U.S. AIR FORCE

Specifications Manual
Design-Bid-Build (DBB)

JCGU 25-7007, Repair Kitchen Flooring B334
Goodfellow AFB, TX

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ISSUED FOR CONSTRUCTION

SECTION 00 00 00

TABLE OF CONTENTS

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

00 00 00 TABLE OF CONTENTS
00 01 15 LIST OF DRAWINGS
00 41 00 BID SCHEDULE

DIVISION 01 - GENERAL REQUIREMENTS

01 00 00 GENERAL REQUIREMENTS
01 01 10-IC INFECTION CONTROL
01 11 00 SUMMARY OF WORK
01 12 17 JOB MEETINGS
01 18 00 PROJECT UTILITIES
01 30 00 ADMINISTRATIVE REQUIREMENTS
01 32 16.00 20 PROJECT SCHEDULE (SMALL PROJECTS)
01 33 00 SUBMITTAL PROCEDURES
01 35 26 GOVERNMENT SAFETY REQUIREMENTS
01 45 00.00 10 QUALITY CONTROL
01 56 00 ENVIRONMENTAL PROTECTION
01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS
01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
01 78 00 CLOSEOUT SUBMITTALS

DIVISION 02 – EXISTING CONDITIONS

02 41 00 DEMOLITION

DIVISION 03 – CONCRETE

03 01 00 REHABILITATION OF CONCRETE

DIVISION 09 – FINISHES

09 67 13.13 STANDARD RESINOUS FLOORING

DIVISION 10 – SPECIALTIES

10 26 00 WALL PROTECTION

DIVISION 11- EQUIPMENT

11 05 40 COMMON WORK RESULTS FOR FOOD SERVICE EQUIPMENT

-- End of Project Table of Contents --

DOCUMENT 00 01 15

LIST OF DRAWINGS

PART 1 GENERAL

1.1 SUMMARY

This section lists the drawings for the project pursuant to contract clause "DFARS 252.236-7001, Contract Drawings, Maps and Specifications" are provided and form a part of the contract.

1.2 CONTRACT DRAWINGS

Contract drawings are as follows:

DRAWING NO.	TITLE
G-001	COVER SHEET
G-002	GENERAL INFORMATION 1
G-003	GENERAL INFORMATION 2
G-004	PHASING PLAN
AD-101	DEMOLITION AND NEW FLOORPLAN
Q-101	EQUIPMENT PLAN
P-101	SANITARY SEWER PLAN

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SECTION 00 41 00

BID SCHEDULE

PART 1 GENERAL

1.1 SUMMARY

This section lists the bid schedule and schedule of contract line-item numbers (CLINs) defined in the technical provisions of the contract.

1.2 CONTRACT LINE-ITEM NUMBER (CLIN)SCHEDULE

The design-bid-build (DBB) project delivery team shall provide all tools, equipment, material, labor, and supervision necessary to perform all work subject to the terms and conditions required by contract.

The total project performance period shall be **ONE HUNDRED AND SIXTY FOUR (164) CALENDAR DAYS.** The total performance period includes time prescribed for Government transitions and phasing as described in the project documents.

CLIN	DESCRIPTION	QTY	UNIT	PRICE	AMOUNT
	0001 (Basic: B334 Kitchen Repair): All costs associated with the demolition, repair, and replacement of the kitchen flooring in B334. This includes all time and costs associated with constructing/deconstructing temporary partitions, floor demolition and preparation, application of new flooring, site cleanup, and demobilization. This CLIN does not include any of the following CLINs within it.	Job	L.S.	****	**$**
				UNIT	**TOTAL**
	0002 (Basic: Furnishings): All costs associated with inventory, removal, storage, sanitization, cleaning, and reinstallation of all kitchen equipment. This includes costs of temporary storage units such as storage containers along with costs to clean and sanitize equipment upon successful hookup and installation.	Job	L.S.	****	**$**
				UNIT	**TOTAL**

TOTAL CLIN (ALL): CLIN 0001 + CLIN 0002

$

TOTAL

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SECTION 01 00 00

GENERAL REQUIREMENTS

(1) GENERAL

1.13 SCOPE OF WORK

The work covered by this specification consists of furnishing all plant, labor, equipment, and material, and performing all work in connection with JCGU 25-7007 "Repair Kitchen, B334" in strict accordance with these specifications and drawings and subject to the terms and conditions of this contract.

1.14 LOCATION

The work is to be accomplished at Goodfellow AFB, San Angelo, Texas. This base is accessible by public highway. Contractor access to the work area will be as indicated in the project drawings.

1.15 WORK SCHEDULE

A. The contractor shall observe the same regular workweek being observed by the Goodfellow AFB Civil Engineering shop forces, which is Monday through Friday, from 7:30 a.m. to 4:30 p.m., with Federal holidays excluded. Any Holiday falling on a Saturday will be observed the preceding Friday. Any Holiday falling on a Sunday will be observed the following Monday.

B. Any deviation from this schedule will require 48 hours advance notice and approval of the Contracting Officer. If base personnel are reasonably available, the Contracting Officer may authorize the Contractor to perform work during periods other than normal duty hours/days.

C. Due to the critical nature of the dining facility to Goodfellow AFB, the Contractor may be required to work nights, weekends, and/or holidays in order to ensure 100% completion of all work items within the prescribed performance period.

D. The base could be closed because of security problems, adverse weather, or other events. Unless otherwise notified by the Government, the Contractor should monitor local television stations, radio stations, or Goodfellow's Facebook page for notification of a possible base closure or late opening. The Contractor may not receive any other form of notification of a base closure from the Government, unless contacted by the Contracting Officer (CO) or the Contracting Officer Representative (COR). The Contractor is responsible for notifying his/her employees. Contractor(s) do not report when the base is closed due to security problems and/or adverse weather.

1.4 TOBACO USE IN AETC FACILITIES

A. Contractors are advised that the Commander has placed restrictions on the smoking of tobacco products in AETC facilities. AFI 40-102, Tobacco Use in the Air Force, outlines the procedures used by the commander to control smoking in our facilities. Contractor employees and visitors are subject to the same restrictions as government personnel. Smoking is permitted only in designated smoking areas. Additional information, to include locations of designated smoking

areas, will be provided to the contractor at the pre-performance conference. required to prevent sagging and an unsightly appearance. Fencing shall be maintained by the Contractor in this manner throughout the extent contract. Due to high winds in West Texas, Contractor shall take every precaution to preclude trash and materials from blowing off site.

All Contractor storage areas shall be maintained including yard/grass regularly cut/trimmed by the Contractor, as required daily. At all times, all Contractor trailers shall always maintain a professional appearance.

All construction debris, trash, dirt, etc. shall be immediately removed, at a minimum daily and as required, at the Contractor's expense in accordance with all local, state, and federal environmental laws and regulations.

At all times, the Contractor shall exercise care to reduce noise and ensure safe construction activities while minimizing disturbances to ongoing dining functions. Nearby areas experience peaks in pedestrian and vehicular traffic between the hours of 1100-1300. The Contractor shall always ensure safe pedestrian access for marching troops and vehicle traffic access around the building and outside construction limits. The Contractor shall conduct all work such that means of facility ingress and egress are always maintained for all surrounding buildings.

The Contractor shall be responsible for providing suitable, approved signs, barricades, roped barriers, etc., to warn occupants of hazardous areas at the job site for the entire duration of the contract at no additional cost to the Government.

1.4.6 Site

1.4.6.1 Upon acceptance of work in Construction, the Contractor shall demobilize and remove all trailers, site storage, temporary fencing, etc. and restore/return site to pre-construction conditions.

