minimum size of 8 1/2 x 11 inch (216 x 280 mm) and contain information listed in the attached Form 1. Install the card where directed. Furnish framed card and a duplicate card to the Designer of Record.

B301001 STEEP SLOPE ROOF SYSTEMS

Slope conversions from low slope to steep slope roofing systems must specifically address temporary waterproofing protection where new framing connections penetrate the existing low slope system.

B301001 1.4 METAL ROOF PANELS (ARCHITECTURAL STANDING SEAM METAL ROOFS ON SUPPORTED SUBSTRATE)

B301001 1.4.1 Manufactured Sheet Metal Roofing

Provide galvanized steel or aluminum-zinc coated steel or aluminum panels formed at the manufacturing plant and conditioned for flatness. Determine panel thickness by the requirements of NRCA, *Roofing and Waterproofing Manual*, but not less than 24 gauge for panels less than 16 inches wide (400 mm), and 22 gauge for panels 16 inches (400 mm) wide or greater. All panels greater than 12 inches (300 mm) wide must have preformed reinforcing ribs or embossed for stiffening. The minimum gauge for aluminum panels must be 20-gauge, .032 inch thick (.8 mm thick) or greater. Roofing design must meet deflection and wind load requirements per building code.

The SSMR system covered under this specification must include the entire roofing system; the standing seam metal roof panels, fasteners, connectors, roof securement components, and assemblies tested and approved in accordance with ASTM E 1592. In addition, the system must consist of panel finishes, slip sheet, insulation, vapor retarder, all accessories, components, and trim and all connections with roof panels. This includes roof penetration items such as vents, curbs, skylights; interior or exterior gutters and downspouts; eaves, ridge, hip, valley, rake, gable, wall, or other roof system flashings installed and any other components specified within this contract to provide a weathertight roof system.

a. Provide inverted "L" Standing Seam shape roofing panels.
b. Panel Protection - Treat exposed cut edges with compatible coating comparable to the factory applied coating system for corrosion protection.
c. Sealants - Provide non-curing, non-skinning butyl based sealants and tapes for concealed locations such as within laps and under eaves. Provide polyurethane and curing butyl elastomeric sealants for exposed locations such as along top edge of surface mounted counter flashings.
d. Factory Color Finish - Provide factory applied, baked

coating to the exterior and interior of metal wall panels and metal accessories. Provide exterior finish top coat of 70 percent polyvinylidene fluoride resin with not less than 0.8 mil dry film thickness. Provide exterior primer standard with panel manufacturer with not less than 0.8 mil dry film thickness. Interior finish must consist of 0.5 mil dry film thick backer coat if permanently concealed from view by construction or the same coating and dry film thickness as the exterior coating if the panel interior side will be exposed. Provide factory-applied clear 70 percent polyvinylidene fluoride (PVF), 0.8 mil top coat and edge coating on all factory-cut or unfinished panel edges for projects within 300 feet (91 meters) of the ocean or industrial environments.

e. Warranty - Furnish manufacturer's no dollar limit materials and workmanship warranty for the roofing system. The warranty period must not be less than 20 years from the date of Government acceptance of the work. The warranty must be issued directly to the Government. The warranty must provide that if within the warranty period the metal roofing system becomes non-watertight or shows evidence of corrosion, perforation, peeling paint, rupture or excess weathering due to deterioration of the roofing system resulting from defective materials or workmanship the repair or replacement of the defective materials and correction of the defective workmanship must be the responsibility of the roofing system manufacturer. Repairs that become necessary because of defective materials and workmanship while roofing is under warranty must be performed within 7 days after notification, unless additional time is approved by the Contracting Officer. Failure to perform repairs within the specified period of time will constitute grounds for having the repairs performed by others and the cost billed to the manufacturer. Provide a 2-year contractor installation warranty. Coating must not show a color change greater than 5 NBS color units in accordance with ASTM D2244, and not show chalking in excess of 10 in accordance with ASTM D4214.

f. Wind Uplift - Metal roofing systems must be designed and attached to resist wind uplift pressures calculated in accordance with ASCE/SEI 7. Uplift resistance must be validated by applicable Factory Mutual (FM), Underwriters Laboratories (UL), or ASTM uplift resistance test procedures.

B301001 1.4.2 Metal Roof Design Requirements

Design the SSMR system as a complete system. Roof panels, components, transitions, accessories, and assemblies must be supplied by the same roofing system manufacturer. Provide to the DOR a design analysis signed by a Registered Professional Engineer employed by the SSMR manufacturer. The design analysis must include a list of the design loads, and complete

calculations for the roofing system and its components; screw pullout test results, and indicate how expected thermal movements are accommodated.

Design and install SSMR system for a Cold Roof Design as required per the RFP drawings package Appendix A.

B301001 1.4.3 Accessories

Provide other sheet metal flashings, trim moldings, closure strips, caps and other preformed metal panel accessories, of the same material, thickness and finish as panels, except accessories that are concealed after installation, and are aluminum or zinc-coated steel may be provided unfinished. Provide molded closure strips of closed-cell or solid-cell synthetic rubber, neoprene, or polyvinyl chloride premolded to match configurations of preformed metal panels. All accessories must be manufactured or approved by the roof panel manufacturer.

B301001 1.4.4 Fasteners

Provide concealed fasteners for attaching panels to structural supports and to adjoining panels as approved and in accordance with printed manufacturer's recommendations.

Provide self-sealing fasteners for roof hatch and snow guard attachments. Standard neoprene washers with exposed fasteners are not permitted on this project.

B301001 1.4.5 Field Quality Control

Install in accordance with the approved manufacturer's erection instructions, shop drawings, and diagrams. Panels must be in full and firm contact with attachment clips. Where prefinished panels are cut in the field, or where any of the factory applied coverings or coatings are abraded or damaged in handling or installation, they must, after necessary repairs have been made with material of the same color as the weather coating, be approved before being installed. Seal openings through panels. Correct defects or errors in the materials. Replace materials which cannot be corrected in an approved manner with nondefective materials. Provide molded closure strips where necessary to provide weathertight construction. Use shims as required to ensure attachment clip line is true. Use a spacing gage at each row of panels to ensure that panel width is not stretched or shortened. Provide 30-pound layer of asphalt-saturated felt placed perpendicular to roof slope, covered by a slip sheet. Overlap side and end laps 75 mm 3 inches, offset seams in building paper with seams in felt.

Apply roofing panels with the standing seams parallel to the slope of the roof. Provide roofing panels in longest practical lengths from ridge to eaves (top to eaves on shed roofs), with no transverse joints except at the junction of ventilators, curbs,

and similar openings. Install flashing to assure positive water drainage away from roof penetrations. Locate panel end laps such that fasteners do not engage supports or otherwise restrain the longitudinal thermal movement of panels. Attach panels to the structure with concealed clips incorporated into panel seams. Clip attachment must allow roof to move independently of the structure, except at fixed points as necessary.

B301003 ROOF INSULATION & FILL

Coordinate the insulation system with the mechanical design to suit the energy requirements of the facility.

B301003 1.1 MINERAL FIBER BLANKET INSULATION

This paragraph covers the requirements for mineral fiber blanket thermal insulation in attics and above ceilings.

B301003 1.1.1 Products

a. Blanket Insulation - ASTM C 665, Type I, II, or III, as appropriate for the installation, Class A, membrane-faced surface with a flame spread of 25 or less; and a smoke developed rating of 150 or less when tested in accordance with ASTM E 84. Indicate insulation R-values on the design drawings.
b. Blocking – Treated wood, metal, un-faced mineral fiber blankets in accordance with ASTM C665, Type I. Blocking around chimneys and other heat producing devices must be non-combustible and meet the requirements of ASTM E 136.
c. Vapor Retarder - 6 mil (minimum) thick polyethylene sheeting conforming to ASTM D 4397, with a water permeance value of 1 perm or less when tested according with ASTM E 96.

B301003 1.2.6 Underlayment

a. Asphalt-Saturated Felt Base Sheet for Single Layer Application - ASTM D 4869, Type II or ASTM D 226, Type II (30 pounds).
b. Polymer-Modified Self-Adhering Bitumen Sheet, 40 mil (1.1 mm) minimum thickness. Provide at roof perimeter and roof penetration locations as a minimum.

B301003 1.2.7 Seal at Penetrations

Provide pre-manufactured flashing components for use in single-ply roofing applications. Seal laps and penetrations to prevent moisture vapor penetration. Adhesives, sealants, prefabricated components and spray foam products may be required.

B301003 1.2.8 Fasteners

Fasteners must be flat, round or hexagonal steel (not less than 1-3/8"(35 mm) diameter) and 28 gage, or plastic plates (not less than 3 inches (75 mm) in diameter).

Fasteners must be place to withstand an uplift pressure required by the project program in the field of the roof and FM Loss Prevention Data Sheets (LPDS) 1-49 for perimeter component and flashing attachment.

Roofing Nails - Provide corrosion resistant ring shank nails of sufficient length to penetrate a minimum of 1 inch (25 mm) into wood nailers or so as to provide appropriate embedment in substrate below. Fasteners must conform to FM A/S4470, and be placed to withstand an uplift pressure of 90 psf (4.3 kPa) conforming to FM P7825, and FM 1-49 for perimeter fasteners.

B301004 FLASHINGS & TRIM

B301004 1.1 FLASHING AND SHEET METAL

This paragraph covers the requirements for flashing and sheet metal work including scuppers, splash pans, and sheet metal roofing. Provide flashing and sheet metal in accordance with roof manufacturer's printed installation instructions and in compliance with NRCA and SMACNA recommendations.

B301004 1.1.1 Materials

Furnish sheet metal items in minimum 8 to 10 foot (2.44 to 3.05 meter) lengths. Sheet metal items include the following: fascias, soffits; cap, base and eave flashings and related accessories.

a. Copper, Sheet and Strip - ASTM B 370, cold-rolled temper.
b. Lead-Coated Copper Sheet - ASTM B 101
c. Lead Sheet - Minimum weight 4 pounds per square foot (.19 kPa).
d. Steel Sheet, Zinc-Coated (Galvanized) - ASTM A 653/ A 653M. Galvanized steel items must have a baked-on, factory applied finish of polyvinylidene fluoride or an equivalent fluorocarbon coating with a minimum thickness of 0.8 to 1.3 mils.
e. Stainless Steel - ASTM A 167, Type 302 or 304, 2D finish, fully annealed, dead-soft temper.
f. Aluminum Alloy Sheet and Plate - ASTM B 209
g. Pre-Finished Aluminum - Provide trim, gravel stops and fascias of Pre-finished aluminum. Finish must be baked-on factory applied color coating of polyvinylidene fluoride (PVF2) or other equivalent fluorocarbon coating with a minimum thickness of 0.8 to 1.3 mils.

h. Aluminum alloy, Extruded Bars, Rods, Shapes, and Tubes - ASTM B 221
i. Solder - ASTM B 32
j. Polyvinyl Chloride Reglet - ASTM D 1784, Type II
k. Asphalt Primer - ASTM D 41
l. Fasteners - Fasteners must be of the same or compatible metal with the item being fastened. Stainless steel fasteners must be used to fasten dissimilar materials.

B301004 1.1.2 Field Quality Control

Fabrication and installation of sheet metal items must be as follows:

a. Install work with watertight and hairline joints, without waves, warps, buckles, fastening stresses, or distortion, allowing for expansion and contraction.
b. Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry and free of defects and projections that could affect the application.
c. Provide sheet metal flashing in angles formed where roof decks abut walls, curbs, ventilators, pipes, or other vertical surfaces and wherever indicated and necessary to make the work watertight.
d. Provide prefabricated inside and outside corners at all sheet metal intersection pieces. Minimum leg length must be 12 inches (300 mm), maximum length must be 18 inches (450 mm).
e. Fabricate sheet metal to conform to the contours of surfaces to which applied.
f. All sheet metal cap flashings must have waterproof membrane underlayment installed behind or below the metal components.
g. Provide conforming sheet metal closures at all flashing termination conditions.
h. Provide fastenings and accessories as required to provide a securely attached, watertight construction. Cleats must be a minimum of one gage heavier than the component to be attached.
i. Where sheet metal components are to be embedded in the roofing system, prime both sides of all metal flanges prior to installation.

B301006 ROOF OPENINGS AND SUPPORTS

B301006 1.1 GENERAL REQUIREMENTS

Provide flashings for roof openings and supports as recommended by the NRCA and as specified below:

When existing pitch pans cannot be avoided and must be utilized, insure pitch pan is a preformed pan with minimum 4-inch (100 mm) height and 2-inch (50 mm) flange with 2-inch (50 mm) clearance on all sides of the

penetration. Fill bottom 1/3 with non-shrink grout. Fill remainder with pourable elastomeric sealer sloped to drain. For round penetrations, provide a metal umbrella cap clamped to the penetration.

Assure all penetration flashings extend minimum 8 inches (200 mm) above the finished roof surface. Use round shapes to construct equipment supports. Equipment supports should be raised on a continuous curb a minimum of 14 inches (350 mm), but not less than as required by the NRCA.

B301006 1.2 ROOF HATCHES

Construct using NRCA approved techniques and details. Provide roof hatch where required by Occupational Safety and Health Administration (OSHA), as access to roof when roof mounted equipment is used, provide access to the wellheads for the installation and removal of well components and periodic well development efforts, or other routine roof maintenance is required.

B301006 1.2.1 Construction

Provide insulated roof hatches of 14 gage galvanized steel with 22 gage galvanized steel liner or 18 gage aluminum liner, and to also have an integral insulated curb, flange and flashings for securing to roof deck. Hinge must be heavy-duty zinc plated steel with non-removable pins. Latching mechanism must be zinc-coated steel slam latch with inside and outside levers. Springs must be greased compression springs in telescopic tubes. Provide interior locking of roof hatch. Provide a roof fall protection anchor. Size roof hatch to allow access of routine maintenance equipment, but not less than 3'-6" x 3'-6". Hatch must conform to OSHA and other applicable safety standards.

-- End of Section --

SECTION C10

INTERIOR CONSTRUCTION
09/22

C10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

C10 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards that are referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Federal Facility Criteria (FFC) at the Whole Building Design Guide (WBDG) website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the standard at the time of contract award.

C10 1.1.1 Industry Standards and Codes

Sealant, Waterproofing & Restoration Institute

C10 1.1.2 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-101-01, Architecture UFC 3-120-10, Interior Design)
UFC 1-200-02	High Performance and Sustainable Building Requirements

C10 1.2 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Provide verification of satisfactory interior construction assemblies' performance via Performance Verification Testing, as detailed in this section of the RFP. Provide special tests and special inspections in accordance with Part 2 Section 01 45 00, *Quality Control* at no additional cost to the Government.

C10 1.3 DESIGN SUBMITTALS

Provide design submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Award*, UFC 3-101-01, *Architecture*, and UFC 3-301-01, *Structural Engineering*.

C10 1.4 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following submittals as a minimum:

All structural elements necessary for construction

C10 1.5 SUSTAINABILITY

Provide products and systems in accordance with Part 2 Section 01 33 29, *Sustainability Requirements and Reporting*.

C101001 1.5 ROUGH CARPENTRY

Unless otherwise noted, conceal all rough carpentry from view. All framing and board lumber shall be graded and marked by a recognized association or independent inspection agency. Certification of grade is acceptable in lieu of grade markings. Framing lumber such as studs, plates, caps, bucks and nailers must be of the minimum grade for the application in accordance with the grading rules for the local species of framing and board lumber.

C101001 1.5.1 Moisture Content

Air-dry or kiln dry lumber as follows:

a. Framing lumber and boards – 19% maximum
b. Timbers 5" and thicker – 25% maximum

C101001 1.5.3 Structural Lumber

Provide of species and grade as listed in AF&PA 101 that have the following minimum allowable unit stresses: 1050 Fb, 700 Fc with 1,200,000 E (for engineered uses) but not less than required by structural calculations.

C101001 1.5.4 Plywood, Structural

PS-1, PS-2.

a. Plywood (Concealed) - C-D grade, exposure 1 durability classification, span rating of 24/16 or greater.
b. Plywood Shear Walls - Structural I, C-C or C-D grade, and a minimum thickness of 3/4 inch, but not less than required by structural calculations.

C101008 INTERIOR JOINT SEALANT

Sealant joint design and application must be in accordance with the general requirements of *Sealants: A Professionals' Guide* from the Sealant, Waterproofing & Restoration Institute. Refer to manufacturers' recommendations for chemical resistance.

C101008 1.1 JOINT SEALANT TYPES FOR INTERIOR WORK

Sealants must be paintable, and must match the color of adjacent surfaces.

a. Vertical Surfaces - ASTM C 920, Type M, Grade NS, Class 25, Use NT.
b. Horizontal Surfaces - ASTM C 920, ASTM D 1190 for traffic surfaces, Type M, Class 25, Use T.
c. Chemical Resistance - Ensure that all sealants are chemically compatible or resistant to adjacent materials, or materials that may come into contact with the sealants in the course of the building life.

C1030 SPECIALTIES

C103004 IDENTIFYING DEVICES

This paragraph covers all signs, plaques, and traffic markers.

C103004 1.9 EXTERIOR POST AND PANEL SIGNS

C103004 1.9.1 Posts and Panels

Provide one-piece extruded aluminum posts with not less than 0.125 inch wall thickness. Posts must permit attachment of panel framing system. Provide cap for each post. Panel framing system must consist of aluminum extrusions and interlocking track

components designed to interlock with concealed fasteners. Panels must be fabricated of rectangular extruded tubular aluminum with a minimum wall thickness of 0.125 inches. Panels must be removable and interchangeable. Posts must be embedded in solid concrete foundation.