1.4.6.2 Management Plan: The Contractor shall have the responsibility to prevent freezing of utility lines and stoppages in sanitary sewer lines during construction operations. A management plan outlining the Contractor's methods of achieving this work shall be submitted for Government approval. Upon completion and prior to final inspection, the Contractor shall flush all lines and prove flow through the lines.

1.4.7 Fire Prevention, Safety and Security

1.4.7.1 The contractor shall be responsible for ensuring that all construction openings, penetrations, and door and window openings in the work area are secure and weather tight.

1.4.7.2 All existing life safety systems for fire alarm, and fire suppression shall remain functional at all times. Work which will disturb any suppression or alarm system requires approval by the Contracting Officer.

1.4.7.5 The Contractor shall comply with the requirements of National Fire Protection Association regulation, NFPA 241, "Standard for Safeguarding Construction, Alteration, and Demolition Operations" for the handling and storage of combustible supplies, materials, and waste. The Contractor shall insure his employees know how to initiate a fire alarm.

1.4.7.6 The Contractor shall comply with the provisions of the US Army Corps of Engineers Manual, EM 385 1-1, most recent edition, entitled "Safety

and Health Requirements," and all subparts of Code of Federal Regulations 29 CFR 1910, and Code of Federal Regulations 29 CFR 1926, and will take such additional measures as the CO may determine to be necessary for the safety.

1.4.7.7 Safety Data Sheets (SDS) shall be obtained by the contractor for all hazardous materials to be used in the performance of this contract in accordance with Federal Acquisition Regulation FAR 52.223-3. These SDS and an inventory of hazardous material shall be provided to the CO prior to bringing the material on site. MSDS shall be maintained at the job site and available to all employees and inspectors. The contractor must have an active Hazardous Communication Program place for all employees as required by Code of Federal Regulations 29 CFR 1910.1200.

1.4.7.8 For entry into confined spaces such as manholes and vessels the contractor is required to present a confined space entry program in accordance with Occupational Safety and Health Administration OSHA Title 29 of the Code of Federal Regulations 1910.146. The program must be approved by the Contracting Officer. The contractor shall perform gas free testing prior to entry by any personnel. All personnel shall use tripod and harness devices when entering manholes.

1.4.7.9 The Contractor shall establish and adhere to a Lockout and Tag-out program that effectively disables machinery, utilities, and equipment to prevent unexpected energization, start-up, and release of stored energy. The Lockout and Tag-out program shall comply with the Code of Federal Regulations 29 CFR 1910.147, Control of Hazardous Energy, and the National Safety Council.

1.4.7.10 The contractor is responsible for the installation and maintenance of vehicle and pedestrian barriers at the perimeter of the work areas as needed for safety and security.

1.4.8 Site-Specific Safety Plan (SSSP)

1.4.8.1 The contractor shall prepare and submit a Site-Specific Safety Plan (SSSP) that includes the following safety considerations:

a) Safety barriers, such as traffic safety water filled jersey style barriers, traffic cones, and or yellow plastic tape, to mark off the work areas.

b) Construction safety vests and hard hats

c) Steel toed boots

d) Safety eyewear

e) Hearing protection

f) Hand washing station

g) Spill containment kit

h) First aid kit

i) Fire extinguishers

j) Chemical resistant gloves

k) Smoking areas/No smoking areas

l) Dust and sound control measures including temporary partitions, negative air pressure machines, and EHPA vacuum cleaners.

1.4.9 Protecting Unclassified DoD Data

All DoD and Government data that is shared, stored, or created on non-DoD information systems must be protected and any breach or loss of that data must be reported. The project delivery team shall comply with the security requirements defined in DoD Instruction 8582.01.

1.4.10 Hazardous Material Survey Requirements and Responsibilities

1.4.10.1 Hazardous Materials: Hazardous materials surveys have not identified hazardous materials in Building 334. If the presence of hazardous materials are detected, the project delivery team shall stop work in the immediate area and report any such conditions to the contracting officer.

1.4.10.2 Notification: The Contractor shall cease work and notify the Contracting Officer upon discovery of any suspected lead-based paint, asbestos containing material and regulated waste material, not identified in this contract, thought to be hazardous to workers or personnel in the area. The Government will take steps, as appropriate, to ascertain the material's composition and determine future actions necessary.

1.4.10.3 Asbestos: Should the Contractor encounter/suspect previously unidentified Asbestos Containing Material (ACM) that must be disturbed to comply with the contract documents, the Contractor shall cease all work which would disturb the suspect material and shall immediately notify the Contracting Officer.

1.4.10.4 Lead Based Paint: Should the Contractor encounter/suspect previously unidentified lead-based paint that must be disturbed to comply with the contract documents, the Contractor shall cease all work that would disturb the suspect material and shall immediately notify the Contracting Officer. The Government will take steps, as appropriate, to ascertain the material's composition and determine future actions necessary.

1.4.10.5 Hazardous Material Reports: Previously completed Hazardous Material Reports performed are available upon request from the Government. However, no hazardous materials have been reported in the Asbestos Reports (1992, 1996, 2021) for building 334.

1.4.11 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 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.

1.4.12 Code Compliance

The project delivery team shall comply with all applicable federal, state, and local laws; statutes; Executive Orders; Department of Defense/Air Force manuals, handbooks, regulations, guidance, and policies.

1.4.13 References

The project delivery team shall utilize the National Institute of Building Sciences Whole Building Design Guide Construction Criteria Base (CCB) Unified Facility Criteria (UFC) and all related libraries.

Work shall comply with the most recent editions of the following codes and publications in effect at the time of solicitation:

A. BUILDING CODES:

INTERNATIONAL BUILDING CODE (IBC)

INTERNATIONAL EXISTING BUILDING CODE (IEBC)

INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

INTERNATIONAL FIRE CODE (IFC)

INTERNATIONAL MECHANICAL CODE (IMC)

INTERNATIONAL PLUMBING CODE (IPC)

NATIONAL ELECTRIC CODE (NEC)

B. GAFB INSTRUCTION:

GAFBI 32-2001 Goodfellow AFB Base Fire Protection Program GAFBI 31-102 Installation Security Instruction

C. GOODFELLOW AIR FORCE BASE FACILITIES STANDARDS
Goodfellow AFB Installation Facilities Standards, 2020 edition
Base Standardization of Building/Utility Distribution Systems (CE Regs), June 2021

D. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
NFPA 10 - Standard for Portable Fire Extinguishers

NFPA 70 - National Electric Code (NEC)

NFPA 101 - Life Safety Code

NFPA 220 - Standard on Types of Building Construction NFPA 241 - Safeguards During Construction

NFPA 241, "Standard for Safeguarding Construction, Alteration, and Demolition Operations

E. OCCUPATIONAL SAFETY & HEALTH (OSHA)

OSHA STD 29 CFR 1910 and 1926

OSHA STD 29 CFR 1910.252 Welding, Cutting and Brazing (General Requirements) OSHA requirements found in 29 CFR 1910 (1910.146 and 1910.147) and 29 CFR 1926

F. UNIFIED FACILITIES CRITERIA (UFC)
UFC 1-200-01 General Building Requirements

UFC 1-300-02 Unified Facilities Guide Specifications Format Standard
UFC 3-101-01 Architecture

UFC 3-101-01 Architecture

UFC 3-120-01 Interior

Design

UFC 3-190-06 Protective Paints and Coatings

G. UNITED STATES ARMY CORPS OF ENGINEERS
USACE Health and Safety Manual (EM 385-1-1)

H. U.S. AIR FORCE INSTRUCTION (AFI):
AFI 32-7086 Hazardous Materials Management AFI 40-102 Tobacco Free

Living
AFI 91-203 US Air Force Occupational Safety Instruction

I. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) INTERNATIONAL

J. ASTM C881/C881M (2020a) Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete

ASTM D1652 (2011; E 2019) Standard Test Method for Epoxy Content of Epoxy Resins

ASTM D4259 (2018) Standard Practice for Preparation of Concrete by Abrasion Prior to Coating Application

ASTM E303 Standard Test Method for Measuring Surface Frictional Properties using the British Pendulum Tester

K. Society for Protective Coatings/NACE International (NACE)

SSPC-SP 13/NACE No. 6 (1997) Joint Surface Preparation Standard, Surface Preparation of Concrete.

1.4.14 General Requirements

Refer to Section 01 00 00 GENERAL REQUIREMENTS of the Specifications for general performance conditions pertaining to this contract.

1.4.15 Job Meetings

Refer to Section 01 12 17 JOB MEETINGS of the Specifications for conducting weekly job progress meetings during the construction phase.

1.4.16 Utilities

Refer to Section 01 18 00 UTILITIES of the Specifications for identification, interruption, and use of utilities.

1.4.17 Environmental Protection

Refer to Section 01 56 00 ENVIRONMENTAL PROTECTION of the Specifications for environmental protection conditions pertaining to this contract.

1.4.18 Temporary Environmental Controls

Refer to Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS of the Specifications for control of environmental pollution that the project delivery team must consider for air, water, and land resources.

1.4.19 Infection Control

Refer to Section 01 01 10-IC INFECTION CONTROL of the Specifications for controls to limit spread of infectious and airborne pollutants during construction.

1.4.20 Closeout Requirements

Refer to Section 01 78 00 CLOSEOUT SUBMITTALS of the Specifications for contract closeout submittals and requirements.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

1.5 OPERATIONS SECURITY (OPSEC) REQUIREMENTS

A. The purpose of OPSEC is to reduce the vulnerability of Air Force missions by eliminating or reducing successful adversary collection and exploitation of critical or sensitive information. OPSEC applies to

all activities that prepare, sustain, or employ forces during all phases of operations. OPSEC is a process of identifying, analyzing and controlling critical and sensitive information indicating friendly actions associated with military operations and other activities to: 1) identify those actions that can be observed by adversary intelligence systems; 2) determine what specific indications could be collected, analyzed, and interpreted to derive critical or sensitive information in time to be useful to adversaries; 3) select and execute measures that eliminate or reduce to an acceptable level the vulnerabilities of friendly actions to adversary exploitation.

B. Organizations and personnel supporting the 17th Training Wing have OPSEC requirements associated with their activities and support. The Contractor shall comply with the 17th Training Wing OPSEC Program and during the construction contract pre-construction meeting further information will be provided by the Government on the Goodfellow AFB OPSEC Program. The basis for the OPSEC program is AFI 10-701.

C. Contractor personnel will receive OPSEC Awareness Education and Duty-Related Training within 90 days of contract start date and annually thereafter.

D. OPSEC Awareness Education and Training will be provided or coordinated through government channels.

E. The contractor is susceptible to OPSEC assessments, surveys, or any other evaluation tool available for the Wing OPSEC Program Manager or subordinate OPSEC Coordinator to use to gauge the effectiveness of the overall program.

1.6 UTILITIES

For this contract, utilities such as water, electricity, etc., will be furnished by the Government at no cost to the contractor. Long distance and Defense Switched Network (DSN) telephone services will not be provided. Refer to Section 01 18 00 PROJECT UTILITIES for additional information.

1.7 HOT WORK PERMIT

A. The "NFPA 51B Fire Prevention During Welding, Cutting, and Other Hot Work" provides guidelines for hot work which includes activities like welding, cutting and grinding that can produce heat, sparks, or flames. The contractor shall comply with NFPA 51B and obtain a hot work permit before initiating hot work, ensuring that precautions are in place as required by NFPA 51B and ANSI Z49.1. This hot work permit is required for any operation involving open flame or producing heat and/or sparks. This work includes, but is not limited to, welding, brazing, cutting, grinding, soldering, thawing pipe, torch-applied roofing, or chemical welding.

B. Air Force Form 592 USAF Welding, Cutting, and Brazing permit will be issued prior to any operation and shall be kept on site till completion of operation or permit expires. Contact Fire Protection at 325-654-3532/33/34 for issuance of permit.

1.8 BASE FIRE REGULATIONS

The Contractor shall comply with Base Fire Regulations in effect as of the date of this solicitation. All work shall be in strict compliance with NFPA-101. The Contractor shall be aware that NO powder actuated tools, charges, or explosives shall be used in performing the work. Reference *FAR 52.236-13 Accident Prevention.*

1.9 STREET/OR PARKING LOT CLOSURES

A. When Road closures are required, written notification must be made to the Contracting Officer a minimum of 14 calendar days in advance. One lane of traffic shall be always maintained unless otherwise approved in writing by the Contracting Officer. The Contractor shall notify the Security Forces at 325-654-3504 and Base Fire Protection at 325-654-3532 three days prior to any closures. Personnel exposed to a traffic environment during hours of darkness, periods of reduced visibility, or as part of construction or maintenance activities, will be provided and use reflective vest/accessories.

B. One lane of traffic shall be always maintained unless otherwise approved in writing by the Contracting Officer. The Contractor shall notify the Security Forces at 325-654-3504 and Base Fire Protection at 325-654-3532 72 hours prior to any closures. Personnel exposed to a traffic environment during hours of darkness, periods of reduced visibility, or as part of construction or maintenance activities, will be provided and use reflective vest/accessories.

C. The final street repair shall be completed within 14 days after the start of any street demolition for utility crossings or other purposes. Any part of the street returned to service prior to final repair shall be maintained smooth with temporary cold-lay asphalt surface course. All physically exposed portions of the work shall be properly covered or repaired the same business day that the work began.

1.10 DISPOSITION OF WASTE AND EXCESS MATERIALS

A. The Contractor shall make waste determinations for all wastes generated in the performance of this contract, in accordance with the provisions set out in 40 Code of Federal Register (CFR) Part 261, at the time and point of generation. The Contractor shall properly sample, analyze, or by use of process knowledge classify all wastes in accordance with Title 30 Texas Administrative Code (TAC), Chapter 335, Subchapter R at no additional cost to the Government. Unless the Contractor can demonstrate that a waste is non-hazardous, the Contractor shall manage the waste as a hazardous waste until sample test results prove otherwise. All non-hazardous wastes, special wastes, and hazardous wastes (including but not limited to construction debris, material containers, material residues, and unwanted excess materials) resulting from the performance of work under this contract shall be removed from and disposed of off Goodfellow AFB by the Contractor at no additional

cost to the Government and in accordance with all applicable Federal, State, and local laws, rules, and regulations. Under no circumstances shall the Contractor dispose of wastes or excess material in trash dumpsters, storm sewers, sanitary sewers, creeks, streams, or other property of Goodfellow AFB. The Contractor and the Government will be co-generators of all wastes resulting from the performance of this contract. Refer to Section 01400-Environmental Protection, paragraph 3, DISPOSAL OF WASTES, for special requirements on disposal of waste types.

B. Dumping/cleaning out of concrete trucks on Goodfellow AFB is prohibited. Concrete truck chutes only may be rinsed at the construction site. Wastewater and concrete from this rinse shall be collected in a high-density polyethylene (HDPE) plastic-lined box or pit provided by the Contractor at the site. At the end of pouring operations, the Contractor shall excavate all the waste and liner and properly dispose of same. The pit shall be completely backfilled, and the site restored to original conditions.