-- End of Section --

SECTION C30

INTERIOR FINISHES
09/22

C30 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

All interior finish products must be from manufacturers' standard running line offerings. Custom fabrications are not permitted unless otherwise noted.

C30 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Federal Facility Criteria (FFC) at the Whole Building Design Guide (WBDG) website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the referenced standard at the time of contract award.

C30 1.1.1 Industry Standards And Codes

TILE COUNCIL OF NORTH AMERICA (TCNA)

C30 1.1.2 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-101-01, Architecture

UFC 3-120-10, Interior Design)

UFC 1-200-02 High Performance and Sustainable Building Requirements

C30 1.4 DESIGN SUBMITTALS

Provide design submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Award*, UFC 3-101-01, *Architecture and UFC 3-120-10, Interior Design*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR must edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS Section Z10, *General Performance Technical Specifications*.

Changes must not be made to the finishes that are submitted in the plans, specifications, and Structural Interior Design submittals and approved by the Government during the design phase unless changes are requested by the Government. In the event that revisions may be required because of unforeseen conditions such as discontinued product, the revisions must be approved by the DOR and then submitted to the Government Interior Designer for approval before substitutions can be made.

C30 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*.

Changes must not be made to the finishes that are submitted and approved by the Government during the design phase. In the event that revisions may be required because of unforeseen conditions such as discontinued product, the revisions must be approved by the DOR and then submitted to the Government Interior Designer for approval before substitutions can be made.

C3010 WALL FINISHES

Provide moisture and mildew resistant interior wall finishes which are easily maintained, and suitable in accordance with industry standards for the architectural surface being finished.

C301090 OTHER WALL FINISHES

C301090 1.3 PLYWOOD SHEATHING

Moisture resistant plywood sheathing with a 3/4” thickness applied to interior walls, no finish required.

C302010 HARDENERS AND SEALERS

C302010 1.1 HARDENED AND SEALED CURE CONCRETE FLOORS

Harden and seal concrete floors in accordance with the finished floor manufacture requirements. Utilize other methods of concrete curing if the floor finish manufacturer does not recommend a chemical hardener or sealer. Concrete floors that can utilize a hardener-sealer and will be exposed to traffic must receive a minimum of two coats of hardener-sealer curing agent for dust protection. These hardener-sealer-cured floors must be finished with a curing agent that must penetrate the concrete to permanently seal the floor against moisture and the penetration of contaminants. The curing agent must be non-toxic, non-flammable, and non-combustible and must be installed in accordance with the manufacturer's printed instructions. The finished floor must be dust-free.

C303090 OTHER CEILING

Moisture resistant plywood sheathing with a 3/4" thickness applied to ceiling, no finish required.

-- End of Section --

SECTION D20

PLUMBING
12/18

D20 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

D20 1.1 NARRATIVE

Use this section in conjunction with all parts of the Design Build (D/B) Request for Proposal (RFP) to determine the full requirements of this solicitation.

This section includes the construction of interior plumbing systems. This section covers installations inside the facility and out to the five foot line. See Section G30, *Site Civil/Mechanical Utilities*, for continuation of systems beyond the five foot line.

D20 1.2 PLUMBING DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

D20 1.2.1 Government Standards

Federal Energy Management Program (FEMP)

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-401-01, Mechanical Engineering UFC 3-420-01, Plumbing Systems)

D20 1.3 DESIGN SUBMITTALS

Submit design submittals in accordance with Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Award*, and UFC 3-401-01, *Mechanical Engineering*.

D20 1.4 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following construction submittals as a minimum:

Fixtures, equipment, and OMSI information for all equipment and fixtures.

D20 1.5 QUALITY CONTROL

Upon completion of the installation test all systems in accordance with the IPC. Refer to PTS section D30 1.3 Performance Verification and Acceptance Testing for additional testing requirements.

D2020 DOMESTIC WATER DISTRIBUTION

D202001 PIPES & FITTINGS

Pipe seals for threaded connections must be PTFE-free.

D202001 1.1 STEEL

Use Schedule 40 black carbon steel, seamless or electric resistance welded, conforming to ASTM A53/A53M for pipe sizes 4 inches or larger. Provide transition union connections or dielectric fittings between ferrous and non-ferrous piping. Water service piping and fittings must conform to NSF 61.

D202001 1.2 STAINLESS STEEL

Use stainless steel tubing and fittings for above ground pipes smaller than 3/4 inches, including gauge and sensor lines. Use Schedule 40 stainless steel, seamless or electric resistance welded, conforming to ASTM A312/A312M. Provide transition union connections or dielectric fittings between ferrous and non-ferrous piping. Water service piping and fittings must conform to NSF 61.

D202001 1.3 HIGH-DENSITY POLYETHYLENE(HDPE)

For underground applications, utilize HDPE DIPS DR11 for all domestic water mains. Pipe must conform to AWWA C151, pressure class 350 or

equivalent. Fittings must conform to AWWA C110 or AWWA C153. Provide transition flanged connections between metallic piping and HDPE piping. Coordinate with civil requirements outlined in section G30.

D202002 VALVES & HYDRANTS

D202002 1.1 VALVES

Provide valves at water supplies to fixtures and to provide ease of maintenance. Provide isolation valves at branch take-offs from the mains. Valves used for potable water and for the well system must conform to NSF 61.

D202002 1.1.1 Butterfly Valves

Ensure butterfly valves conform to MSS SP-67 and are lug style suitable for bi-directional and dead service or the wafer type for mounting between specified flanges. Ensure valves are rated for 150-psig shutoff and nonshock working pressure. Select bodies of cast ferrous metal conforming to ASTM A126, Class B, and to ASME B16.1 for body wall thickness. Seats and seals are fabricated from resilient elastomer designed for field removal and replacement.

D202002 1.1.2 Ball Valves

Ensure ball valves conform to MSS SP-72 for flanged valves and MSS SP-110 for screwed-end valves for Figure 1B vertically split body and 1D three piece body and are rated for service at not less than 175 psig at 200 degrees F. For valve bodies in sizes 2 inches and smaller, use screwed-end connection-type constructed of Class A copper alloy. For valve bodies in sizes 2-1/2 inches and larger, use flanged-end connection type, constructed of Class 150 material. Balls and stems of valves 2 inches and smaller are manufacturer's standard with hard chrome plating finish. Balls and stems of valves 2-1/2 inches and larger are manufacturer's standard Class C corrosion-resistant steel alloy with hard chrome plating. Balls of valves 6 inches and larger may be Class D with 900 Brinell hard chrome plating. Ensure valves are suitable for flow from either direction and seal equally tight in either direction. Valves with ball seals held in place by spring washers are not acceptable. Ensure all valves have adjustable packing glands. Seats and seals are fabricated from tetrafluoroethylene.

D202002 1.1.3 Check Valves

Use cast iron, bronze trim, swing type check valves in sizes 2-1/2 inches and larger. Ensure valve bodies are cast iron, conforming to ASTM A126, Class A and valve ends are flanged in conformance with ASME B16.1. Swing-check pin is AISI Type or approved equal corrosion-resistant steel. Angle of closure is manufacturer's standard unless a specific angle is needed. Ensure valves have bolted and gasketed covers.

D202002 1.1.4 Nonslam Check Valves

Provide check valves at pump discharges in sizes 2 inches and larger with nonslam or silent-check operation conforming to MSS SP-125. Select a valve disc or plate that closes before line flow can reverse to eliminate slam and water-hammer due to check-valve closure. Ensure valve is Class 125 rated for 200-psi maximum, nonshock pressure at 150 degrees F in sizes to 12 inches. Use valves that are fitted with flanges conforming to ASME B16.1. Valve body may be cast iron, or equivalent strength ductile iron. Select disks using manufacturer's standard bronze, aluminum bronze, or corrosion-resistant steel. Ensure pins, springs, and miscellaneous trim are manufacturer's standard corrosion-resistant steel. Disk and shaft seals are Buna-N elastomer tetrafluoroethylene.

D202002 1.1.5 Drain, Vent, and Gage Cocks

Provide ball valves, 1/2-inch ips, end threaded.

D202003 DOMESTIC WATER EQUIPMENT

D202003 1.1 PUMPS

D202003 1.1.1 Submersible Well Pumps

Submersible type with capacity sufficient to deliver design water flow to the top of the existing water tower. The existing water tower is approximately 185 feet tall and the height difference between the bottom of the new wells and the top of the water tower is estimated to be approximately 450 feet; refer to civil drawings and documents for additional information. Motor must be of sufficient size to operate the pump under the maximum operating conditions without exceeding its rating. Equip the pump with necessary controls to provide for automatic operation of the pump. Provide variable frequency drive pump operation. Pump and motor unit must be no larger than well diameter at any point. Provide positive sealing, built-in check valve at discharge head. Provide stainless steel suction strainer.

D202003 1.2 FLOW METERS

Provide insertion type magnetic flowmeters with all installation hardware necessary to enable insertion and removal of the meter without system shutdown. All parts must meet or exceed the pressure classification of the pipe system it is installed in. Flowmeter accuracy must be no greater than plus or minus 1 percent of rate from 2 to 20 feet/sec. Wetted material parts must be 300 series stainless steel. The flowmeter must include either dry contact pulse outputs, 4-20mA, 0-10Vdc or 0-5Vdc outputs.

D202004 INSULATION & IDENTIFICATION

D202004 1.1 PIPING INSULATION

Mineral fiber insulation on domestic hot water supply and recirculation piping. Insulate domestic cold water piping with cellular glass insulation. Insulation thickness must be no less than Code minimum required thickness and must prevent condensation form forming on piping, fittings, and equipment.

D202004 1.2 PIPING & EQUIPMENT IDENTIFICATION

In addition to the requirements in Section Z10, *General Performance Technical Specification*, provide engraved brass, laminated plastic, or engraved anodized aluminum nameplates for valves. Stop valves in supplies to fixtures will not require nameplates. Identify above ground pipe with the type of service and direction of flow. Letter size, lengths and colors to be in accordance with ANSI A13.1.

D202090 OTHER DOMESTIC WATER SUPPLY

D202090 1.1 SUPPORTS

Provide piping supports. If a supported floor slab is used, support all piping located below the building from the building support slab.

D202090 1.2 INSPECTIONS

Prior to initial operation, inspect piping system for compliance with drawings, specifications, and manufacturer's submittals.

D202090 1.3 DISINFECTION

Upon completion of the installation, disinfect all systems.

D2030 SANITARY WASTE

D203001 WASTE PIPE & FITTINGS

D203001 1.1 PIPING AND FITTINGS

Cast iron hub and spigot pipe and fittings, rubber compression gasket joints or cast-iron hubless pipe and fittings, CISPI 301 with CISPI 310 couplings. Where indicated in ESR Section D20, plastic PVC or ABS piping, fittings, and solvent cement meeting requirements of ASTM D 2665 or ASTM D 2661 may be provided. Equip plastic piping with approved firestopping devices as required by Code.

D203001 1.2 CLEANOUTS

Provide cleanouts. Utilize material consistent with the piping system

materials. Do not locate sanitary cleanouts within occupied spaces, with the exception of toilet and janitor spaces.

D203002 VENT PIPE & FITTINGS

Cast-iron hubless pipe and fittings, CISPI 301 with CISPI 310 couplings. Where indicated in ESR Section D20, plastic PVC or ABS piping, fittings, and solvent cement meeting requirements of ASTM D 2665 or ASTM D 2661. Equip PVC piping with approved firestopping devices as required by code.

D203003 FLOOR DRAINS

Flush strainer or extended rim type; provide with nickel bronze heel-proof strainer. Provide in well houses.

-- End of Section --

SECTION D30

HVAC
06/23

D30 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Specifications (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

D30 1.1 NARRATIVE

This section includes the construction of interior mechanical systems. This section covers installations inside the facility and out to the five foot line. See Section G30, *Site Civil/Mechanical Utilities*, for continuation of systems beyond the five-foot line.

D30 1.2 MECHANICAL DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

D30 1.2.1 Government Standards

Federal Energy Management Program (FEMP)

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-401-01, Mechanical Engineering UFC 3-420-01, Plumbing Systems)
UFC 1-200-02	High Performance and Sustainable Building Requirements

UFC 3-440-01	Facility-Scale Renewable Energy Systems

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS 01 78 24.00 20	Facility Data Workbook (FDW)
UFGS 23 05 93	Testing, Adjusting, and Balancing for HVAC
UFGS 23 09 00	Instrumentation and Control for HVAC
UFGS 23 09 23.02	BACnet Direct Digital Control for HVAC and Other Building Control Systems
UFGS 23 09 13	Instrumentation and Control Devices for HVAC

D30 1.3 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

a. Verification of satisfactory HVAC system performance must be via Performance Verification Testing, as detailed in this section.

b. The Government reserves the right to witness all Acceptance Tests and Inspections, review data, and request other such additional inspections and repeat tests as necessary to ensure that the system and provided services conform to the stated requirements. Performance Verification Testing of the well house pumps and associated controls and integration into the existing Water Telemetry Control System (WTCS) must be witnessed by the Contracting Officer’s Representative.

c. The Qualified Testing Organization must provide the Acceptance Tests and Inspections test plan and perform the acceptance tests and inspections. Perform and evaluate test methods, procedures, and test values in accordance with appropriate standards, and the manufacturer's recommendations. Place equipment in service only after completion of required tests and evaluation of the test results have been completed. Supply to the testing organization complete sets of shop drawings, settings of adjustable devices, and other information necessary for an accurate test and inspection of the system prior to the performance of any final testing. Perform acceptance tests and inspections on Computer Room Air Conditioning Units, Direct Digital Control System, and HVAC Testing/Adjusting/Balancing.

d. Performance Verification Testing must be performed on the following equipment: unit heaters, ventilation fans, and well house pumps, including the integration of well house pump controls into the existing WTCS.

D30 1.4 HVAC TESTING REQUIREMENTS

HVAC system testing must coordinate with and incorporate the testing, reporting, training & O&M documentation requirements of UFGS 23 05 93, *Testing, Adjusting, and Balancing for HVAC;* UFGS 23 09 00, *Instrumentation and Control for HVAC*; UFGS 23 09 23.02, *BACnet Direct Digital Control for HVAC and Other Building Control Systems* and UFGS 23 09 13, *Instrumentation and Control Devices for HVAC*.

D30 1.5 DESIGN SUBMITTALS

Submit design Submittals in accordance with Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Award*, and UFC 3-401-01, *Mechanical Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR must edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS section Z10, *General Performance Technical Specifications*.

UFGS 01 78 24.00 20, *Facility Data Workbook (FDW)*

UFGS 23 09 00, *Instrumentation and Control for HVAC*

UFGS 23 09 23.02, *BACnet Direct Digital Control for HVAC and Other Building Control Systems*

UFGS 23 09 13, *Instrumentation and Control Devices for HVAC*

UFGS 23 09 53.00 20, *Space Temperature Control Systems*

UFGS 23 05 93, *Testing, Adjusting, and Balancing for HVAC*

D30 1.6 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following construction submittals as a minimum:

OMSI information for all equipment.

D30 1.7 MOTORS

High efficiency single-phase fractional-horsepower alternating-current motors, corresponding to the applications listed in NEMA MG 11. Select polyphase motors based on high efficiency characteristics relative to the applications as listed in NEMA MG 10. Additionally, all polyphase squirrel-cage medium induction motors with continuous ratings must meet

or exceed energy efficient ratings in accordance with Table 12-10 of NEMA MG 1. Provide controllers for 3-phase motors rated 1 hp (0.75 kW) and above with phase voltage monitors designed to protect motors from phase loss and over/under-voltage. Provide means to prevent automatic restart by a time adjustable restart relay.

D3040 DISTRIBUTION SYSTEMS

D304001 AIR DISTRIBUTION, HEATING & COOLING

D304001 1.1 DUCTWORK

Except as specified herein, provide ductwork constructed, braced, reinforced, installed, supported, and sealed in accordance with SMACNA standards.

D304001 1.1.1 Flexible Connections

Provide flexible connectors between fans and ducts.

D304001 1.1.2 Motorized Control Dampers

Provide parallel-blade or opposed blade type dampers. Blades must have interlocking edges. The channel frames of the dampers must be provided with jamb seals to minimize air leakage. Unless otherwise indicated, dampers must meet AMCA 511 Class 1A requirements. Outside air damper seals must be suitable for an operating temperature range of -40 to +167 degrees F. Dampers must be rated at not less than 2000 ft/min air velocity. Provide dampers which do not exceed a pressure drop through the damper of 0.04 inches water gauge at 1000 ft/min in the wide-open position. Provide dampers with frames not less than 2 inch in width. Provide dampers which have been tested in accordance with AMCA 500-D. Damper actuators must provide the torque necessary per damper manufacturer's instructions to modulate the dampers smoothly over its full range of operation and torque must be at least 6 inch-pounds/1 square foot of damper area for opposed blade dampers and 9 inch-pounds/1 square foot of damper area for parallel blade dampers.

D304001 1.2 LOUVERS & HOODS

D304001 1.2.1 Louvers

Louvers must bear AMCA ratings seal for air performance and water penetration in accordance with AMCA 500L and AMCA 511. Louvers must be constructed of anodized aluminum alloy or stainless steel. Provide birdscreens. Provide motorized dampers.

Maximum face velocity through exhaust louvers must not exceed 750 feet per minute (FPM). Maximum face velocity through intake louvers must not exceed 500 FPM.

D304001 1.3 GRILLES, REGISTERS, & DIFFUSERS

Factory-finished grilles, registers, and diffusers. Exterior and exposed edges must be rolled, or otherwise stiffened and rounded.