C. All equipment and materials to be removed from the project site not specifically identified for turn-in to the Government shall become the property of the Contractor upon issuance of the Notice to Proceed (NTP). The Contractor shall turn-in all materials specifically designated for turn-in to the Government to a location at Goodfellow AFB, as designated by the Contracting Officer. The Contractor shall obtain a receipt from the Government employee responsible for receiving the returned equipment or material as evidence of compliance. A copy of the receipt(s) shall be submitted to the Contracting Officer prior to final inspection of the project.

1.11 DISPOSITION OF NONSALVABLE MATERIALS

All non-salvable or unusable material shall be disposed of off base as directed by the Contracting Officer. All waste material generated by any work under this contract shall be handled, transported, stored, and disposed of off base, by the Contractor, in accordance with all applicable federal, state, or local laws, ordinances, regulations, court orders, or other types of rulings having the effect of law.

1.12 EMERGENCY RESPONSE

If the Contractor needs emergency response services, dial 9-1-1 and tell the operator you are located on Goodfellow AFB. The Goodfellow Dispatch office is 325-654-7000.

1.13 OPERATIONS AND STORAGE AREAS

A. In accordance with FAR 52.236-10, Operations and Storage Areas.

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor’s performance.

(b) Temporary buildings (*e.g.,* storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The

temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

1.14 MATERIALS STORED AT LOCATIONS OTHER THAT THE WORKSITE

A. The Contracting Officer will Consider for monthly progress payments material and/or equipment procured by the Contractor and stored on the construction site, as space is available, or at a local approved location off the site, under such terms and conditions as the Contracting Officer approves, including but not limited to the following—

(1) The materials or equipment are in accordance with the contract requirements and/or approved samples and shop drawings;

(2) The materials and/or equipment are approved by the COR;

(3) The materials and/or equipment are stored separately and are readily available for inspection and inventory by the COR;

(4) The materials and/or equipment are protected against weather, theft and other hazards and are not subjected to deterioration; and

(5) The Contractor obtains the concurrence of its surety for off-site storage.

B. The Government reserves the right to withhold payment until samples, shop drawings, engineer’s certificates, additional bonds, payrolls, weekly statements of compliance, proof of title, nondiscrimination compliance reports, or any other requirements of this contract, have been submitted to the satisfaction of the Contracting Officer.

1.15 TOILET FACILITIES

There are no toilet facilities available for Contractor use. Contractor shall provide his own portable/temporary toilet facilities.

1.16 CLEAN-UP

A. The Contractor shall at all times keep the construction site, construction trailer(s)/building(s), and storage area(s) in a clean, neat, workman like condition, free from accumulation of waste, rubbish, weeds, overgrown grass, or construction debris to the satisfaction of the Contracting Officer. All loose or lightweight materials shall be secured to prevent blowing or scattering. The burning of trash or construction debris is strictly prohibited on Goodfellow AFB. Prior to

final inspection, the Contractor shall remove all construction debris, tools, equipment, and materials, not the property of the Government. Upon completion of the work, the Contractor shall leave the work site and storage area(s) in a clean, neat, and workmanlike condition satisfactory to the Contracting Officer.

1.17 FINAL INSPECTION

The Contractor shall advise the Contracting Officer in writing of the Contractor's desired final inspection date seven (7) calendar days in advance of that desired date to permit proper coordination. The date selected shall provide adequate time for Contractor performed corrections of final inspection deficiencies within the contract performance time. The Contracting Officer will be the final authority for determining whether or not the Contractor's performance is sufficiently advanced to warrant a final inspection.

1.18 TESTING

A. Costs of all tests, unless specifically indicated as being performed by the Government, shall be at the Contractor's expense. The Contractor shall schedule all tests and notify the Contracting Officer or his/her representative in a timely manner prior to any required testing. All test results shall be submitted to the Contracting Officer on AF Form 3000, Material Approval Submittal. Where test reports are to be submitted to the Contracting Officer within 24 hours after the tests are performed, the results may be faxed to the Contracting Officer at a number provided at the preconstruction conference.

B. Testing laboratories must be licensed to operate in the State of Texas and must meet the following: "Recommended Requirements for Independent Laboratory Qualification", published by American Council of Independent Laboratories.

C. Testing laboratories must be licensed to operate in the State of Texas and must meet the following:

1) "Recommended Requirements for Independent Laboratory Qualification", published by American Council of Independent Laboratories.

2) Basic requirements of latest edition of ASTM E329 "Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials Used in Construction"

3) Latest edition of ASTM E 548, "Qualifications for Testing Labs

1.19 BASE SECURITY REQUIREMENTS

A. Goodfellow Air Force Base is a closed/controlled access base. As an effort to minimize peak traffic flows at the entry gates, the Contractor, his employees, and his subcontractors are highly encouraged to avoid scheduling deliveries through the entry control gates from 7:00 A.M. to 8:00 A.M. Monday through Friday as there could be significant delays.

B. The Government will conduct security/background checks on all construction personnel as required. Security requirements will be briefed at the pre-construction conference and handouts outlining specific requirements will be provided. Screening measures are in place and suitability for employees to access the installation will be

determined during the conference. Requirements are subject to change dependent upon current world situations, potential threats, and base exercises. Full cooperation by Contractor workforces is required. Contractors should anticipate certain notification and reporting requirements, preparation of forms, and lists for pass and identification of employees and their vehicles, entry restrictions, key/lock control, and compliance with all base traffic rules and regulations. The Jacobson Gate Visitor Control Center 325-654-4122 is the OPR for passes.

1.20 SITE ACCESS BADGES

The Contractor shall obtain and monitor assigned security badges or passes (used by both Contractor and subcontractor personnel) for the duration of this contract. All security badges or passes shall be returned to the base POC upon expiration of the badge, upon completion of the project, or when possession of the badge is no longer necessary (e.g., upon removal of Contractor personnel from specific projects). Contractor shall coordinate weekend or after hours work with the Government minimum (3) days in advance.

1.21 CONTRACTOR INSTALLATION ACCESS PASS

Before arrival, a government identification card-holding person from the sponsoring agency, Base Contracting office/administrator or applicable local project manager will submit a request for base access using the 17 Training Wing’s Base Access List (BAL) memorandum as a form of registration for each credential applicant. Base sponsors/sponsoring agencies or contract officers will ensure the BAL is accurate, it is signed and forwarded to the 17 SFS Pass & Registration section for completion of the vetting and fitness determination processes. The BAL should be delivered to Pass & Registration, located at the Visitor Control Center (VCC). The BAL will include pertinent visitor information, reason for entry, frequency of entry, destination, times each day requiring entry, and duration of request.

1.22 CONTARCTOR INSTALLATION ACESS SCREENING

The Contractor shall provide Pass and Registration with two forms of identification, one of which will be a state issued photo identification. Prior to being allowed access, a minimum of a background/National Crime Information Center (NCIC) check will be completed on all Contractors, requesting unescorted access for official business. This screening process will validate the Contractor's suitability to visit Goodfellow and certify that the Contractor does not pose an increased threat to the base populace. The Contractor will then be issued a temporary Defense Biometric Identification System (DBIDS) pass or AF Form 75A through the expiration date on the BAL request. Possession of an authorized access pass does not automatically authorize or guarantee access to the installation. The individual must still have a valid purpose to be on the installation and properly sponsored, as applicable

1.23 ACCESS DENIAL

If it is determined a Contractor requesting access has been convicted of a felony or pled guilty to a felony charge within the past 10 years, or is considered not fit to obtain authorized access based on the

information obtained during the identity vetting, or criminal history indicates the individual may present a threat to the good order, discipline and morale of the installation, Security Forces personnel will deny entry. The Contractor will be informed of the access denial, will be issued an Access Denial Letter, and will be informed on how they may appeal this order.

1.24 IDENTIFICATION OF CONTRACTOR VEHICLES

Contractor vehicles should be marked on each side with company name with either permanent or semi-permanent/magnetic signage to aid the Security Forces in identifying and permitting them exemption from base wide exercises.

1.25 SUBMITTALS REQUIRED

The contractor must initiate and process for approval a Work Clearance Request AF Form 103 through 17 CES/CENMP a minimum of fourteen (14) calendar days prior to the start of any construction work. Excavation is not authorized without issuance of a completed and approved AF Form 103. After the initial issue, it is the Contractor's responsibility to keep the Work Clearance Request coordinated and up to date/current through the remainder of the contract. Upon receipt of an AF Form 103, the Contractor shall be responsible for locating all underground utilities. Utilities include, but are not limited to electric, water, sewer, steam, communication, telephone, fiber optic, cathodic protection, cable television, fuel lines, and natural gas. Historical drawings, as-built drawings, and topographic drawings, the accuracy of which the government does not guarantee, are available for research and review at the 17th Civil Engineer Squadron, Design element located in Building 3511. The contractor shall promptly repair/replace contractor damaged utilities at no additional cost to the Government. The repair/replacement shall be accomplished in a manner that is acceptable to and approved by the Government.

1.26 COMMUNICATION DEVICES

Any removal/relocation/reconnection of any communication device shall be coordinated in advance with 17 CS/SCMP at 325-654-3010. Any removal/relocation/reconnection of any Cable TV device shall be coordinated in advance with 17 CS. Communications and Cable TV devices to remain shall be protected as required when work proximity dictates.

1.27 SAFETY

All safety requirements of the U.S. Army Corps of Engineers Safety Manual 385-1-1, latest edition, will be strictly adhered to as related to all work covered under these specifications.

1.28 MATERIALS CONTAINING ASBESTOS

In the event the Contractor discovers materials suspected of containing asbestos that is not identified to be removed in the plans and specifications, the Contractor shall stop work in the immediate area and report any such conditions to the contracting officer.

1.29 LABELING OF STORAGE DRUMS

A. All 55 gallon or larger drums brought on base for use under this contract and containing new material or used for storage of waste

materials or hazardous waste must be labeled with a Department of Transportation (DOT) Proper Shipping Name, DOT Hazardous Identification Number, the Contractor's name, a contractor representative, and the Contractor's telephone number. Label lettering should have a minimum height of one-half inch painted in white paint or other color that is in contrast with the color of the drum. The label should be sufficiently durable to equal or exceed the life (including storage and disposal) of the drum.

1.30 CONTRACTOR STORAGE TRAILER(S) AND BUILDINGS

The Contractor shall place or paint a sign on all of his storage trailer(s) and building(s) used on this contract. At a minimum, the sign shall contain the name of the Contractor and a telephone number at which the Contractor can be reached. The trailer(s) and building(s) shall be complete with gates and/or doors which can be locked. Only material for this project shall be stored in the trailer(s) or building(s). The Contractor shall remove the storage trailer(s) or building(s) within 30 days after completion of the contract and prior to submitting his final invoice. The area around the storage trailer(s) and building(s) shall be kept clean. This includes the mowing of grass during the growing season. The lawn mower shall be supplied by the Contractor.

1.31 TEMPORARY CONSTRUCTION FENCING

A. The contractor has a duty to maintain the work environment and procedures which will safeguard the public and government personnel, property, materials, supplies and equipment exposed to operations and activities.

B. Use of construction fencing enables the contactor to protect the safety of construction workers, enables safe, appropriate, and authorized access to and from the construction site, and separates the public from the construction site.

C. In accordance with 52-236-13 Accident Prevention the contractor shall:

1. Provide safety barricades, signs, and light signals;

2. Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 Safety and Health Regulations for Construction; and

3. Comply with U.S Army Corps of Engineers Safety and Health Requirements Manual, EM 35-1-1.

D. U.S Army Corps of Engineers Safety and Health Requirements Manual, EM 35-1-1, SECTION 4 Temporary Facilities, EM 385-1-1.pdf (army.mil), defines requirements for the layout of temporary construction fencing to be approved by the Government Designated Authority (GDA):

1. Temporary project fencing shall be provided on all projects located in areas of active use by members of the public. Fencing shall extend from grade to a minimum of 6 ft (1.8 m) above grade and shall have a maximum mesh size of 2 in (5 cm).

2. Fencing shall remain rigid/taut with a minimum of 200 lbs (.9 kN) of force exerted on it from any direction with less than 4 in (10 cm) of deflection.

3. Signs warning of the presence of construction hazards and requiring unauthorized persons to keep out of the construction area shall be posted on the fencing. At minimum, signs shall be posted every 150 ft (45.7 m). Fenced sides of projects that are less than 150 ft shall, at minimum, have at least one warning sign.

1.32 CRANES

A. All crane work shall comply with 29 CFR 1926 Subpart CC eCFR :: 29 CFR Part 1926 Subpart CC -- Cranes and Derricks in Construction and EM 385-1-1 EM_385-1-1.pdf (army.mil).

B. Prior to operating a crane, the operator must be licensed, qualified, or certified to operate the crane.

C. Submittal - Provide Operators, Signal Persons, and Riggers meeting the requirements in EM 385-1-1, Section 15.B for Riggers and Section 16.B for Crane Operators and Signal Persons. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacities of 22,680 kg 50,000 pounds or greater, designate crane operators qualified by a source that qualifies crane operators (i.e., union, a government agency, or an organization that tests and qualifies crane operators). Provide proof of current qualification.

Standard Lift Plan (SLP) - The Contractor shall submit a Standard Lift Plan (SLP) for lifts to avoid situations where the operator cannot maintain safe control of the lift. Prepare a written SLP in accordance with EM 385-1-1, Section 16.A.03, using Form 16-2 for every lift or series of lifts (if duty cycle or routine lifts are being performed).

Develop and submit a standard lift plan to the Contracting Officer 14 calendar days prior to lift. The SLP must be developed, reviewed and accepted by all personnel involved in the lift in conjunction with the associated AHA. Signature on the AHA constitutes acceptance of the plan. Maintain the SLP on the LHE for the current lift(s) being made.

Maintain historical SLPs for a minimum of three months.

2. Critical Lift Plan (SLP) - The Contractor shall submit a Critical Lift Plan (CLP) as required for Crane or Load Handling Equipment. Provide a Critical Lift Plan as required by EM 385-1-1, Section 16.H.01, using Form 16-3. In addition, Critical Lift Plans are required for the following:

a. Lifts over 50 percent of the capacity of barge mounted mobile crane's hoist.

b. When working around energized power lines where the work will get closer than the minimum clearance distance in EM 385-1-1 Table 16-1.

c. For lifts with anticipated binding conditions.

d. When erecting cranes.

Critical Lift Plan Planning and Schedule Critical lifts require detailed planning and additional or unusual safety precautions. Develop and submit a critical lift plan to the Contracting

Officer 30 calendar days prior to critical lift. Comply with load testing requirements in accordance with EM 385-1-1, Section 16.F.03.

In addition to the requirements of EM 385-1-1, Section 16.H.02, for lifts of personnel, demonstrate compliance with the requirements of 29 CFR 1926.1400 and EM 385-1-1, Section 16.T.

1.33 CONSTRAINTS

A. Construction site is not located within a secure area. All contractor and subcontractor personnel shall carry an identification tag showing their picture and the name of the company they represent, and their base pass at all times. All vehicles operated by the contractor or subcontractors shall have visible identification showing name of represented company.