D304001 1.4 INSULATION

Provide external thermal insulation for all ductwork. Insulate ductwork in Mechanical Rooms and exposed locations with rigid mineral fiber insulation.

Provide insulation with factory applied all-purpose jacket with integral vapor retarder. In exposed locations, provide a jacket with white surface suitable for painting. Flame spread/smoke developed rating for all insulation must not exceed 25/50. Minimum insulation thickness must be the minimum thickness required by ASHRAE 90.1.

D304007 EXHAUST SYSTEMS

D304007 1.1 FANS

AMCA 210 certified, with AMCA seal. Provide bird screens for outdoor inlets and outlets. Provide direct-drive type fans with means for verifying operation via the building DDC system or with speed controllers. Provide motorized dampers.

D304007 1.2 IN-LINE FANS

UL-Listed centrifugal fans.

D3050 TERMINAL & PACKAGE UNITS

D305005 ELECTRIC HEATING

D305005 1.1 UNIT HEATERS

Factory assembled, UL-1025, unit heaters.

D305005 1.3 WALL HEATERS

Factory assembled, UL-1025, cabinet heaters.

D3060 CONTROLS AND INSTRUMENTATION

D306001 HVAC CONTROLS

D306001 1.1 DIRECT DIGITAL CONTROLS

Provide the following as directed in ESR Section D30.

a. Provide a partial direct digital control (DDC) system that will communicate with the existing Base DDC system. If using BACnet protocol, comply with the requirements specified in UFGS Sections

23 09 00, *Instrumentation and Control for HVAC*, 23 09 23.02, *BACnet Direct Digital Control for HVAC and Other Building Control Systems*, and 23 09 13, *Instrumentation and Control Devices for HVAC*. Notwithstanding any other provisions of this Contract, no other product will be acceptable other than that indicated in ESR Section D30. Provide a distributed control system. Integrate all new DDC points on the existing server providing a seamless logical flow from the existing facilities to the new integrated facility.

The Designer of Record must use UFGS Sections 23 09 00, 23 09 23.02, and 23 09 13 if using BACnet protocol, and submit the edited specification sections as a part of the project design submittal.

Design requirements must be in accordance with all specification notes and the BAS Owner must be identified and designated early in the design documentation.

The controls system for the well pumps must be fully integrated into the existing Water Telemetry Control System (WTCS). The existing system is a Trane Tracer SC+ system, and any new programmable logic controllers, input/output modules, and software, software licensing, and programming required for controls integration must be provided by the manufacturer of the existing Trane control system. Utilize the Supervisory Control and Data Acquisition (SCADA) communication network to transmit control signals from the well house to the existing WTCS central controller. See the electrical Engineering System Requirements (ESR) and Performance Technical Specifications (PTS) for communication cabling requirements. Provide trending, scheduling and alarm tables (may be included with the sequence of operation). Use alarming and trending services during performance testing. Alarm every sequence routine when out-of-limits or control/response failure occurs. Display all graphic floor plans, equipment graphics, DDC ladder diagrams, and sequence of operations graphic pages. Coordinate control of the submersible well pumps with the existing Base-wide water distribution sequence of operations. Coordinate final points lists with the Owner. See table below for minimum expected points available at the WTCS for the new well houses:

Point Name	**Point Type**	**Alarm**
Panel Temp	Analog Input	YES
Well House Space Temp	Analog Input	
Well Flowmeter GPM	Analog Output	
H_O_A in Hand	Universal Input	
H_O_A in Auto	Universal Input	
Well Pump Start/Stop	Digital Output	

Point Name	Point Type	Alarm
Well Pump Run Status	Digital Input	YES
Well Pump VFD Speed Command	Analog Output	
Well Pump VFD Speed	Analog Input	YES
Well Pump VFD Power	Analog Output	
Well Pump VFD Fault	Digital Input	YES
Tank 01 Level (ft)	Analog Input	
Well Level Set Point	Analog Output	
Well Level Deadband	Analog Output	
Well Low Flow setpoint	Analog Output	
Well low flow time setpoint	Analog Output	
Well fail time setpoint	Analog Output	
Well not in auto time setpoint	Analog Output	YES
Well GPM setpoint	Analog Output	
Well speed override value	Analog Output	
Well Pump fail reset	Digital Output	YES
Well Pump Low flow reset	Digital Output	YES
Plant Shutdown Reset	Digital Output	YES
Well not in auto reset	Digital Input	YES
Well override mode	Digital Input	
Well override value	Analog Output	
Well speed override value	Analog Output	
UV Failure	Digital Input	YES
High Chlorine Alarm	Digital Input	YES
Low chlorine alarm	Digital Input	YES

Point Name	Point Type	Alarm
High Fluoride alarm	Digital Input	YES
Plant Shutdown	Digital Output	YES

All 120-volt wiring must comply with NFPA 70. All 24-volt wiring must comply with the IMC and terminal device manufacturer's recommendations.

Provide training on the installed system according to the maximum training days in UFGS 23 09 00, UFGS 23 09 23.02, and UFGS 23 09 13. Demonstrate all operator workstation functions requiring BACnet services, including but not limited to navigating through the graphic displays, trending, alarming and monitoring of the new controls system from the existing operator workstation using only the existing application software and without the need to launch other applications or logon to other vendor applications. Demonstration of operator functions related to the well house pump control must be witnessed by the Contracting Officer's Representative.

D306001 1.2 ELECTRONIC CONTROLS

Provide programmable thermostats with built in keypads for scheduling of day and night temperatures with two setback periods per day. Provide independent summer and winter programs. Thermostats must have temporary and manual override of schedule and setpoint, and 24-volt primary power with battery backup.

D3070 SYSTEMS TESTING AND BALANCING

D3070 1.1 HVAC SYSTEM

Provide HVAC systems and domestic water systems testing and balancing that complies with the requirements specified in UFGS Specification Section 23 05 93, *Testing, Adjusting, and Balancing for HVAC*. The Designer of Record must prepare UFGS Specification Section 23 05 93, as a part of the project specification and include the prepared specification section in the design submittal for the project.

D3090 OTHER HVAC SYSTEMS AND EQUIPMENT

D309001 GENERAL CONSTRUCTION ITEMS

D309001 1.1 SEISMIC DESIGN

Provide in accordance with UFC 3-401-01, *Mechanical Engineering*.

-- End of Section --

SECTION D50

ELECTRICAL
09/22

D50 GENERAL

RFP Part 3, including the Engineering System Requirements (ESR) provides project specific requirements. The RFP Part 4, Performance Technical Specifications (PTS), provides generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

D50 1.1 NARRATIVE

This section covers installations inside the facility and out to the five foot line. See PTS Section G40, *Site Electrical*, for continuation of systems beyond the five foot line.

D50 1.2 ELECTRICAL DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

When all product Quality Control information is included in the Unified Facility Criteria (UFC) and there are requirement options identified in the ESR, then the Uniformat Level 4 titles (and possible subtitles) are included without additional verbiage. One example of this is D501090, OTHER SERVICE AND DISTRIBUTION.

D50 1.2.1 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-501-01, Electrical Engineering)
UFC 1-200-02	High Performance and Sustainable Building Requirements

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS 26 08 00	Apparatus Inspection and Testing
UFGS 26 20 00	Interior Distribution System
UFGS 26 29 23	Adjustable Speed Drive (ASD) Systems Under 600 Volts
UFGS 26 32 15.00	Engine-Generator Set Stationary 15-2500 kW, with Auxiliaries
UFGS 26 51 00	Interior Lighting
UFGS 27 10 00	Building Telecommunications Cabling System

FT DRUM STANDARDS

All applicable Fort Drum Standards

D50 1.3 QUALITY ASSURANCE

Submit Qualifications, Certifications, and Test Plans indicated herein 45 calendar days prior to the expected date of execution. Notify the Contracting Officer 14 calendar days prior to all testing. Submit test results within 7 calendar days of completion of testing.

The Designer of Record is responsible for approving the submittals listed below.

D50 1.3.1 Qualified Testing Organization

Engage the services of a qualified testing organization to provide inspection, testing, calibration, and adjustment of the electrical distribution system and equipment listed in paragraph entitled "Acceptance Tests and Inspections" herein. Organization must be independent of the supplier, manufacturer, and installer of the equipment. The organization must be a first tier subcontractor.

Submit name and qualifications of organization. Organization must have been regularly engaged in the testing of electrical materials, devices, installations, and systems for a minimum of 5 years. The organization must have a calibration program, and test instruments used must be calibrated in accordance with NETA ATS.

Submit name and qualifications of the lead engineering technician performing the required testing services. Include a list of three comparable jobs performed by the technician with specific names and telephone numbers for reference. Testing, inspection,

calibration, and adjustments must be performed by an engineering technician, certified by NETA or the National Institute for Certification in Engineering Technologies (NICET) with a minimum of 5 years' experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices.

D50 1.3.2 NEC Qualified Worker

Provide in accordance with NFPA 70. Qualified Workers are allowed to be assisted by helpers on a 1 to 1 ratio, provided such helpers are registered in recognized apprenticeship programs. Submit a certification confirming NEC Qualified Worker

D50 1.3.3 Qualified Telecommunications Worker

All installers assigned to the installation of telecommunications systems or any of its components must be Building Industry Consulting Services International (BICSI) Registered Cabling Installation Technicians or have a minimum of 3 years experience in the installation of the specified copper and fiber optic cable and components. Include names and locations of two projects successfully completed using optical fiber and copper communications cabling systems. Include written certification from users that systems have performed satisfactorily for not less than 18 months. Include specific experience in installing and testing structured telecommunications distribution systems using optical fiber and Category 5e cabling systems.

D50 1.3.4 Material Standards

Ensure service support and provide manufacturer's nameplate in accordance with PTS Section Z10, *General Performance Technical Specification*.

D50 1.3.4.1 Warning Labels

Provide arc flash warning labels in accordance with UFC 3-560-01, *Electrical Safety, O & M*.

D50 1.3.4.2 Field-Required Nameplates

Provide laminated plastic nameplates for each switchboard, switchgear, panelboard, equipment enclosure, motor controller, relay, and switch. Each nameplate must identify the function and, when applicable, the position. Provide melamine plastic nameplates, 0.125 inch (3 mm) thick, white with black center core. Surface to be matte finish with square corners. Accurately align lettering and engrave into the core. Minimum size of nameplates is 1-inch by 2-1/2 inches (25 mm by 65 mm). Minimum size of lettering is 0.25 inch (6.35 mm) high normal block style.

D50 1.3.5 Factory Testing

The Government reserves the right to witness all factory testing. The manufacturer must have a calibration program that assures that all test instruments are maintained within rated accuracy.

D50 1.3.6 Electrical System Startup and Testing

Submit test plans for approval. Tailor test plans to the systems provided.

As part of the test plan, list make and model and provide functional description of the test instruments and accessories and describe the setup of the tests to be conducted. Test instruments must be capable of measuring and recording or displaying test data at a higher resolution and greater accuracy than specified for the equipment's performance.

D50 1.3.6.1 Factory Trained Engineer

Provide a factory trained engineer to supervise start-up and testing as required in referenced specifications.

D50 1.3.6.2 Performance Verification Testing

Perform in-service demonstration that all circuits and devices are in operating condition. Tests must confirm that each item of control equipment will function not less than five times. Provide all necessary test equipment, tools, fuel, load banks, labor, and materials for testing. As a minimum, test all systems in accordance with manufacturer's recommendations. Additional testing requirements for the various systems are described with those systems, hereinafter. Assure that all test instruments are maintained within rated accuracy. Dated calibration labels are to be visible on all test equipment.

Submit a separate electrical field test plan in accordance with manufacturer's recommendations and that conforms to NETA ATS for each piece of Electrical Distribution Equipment and System requiring Performance Verification Testing.

The following items identify specific test requirements. Additional test requirements are contained in the applicable UFGS.

a. Panelboards - Field test each GFI and AFI circuit breaker with a UL 1436-certified outlet circuit tester to verify correct operation.
b. Motor control centers - Test motor control centers and motor starters in accordance with NETA ATS.
c. Surge Protective Devices (SPD) -

1) Inspect for physical damage and compare nameplate data with the drawings and specifications, if applicable. Verify from the nameplate data that the SPD equipment is appropriate for the system voltage.

2) Verify lead length between the SPD equipment and the circuit connection is less than one foot.

3) Verify wiring between the SPD equipment and the circuit connection does not include high-inductance coils or sharp bends.

4) Confirm circuit breaker used for SPD circuit connection is sized in accordance with SPD manufacturer's requirements.

5) Ensure SPD equipment is grounded in accordance with SPD manufacturer's requirements. Check the ground lead on each device for individual attachment to the ground bus or electrode.

6) Check tightness of connections in accordance with NETA ATS.

7) For SPD equipment with visual indications of proper operation, verify that it displays normal operating characteristics.

d. Busway – Conduct standard tests for busway in accordance with NETA ATS.

e. Receptacles – Test GFI receptacles with a UL 1436-certified outlet circuit tester to verify correct operation.

f. Lighting - Aim photocell switches and locate light level sensors in accordance with the manufacturer's recommendations. Verify that equipment operates in accordance with user's requirements and in accordance with manufacturer’s recommendations. Fluorescent lamps on electronic dimming ballast control must be burned in at full light output for 100 hours before dimming.

g. Telecommunication - Test telecommunications systems in accordance with applicable EIA/TIA requirements.

h. Emergency lighting - Test emergency lighting that is intended for means of egress in accordance with NFPA 101, Section 5-9. Confirm the emergency lighting system operates for a minimum of 90 minutes and emergency illumination satisfies NFPA 101, Section 5-9, specified levels.

D50 1.3.6.3 Acceptance Tests and Inspections

The Government reserves the right to witness all Acceptance Tests and Inspections, review data, and request other such

additional inspections and repeat tests as necessary to ensure that the system and provided services conform to the stated requirements.

The Qualified Testing Organization must provide the Acceptance Tests and Inspections test plan and perform the acceptance tests and inspections. Test methods, procedures, and test values must be performed and evaluated in accordance with NETA ATS, the manufacturer's recommendations, and paragraph entitled "Field Quality Control" of each applicable specification section. Tests identified as optional in NETA ATS are not required unless otherwise specified. Place equipment in service only after completion of required tests and evaluations of the test results have been completed. Contractor must supply to the testing organization complete sets of shop drawings, settings of adjustable devices, and other information necessary for an accurate test and inspection of the system prior to the performance of any final testing. Perform acceptance tests and inspections on Diesel-Electric Generators, Uninterruptible Power Supply (UPS) Systems, Automatic Transfer Switches, and Switchboards and Switchgear.

D50 1.4 DESIGN SUBMITTALS

Submit design submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Award*, and UFC 3-501-01, *Electrical Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR must edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS Section Z10, *General Performance Technical Specifications*.

UFGS 26 08 00, *Apparatus Inspection and Testing*

UFGS 26 20 00, *Interior Distribution System*

UFGS 26 29 23, *Adjustable Speed Drive (ASD) Systems Under 600 Volts*

UFGS 26 32 15.00, *Engine-Generator Set Stationary 15-2500 kW, with Auxiliaries*

UFGS 26 51 00, *Interior Lighting*

UFGS 27 10 00, *Building Telecommunications Cabling System*

D50 1.4.1 Sustainable Design Submittal

Submit sustainable design submittals in accordance with Part 2 Section 01 33 29, *Sustainability Requirements and Reporting*.

D50 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the PTS Section Z10 requirements, the Designer of Record (DOR) must approve the following construction submittals as a minimum:

Electrical Equipment, OMSI information for equipment, and Quality Assurance Submittals listed above.

Provide certification that all adjustable protective device settings have been set in accordance with the coordination study for the as-built equipment and configuration.

D50 1.5.1 Sustainable Construction Submittal

Submit sustainable construction submittals in accordance with Part 2 Section 01 33 29, *Sustainability Requirements and Reporting*.

D5010 ELECTRICAL SERVICE AND DISTRIBUTION

D501001 MAIN TRANSFORMERS

Provide pad mounted distribution transformers in accordance with PTS Section G40, *Site Electrical Utilities*.

D501002 SERVICE ENTRANCE EQUIPMENT

D501003 INTERIOR DISTRIBUTION TRANSFORMERS

D501004 PANELBOARDS

Provide panelboards that comply with UL 67 and UL 50. UL 869A applies if used as service entrance equipment. Panelboards for non-linear loads must be UL listed, including heat rise tested, in accordance with UL 67, except with the neutral assembly installed and carrying 200 percent of the phase bus current during testing.

Provide molded case circuit breakers in accordance with UL 489. Ground fault circuit interrupting circuit breakers must comply with UL 943. Arc fault circuit breakers must comply with UL 489 and UL 1699.

D501005 ENCLOSED CIRCUIT BREAKERS

Provide molded case circuit breakers in accordance with UL 489. UL 869A applies if used as service entrance equipment. Provide with solid neutral

when grounded conductor is present.

D501006 MOTOR CONTROL CENTERS

Provide motor control centers that comply with UL 845, NEMA ICS 2, and NEMA ICS 3. Motor controllers must comply with UL 508. Provide disconnecting means capable of being locked out for machines and other equipment to prevent unexpected startup or release of stored energy in accordance with 29 CFR 1910.147.

D501006 1.1 VARIABLE FREQUENCY DRIVES (VFD)

When Variable Frequency Drives are required, the Designer of Record must utilize UFGS Section 26 29 23 for the project specification, and submit the edited specification section as a part of the design submittal for the project.

D501090 OTHER SERVICE AND DISTRIBUTION

D501090 1.1 SURGE PROTECTIVE DEVICE (SPD)

D5020 LIGHTING AND BRANCH WIRING

D502001 BRANCH WIRING

Provide wiring and connections for special outlets where required.

All homerun circuits must contain no more than 3 phase conductors.

Provide switches that comply with NEMA WD-1 and UL 20.

D502002 LIGHTING EQUIPMENT

Install in accordance with manufacturer's recommendations and the additional requirements for "Severe Seismic Disturbance" contained in ASTM E 580. Fixture support wires must conform with ASTM A 641/A 641M, galvanized regular coating, soft temper.

D5030 COMMUNICATIONS AND SECURITY

D503001 TELECOMMUNICATIONS SYSTEMS

The contractor must use Juniper switches in all the well house data racks without substitution. Part numbers must be Juniper EX4100-F-12P Fanless Switch with Juniper EX4100-F-12-RME Rack Mounted Ears. Quantity of 5 each.

D509001 GENERAL CONSTRUCTION ITEMS (ELECTRICAL)

D509002 EMERGENCY LIGHTING AND POWER

D509002 1.1 EMERGENCY LIGHTING

D509002 1.2 EMERGENCY GENERATORS

When an emergency generator is required, the Designer of Record must utilize UFGS Section 26 32 15.00 for the project specification, and submit the edited specification section as a part of the design submittal for the project.

D509003 GROUNDING SYSTEMS

D509005 ELECTRIC HEATING

D509006 ENERGY MANAGEMENT CONTROL SYSTEM

D509007 1.4 OPERATORS MANUALS AND TRAINING

Operators manuals for each system component must include detailed instructions on how to operate the system, programming and installation instructions, emergency operating procedures, default program values and set points, listing of field programmed variables and set points, equipment wiring diagrams, product model number, with Name, Address and Telephone number of local representative, and starting, operating, and shut down procedures. Include normal and emergency shut down procedures, schedule of maintenance work, if any, recommended cleaning agents and methods, replacement parts list, including internal fuses, and warranty information.

Provide a formal 2-hour on-site training session instructing operators in the operation and maintenance of the new system, including operation and maintenance of inverters, disconnects and other system components. Instruct personnel in removal and installation of panels, including wiring and all connections. At the time of training furnish, for the equipment specified, operation and maintenance manuals, record drawings and recommended spare parts lists identifying components adequate for competitive supply procurement for operation and maintenance of system.

D509007 1.5 FIELD QUALITY CONTROL

Schedule connection of the photovoltaic system with the Contracting Officer such that the Contracting Officer can be present when the photovoltaic system is tied to the grid.

Provide test plan that meets the requirements of IEC 62446. Test plan must include expected values for testing. Provide test results.

Tests must include the following:

a. Verify that non-current carrying metal parts are grounded.
b. Verify that all components are labeled.
c. Verify mounting supports are installed properly, and all fasteners are installed correctly and torqued to manufacturer's instructions.
d. Test open circuit voltage of each string in full sunlight.
e. Test output of inverter. Measure solar irradiance. Perform calculations to show inverter output is consistent with the

expected performance.

--End Of Section--

SECTION G10

SITE PREPARATION
09/22

G10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

G10 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Federal Facility Criteria (FFC) at the Whole Building Design Guide (WBDG) website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the referenced standard at the time of contract award.

G10 1.1.1 Industry Standards and Codes

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

Refer to UMRL for reference designation identification.

G10 1.1.2 Government Standards

CORPS OF ENGINEERS (COE)

COE EM 385-1-1	Safety and Health Requirements Manual

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01

requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s):
UFC 1-200-02, High Performance and Sustainable Building Requirements
UFC 3-201-01, Civil Engineering
UFC 3-220-01, Geotechnical Engineering)

UFC 3-250-09FA	Aggregate Surfaced Roads and Airfields Areas, January 16, 2004
UFC 3-260-01	Airfield and Heliport Planning and Design, Change 1, May 5, 2020

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS 31 00 00	Earthwork
UFGS 01 57 19	Temporary Environmental Controls
UFGS 02 61 13	Excavation and Handling of Contaminated Material
UFGS 02 61 23	Removal and Disposal of PCB Contaminated Soils

G10 1.2 PERFORMANCE VERIFICATION AND ACCEPTABLE TESTING

Compliance with the requirements will be determined by a review of the design and construction submittals and by field inspection. See Part 2 Section 01 33 16.00 10, *Design After Award*, and Part 2 Section 01 33 00.05 20, *Construction Submittal Procedures*, for additional requirements. Verify earthwork performance via testing detailed in the paragraph, "Field Quality Control", in UFGS Section 31 00 00, Earthwork.

G10 1.3 DESIGN SUBMITTALS

Submit design submittals in accordance with Part 2 Section 01 33 16.00 10, *Design After Award*, UFC 3-201-01, *Civil Engineering*, and UFC 3-220-01, *Geotechnical Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design

submittal. If the UFGS products or systems are applicable to the project, the DOR is required to edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS section Z10, *General Performance Technical Specifications*.

UFGS 31 00 00, *Earthwork.*

Provide sustainability submittals in accordance with Part 2 Section 01 33 29, *Sustainability Requirements and Reporting*.

G10 1.4 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) is required to approve the following construction submittals as a minimum:

Submittals in Part 2 UFGS Section 01 57 19, *Temporary Environmental Controls.*

Submittals in UFGS Section 02 61 13, *Excavation and Handling of Contaminated Material*

Submittals in UFGS Section 31 00 00, *Earthwork*.

Submittals in UFGS Section 02 61 23, *Removal and Disposal of PCB Contaminated Soils.*

Submittals in UFGS Section 02 65 00, *Underground Storage Tank Removal.*

Waste Management Plan in accordance with Part 2 UFGS Section 01 74 19, *Construction Waste Management and Disposal*.

Provide sustainability submittals in accordance with Part 2 UFGS Section 01 33 29, *Sustainability Requirements and Reporting*.

G10 1.5 GEOTECHNICAL REPORT

G10 1.5.1 Subsurface Soils Information

Provided subsurface soil information is included for the Contractor's information only, and is not guaranteed to fully represent all subsurface conditions. The data included in this RFP is intended for proposal preparation and preliminary design only. Perform, at the Contractor's expense, such subsurface exploration, investigation, testing, and analysis for the design and construction of the site improvements.

G10 1.5.2 Contractor-provided Geotechnical Engineer

The Contractor-provided Geotechnical Engineer is required to be experienced with soil conditions in the region where the project

site is located. The Geotechnical Engineer is required to evaluate the RFP data, obtain and evaluate additional data to support the design and construction, and prepare a Geotechnical Report.

Coordinate work by the Contractor-provided Geotechnical Engineer at the project location with the Contracting Officer so as not to interfere with normal base operations. A minimum of two weeks prior to the Foundation Work Design submittal, provide the Contractor's Geotechnical Report (a searchable Adobe Acrobat PDF version on CD and two printed copies) for review and record keeping purposes. The report will become the property of the Government. Provide the geotechnical reports generated during construction, such as pile driving results and analysis, to the Contracting Officer. In addition, provide a searchable Adobe Acrobat PDF version and two printed copies for record keeping purposes.

G10 1.5.3 Contractor-Provided Geotechnical Report

Submit a written Geotechnical report based upon Government-provided subsurface investigation data and additional field and laboratory testing accomplished at the discretion of the Contractor's Geotechnical Engineer. Include in the Geotechnical Report all requirements listed in UFC 3-220-01, *Geotechnical Engineering*, paragraph entitled "Section 1803 Geotechnical Investigations"; in addition, include the following:

a. The project site description, vicinity map and site map indicating the location of borings and any other sampling locations. Provide 24 hour groundwater observations for at least 20 percent of the borings, minimum one boring. Provide notes explaining any abbreviations or symbols used and describing any special site preparation requirements.

b. Results of field and laboratory testing, whether Government or Contractor-provided. Address existing subsurface conditions, selection and design of the foundation and floor slab, underground construction including utility installation and other site specific requirements (such as soil stabilization and slope stability).

c. Engineering analysis, discussion and recommendations Addressing:

1) Settlement analysis - Limit settlement in accordance with UFC 3-220-01 *Geotechnical Engineering* and EM 1110-1-1904 "Settlement Analysis".

2) Bearing Capacity analysis.

3) Foundation selection (shallow, deep, special) and construction considerations; dimensions, and installation procedures.

4) Site preparation (earthwork procedures and equipment, compaction requirements, building slab preparation, soil sensitivity to weather and equipment, groundwater influence on construction, mitigation of expansive soils or liquefaction potential, and dewatering requirements).

5) Sheeting and shoring considerations.

6) Pavement design calculations with parameters defined, actual or assumed, and recommended thicknesses and materials.

7) Infiltration rate.

8) Haul routes and stockpile locations for earthwork.

9) Calculations to support conclusions and recommendations.

10) Present recommendations on a structure-by-structure basis.

A registered Geotechnical Engineer is required to sign the Geotechnical Report.

Accompany the submitted report with a cover letter identifying any report recommendations proposed to be adopted into the design which are interpreted by the Contractor as a changed condition to the Geotechnical or Pavement related requirements of the RFP.

G10 1.5.4 Geotechnical Site Data required in Design Drawings

The Contractor's final design drawings must include the Government-provided subsurface data presented in the RFP, as well as additional borings and laboratory test result data performed by the Contractor. The data provided is required to include:

a. Logs of Borings and related summary of laboratory test results and groundwater observations. Provide 24 hour groundwater observations for at least 20 percent of the borings, minimum one boring. Provide notes explaining any abbreviations or symbols used and describing any special site preparation requirements.

b. Indicate the locations of borings on the drawings. Revise the design drawings to reference the Contractor's Geotechnical Report as being a basis for design.

G1010 SITE CLEARING

G1010 1.1 GENERAL

Clear and grub project site for project construction.

G1010 1.2 BURNING

Where burning is permitted, adhere to the federal, state, and local regulations.

G101001 CLEARING

G101001 1.1 CLEARING

Clear trees, shrubs, brush and vegetation for construction of the project. Clearing includes the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared.

G101001 1.2 PRESERVATION

Preserve and protect trees, shrubs and vegetation not directly impacted by the construction in accordance with Part 2 Section 01 57 19, *Temporary Environmental Controls*, and PTS Section G205005, paragraph 1.1 *Existing Plant Material to Remain or be Transplanted*.

G101002 TREE REMOVAL

Remove and dispose of trees to a depth of at least 18 inches (450 mm) below ground surface. Fill depressions with satisfactory material and compact. Mound fill 2 inches (50 mm) above adjacent surface to allow for settling when not part of a subbase.

G101003 STUMP REMOVAL

Remove stumps to a depth of at least 18 inches (450 mm) below ground surface. Fill depressions with satisfactory material and compact. Mound fill 2 inches (50 mm) above adjacent surface to allow for settling when not part of a subbase.

G101004 GRUBBING

Within the clearing limits, remove and dispose of logs, shrubs, brush, matted roots, roots larger than 2 inches (50 mm) in diameter, and other debris to a depth of at least 18 inches (450 mm) below ground surface. Fill depressions made by grubbing with satisfactory material and compact to make the new surface conform to the adjacent surface of the ground.

G101005 SELECTIVE THINNING

G101005 1.1 TREE THINNING

Trim trees to remain of dead branches 1-1/2 inches (38 mm) or more in diameter. Cut limbs and branches in accordance with ANSI A300.

G101006 DEBRIS DISPOSAL

Prevent spillage on pavements, streets, or adjacent areas. Dispose of

surplus and unsuitable material off of Government property.

G1020 SITE DEMOLITION & RELOCATIONS

G1020 1.1 GENERAL

Demolition work includes the demolition, removal and legal disposal of existing construction debris to accommodate the new construction. Take precautions to prevent damages to existing utilities, construction and materials not scheduled for demolition, repair or replacement; repair damages to the construction and materials to the satisfaction of the Contracting Officer and at no additional cost to the Government.

G1020 1.2 AUTHORIZATION

Do not begin demolition until the Demolition Plan has been approved by, and authorization is received from, the Contracting Officer.

G1020 1.3 TITLE TO MATERIALS

Whenever possible, salvage or recycle features demolished in lieu of disposing of as waste in a landfill. Existing features to be demolished which are not salvageable or reused become the property of the Contractor, and must be removed from the project site. The Government will not be responsible for the condition, loss of, or damage to, such property after contract award. Materials and equipment cannot be viewed by prospective purchasers or sold on the site.

G1020 1.4 REUSE OF MATERIALS AND EQUIPMENT

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

G1020 1.5 SALVAGED MATERIALS AND EQUIPMENT

Deliver salvaged materials and equipment that are to be removed by the Contractor and that are to remain the property of the Government to a storage site on the installation, in accordance with instructions of the Contracting Officer.

G102001 BUILDING MASS DEMOLITION

Refer to Section F20, *Selective Building Demolition*, for additional information.

G102002 ABOVEGROUND SITE DEMOLITION

G102002 1.1 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris to occupied portions of a building or on pavements and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water for dust control if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Sweep pavements to control the

spread of debris that may result in foreign object damage potential to aircraft.

G102002 1.2 PROTECTION

G102002 1.2.1 Traffic Control

Where pedestrian and driver safety is endangered in the area of removal work, provide traffic control in accordance with FHWA Manual on Uniform Traffic Control Devices (MUTCD).

G102002 1.2.2 Foreign Object Damage (FOD)

Remove potential FOD debris and waste materials on or adjacent to operational airfield pavements due to the Contractor's operations. Install a temporary barricade at the Contractor's expense. The barricade is required to include a fence covered with a fabric designed to stop the spread of debris. Anchor the fence and fabric to prevent displacement by winds or jet/prop blasts. Remove barricade when no longer required.

G102002 1.2.3 Existing Work

Protect existing work that is to remain in place, be reused, or remain the property of the Government. At no additional expense to the Government, repair items that are damaged during performance of the work to original condition, or replace with new. Do not overload pavements to remain.

G102002 1.3 PAVING AND SLABS

Remove concrete and asphaltic concrete paving and slabs as required for construction of project. Remove the existing aggregate base in areas to receive new pavement to the depth of the proposed pavement section below new finish grade. Remove the existing aggregate base in areas not to receive new pavement to a depth of 8 inches (200 mm) below existing adjacent grade and break remaining pavement (if any) to allow drainage. Provide neat sawcuts at limits of pavement removal; protect sawcuts so that new pavement butts against the existing without feathering.

G102003 UNDERGROUND SITE DEMOLITION

G102003 1.1 UTILITY TERMINATION

Terminate utilities in accordance with state and local rules and regulations; the nationally recognized code; and the requirements of the utility provider covering the specific utility; UFC 3-201-01, *Civil Engineering*; and approved by the Contracting Officer.

G102003 1.2 PROTECTION OF EXISTING UTILITIES

Protect existing utilities to remain. Where removal of existing utilities and pavement is required, provide approved barricades,

temporary covering of exposed areas, and temporary services or connections. Repair damage to existing utilities to remain at no additional expense to the Government.

G102004 BUILDING RELOCATION

Refer to Section F20, *Selective Building Demolition*, for additional information.

G102005 UTILITY RELOCATION

Repair relocated items that are damaged or replace damaged items with new undamaged items at no additional expense to the Government.

G102006 FENCING RELOCATION

Remove and replace post foundations. Repair relocated items that are damaged or replace damaged items with new undamaged items at no additional expense to the Government. Refer to Section G204001 for requirements for new fence systems.

G102007 SITE CLEANUP

Remove rubbish and debris from the installation daily; do not allow accumulations inside or outside the building(s) or on pavements. Store materials that cannot be removed daily in areas specified by the Contracting Officer.

G102007 1.1 SPILLS

In the event of a spill or release of hazardous substances, pollutant, contaminant or oil, notify the Contracting Officer immediately. Take immediate containment actions to minimize the effect of any spill or leak in accordance with the ESR and the approved spill work plan as described in Part 2 Section 01 57 19, *Temporary Environmental Controls*. Perform clean up at no additional expense to the Government.

G1030 SITE EARTHWORK

G1030 1.1 GENERAL

This section includes the design and construction requirements for earthwork and grading related to construction of the roadways, parking, paved areas and other related sitework. Refer to Section A10, *Foundations*, for earthwork related to construction of structures, including building, footings, foundations, retaining walls, slabs, tanks, and utility appurtenances.

The Designer of Record is required to utilize UFGS Section 31 00 00, *Earthwork*, for the project specification, and to submit the edited specification section as a part of the design submittal for the project.

The project site is located along an active airfield. All runway clear

distances and setbacks apply to construction within this area. Coordination with the Fort Drum Airfield Control is required prior to the commencement of any construction.

G103001 GRADING

Provide site grading in accordance with the requirements of UFC 3-201-01, *Civil Engineering*.

G103001 1.1 ELEVATIONS

Establish finish floor elevations in accordance with UFC 1-200-01, *DoD Building Code(General Building Requirements)*, and UFC 3-101-01, *Architecture*.

G103001 1.2 SITE GRADING

Grade the site such that associated storm water runoff does not adversely affect surrounding sites. Preserve natural topographic features to minimize the impact on the existing drainage patterns at and adjacent to the site.

G103001 1.3 FINISHED SURFACES

Provide finish grading with drainage towards new and existing drainage features and with no resulting low spots that hold water or that direct runoff towards new or existing facilities or site amenities.

G103001 1.4 RODENT AND VEGETATION CONTROL

Prevent and eliminate standing water.

G103002 COMMON EXCAVATION

Preserve natural topographic features to minimize cut and fill requirements. Unsuitable material and surplus excavation becomes the property of the Contractor, and must be disposed of as indicated in the Project Program.