1.34 AFFIRMATIVE PROCUREMENT

A. The contractor shall incorporate affirmative procurement requirements as per 40 CFR, Part 247 and Executive Order 13423: "Strengthening Federal Environmental, Energy and Transportation management." Any Environmental Protection Agency's (EPA) Designated items used in the execution of this contract shall meet or exceed the EPA's requirements for recycled content materials (RCM) as per the EPA's Comprehensive Procurement Guidelines (CPG). The contractor shall ensure affirmative procurement requirements for CPG items are met or provide written justification that: 1) The price of a given designated item is unreasonably high, 2) There is inadequate competition (not enough sources of supply), 3) Unusual and unreasonable delays would result from obtaining the item, or 4) The item does not meet the Air Force's performance specifications.

B. Individual specifications contained in this contract may or may not reference the permitted use of a recycled/recovered material. Recycled/recovered materials shall be used in the quantities set forth in the EPA's CPG whether specified in the individual specification or not.

C. The contractor shall list products on the CPG list (list and percentages can be found at www.epa.gov/cpg/ products.htm) and the contractor must meet minimum percentages.

1.35 CONTRACTOR INVENTORY

A. Submittal - Contractor shall provide an inventory of quantities and information as specified below. Contractor shall conduct the inventory using the US Army Corps of Engineers (USACE) Construction Engineering Research Laboratory (CERL) BUILDER™ Sustainment Management System (SMS) methodology.

B. Inventory shall be provided for the 10 categories of newly installed assets listed in Paragraph 36.c below using the ASTM-E1557-09 UNIFORMAT II classification. Inventory shall be conducted using the Microsoft® Excel spreadsheet entitled "BUILDER Inventory" provided by the government.

C. For each of the 10 newly installed asset categories, the Contractor shall classify each item in reference to its: System, Component,

Component-Section, Subcomponent, and Section Name. The explanation of each of the columns in the "BUILDER Inventory" spreadsheet can be found below.

System: The Contractor shall select the asset's applicable System from the given list in the "BUILDER Inventory" spreadsheet. As a minimum, the following systems shall be inventoried by the Contractor:

B10 – Superstructure

B20 – Exterior Enclosure

B30 – Roofing

C10 – Interior Construction

C20 – Stairs (As Applicable)

C30 – Interior Finishes

D20 – Plumbing

D30 – HVAC

D40 – Fire Protection

D50 – Electrical

D. Component: The Contractor shall select the asset's applicable Component from the given list in the "BUILDER Inventory" spreadsheet.

E. Component-Section: The Contractor shall select the asset's applicable Component-Section from the given list in the "BUILDER Inventory" spreadsheet.

F. Subcomponent: The Contractor shall classify each asset using the most specific applicable Subcomponent from the given list in the "BUILDER Inventory" spreadsheet. If no specific Subcomponents are applicable or available the Contractor may classify the Subcomponent as "General", "Other", or "Unknown".

G. Section Name: The Contractor shall enter a name for each section that specifies the location of the asset. For example, these sections shall be named by any and all of the following characteristics:

Floor – for example "1st Floor"

Bay – for example, "Bay A"

Cardinal Direction – for example "North", "Northwest"

Space – for example, "Mech Room", "Addition", "Storage", or "Restroom

H. Unit of Measure: The UOM is associated with the Subcomponent. The Contractor shall not specify a different UOM than what is listed with the Subcomponent.

I. Quantity: The Contractor shall state the numerical quantity of the asset with regards to its UOM.

J. Year Installed: The Contractor shall state the year the asset was installed in the format of "YYYY".

K. Painted/Coated? Y/N: The Contractor shall state by either "Yes" or "No" whether the asset was painted or coated.

L. Year Painted/Coated: The Contractor shall state the year the asset was painted or coated in the format of "YYYY".

M. Paint/Coating Type: The Contractor shall specify the painting and/or coating type in accordance with the separate tab in the "BUILDER Inventory" spreadsheet entitle "Paint Coating Type".

N. ID Number: The Contractor shall specify the ID Number of the asset, limited to 20 alphanumeric characters.

O. Equipment Type: The Contractor shall specify the ID Number of the asset, limited to 50 alphanumeric characters.

P. Equipment Make: The Contractor shall specify the equipment make of the asset, limited to 30 alphanumeric characters.

Q. Serial Number: The Contractor shall specify the serial number of the asset, limited to 30 alphanumeric characters.

R. Model: The Contractor shall specify the model of the asset, limited to 20 alphanumeric characters.

S. Capacity: The Contractor shall specify the capacity of the asset, limited to 70 alphanumeric characters.

T. Manufacturer: The Contractor shall specify the manufacturer of the asset, limited to 40 alphanumeric characters.

U. Warranty Company: The Contractor shall specify the warranty company of the asset, limited to 50 alphanumeric characters.

V. Warranty Date: The Contractor shall specify the warranty date of the asset in the format of "MM/DD/YYYY".

W. Date Manufactured: The Contractor shall specify the date the asset was manufactured in the format of "MM/DD/YYYY".

X. Control Type/Make: The Contractor shall specify the asset's control type and/or make, limited to 50 alphanumeric characters.

1.36 AS-BUILT DRAWINGS

A. Submit final record PDF and CAD drawings package for the entire project within 20 days of substantial completion of all phases of work. Submit one (1) set of ANSI D-size drawings PDF and CAD files plus final PDF file record construction contract specifications including any revisions thereto, on optical disc, read-only memory (ROM). The package must be complete in all details and identical in form and function to the contract drawing files supplied by the Government.

1. The actual locations, 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.

Provide geographic information system (GIS) mapping of any new utilities installed and any other encountered utilities and demolished and abandoned utilities as part of the as-builts to the base. GIS mapping shall be performed at time of the utility installation into the ground. Data layers shall be in compliance with SDSFIE (Spatial Data Standards Facilities Infrastructure and Environmental v3.1.0.1 or greater).

2. The location and dimensions of any changes within the building structure.
3. Layout and schematic drawings of electrical circuits and piping.
4. Correct grade, elevations, cross section of earthwork, structures, or utilities if any changes were made from contract plans.
5. Changes in details of design or additional information obtained from working drawings specified to be prepared and/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 foundation, etc.
6. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.
7. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler and irrigation systems.
8. Changes in location of equipment and architectural features.

B. Submittal - Provide GPS coordinates for all underground utilities at time of utility installation. Provide GIS deliverable of all installed underground utilities and all demolished or abandoned utilities encountered. All coordinates shall be in Texas NAD83 State Plane Zone 4203.

--- END OF SECTION ---

SECTION 01 01 10-IC

INFECTION CONTROL

PART 1.0 GENERAL

A. This section specifies the control of environmental infection control that the Contractor must consider for construction & renovation projects in the dining facility. It includes precautionary management practices for Inspections and Noninvasive activities, small scale, short duration activities that create minimal dust, major demolition and construction activities that generate moderate to high levels of dust, movement of materials and equipment, and resources that are encountered or generated by the Contractor. The Contractor is obligated to consider the specified control measures with the costs included within the various contract items of work. An ***Infection Control Risk Assessment Matrix of Precautions*** for construction and renovation for this area has already been completed, and has found that "**Medium**" level of risk groups are prevalent, and therefore Class III and IV precautions and procedures are required for construction activities. This risk analysis has been included as *"Attachment 1: Pre-Construction Risk Assessment (PCRA)"*.

Construction Project Type

Risk Group	**TYPE A**	**TYPE B**	**TYPE C**	**TYPE D**
LOW risk	**I**	**II**	**II**	**III/IV**
MEDIUM risk	**I**	**II**	**III**	**IV**
HIGH risk	**I**	**II**	**III/IV**	**IV**
HIGHEST risk	**II**	**III/IV**	**III/IV**	**IV**

All precautions in the determined class must be followed:

PRECAUTIONS AND PROCEDURES THAT ARE REQUIRED FOR EACH CLASS	
CLASS I	1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace any ceiling tile displaced for visual inspection. Upon completion of Project: 1. Clean work area upon completion of task.
CLASS II	1. Provide active means to prevent air-borne dust from dispersing into atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Place dust mat at entrance and exit of work area as needed. 6. Remove or isolate HVAC system in areas where work is being performed.

	Upon completion of Project: 1. Wipe work surfaces with cleaner/disinfectant. 2. Contain construction waste before transport in tightly covered containers. 3. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area. 4. Upon completion, restore HVAC system where work was performed.
CLASS III	1. *Remove or Isolate HVAC system in area where work is being performed to prevent contamination of duct system. 2. Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. Continuous negative pressure monitoring is required and must be maintained >0.01 4. Contain construction waste before transport in tightly covered containers. 5. Cover transport receptacles or carts. Tape covering unless solid lid. * Use window for negative HEPA air exhaust when accessible. Obtain COR approval for exhausting in existing exhaust ductwork. Upon completion of Project: 1. Do not remove barriers from work area until completed area is thoroughly cleaned, and is inspected by owner's Safety Department, Contracting Officer, and Public Health Department. 2. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 3. Vacuum work area with HEPA filtered vacuums. 4. Wet mop area with cleaner/disinfectant. 5. Remove isolation of HVAC system in areas where work was performed.
CLASS IV	<u>During Work</u>: 1. Isolate HVAC system in area where work is being performed to prevent contamination of duct system. 2. Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. Continuous negative pressure monitoring is required and must be maintained >0.01. 4. Seal holes, pipes, conduits, and punctures appropriately.

	5. Provide and use adhesive walk-off mats within the area entry. Replace used mats with new mats in accordance with manufacture's recommendations and when dirty. Upon completion of Project: 1. Do not remove barriers from work area until completed area is thoroughly cleaned, and is inspected by owner's Safety Department, Contracting Officer, and Public Health Department. 2. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 3. Vacuum work area with HEPA filtered vacuums. 4. Wet mop area with cleaner/disinfectant. 5. Upon completion, restore HVAC system where work was performed.

PART 2 - PRODUCTS, MATERIALS AND EQUIPMENT

2.1 MATERIALS AND EQUIPMENT

GENERAL REQUIREMENTS

A. Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Flammable materials cannot be stored inside buildings. Replacement materials shall be stored outside of the regulated/work area until construction is completed.

B. The Contractor shall not block or hinder use of buildings by staff and visitors to the dining facility in partially occupied buildings by placing materials/equipment in any unauthorized place.

C. The Competent Person shall inspect for damaged, deteriorating or previously used materials. Such materials shall not be used and shall be removed from the worksite and disposed of properly.

2.1.2 NEGATIVE PRESSURE FILTRATION SYSTEM

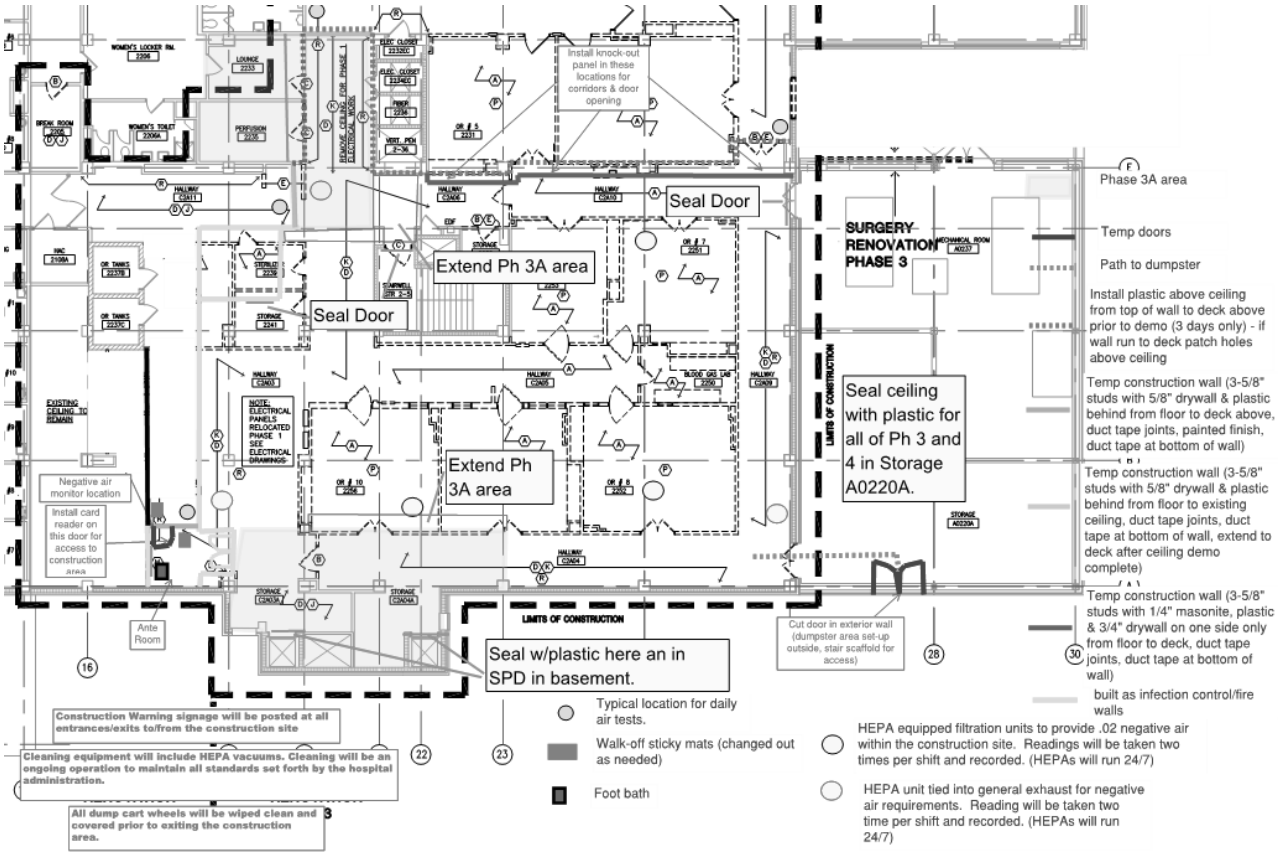
The Contractor shall provide enough negative air machines to completely exchange the regulated area air volume 4 actual times per hour. The Competent Person shall determine the number of units needed for each regulated area by dividing the cubic feet in the regulated area by 15 and then dividing that result by the actual cubic feet per minute (cfm) for each unit to determine the number of units needed to effect 4 air changes per hour. Provide a standby unit in the event of machine failure and/or emergency in an adjacent area.