G103003 ROCK EXCAVATION

If blasting is allowed, conduct it in accordance with EM 385-1-1 and Federal, state, and local safety regulations. Provide blasting mats and use non-electric blasting caps. Notify the Contracting Officer 24 hours prior to blasting.

Do not make requests for additional compensation for degree of hardness or difficulty encountered in removal of material. Unsuitable material and surplus excavation becomes the property of the Contractor, and must be disposed of as indicated in the Project Program.

G103004 FILL & BORROW

G103004 1.1 SOURCES

Where sufficient topsoil and satisfactory materials are not available on the project site, provide suitable borrow materials.

G103004 1.2 REQUIREMENTS FOR OFF SITE SOIL

Test off-site soil in accordance with UFGS Section 31 00 00, *Earthwork*, section titled "Requirements for Off Site Soil".

G103004 1.3 UNSATISFACTORY SOIL MATERIALS

Remove uncontaminated unsatisfactory soil materials from the site. Unsatisfactory materials are materials which do not comply with the requirements for satisfactory materials. Unsatisfactory materials also include man-made fills, trash, refuse, backfills from previous construction or material classified as satisfactory which contains root and other organic matter, frozen material, and stones larger than 3 inches. The Contracting Officer shall be notified of any contaminated materials.

G103004 1.4 TOPSOIL

Refer to Section G2050, "Landscaping". Remove unsatisfactory, existing topsoil from the site in accordance with the Project Program.

G103005 COMPACTION

Provide compaction in accordance with UFGS Section 31 00 00, *Earthwork*, and the recommendations of the Contractor's Geotechnical Engineer, whichever is greater.

G103006 SOIL STABILIZATION

Provide soil stabilization designed to function as required by site conditions in accordance with the State Highway specifications and standards in the state where the project is located. Apply and install geosynthetics in accordance with the manufacturer's written instructions.

G103007 SLOPE STABILIZATION

Provide slope stabilization methods in accordance with the State Highway specifications and standards in the state where the project is located. Design and install manufactured products, gabions, geogrids, rock anchors in accordance with the manufacturer's written instructions.

G103008 SOIL TREATMENT

G103008 1.1 TERMITE CONTROL

Refer to Section A1010 1.2, "Termite Control".

G103009 SHORING

Provide sheeting, shoring, bracing, cribbing and underpinning in accordance with the Army Corps of Engineer's Safety and Health Requirements Manual (COE EM 385-1-1), UFC 3-220-01, *Geotechnical Engineering*, UFC 3-301-01, *Structural Engineering*, and other Federal, State and local codes and requirements.

Provide protection of existing structures.

G103010 TEMPORARY DEWATERING

The design of the temporary dewatering system is required to account for soil conditions, rainfall, fluctuations in the groundwater elevations and the potential settlement impact on adjacent facilities due to dewatering. Provide dewatering in accordance with UFGS Section 31 00 00, *Earthwork*. While the excavation is open, maintain the water level continuously, at least 1.0 foot (0.30 m) below the working level.

French drains, sumps, ditches or trenches are not allowed within 3 feet (0.9 m) of the foundation of any structure without written approval of the Government's Civil/Geotechnical Reviewer.

G103011 TEMPORARY EROSION & SEDIMENT CONTROL

G103011 1.1 TEMPORARY EROSION & SEDIMENT CONTROL

Develop and implement temporary erosion and sediment control measures and other Best Management Practices (BMPs) prior to or in conjunction with commencement of earthwork in accordance with the state Erosion and Sediment Control Laws and Regulations. Remove non-permanent erosion control measures after vegetation is fully established.

G103011 1.2 MAINTENANCE

Maintain temporary erosion control measures in accordance with state Erosion and Sediment Control Laws and Regulations throughout the project until areas are fully stabilized.

G103090 OTHER SITE EARTHWORK

G103090 1.1 HISTORIC AND ARCHAEOLOGIC ARTIFACTS

Refer to Part 2 UFGS Section 01 50 00, *Temporary Construction Facilities and Controls*.

G103090 1.2 PIPELINE CASING UNDER RAILROADS OR PAVEMENTS

Where required by code or local practice provide casing for piping under railroads or pavements. The Contractor is responsible for obtaining permits from government and nongovernment owners/agencies as required to perform the work.

G103090 1.3 TOPSOIL AND SEED

Provide topsoil and seed according to UFGS Section 31 00 00, *Earthwork*, except when landscaping is required.

G1040 HAZARDOUS WASTE REMEDIATION

Perform work in accordance with specification and plans provided in Parts 5 and 6.

G1040 1.1 DISPOSAL

Manage, transport and dispose of waste materials in accordance with specification and plans provided in Parts 5 and 6.

-- End of Section --

SECTION G20

SITE IMPROVEMENTS
09/22

G20 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

G20 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Federal Facility Criteria (FFC) at the Whole Building Design Guide (WBDG) website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the referenced standard at the time of Contract award.

G20 1.1.1 Industry Standards and Codes

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

Refer to UMRL for reference designation identification.

G20 1.1.2 Government Standards

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS RR-F-191	Fencing and Wire and Post Metal (and Gates, Chain-link Fence Fabric, and Accessories)

FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements) (A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-

	Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 1-200-02, High Performance and Sustainable Building Requirements UFC 3-201-01, Civil Engineering UFC 3-210-01, Low Impact Development UFC 3-220-01, Geotechnical Engineering
UFC 3-270-04	Concrete Repair
UFC 4-022-03	Security Fences and Gates

G20 1.2 QUALITY ASSURANCE

G20 1.3 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Compliance with the requirements will be determined by a review of the design and construction submittals and by field inspection. See Part 2 Section 01 33 16.00 10, *Design After Award*, and Part 2 Section 01 33 00.05 20, *Construction Submittal Procedures*, for additional requirements.

Verify satisfactory performance via Performance Verification, as detailed in this section of the RFP. Verify satisfactory performance also via testing as detailed in the paragraph, Field Quality Control, in UFGS Specification Sections utilized.

G20 1.3.1 Subgrade Preparation Performance Verification

Perform subgrade preparation in accordance with PTS Section G10. If required by the Designer of Record, perform proof rolling. Perform proof rolling in the presence of the Contracting Officer. Rutting or pumping of material is required to be undercut and replaced with satisfactory soil materials as defined in Section G10, *Site Preparation*.

G20 1.3.2 Base Course Performance Verification

G20 1.3.2.1 Aggregate Base Course

a. Sampling: ASTM D75/D75M.
b. Gradation: ASTM C136.
c. Thickness: Confirm in-place compacted thickness. Acceptable tolerances are plus or minus 0.5 inches (13 mm). One test for every 500 square yards (418 square meters); minimum 2 tests.

d. Density: ASTM D1556 or ASTM D6938. One field test for every 1000 square yards (836 square meters); minimum 2 tests. ASTM D1557, Method A, B or C; one laboratory test for the project.
e. Visual: Provide smooth surface with no ruts.

G20 1.3.2.2 Other Types of Base Courses

For other types of base courses, provide field testing in accordance with the SHS.

G20 1.3.4 Portland Cement Concrete Pavement Performance Verification

a. Visual: Provide finished surface that is uniform in texture and appearance and free of cracks.
b. Sampling: ASTM C31/C31M.
c. Thickness: Acceptable tolerances are plus or minus 0.5 inches (13 mm). One test for every 500 square feet (418 square meters); minimum 2 tests.
d. Surface Smoothness: Test surface smoothness by using a 12 foot (3.6 meter) straightedge in transverse and longitudinal directions to pavement. Provide finished surfaces of the pavements with no abrupt change of 0.71 inch (18 mm) or more.
e. Strength: Samples for strength tests of each mix design of concrete placed each day are required to be taken not less than once a day, nor less than once for each 100 cubic yards (120 cubic meters) of concrete, nor less than once for each 5000 square feet (500 square meters).

1) Compressive Strength: ASTM C39/C39M. Make five test cylinders for each set of tests. Test two cylinders at 7 days, two cylinders at 28 days, and hold one cylinder in reserve. Determine each strength test result by the average of two cylinders from the same concrete sample tested at 28 days. If the average of any three consecutive strength test results is less than f'c or if any strength test result falls below f'c by more than 500 psi, take a minimum of three ASTM C42/C42M core samples from the in-place work represented by the low test cylinder results and test. Consider the concrete represented by core test structurally adequate if the average of three cores is equal to at least 85 percent of f'c and if no single core is less than 75 percent of f'c. Retest locations represented by erratic core strengths.

2) Flexural Strength: ASTM C78/C78M. Make four test specimens for each set of tests. Test two specimens at 28 days, and the other two at 90 days. Concrete strength will be considered satisfactory

when the minimum of the 90-day test results equals or exceeds the specified 90-day flexural strength, and no individual strength test is less than the design strength. If the ratio of the 28-day strength test to the specified 90-day strength is less than 65 percent, make necessary adjustments for conformance.

f. Remove concrete not meeting strength criteria and provide new acceptable concrete at no expense to the Government. Repair core holes with nonshrink grout. Match color and finish of adjacent concrete.

G20 1.3.6 Topsoil Performance Verification

Prior to planting design, provide a commercial soil analysis. Amend planting areas based on the soil test's interpretation, amendment type, and quantity recommendations (including soil nutrients and texture, with percentages shown). Use additional topsoil only in areas where soil analysis shows that the existing soil is inadequate for growth of plant materials.

G20 1.4 DESIGN SUBMITTALS

Submit design submittals in accordance with UFC 1-200-01, *DoD Building Code(General Building Requirements)*, Part 2 Section 01 33 16.00 10, *Design After Award* and UFC 3-201-01, *Civil Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR is required to edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS Section Z10, *General Performance Technical Specifications*.

32 11 20, *Subbase andSelect-Material*

Provide sustainability submittals in accordance with Part 2 Section 01 33 29, *Sustainability Requirements and Reporting*.

G20 1.6 ANTITERRORISM (AT) STANDARDS

Incorporate the minimum AT standards indicated in UFC 4-010-01, *DoD Minimum Antiterrorism Standard for Buildings*.

G20 1.7 PROJECT LIMITATIONS

Prior to the start of design, determine the exact limit-of-work line for the project periphery, considering items such as, but not limited to, utility work, and laydown areas.

G2010 ROADWAYS

G2010 1.1 PAVEMENT DESIGN

Provide subbase and base gravel depth design based on maximum loading of a mobile crane and emergency equipment.

For pavements subject to aircraft traffic or aircraft ground support equipment traffic consult Government Civil Reviewer for design criteria and requirements. State Department of Transportation standards are not acceptable for airfield pavements.

G2010 1.2 PAVEMENT AESTHETICS

Provide surfaces consistent in color and finish.

G2010 1.3 TRAFFIC CONTROL DEVICES

Provide and install new traffic control devices (i.e., signs and markings) in accordance with the United States Department of Transportation Federal Highway Administration's *Manual on Uniform Traffic Control Devices* and their standard, "Rigid Sign Supports". Also provide new traffic control devices along/in the existing streets adjacent to the project site as necessary to provide complete traffic control to the new facilities.

G2010 1.4 EXISTING UTILITY STRUCTURES

Adjust existing utility structures to meet the new finished pavement grades as required.

G201001 BASES & SUBBASES

Prepare subgrade in accordance with Section G10, *Site Preparation*. Use geotextiles for separation or reinforcement in accordance with manufacturer's instructions. Provide base course under paved areas in accordance with the State Highway specifications (SHS) in the state where the project is located.

Place base course in accordance with the SHS for that particular base course and in layers of equal thickness with no compacted layer more than 6 inches (150 mm) thick. Compact base course at optimum moisture content to 100 percent ASTM D 1557 maximum dry density.

Where SHS are not available or applicable, the Designer of Record must utilize the UFGS Specification Sections referenced under paragraph 1.1.2 entitled "Government Standards" for the project specification. Submit these specifications in edited form as a part of the design submittal for the project.

G201003 1.5 PAVEMENT PATCHES

Provide pavement patches for existing pavements where required for installation of utility trenches. Sawcut 12 inches beyond edge of trench. Provide thicknesses of pavement materials equal to or greater

than the existing pavement section.

For spalls or repairs of existing concrete pavement, perform repairs in conformance with UFC 3-270-03, *Concrete Crack and Partial Depth Spall Repair*, and UFC 3-270-04, *Concrete Repair*. Provide spall repair materials that are either Rapid Setting Cementitious Concrete (RSCC), epoxy concrete, or polymer-modified Portland Cement (non-sag mortar) products specially formulated for spall repairs, with a proven record (in service at least three years) of satisfactory use under loading and environmental conditions similar to those at the location of intended use. Provide a manufacturer's data sheet and certificate supporting the satisfactory use to the Contracting Officer with the design. A product manufacturer's representative is required to be present during the initial two days of product application to verify that manufacturer's instructions for use are adhered to by the Contractor. Give the Contracting Officer 7 days notice prior to the initial application in order to be present.

G201004 MARKING & SIGNAGE

G201004 1.2 SIGNAGE

Provide signage in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

Building signage to be surface mounted. Approval from Fort Drum’s Public Works Department prior to installation is required. Refer to Architectural drawing A-201 for approximate location of building signage.

G201005 GUARDRAILS & BARRIERS

G201005 1.1 GUARDRAILS

Provide guard (guide) rails in accordance with the SHS. Where the SHS do not include materials for guardrails, provide guardrails in accordance with the *AASHTO Roadside Design Guide*.

G201005 1.2 BOLLARDS

For bollards to prevent damage, provide minimum 4 feet height, 4 inch diameter steel pipe filled with concrete, painted, and embedded in a portland cement concrete foundation.

For bollards located at building entries or other high-visibility areas provide decorative bollards matching the design of the facility or consistent with the Base Exterior Architecture Plan (BEAP) and the Installation Appearance Plan.

Bollards for security are specified in Section G204004, "Security Structures".

G201006 RESURFACING

Adjust rims of existing utility structures to match proposed grades after resurfacing.

G201006 1.1 SLURRY SEAL

ASTM D 3910 and in accordance with the SHS.

G202001 BASES & SUBBASES

Refer to Section G201001.

G202005 GUARDRAILS & BARRIERS

Refer to Section G201005.

G202005 1.1 WHEELSTOPS

Provide precast concrete wheelstops.

G202006 RESURFACING

Refer to Section G201006.

G203001 BASES & SUBBASES

Provide as required by local standards or geotechnical report; refer to Section G201001.

G203004 GUARDRAILS & BARRIERS

Refer to Section G201005.

G2040 SITE DEVELOPMENT

G204001 FENCING & GATES

G204001 1.1 CHAIN LINK FENCE

Provide chain link fence designated as security fencing in accordance with paragraph G204001 - 1.3.

Provide chain link fence fabric that is at least 9 gauge (3 mm) steel wire mesh material (before coating) with mesh openings not larger than 2 inches (51 mm). Do not use aluminum fabric, posts or accessories. Install fence in accordance with ASTM F567 and the manufacturer's written installation instructions.

G204001 1.1.1 Tensions Wires and Top Rails

Provide rails in accordance with FS RR-F-191/3, Class 1, steel pipe, Grade A.

G204001 1.1.2 Gates

Provide gates in accordance with FS RR-F-191/2 with posts and fabric as specified for fence.

G204001 1.1.3 Posts and Braces

Provide posts and braces in accordance with FS RR-F-191/3, Class 1, steel pipe, Grade A. Brace each gate, terminal and end post with truss rods.

G204001 1.1.4 Fencing Accessories

Provide fencing accessories in accordance with FS RR-F-191/4. If PVC coating is required, provide accessories with PVC color coating similar to that specified for chain-link fabric or framework.

G204001 1.3 SECURITY FENCE

Provide security fencing systems in accordance with UFC 4-022-03, *Security Fences and Gates*, and this RFP.

G204001 1.3.1 Chain Link Security Fence

Provide chain link fence in accordance with paragraph G204001 - 1.1, excepted as noted otherwise. Ensure that the fabric has twisted and barbed selvage at the top and bottom. Do not provide top rails. Locate posts and structural supports on the inner side of the fencing. Install outriggers facing outward except when the fence is mounted directly on the property line.

G204001 1.3.3 Drainage Culverts and Utility Openings

Provide protective measures to prevent access through culverts, storm drains, sewers, air intakes, exhaust tunnels and utility openings or across drainage ditches or swales in accordance with UFC 4-022-03.

G204001 1.4 OPENINGS IN PERIMETER AND SECURITY FENCING

Do not cover, block or lace openings in perimeter fencing and security fencing with material which would prevent a clear view of personnel, vehicles or material in the outer or inner vicinity of the fence line.

G204001 1.5 FENCE GROUNDING

Ground and bond the fence in accordance with the National Electric Safety Code (NESC) - IEEE C2 and UFC 4-022-03. Ground fencing on either side of every gate and at other locations when the fencing is near and parallel to high tension power lines. Grounding is also required at intervals of 1000 feet (305 meters) to 1500 feet (457

meters) when the fencing runs through isolated areas and at lesser distances depending on the proximity of the fencing to public roads, highways and buildings where the fencing is around or within explosive storage, production, operating or handling areas.

G204001 1.6 ENCLOSURES FOR UTILITY EQUIPMENT

Where fencing is used to provide an enclosure for utility equipment, ensure a minimum clearance is provided no less than 3 feet (900 mm) around the equipment to permit maintenance access and ventilation. Provide stone, gravel or concrete paving within the enclosure.

G204002 RETAINING WALLS AND FREESTANDING WALLS

Provide retaining walls to permanently resist soil pressures as well as live loads. Provide wall drainage to minimize lateral loading and protect wall materials against degradation.

G204003 EXTERIOR FURNISHINGS

Refer to ESR G20 and other portions of the RFP for exterior furnishings required on this project. Permanently attach site furnishings to concrete pads. Provide site furnishings in conformance with the Base Exterior Architecture Plan (BEAP) and or Installation Appearance Plan for each Activity. If no product guidance is given, coordinate material, finish and color with architecture (fiberglass and aluminum are not acceptable) and provide to the greatest extent possible, materials with industrial recycled content, preferably from regionally local manufacturers.

G204090 OTHER SITE IMPROVEMENTS

Provide other site improvements in conformance to the BEAP or Installation Appearance Plan and to the requirements of UFC 4-010-01.

G2050 LANDSCAPING

Landscape area is defined as permeable areas within the project boundaries

not covered by buildings, roads, parking lots, sidewalks, and other non-permeable areas. Provide loam, seed and mulch to all site areas disturbed by construction.

G205001 FINE GRADING AND SOIL PREPARATION

See Section G10, *Site Preparation*. Provide 4 inches (102 mm) of topsoil with appropriate soil amendments, as recommended by a current soil composition test, for areas to be planted with turf grass.

G205002 EROSION CONTROL MEASURES

See Section G10, Site Preparation.

G205004 SEEDING, SPRIGGING, AND SODDING

Hydroseed areas that are to be seeded and are larger than 1,000 square feet (92.90 square meters). Select hydroseed mix composition that is appropriate for surrounding land use and compatible and consistent with local application rates, seed availability and established practice in the project area. If project dates are unknown, specify required planting dates or alternative species for different seasons. Apply seed at a time best suited for germination of the selected species. Seeded areas are required to achieve a 95-percent coverage of the selected species and be weed free at the end of the Establishment Period.

G205005 PLANTINGS

G205005 1.1 EXISTING PLANT MATERIAL TO REMAIN OR BE TRANSPLANTED

Preserve existing trees to the greatest extent possible. . During the landscape establishment period, replace turf, and ground cover that are damaged or destroyed during construction operations by the Contractor at no additional cost to the Government.

G205005 1.2 UTILITIES

Do not place trees within 10 feet (3 meter) of above or below-grade utility line or structure. Within roadway sightlines, height of mature shrubs is limited to 3 feet (1 m) and trees must be limbed up a minimum of 6 feet (2 m) so their mature growth does not obstruct views from vehicle intersections or points of vehicle ingress or egress. Coordinate utilities between the Landscape Architect and appropriate disciplines.

G205005 1.3 RECYCLING

Green waste: Contact the Public Works Department for potential green waste collection and hauling by the Government. Separate green waste not collected by the Government from construction debris and deliver to the base's or local landfill's green waste recycling area. Quantify and report diverted waste to the Contracting Officer.

G205005 1.4 PLANTING

G205005 1.4.2 Plant Quality

Provide plants that comply with ANSI Z60.1 and ANSI A300, Part 1, current editions. Plants must be in a healthy, disease and pest free condition. Provide seed, sod, and sprigs that are State Certified.

Seeding must be as follows;

Lower Growing Turf Seed Mix: 5 lbs/1,000 sf.

- 35% Creeping Red Fescue
- 25% Hard Fescue
- 25% Chewings Fescue
- 15% Sheep Fescue

G205005 1.4.6 Fertilizer

Fertilize transplanted trees, new trees, shrubs, ground covers, turf, perennials and ornamental grasses as recommended by local agricultural extension services.

G205005 1.4.7 Weed Fabric and Erosion Control Fabric

Provide a weed barrier fabric of sheet polypropylene or polyester fabric specifically designed for weed control purposes beneath planted or mulched non-planted areas. Treat fabric for protection against deterioration due to ultraviolet radiation. Provide fabric that is a minimum 99 percent opaque to prevent photosynthesis and seed germination from occurring, yet allowing air, water and nutrients to pass through to the roots. Minimum weight must be 5 ounces per square yard (0.11 kg per square meter) with a minimum thickness of 20 mils (0.50 mm) with a 20 year minimum guarantee. Provide a biodegradable product designed specifically for erosion control on sloped areas 3 (horizontal):1 (vertical) and steeper in slope. Do not place weed fabric over the root balls of trees.

G205005 1.4.8 Drainage

Provide for proper grading and drainage of turf and planting areas. Provide sub-surface drainage where soil or other conditions do not allow surface drainage. Do not drain roof gutters into planter areas.

-- End of Section --

SECTION G30

SITE CIVIL/MECHANICAL UTILITIES
09/22

G30 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

G30 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Federal Facility Criteria (FFC) at the Whole Building Design Guide (WBDG) website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the referenced standard at the time of Contract award.

G30 1.1.1 Industry Standards and Codes

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

AMERICAN WATER WORKS ASSOCIATION (AWWA)

G30 1.1.2 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 1-200-02, High Performance and Sustainable Building Requirements

UFC 3-201-01, Civil Engineering
UFC 3-230-01, Water Storage, Distribution, and Transmission

UFC 3-240-01, Mechanical Engineering
UFC 3-600-01, Fire Protection Engineering for Facilities)

Fort Drum Public Works Utility Standards, June 20, 2020
10 State Standards Recommend Standards for Water Works, 2022
NYSDOH, State Sanitary Code Subpart 5, September 8, 2023

G30 1.2 QUALITY ASSURANCE

Materials and assemblies installed in the work must be inspected and found to be in compliance with industry standards and these specifications prior to acceptance of the work. Remove items found not to be in compliance, or take corrective measures, to assure compliance with the referenced standard. Perform field tests and provide labor, equipment and incidentals required for testing.

G30 1.2.1 Materials

Provide new materials that bear the label of the standardizing agency whenever standards have been established and label service is normally and regularly furnished by the agency. Equipment provided must be listed and suitably labeled for the specified purpose, environment, and application and installed in accordance with manufacturer’s recommendations.

G30 1.2.2 Additional Work

Provide such other labor and materials as are required for a complete and usable system in accordance with the requirements of the criteria listed, regardless of whether such materials and associated labor are called for elsewhere in this RFP.

G30 1.2.3 Qualifications of Well Drillers for Water Supply Wells

If required by the state waterworks' regulations, the well driller must be certified by the state and remain certified while constructing the well.

G30 1.2.4 Qualifications of Coating Contractors for Water Storage Tanks

Contractors and subcontractors that perform surface preparation or coating application must be certified by the Society for Protective Coatings (formerly Steel Structures Painting Council) (SSPC) to the requirements of SSPC QP 5 for the inspection firm

prior to Contract award, and remain certified while accomplishing any surface preparation or coating application. The Coating Inspector must also be certified to Level II for exterior and Level III for interior coatings prior to and during the project.

G30 1.2.5 Qualifications of Oil Interceptor Manufacturers

Manufacturers must have five years of experience producing packaged oil interceptor units of similar size.

G30 1.3 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Compliance with the requirements will be determined by a review of the design and construction submittals and by field inspection. See Part 2 Section 01 33 16.00 10, *Design After Award*, Parts 1, 2, and 3 UFGS Section 33 11 13, *Potable Water Supply Wells,* and Part 2 Section 01 33 00.05 20, *Construction Submittal Procedures*, for additional requirements.

Verify satisfactory utility system performance via Performance Verification Testing, as detailed in this section of the RFP. Verify satisfactory performance also via testing as detailed in the paragraph, "Field Quality Control", in UFGS Specification Sections utilized.

G30 1.3.1 Water Supply Well Performance Verification

Upon completion of the permanent well, conduct performance testing for well capacity, drawdown and pump equipment. Conduct water quality testing in accordance with AWWA A100 and its appendices and state regulations (NYSDOH, State Sanitary Code Subpart 5).

G30 1.3.2 Water Distribution System Verification Testing

Provide testing on water mains and service lines in accordance with the state waterworks' regulations and the following:

a. Ductile Iron and other materials: AWWA C600.
b. PVC: AWWA C605.
c. HDPE: AWWA C906

Where water mains and water service lines provide fire service, test in accordance with NFPA 24.

Do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete.

G30 1.3.6 Storm Sewer System Verification Testing

G30 1.3.6.1 Deflection Test

Deflection of pipe in the installed pipeline under external

loads must not exceed 4.5 percent of the average inside diameter of pipe, in accordance with ASTM D 2412.

G30 1.3.6.2 TV Inspection for Storm Sewer Under Pavements

Complete the post-installation TV inspection to confirm that the completed lines are free of defects. For video recordings include an audio track recorded by the inspection technician during the actual inspection work describing the parameters of the line being inspected. The minimum information to be included is the pipe material, pipe size, starting and stopping manholes and descriptions of any features as they occur. Video recording playback must be at the same speed that it was recorded. Permanently label CDs / DVDs according to their contents; CDs / DVDs become the property of the Government.

Provide TV inspections of storm sewer lines in accordance with the Pipeline Assessment and Certification Program as sponsored by the National Association of Sewer Service Companies (NASSCO). Prior to initiating CCTV inspection, provide copies of PACP Certification of the operators that perform the work.

Complete pipe segments and manhole work, including pipe penetrations, manhole benches, main line and manhole visual inspection, pressure testing, and deflection test on a section of line (manhole to manhole) prior to performing TV.

Complete post-installation TV inspection in the presence of the Contracting Officer or designated representative.

The importance of accurate measurements is emphasized. The meter device must be accurate to one tenth of a foot.

Utilize the full capabilities of the camera equipment to document the completion and the conformance of the work to the Contract Documents. Provide a full 360 degree view of the pipe, joints and service connections. Move the camera through the line in either direction at a moderate rate, stopping to permit proper documentation of the sewer's condition. The maximum speed must be no greater than 30 feet per minute. Use manual wenches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with the proper documentation of the sewer conditions to move the camera through the sewer line.

Once video recording has commenced, the recording must be continuous, without interruption, until the termination manhole is reached.

Provide a color video showing the completed work. Prepare

and submit Television Inspection Logs providing location of service connections along with the location of any discrepancies.

Keep computer printed location records (Television Inspection Logs) and clearly show the location and orientation in relation to an adjacent manhole for each point observed during the TV inspection. Record features of significance such as locations and orientations of service connections, pipe deflections, leaks, rolled or dislodged gaskets, sags or bellies in the line, or wide joints.

Document noted defects and lateral connections as color digital files and color hard copy prints. Photo logs must accompany each photo submitted.

Prior to submission of the TV inspection video, Television Inspection Logs, and digital photographs to the Contracting Officer, review the submittal items to ensure compliance with the quality criteria set forth in this specification. Provide a copy of such video along with the Television Inspection Logs and Digital photographs to the Contracting Officer within five business days of completion of the video -inspection. In the event that the video, Television Inspection Logs or digital photographs are deemed of poor quality or substandard by the Contracting Officer, the videos, Television Logs, or digital photographs will be returned and a re-inspection provided by the Contractor, at no additional cost to the Government.

G30 1.4 DESIGN SUBMITTALS

Submit design submittals in accordance with Part 2 Section 01 33 16.00 10, *Design After Award*, Part 1 UFGS Section 33 1113, *Potable Water Supply Wells*, UFC 3-201-01, *Civil Engineering*, and UFC 3-401-01, *Mechanical Engineering*.

Provide sustainability submittals in accordance with Part 2 UFGS Section 01 33 29, *Sustainability Requirements and Reporting*.

G30 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following construction submittals as a minimum:

Test reports.

Provide potable water supply well submittals in accordance with Parts 2 and 3 UFGS Section 33 11 13, *Potable Water Supply Wells*.

Provide sustainability submittals in accordance with Part 2 UFGS Section 01 33 29, *Sustainability Requirements and Reporting*.

G30 1.6 COORDINATION

To the extent that site work is indicated on the RFP drawings, verify that the locations and inverts of site utility lines are coordinated with building utility lines. Make adjustments to the locations and inverts indicated on the RFP drawings in accordance with codes and standards.

G30 1.7 ANTITERRORISM (AT) STANDARDS

Incorporate the minimum AT standards indicated in UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*.

G30 1.8 BACKFLOW PREVENTION

Submit backflow prevention training certificates and backflow preventer devices certification in accordance with Part 2 UFGS Section 01 50 00, *Temporary Construction Facilities and Controls*.

G30 1.10 NACE CERTIFIED CATHODIC PROTECTION SPECIALIST QUALIFICATIONS

Submit qualifications of specialist prior to site welding. Submit documentation of current NACE certification.

G30 1.11 EXCAVATION, BACKFILLING AND COMPACTION OF UTILITIES

Refer to Section G10, *Site Preparation*.

G30 1.12 DELIVERY, STORAGE AND HANDLING OF MATERIALS

Inspect materials delivered to site for damage. Unload and store with minimum handling. Store materials on site in enclosures or under protective covering. Store plastic piping, jointing materials and rubber gaskets under cover out of direct sunlight. Do not store materials directly on the ground. Keep inside of pipes, fittings, valves, and hydrants free of dirt and debris. Handle in a manner to ensure delivery to the trench in sound undamaged condition. Take special care to avoid injury to coatings and linings on pipe and fittings; make satisfactory repairs if coatings or linings are damaged. Carry, do not drag pipe to the trench.

G3010 WATER SUPPLY

G3010 1.1 WATER SYSTEM DESIGN

Determine domestic and fire demands for the facility and verify the design of all components of the domestic and fire protection supply systems. Design and construct the water system in accordance with UFC 3-230-01, *Water Storage, Distribution, and Transmission;* the state waterworks' regulations, and the utility provider's requirements. Design the water supply systems to provide required flows and maintain

residual pressures based upon peak demands.

If the new water system is an extension of an existing water system, obtain static pressure, residual pressure and flow characteristics of the existing distribution system by actual field tests. Conduct flow and pressure tests and provide design calculations that show the existing lines are capable of handling the additional flows. Connect the new water system to the nearest existing fitting or water line capable of handling the additional flows.

Design the connections to the water system including the meter assemblies and backflow-preventing devices in accordance with the requirements of the Activity or utility provider and the state waterworks regulations.

Wherever possible, locate valve boxes and other utility access structures out of paved areas.

G301001 WELL SYSTEMS

Design and construct the potable water well system in accordance with AWWA A100 and its appendices; the state waterworks' regulations, UFGS 33 11 13 Potable Water Supply Wells, and the system owner's preferences and requirements.

G301001 1.1 WATER METER

Provide a water meter on the well pump discharge piping aboveground in a pump enclosure or in a meter vault underground. Provide type of water meter and remote reading capability in accordance with system owner's preferences and requirements: AWWA C700, displacement type; AWWA C701, turbine type; or AWWA C702, compound type.

G301001 1.2 TEST HOLE

Drill test hole(s) at the well site before construction of the permanent well to determine the existing site-specific geologic and hydrologic conditions and groundwater-quality parameters. A test hole may be incorporated into the finished construction provided it meets the requirements for a finished well. Seal test holes not used in finished construction as recommended in accordance with AWWA C654 and the state waterworks' regulations. Upon completion of test hole, provide recommendations for permanent wells and submit data obtained at each well site. Include with the recommendations the appropriate depth, details of construction, length and location of screens, screen openings, gravel size, grout, and an estimation of the quantity of water that can be obtained from each water-bearing stratum and from each completed well. Submit electric log, a drillers log drawn to scale with coarseness and fineness modulus of each strata, time penetration log (time to drill through each formation), and sieve analysis to substantiate recommendations.

G301001 1.3 WELL CONSTRUCTION

G301001 1.3.1 Well Development And Capacity Testing

Provide well development and capacity testing in accordance with AWWA A100 and the state waterworks' regulations.

G301001 1.3.2 Disinfection

Disinfect well, equipment, and material in accordance with AWWA C654 and the state waterworks' regulations. Provide a sanitary seal for the well to prevent contamination until the pump foundation and pump are installed on the well.

G301001 1.4 ABANDONMENT OF EXISTING WELLS

Abandon and seal existing wells in accordance with AWWA A100 and the state waterworks' regulations.

G301002 POTABLE WATER DISTRIBUTION

G301002 1.1 WATER SYSTEM DESIGN

Provide materials, equipment, labor, testing, and miscellaneous related items for water distribution mains and service lines to the facility and connections to the existing water system in accordance with UFC 3-230-01, *Water Storage, Distribution, and Transmission*; the utility provider's requirements; and the state waterworks' regulations; whichever is more stringent.

Determine available flow at the residual pressure at each point of connection by conducting flow tests in accordance with AWWA M17 and NFPA 291.

Provide water main piping, service lines, fittings, valves, accessories and other materials in compliance with the American Water Works Association (AWWA) standards for a minimum system working pressure of 150 psi (1050 kPa).

G301002 1.2 WATER DISTRIBUTION MAINS

For underground applications, utilize HDPE DIPS DR11 for all water mains.

For aboveground applications, utilize flanged ductile iron pipe for water mains.

G301002 1.2.1 Materials

a. HDPE DIPS Pressure Pipe

1) Pipe: AWWA C906, Pressure Class 350 or equivalent.

2) Fittings: AWWA C906.

G301002 1.2.2 Installation

a. HDPE DIPS: AWWA C906.

Provide nondetectable warning tape and a continuous length of tracer wire for the full length of each run of nonmetallic piping below grade. Warning tape to be color coded with warning and identification of utility type imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (utility type) LINE BELOW" or similar wording. Color to be blue for potable water systems and purple for non-potable, reclaimed water, and irrigation lines. Terminate tracer wire above grade at valve boxes and at exterior of building.

G301002 1.2.3 Connections to Existing Water Lines

Make connections to existing water lines after approval from the system owner is obtained and with a minimum interruption of service on the existing line. Make connections to existing lines under pressure in accordance with the recommended procedures of the manufacturer of the pipe being tapped.

G301002 1.3 WATER SERVICE LINES

This section has been deleted as there are no water services associated with this project.

G301002 1.4 CORROSION PROTECTION

G301002 1.4.1 Insulating Joints

Provide insulating joints to prevent contact between dissimilar metals at the joint between adjacent sections of piping in accordance with the pipe manufacturer's recommendations. Ensure that there is no metal-to-metal contact between dissimilar metals after the joint has been assembled.

To prevent the possibility of bi-metallic corrosion, wrap service lines of dissimilar metal to the water mains and the attendant corporation stops with polyethylene or dielectric tape for a minimum clear distance of 3 feet (900 mm) from the main.

G301002 1.5 VALVES

Install valves with the same diameter and have the same joint ends as the mains to which they are installed. Provide each type of valve from one manufacturer.

G301002 1.5.1 Gate Valves

G301002 1.5.1.1 Location

Install valves at new points of connection. At a minimum, locate valves to ensure that no more than two fire hydrants will be out of service in the event of a single break in a water main. Locate valves outside of pavement and heavy traffic areas whenever possible.

G301002 1.5.1.2 Gate Valves 3-inch (75 mm) and Larger in Diameter

a. Valves (20-inch and smaller in diameter): AWWA C509 or AWWA C515, nonrising stem and of one manufacturer.
b. Valves (greater than 20-inch in diameter): AWWA C500.
c. Valves for Indicator Post: AWWA C509 or AWWA C500, as indicated above, with indicator post flange in accordance with requirements of UL 262.
d. Interior Coating: AWWA C550.

G301002 1.5.1.3 Gate Valves Smaller than 3-inch (75 mm) in Diameter

MSS SP-80, Class 150, solid wedge. Provide valves with flanged or threaded end connections, with unions on both sides of the valve and a handwheel operator.

G301002 1.5.1.4 Valve Box

Provide a cast iron, adjustable, valve box for each gate valve on buried piping. Provide valve boxes of a size suitable for the valve on which it is to be used with a minimum diameter of 5-1/4 inches (130 mm). Provide a round head and cast the word "WATER" on the lid.

G301002 1.5.2 Check Valves

Provide check valves sized 2-inches (50 mm) to 24-inches (600 mm) as swing-check type (AWWA C508) and with a protective epoxy interior coating conforming to AWWA C550. For underground applications, provide check valve in a valve vault.

G301002 1.5.3 Air Release, Air/Vacuum, and Combination Air Valves

AWWA C512 and AWWA M51.

G301002 1.5.4 Corporation Stops

If service lines 2—inch diameter or less are tapping water mains, provide corporation stops. Provide ground key type, bronze corporation stops, ASTM B61 or ASTM B62.

G301002 1.5.5 Installation of Valves

Make and assemble joints to valves as specified for making and assembling the same type of joints between pipe and fittings.

G301002 1.6 WATER METERS

Provide water meter and remote reading as required by the utility provider and in accordance with AWWA standards.

G301002 1.7 BACKFLOW PREVENTION

Provide backflow prevention and cross connection control in accordance with AWWA M-14 and governing local/state plumbing codes and waterworks' regulations.

G301002 1.8 FIRE HYDRANTS

Provide fire hydrants from one manufacturer and in accordance with UFC 3-600-01, *Fire Protection Engineering*. Coordinate with the project's fire protection designer of record. Provide protection for fire hydrants located in areas subject to vehicle damage. Provide fire hydrants with National Standard threads on hose and pumper connections. Provide a 6 inch (150 mm) inlet, two 2.5 inch (62 mm) hose connections and one pumper connection sized to accommodate local fire department equipment requirements. Paint hydrants with at least one coat of primer and two coats of enamel paint. Barrel and bonnet colors must be in accordance with UFC 3-600-01. Stencil hydrant number and main size on the hydrant barrel using black stencil paint.

a. Dry Barrel Fire Hydrants: AWWA C502 with frangible sections.
b. Wet Barrel Fire Hydrants: AWWA C503 or UL 246, "Wet Barrel" design, with breakable features.
c. Installation: Install hydrants with the pumper connection facing the adjacent paved surface. If there are two, paved adjacent surfaces, contact the Contracting Officer for further direction.

G301002 1.9 THRUST RESTRAINT

Provide thrust restraint for all piping, valves, fittings, and other appurtenances of the water distribution system.

Provide thrust restraint using restrained joints in accordance with pipe manufacturer's recommendations, AWWA C600 and if for fire service main, NFPA 24.

G301002 1.10 DISINFECTION

Disinfect new water piping and existing water piping affected by Contractor's operations in accordance with the state waterworks' regulations and AWWA C651.

.

G301006 NON-POTABLE WATER DISTRIBUTION

Refer to G301002; note that system disinfection is required.

G3030 STORM SEWER

Provide materials, equipment, labor, testing, and miscellaneous related items to provide storm drainage collection system to drain the site. Design and construct the storm sewer collection system in accordance with UFC 3-201-01, *Civil Engineering*; the utility provider's requirements; and the state stormwater management laws and regulations. Design project site to prevent stormwater runoff in excess of the capacity of the existing utility system.

G303001 STORM SEWER PIPING

G303001 1.1 PIPING

Storm sewer piping 12 inches (300 mm) and larger in diameter must be reinforced concrete, ductile iron, HDPE or corrugated steel; PVC, corrugated aluminum, pipe may only be used when written approval is received by the Government's Civil Reviewer or indicated in another part of the RFP.

Utilize perforated PVC or HDPE for subsurface drainage piping.

G303001 1.1.1 Materials

a. PVC Pipe

1) Piping and Fittings: ASTM D3034, SDR 35.

2) Joints: ASTM D3212 and ASTM F477.

b. Ductile Iron Pipe

1) Piping: ASTM A746. Provide required Thickness Class based on design information and methods in ASTM A746.

2) Fittings: AWWA C110 or AWWA C153.

3) Joints: AWWA C111.

4) Interior Coating: AWWA C104.

5) Exterior Protection (if required): AWWA C105, polyethylene encasement.

c. Reinforced Concrete Pipe

1) Circular Pipe: ASTM C76/C76M. Provide required Class based on design information and methods in ASTM C76/C76M. Class III minimum.

2) Elliptical Pipe: ASTM C507/C507M. Provide required

Class based on design information and methods in ASTM C76/C76M.

3) Joints:

a) ASTM C990/C990M butyl gaskets;

b) ASTM C 443/C 443M rubber O-ring joints; or

c) AASHTO M 198, Type B preformed plastic gaskets.

d. Corrugated Aluminum Pipe

1) Piping: ASTM B745/B745M.

2) Joints: Coupling bands conforming to ASTM B745/B745M.

3) Coating: Fully bituminous coated in accordance with ASTM A849. For applications where piping is part of a piped storm sewer system (not a culvert), provide pipe fully bituminous coated, invert (half) paved with concrete lining in accordance with ASTM A849.

e. Corrugated Steel Pipe

1) Piping: ASTM A760/A760M.

2) Joints: Coupling bands conforming to ASTM A760/A760M.

3) Coating: Fully bituminous coated in accordance with ASTM A849. For applications where piping is part of a piped storm sewer system (not a culvert), provide pipe fully bituminous coated, invert (half) paved with concrete lining in accordance with ASTM A849.

f. Polyethylene (PE) Pipe

1) Piping 12 inches to 60 inches and Fittings: ASTM 2648/F2648M and AASHTO M 294 Type S, corrugated.

2) Joints: ASTM F477 and ASTM D3212

g. Dual and Triple Wall Polypropylene (PP) Pipe

1) Piping 12 inches to 60 inches and Fittings: ASTM F2736, ASTM F2764/F2764M, ASTM F2881 and AASHTO M 330 Type S or D

2) Joints: ASTM F477 and ASTM D3212

h. Perforated PVC Pipe: ASTM D 2729.

i. Perforated PE Pipe

1) Piping and Fittings: AASHTO M 294, Type SP, corrugated.

2) Joints: AASHTO M 294, Soiltight.

G303001 1.1.2 Installation

Install piping in accordance with manufacturer's recommendations and the following standards:

1. PVC, PE and Dual and Triple Wall PP: ASTM D 2321. Do not use ASTM D 2321 Class IV or V materials for bedding, haunching or initial backfill materials.
2. Ductile Iron: AWWA C600.
3. Reinforced Concrete: ACPA 01-102 and 01-103.
4. Corrugated Aluminum: ASTM B 788/B 788M.
5. Corrugated Steel: ASTM A 798/A 798M.
6. Perforated PVC and Perforated PE: ASTM D 2321. Do not use ASTM D 2321 Class IV or V materials for bedding, haunching or initial backfill materials.

Provide nondetectable warning tape and a continuous length of tracer wire for the full length of each run of nonmetallic piping below grade. Warning tape to be color coded with warning and identification of utility type imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (utility type) LINE BELOW" or similar wording. Color to be green for sewer systems. Terminate tracer wire above grade at valve boxes and at exterior of building.

G303001 1.2 PIPING FOR CLEANOUTS

G303001 1.2.1 Materials

a. Cast-Iron Soil Pipe for Cleanouts

1) Pipe: ASTM A 74, service.

2) Joints: ASTM C 564 compression rubber gaskets.

3) Exterior Protection (if required): AWWA C105, polyethylene encasement.

G303001 1.2.2 Installation

Install cast iron pipe and fittings in accordance with the recommendations of the pipe manufacturer.

G303002 STORM SEWER STRUCTURES

G303002 1.1 GENERAL REQUIREMENTS

Provide materials, equipment, labor, testing, and miscellaneous related items for the drainage structures in accordance with the following:

a. Set structure rim elevations flush with finished surface of paved areas or 1 inch (25 mm) above finished grade in unpaved areas.
b. Provide resilient connectors for making joints between manhole

and pipes entering manhole in conformance with ASTM C 923/C 923M.

c. Provide precast or cast-in-place concrete drainage structures, except cast-in-place concrete is required for airfield drainage structures, headwalls and gutters.

G303002 1.2 PRECAST CONCRETE INLETS

Provide work and materials in accordance with requirements of the State Highway Specifications (SHS) and standards where the project is located.

G303002 1.3 CAST-IN-PLACE CONCRETE DRAINAGE STRUCTURES

Provide work and materials in accordance with drainage structures indicated in the State Highway Specifications (SHS) and standards where the project is located.

For airfield drainage structures, provide work and materials in accordance with FAA ACA 150/5370-10B.

G303002 1.4 DRAINAGE STRUCTURE FRAMES AND COVERS

Frame and cover for gratings must be cast gray iron, ASTM A48/A48M, Class 35B; cast ductile iron, ASTM A536, Grade 65-45-12; or cast aluminum, ASTM B26/B26M, Alloy 356.OT6. Provide frame and cover to accommodate the imposed live loads. Stamp or cast the words "Storm Sewer" into covers so that it is plainly visible.

For airfield drainage structures, fabricate frames and covers of standard commercial grade steel welded by qualified welders in accordance with AWS D1.1/D1.1M. Provide covers of rolled steel floor plate having an approved anti-slip surface. Steel frames and covers must be hot dipped galvanized after fabrication. At the contractor's option, ductile iron covers and frames may be used for airfield drainage structures if designed for a minimum proof load of 100,000 pounds (45,000 kg) in lieu of the steel frames and covers. Provide covers of the same material as the frames (i.e. ductile iron frame with ductile iron cover, galvanized steel frame with galvanized steel cover). Perform proof loading in accordance with ASTM A 48/A 48M. Physically stamp proof loads into the cover. Provide the Contracting Officer copies of previous proof load test results performed on the same frames and covers as proposed for this Contract. Modify the top of the structure to accept the ductile iron structure in lieu of the steel structure indicated. The finished structure must be level and non-rocking, with the top flush with the surrounding pavement.

G303002 1.5 DRAINAGE STRUCTURE STEPS

a. Zinc-coated steel: 29 CFR 1910.27.

b. Plastic or rubber coating pressure molded to steel: ASTM D 4101, copolymer polypropylene; or ASTM C 443/C 443M, except shore A durometer hardness must be 70 plus or minus 5.

Aluminum steps or rungs are not allowed.

Steps are not required in structures less than 4 feet (1.2 m) deep.

G303002 1.6 DRAINAGE STRUCTURE CONSTRUCTION

Where a new structure is constructed on an existing line, remove existing pipe to construct the structure. Cut existing pipe so that pipe ends are approximately flush with the interior face of structure wall, but not protruding into the structure.

G303002 1.7 CONNECTIONS TO EXISTING STRUCTURES

Center pipe connections to existing structures on the structure. Holes for the new pipe must be of sufficient diameter to allow packing cement mortar around the entire periphery of the pipe but no larger than 1.5 times the diameter of the pipe. Cut the structure in a manner that causes the least damage to the walls.

G303002 1.8 CLEANOUTS

Construct cleanouts of cast iron soil pipe and fittings; see G303001, paragraph 1.2.

G303003 LIFT STATIONS

A stormwater pump station(s) will not be allowed.

G303004 CULVERTS

Provide reinforced concrete, HDPE or corrugated steel piping for culverts 12 inches (300 mm) and larger in diameter; PVC, corrugated aluminum, pipe may only be used when written approval is received by the Government's Civil Reviewer or indicated in another part of the RFP. See G303001, paragraphs 1.1.1 and 1.1.2 for material and installation requirements.

Provide flared end sections of the same material as the pipe material.

Provide erosion control in accordance with the State Erosion and Sedimentation Control Standards or EPA guidance where State Standards are unavailable.

G303005 HEADWALLS

Provide cast-in-place concrete headwalls in accordance with the State Highway Specification (SHS) and standards where the project is located.

G303006 EROSION & SEDIMENT CONTROL MEASURES

Refer to Section G103011.

G303007 STORMWATER MANAGEMENT

G303007 1.1 STORMWATER COLLECTION AND STORAGE

Provide permanent stormwater management (i.e., detention and retention

ponds, LID and other drainage features) to control stormwater runoff in accordance with UFC 3-201-01, *Civil Engineering*, UFC 3-210-10, *Low Impact Development*, , State and local stormwater management Laws and Regulations and project sustainability goals. Integrate permanent stormwater management features into the site design in accordance with UFC 3-201-01, *Civil Engineering*.

Parking areas, roads, walks, courtyards, training areas and similar site features may not be used to detain or retain stormwater. Manage stormwater within detention or retention ponds and the LID features indicated in Part 3 of this RFP. Prevent upstream and downstream property damage.

G303090 OTHER STORM SEWER

G303090 1.1 OIL INTERCEPTOR

Provide an oil interceptor to remove free oil from oil-in-water mixtures originating from proposed facility operations. Provide grit protection upstream of the oil interceptor.

Provide an oil interceptor utilizing coalescing media and conforming to the guidelines of the American Petroleum Institute (API).

Provide materials or a coating system which protects the interceptor from the oil-in-water mixture, atmosphere, and in-situ soil conditions.

Use an interceptor with a completely removable cover.

-- End of Section --

SECTION G40

SITE ELECTRICAL UTILITIES
09/22

G40 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

G40 1.1 NARRATIVE

This section covers installations exterior to the facility outside the five foot line. See PTS Section D50, *Electrical*, for continuation of systems inside the five foot line, into and inside the building.

G40 1.2 ELECTRICAL DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

When all product Quality Control information is included in the Unified Facility Criteria (UFC) and there are requirement options identified in the ESR, then the Uniformat Level 4 titles (and possible subtitles) are included without repetition of requirements. One example of this is G401008, GROUNDING SYSTEMS.

G40 1.2.1 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (General Building Requirements)(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-501-01, Electrical Engineering)
UFC 1-200-02	High Performance and Sustainable Building Requirements

UFC 3-550-01	Exterior Electrical Power Distribution, Change 3, November 1, 2019
UFC 3-580-01	Infrastructure and Communications Technology Infrastructure Planning and Design, November 21, 2024

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS 26 12 19.10	Three-Phase, Liquid-Filled Pad-Mounted Transformers
UFGS 26 13 00	SF6/High-Firepoint Fluids Insulated Pad-Mounted Switchgear
UFGS 26 27 14.00 20	Electricity Metering
UFGS 26 56 00	Exterior Lighting
UFGS 33 71 01	Overhead Transmission and Distribution
UFGS 33 71 02	Underground Electrical Distribution
UFGS 33 82 00	Telecommunications Outside Plant (OSP)

FT DRUM STANDARDS

All applicable Fort Drum Standards

G40 1.3 QUALITY ASSURANCE

Submit qualifications, certifications, and Test Plans indicated herein 45 calendar days prior to the expected date of execution. Notify the Contracting Officer 14 calendar days prior to all testing. Submit test results within 7 calendar days of completion of testing.

The Designer of Record is responsible for approving the submittals listed below.

G40 1.3.1 Qualified Testing Organization

Engage the services of a qualified testing organization to provide inspection, testing, calibration, and adjustment of the electrical distribution system and equipment listed in paragraph

entitled "Acceptance Tests and Inspections" herein. Organization must be independent of the supplier, manufacturer, and installer of the equipment. The organization must be a first tier subcontractor.

a. Submit name and qualifications of organization. Organization must have been regularly engaged in the testing of electrical materials, devices, installations, and systems for a minimum of 5 years. The organization must have a calibration program, and test instruments used must be calibrated in accordance with NETA ATS.
b. Submit name and qualifications of the lead engineering technician performing the required testing services. Include a list of three comparable jobs performed by the technician with specific names and telephone numbers for reference. Testing, inspection, calibration, and adjustments must be performed by an engineering technician, certified by NETA or the National Institute for Certification in Engineering Technologies (NICET) with a minimum of 5 years' experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices.

G40 1.3.2 NEC Qualified Worker

Provide in accordance with NFPA 70. Qualified Workers are allowed to be assisted by helpers on a 1 to 1 ratio, provided such helpers are registered in recognized apprenticeship programs. Submit a certification confirming NEC Qualified Worker requirements.

G40 1.3.3 Qualified Medium Voltage Electrician

All workers on medium voltage electrical crews must have 5 years experience working medium voltage systems on similar projects involving the same or higher voltage.

G40 1.3.4 Qualified Cable Splicer (Medium Voltage Cable)

The cable splicer/terminator must have a certification from the National Cable Splicing Certification Board (NCSCB) in the field of splicing and terminating shielded medium voltage (5 kV to 35 kV) power cable using pre-manufactured kits (pre-molded, heat-shrink, cold-shrink). Submit proof of certification for the individuals that will be performing cable splicer and termination work 30 days before splices or terminations are to be made.

G40 1.3.5 Qualified Cable Splicer (Telecommunications)

Certification must include the training, and experience of the individual on specific type and classification of telecommunications cable to be provided under this contract.

G40 1.3.6 Qualified Cable Installer and Splicer (Fiber Optic Cable)

Certification must include the training, and experience of the individual on specific type and classification of Fiber Optic media to be provided under this contract.

G40 1.3.7 Qualified Fiber Optic (FO) Cable Manufacturer

The FO media manufacturer must have a minimum of 3 years experience in the manufacturing, assembly, and factory testing of FO media that complies with RUS REA Bull 1753F-601 (PE-90). Manufacturer must provide a list of customers with 3 years of maintenance logs documenting experience with government customers.

G40 1.3.8 Material Standards

Ensure service support and provide manufacturer's nameplate in accordance with PTS Section Z10, *General Performance Technical Specification*.

G40 1.3.8.1 Warning Labels

Each enclosure of electrical equipment, including substations, pad-mounted transformers, pad-mounted switches, pad-mounted sectionalizing termination cabinets, and switchgear, must have a warning label identifying the enclosure as 1) containing energized electrical equipment and 2) an arc flash hazard. Provide arc flash warning labels in accordance with UFC 3-560-01, *Electrical Safety, O & M*.

G40 1.3.9 Factory Testing

The Government reserves the right to witness all factory testing. The manufacturer's calibration program must ensure that all test instruments are maintained within rated accuracy.

G40 1.3.10 Electrical System Startup and Testing

Submit test plans for approval. Tailor test plans to the systems provided.

The test plan must list make and model and provide functional description of the test instruments and accessories and must describe the setup of the tests to be conducted. Test instruments must be capable of measuring and recording or displaying test data at a higher resolution and greater accuracy than specified for the equipment's performance.

G40 1.3.11.1 Factory Trained Engineer

Provide a factory trained engineer to supervise start-up and testing as required in referenced specifications.

G40 1.3.11.2 Performance Verification Testing

Perform in-service demonstration that all circuits and devices are in operating condition. Tests must confirm that each item of control equipment will function not less than five times. Provide all necessary test equipment, tools, fuel, load banks, labor, and materials for testing. As a minimum, test all systems in accordance with manufacturer's recommendations. Additional testing requirements for the various systems are described with those systems, hereinafter. Assure that all test instruments are maintained within rated accuracy. Dated calibration labels must be visible on all test equipment.

Submit a separate electrical field test plan in accordance with manufacturer's recommendations and that conforms to NETA ATS for each piece of Electrical Distribution

Equipment and System requiring Performance Verification Testing.

The following items identify specific test requirements. Additional test requirements are contained in the applicable UFGS.

a. Cable – Test cable in accordance with the manufacturer's recommendations and NETA ATS. Adhere to precautions and limits as specified in the applicable NEMA/ICEA Standard for the specific cable.
b. Grounding - Test ground systems in accordance with the manufacturer's recommendations and NETA ATS.
c. Site Lighting - Contractor's Quality Control (CQC) representative must perform a field survey of site lighting systems in accordance with IESNA for acceptance. Show that the lighting system operates in accordance with the user’s requirements and is in accordance with designed levels. Provide certification that the measured lighting levels conform to the design requirements.
d. Telecommunications wiring - Test all cables in accordance with industry standards.

G40 1.3.10.3 Acceptance Tests and Inspections

The Qualified Testing Organization must provide the Acceptance Tests and Inspections test plan and procedures and perform the acceptance tests and inspections. Test methods, procedures, and test values must be performed and evaluated in accordance with NETA ATS, the manufacturer's recommendations, and paragraph entitled "Field Quality Control" of each applicable specification section. Tests identified as optional in NETA ATS are not required unless otherwise specified. Place equipment in service only after completion of required tests and evaluation of the test results have been completed. Contractor must supply to the testing organization complete sets of shop drawings, settings of adjustable devices, and other information necessary for an accurate test and inspection of the system prior to the performance of any final testing.

Specific test requirements are contained in the UFGS for equipment.

G40 1.4 DESIGN SUBMITTALS

Submit design submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*, Part 2 Section 01 33 16.00 10, *Design After Award*, and UFC 3-501-01, *Electrical Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the

project, the DOR must edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS Section Z10, *General Performance Technical Specifications*.

UFGS 26 12 19.10, *Three-Phase, Liquid-Filled Pad-Mounted Transformers*

UFGS 26 13 00, *SF6/High-Firepoint Fluids Insulated Pad-Mounted Switch Gear*

UFGS 26 27 14.00 20, *Electricity Metering*

UFGS 26 56 00, *Exterior Lighting*

UFGS 33 71 01, *Overhead Transmission and Distribution*

UFGS 33 71 02, *Underground Electrical Distribution*

UFGS 33 82 00, *Telecommunications Outside Plant (OSP)*

G40 1.4.1 Sustainable Design Submittal

Submit sustainable design submittals in accordance with Part 2 UFGS Section 01 33 29, *Sustainability Requirements and Reporting*.

G40 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the PTS Section Z10 requirements, the Designer of Record (DOR) ,ust approve the following construction submittals as a minimum:

OMSI Information for Electrical Equipment (if OMSI Manual for the entire project is not already required); all "G" item submittals listed in the submittals of the specifications sections identified in the Design Submittals paragraph above; and all "G" item submittals listed for Government Surveillance in Part 2 Section 01 33 00.05 20, *Construction Submittal Procedures*.

Provide certification that all adjustable protective device settings have been set in accordance with the coordination study for the as-built equipment and configuration.

G40 1.5.1 Sustainable Construction Submittal

Submit sustainable construction submittals in accordance with Part 2 UFGS Section 01 33 29, *Sustainability Requirements and Reporting*.

G4010 ELECTRICAL DISTRIBUTION

G401001 SUBSTATIONS

G401002 TRANSFORMERS

When transformers are required, the Designer of Record must utilize UFGS Section 26 12 19.10, *Three-Phase, Liquid-Filled Pad-Mounted Transformers* and submit the edited specification section as a part of the design submittal for the project.

G401003 SWITCHES, CONTROLS AND DEVICES

When switches or control devices are required, the Designer of Record must utilize UFGS Section 26 13 00, *SF6/High-Firepoint Fluids Insulated Pad Mounted Switchgear*, or UFGS Section 33 71 01, *Overhead Transmission and Distribution*, for the project specification, and submit the edited specification section as a part of the design submittal for the project.

G401004 OVERHEAD ELECTRIC CONDUCTORS

Power line conductors must be strung in accordance with manufacturer's standard sag and tension recommendations.

G401005 TOWERS, POLES, CROSSARMS AND INSULATORS

Wood poles must comply with ANSI 05.1 and RUS 1728F-700. Pressure treat poles in accordance with AWPA C1 and AWPA C4 as referenced in RUS 1728F-700. The quality of each pole must be ensured with "WQC" (wood quality control) brand on each piece or by an approved inspection agency report. Do not use creosote treated poles, lodgepole pine, and western larch pine poles.

Concrete poles must comply with ANSI loadings for distribution poles.

Determine the size of poles required, class, height and other data, to meet requirements of the pole line. Provide wood, steel, or fiberglass crossarms in accordance with industry and local standards. Insulators, cutouts and associated equipment must be determined by the Designer of Record to meet system requirements.

G401006 UNDERGROUND ELECTRIC CONDUCTORS

Route underground cables to minimize splices. Cable pulling tensions must not exceed the maximum pulling tension recommended by the cable manufacturer. Medium voltage cable termination must be suitable for the location installed and meet IEEE Std. 48 Class 1 requirements.

G401007 DUCTBANKS, MANHOLES, HANDHOLES AND RACEWAYS

Concrete manholes and handholes to be standard type precast concrete. Composite/Fiberglass handholes must be polymer concrete reinforced with a heavy weave fiberglass reinforcing. Provide manholes and handholes with load ratings suitable for the location installed.

G401009 METERING

When metering is required the Designer of Record must utilize UFGS section 26 27 14.00 20 for the project specification and submit the edited specification section as part of the design submittal for the project.

G4020 SITE LIGHTING

G402001 EXTERIOR LIGHTING FIXTURES AND CONTROLS

Comply with ANSI/ASHRAE/IES 90.1 for all exterior lighting applications and controls. Comply with UFC 3-530-01 for reduction of light pollution.

Provide SPD at panelboards that include circuits feeding exterior lighting systems.

Coordinate the design and luminaire selection with the landscape designer. Such coordination must ensure the location of poles do not conflict with tree locations.

When exterior lighting is required the Designer of Record must utilize UFGS section 26 56 00 for the project specification and submit the edited specification section as part of the design submittal for the project.

G402005 UNDERGROUND ELECTRIC CONDUCTORS

Provide in accordance with Paragraph G401006.

G402006 DUCTBANKS, MANHOLES AND HANDHOLES

Provide handholes and underground conduits for site lighting in accordance with Paragraph G401007.

G402007 GROUNDING SYSTEMS

All new fencing to provide grounding. See Drawings in Part 6.

G4030 SITE COMMUNICATION AND SECURITY

G403003 CABLES AND WIRING

Fiber optic media must meet all performance requirements of EIA/TIA-568-A and the physical requirements of ICEA S 87-640 and EIA/TIA-598-A.

G403004 DUCTBANKS, MANHOLES AND HANDHOLES

Provide in accordance with paragraph G401007.

G403005 TOWERS, POLES AND STANDS

Provide in accordance with paragraph G401005.

G4090 OTHER ELECTRICAL UTILITIES

-- End of Section --

SECTION Z10

GENERAL PERFORMANCE TECHNICAL SPECIFICATION
06/23

Z10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

Z10 1.1 NARRATIVE

All Performance Technical Specification (PTS) sections must be used in conjunction with all parts of the Design Build (D/B) Request for Proposal (RFP) to determine the full requirements of this solicitation. This PTS section provides general requirements for the other PTS sections of this RFP and is used in conjunction with the other PTS sections.

Refer to Part 2 Section 01 33 16.00 10, *Design After Award* for the Order of Precedence of the RFP Parts. Requirements listed in the Project Program take precedence over the PTS sections requirements; therefore, requirements identified in the Project Program eliminate options related to that requirement in the PTS sections.

Z10 1.2 DESIGN GUIDANCE

Provide work in compliance with the following design standards and codes, as a minimum. Government standards listed in this RFP take precedence over industry standards.

The PTS Sections reference published standards, the titles of which can be found in the *Unified Master Reference List (UMRL)* on the Whole Building Design Guide website. The publications referenced form a part of this specification to the extent referenced. The publications are referred to in the section text by the basic designation only. Industry standards, codes, and Government standards referenced in the section text, and not found in the UMRL, are listed at the beginning of the PTS sections.

The advisory provisions of all referenced codes, standards, and specifications must be mandatory; substitute words such as "must", or "required" for words such as "should", "may", or "recommended," wherever they appear. The results of these wording substitutions incorporate these code and standard statements as requirements. Reference to the "authority having jurisdiction" for variance from criteria must be interpreted to mean the "Chief Engineer " and for

contractual obligations on this project must be interpreted to mean the "Contracting Officer". Comply with the required and advisory portions of the current edition of the standard at the time of contract award.

The following list of codes and standards is not comprehensive and is augmented by other codes and standards referenced and cross-referenced in the RFP.

Z10 1.2.1 INDUSTRY CODES

INTERNATIONAL BUILDING CODE (IBC) as modified by UFC 1-200-01. UFC 1-200-01 applies the IBC to the project and references other commercial standards and UFC criteria that become part of the contract.

Z10 1.2.2 INDUSTRY REQUIREMENTS

WHOLE BUILDING DESIGN GUIDE (WBDG)

WHOLE BUILDING DESIGN GUIDE, Ensure Occupant Safety and Health (Systems Safety Engineering) at https://www.wbdg.org/do/secure/occupant-safe

Z10 1.2.3 GOVERNMENT STANDARDS

Z10 1.2.3.1 UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	DoD Building Code (UFC 1-200-01 is a hub document that provides general building requirements and references other critical UFCs. A reference to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs listed therein.)
UFC 1-200-02	High Performance and Sustainable Building Requirements

Z10 1.2.3.2 FEDERAL STANDARDS

Architectural Barriers Act Standards with DEPSECDEF Memorandum 31 Oct 2008, "Access for People with Disabilities"

Occupational Safety and Health Administration (OSHA)

Z10 1.3 MATERIALS AND EQUIPMENT REQUIREMENTS IDENTIFICATION

Z10 1.3.1 MATERIALS STANDARD

Refer to the Project Program for identification of Government Furnished Equipment.

The equipment items must be supported by service organizations that are convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

Materials, equipment, fixtures, and other appurtenances must comply with applicable Underwriters Laboratories, (UL) Inc., American National Standards Institute, Inc., and National Electrical Manufacturer's Association standards or applicable standards of a similar independent testing organization. All materials must be new, and must bear the label of Underwriters Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency. All equipment provided must be listed and labeled suitable for the specified purpose, environment, and application and installed in accordance with manufacturer’s recommendations. Insulation must be asbestos free.

Z10 1.3.2 EQUIPMENT NAMEPLATE IDENTIFICATION

Each item of equipment must have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

Z10 1.3.3 FIELD-APPLIED NAMEPLATES

Provide laminated plastic nameplates for each piece of equipment. Each nameplate must identify the function and, when applicable, the number designation of that piece of equipment as used in the design documents. Provide melamine plastic nameplates, 0.125 inch (3 mm) thick, white with black center core.

Z10 1.4 COMMISSIONING

Commissioning is not required. Refer to Performance Verification and acceptance testing requirements in this section.

Z10 1.5 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTS

Verification of satisfactory construction and system performance must be via Performance Verification Testing, Acceptance Tests, and submittal of test reports certified by the Designer of Record (DOR), that work is in compliance with requirements of the RFP. The Government reserves the right to witness all Performance Verification and Acceptance Tests, review data, and request other such additional inspections and repeat tests as necessary to ensure that the work and provided services conform to the stated requirements. Contractor must pay the cost of all testing.

Refer to each PTS section to identify Performance Verification and Acceptance Testing required by the work specified in that PTS section.

Z10 1.6 SUBMITTALS

Contractor's design submittals that combines design and construction submittals, must jointly comply with Part 2 Sections 01 33 00.05 20, *Construction Submittal Procedures* and 01 33 16.00 10, *Design After Award*. Contractor's construction submittals that are submitted separate from the design submittals must comply with Part 2 Section 01 33 00.05 20, *Construction Submittal Procedures*.

Refer to "Construction Quality Control" in Part 2 Sections 01 33 00.05 20, *Construction Submittal Procedures* and 01 45 00, *Quality Control* to define reviewing and approving Authority of design and construction submittals.

Utilize the same materials and equipment that are approved and provided for an initial facility design, on all follow-on facilities that use the same design with-in this contract. Once the initial facility design is approved by the Government, the Contractor must obtain Government approval to change materials and equipment when designing and constructing follow-on facilities utilizing the same design.

Z10 1.6.1 DESIGN SUBMITTALS

Submit design submittals in accordance with Part 2 Section 01 33 16.00 10, Design After Award and other discipline-specific guidelines listed in the applicable PTS sections.

Part 2 Section 01 33 16.00 10, *Design After Award* requires the use of UFGS sections in the development of the Contractor originated specification. The Designer of Record (DOR) must edit the UFGS sections for the project and submit the edited specification as a part of the design submittal. The DOR must edit the UFGS as follows:

(1) Prepare UFGS Specifications as part of the project specification,

(2) Delete only portions of the UFGS specification that are not applicable to the project,

(3) Edit only the bracketed choices that are within the UFGS specification text,

(4) Edit blank bracketed options to include requirements that exercise prudence and adherence to acceptable industry standards,

(5) Comply with the directions, directives, and requirements of all UFGS Criteria Notes. The UFGS Criteria Notes are typically bordered on the top and bottom by a line of asterisks to highlight their location.

(6) If proprietary information is provided or required to streamline the construction submittal process, include proprietary information in the edited UFGS sections and added to the end of each UFGS section. Confirm that the proprietary products, materials, and systems listed in the specifications are in compliance with the requirements of the RFP.

Z10 1.6.2 CONSTRUCTION SUBMITTALS

Submit for approval to the Designer of Record (DOR), construction submittals, product data, manufacturer's information, shop drawings, and test reports on all materials and systems installed in the project, unless the DOR designates submittal for QC approval. Refer to each PTS section for further construction submittal requirements relating to the work identified in that particular PTS section. Some PTS sections reference UFGS sections that will require more construction submittals for DOR approval than is stated above. Refer to Part 2 Section 01 33 00.05 20 for the list of construction submittals reserved for Government Approval and Government Surveillance.

--End of Section--