2.1.3 DESIGN AND LAYOUT

Before start of work for each phase of the project, the contractor is to submit for approval, an infection control plan which will include the design and layout of the regulated area to include the type and location of infection control construction

barriers to be used, access points, air exchange and filtration systems, etc. The submittal shall indicate the number of, location of and size of negative air machines and exhaust route & location of the windows to be used. The point(s) of exhaust, air flow within the regulated area, anticipated negative pressure differential, and supporting calculations for sizing shall be provided. In addition, submit the following:

1. Manufacturer's information on the negative air machine(s).
2. Method of supplying power to the units and designation/location of the panels.
3. Description of testing method(s) for correct air volume and pressure differential. Provide manufacturer's product data on the pressure differential measuring device used.
4. If auxiliary power supply is to be provided for the negative air machines, provide a schematic diagram of the power supply and manufacturer's data on the generator and switch.
5. Location of isolation negative air pressure monitor.
6. The following is a SAMPLE plan:



SAMPLE INFECTION CONTROL PLAN

2.1.4 NEGATIVE AIR MACHINES

A. Negative Air Machine Cabinet: The cabinet shall be constructed of steel or other durable material capable of withstanding potential damage from rough handling and transportation. The width of the cabinet shall be less than 30" in order to fit in standard doorways. The cabinet must be factory sealed to prevent dust from being released during use, transport, or maintenance. Any access to and replacement of filters shall be from the inlet end. The unit must be on casters or wheels.

B. Negative Air Machine Fan: The rating capacity of the fan must the air moving capacity under actual operating conditions. Manufacturer's typically use "free-air" (no resistance) conditions when rating fans. The fan must be a centrifugal type fan.

A. Negative Air Machine Final Filter:

1) When exhausting directly to the outside from a window or penetration the filter shall be a minimum MERV 8 pleated filter media completely sealed on all edges within a structurally rigid frame.

2) When exhausting to a exhaust duct: The final filter shall be a HEPA filter. The filter media must be completely sealed on all edges within a structurally rigid frame. The filter shall align with a continuous flexible gasket material in the negative air machine housing to form an airtight seal. Each **HEPA** filter shall be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97% when challenged with 0.3 µm dioctylphthalate (DOP) particles. Testing shall have been done in accordance with Military Standard MIL- STD-282 and Army Instruction Manual 136-300-175A. Each filter must bear a UL586 label to indicate ability to perform under specified conditions. Each filter shall be marked with the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.

D. Negative Air Machine Pre-filters: The pre-filters, which protect the final HEPA filter by removing larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. A first stage pre-filter shall be a low efficiency type for particles 10 µm or larger. A second stage pre-filter shall have a medium efficiency effective for particles down to 5 µm or larger. Pre-filters shall be installed either on or in the intake grid of the unit and held in place with a special housing or clamps.

F. Negative Air Machine Safety and Warning Devices: An electrical/ mechanical lockout must be provided to prevent the fan from being operated without a HEPA filter. Units must be equipped with an automatic shutdown device to stop the fan in the event of a rupture in the HEPA filter or blockage in the discharge of the fan. Warning lights are required to indicate normal operation; too high a pressure drop across filters; or too low of a pressure drop across filters.

G. Negative Air Machine Electrical: All electrical components shall be approved by the National Electrical Manufacturer's Association (NEMA) and Underwriter's Laboratories (UL). Each unit must be provided with overload protection and the motor, fan, fan housing, and cabinet must be grounded.

2.1.5 PRESSURE DIFFERENTIAL

The fully operational negative air system within the regulated area shall continuously maintain a pressure differential of -0.02" water column. Before any disturbance of any material or building system, this shall be demonstrated to the Contracting Officer by use of a pressure differential meter/manometer as required by OSHA 29 CFR 1926.1101(e)(5)(i). The Competent Person shall be responsible for providing and maintaining the negative pressure and air changes as required by OSHA and this specification.

2.1.6 TESTING THE SYSTEM

The negative pressure system must be tested before any disturbance. After the regulated area has been completely prepared, the decontamination units set up, and the negative air machines installed, start the units up one at a time. Demonstrate and document the operation and testing of the negative pressure system to the Contracting Officer using smoke tubes and a negative pressure gauge. Testing must also be done at the start of each work shift.

2.1.7 DEMONSTRATION OF THE NEGATIVE AIR PRESSURE SYSTEM

The demonstration of the operation of the negative pressure system to the CO shall include, but not be limited to, the following:

A. Contractor to install negative air isolation monitoring stations at the sites access doors or at opposite sides of the construction area check with COR for number of units and location.

B. Curtains of the decontamination units move in toward regulated area.

D. Use smoke tubes to demonstrate air is moving air across all areas in which work is to be done.

E. Plastic barriers and sheeting move lightly in toward the regulated area.

2.1.8 USE OF SYSTEM DURING CONSTRUCTION OPERATIONS

A. Start units before beginning any disturbance occurs. After work begins, the units shall run continuously, maintaining 4 actual air changes per hour at a negative pressure differential of 5.0 Pa (-0.02") water column, for the duration of the work until a final visual clearance and final air clearance has been completed.

B. The negative air machines shall not be shut down for the duration of the project unless authorized by the Contracting Officer, in writing.

C. Construction work shall begin at a location closest from the units and proceed away from them. If an electric failure occurs,

the Competent Person shall stop all work and not resume until power is restored and all units necessary are operating properly again.

D. The negative air machines shall continue to run after all work is completed and until a final visual clearance and a final air, clearance has been completed for that regulated area.

2.2 CONTAINMENT BARRIERS AND COVERINGS IN THE REGULATED AREA

2.2.1 GENERAL

A. Seal off the perimeter to the regulated area to completely isolate the regulated area from adjacent spaces. All surfaces in the regulated area must be covered to prevent contamination and to facilitate clean-up. Should adjacent areas become contaminated, immediately stop work and clean up the contamination at no additional cost to the Government. Immediately notify the Contracting Officer of contamination, provide plan of action for cleanup and preventing future contamination. Once this work is complete provide the Contracting Officer a report documenting all remediation actions taken.

2.2.3 CONTROLLING ACCESS TO THE REGULATED AREA

A. Access to the regulated area will only be permitted using existing dock and maintenance exits as indicated in the drawings. All other means of access from the dining area to the work area shall be eliminated, and OSHA warning signs posted as required by OSHA. If the regulated area is adjacent to or within view of an occupied area, provide a visual barrier of opaque fire-retardant poly sheeting at least 4 mils thick to prevent building occupant observation. Separating barriers must be solid and capable of withstanding the negative pressure.

2.2.4 CRITICAL BARRIERS

A. Completely separate the regulated area from adjacent areas using fire retardant poly at least 6 mils thick and duct tape. Individually seal with two layers of 6 mil poly and duct tape all HVAC openings, cap off exhaust into the regulated area. Individually seal all lighting fixtures, clocks, doors, windows, convectors, speakers, or any other objects in the regulated area. Use care with hot/warm surfaces see fig 1.

2.2.5 PRIMARY BARRIERS

A. Temporary Construction Partitions:

1. Install and maintain temporary construction partitions to provide separations between construction areas and adjoining occupied areas. Construct partitions using temporary telescoping modular systems meeting or exceeding ICRA Class IV requirements. Ensure modular systems are rated with flame spread rating of 25 or less in accordance with ASTM E84. Ensure wall systems contain top and bottom rubber gaskets that provide airtight seal and ensure minimal movement.

2. Contractor shall ensure temporary wall systems do not scratch, scuff, or damage newly installed resinous floor systems upon completion of work, or during removal or installation of

wall system. Any damage to newly installed materials or building elements outside the scope of work shall be repaired or replaced by the Contractor at no additional cost to the Government.

3. Seal penetrations at door openings. Construction doors shall be limited to existing dock entry doors provided at each phase of construction.

2.2.6 CONTRACTOR SPILL RESPONSE KIT

A. The kit should include the following:

1. Shop Vacuum.
2. Multi-Purpose Spill Control Sorbents to absorb nonaggressive liquids up to 30 gallons.
3. Sorbents pillows.
4. Pipe leak clamps for copper & steel pipe in sufficient size range and quantity base on project piping scope.
5. Bucket & mop and water-resistant duct tape.

FIG. 1

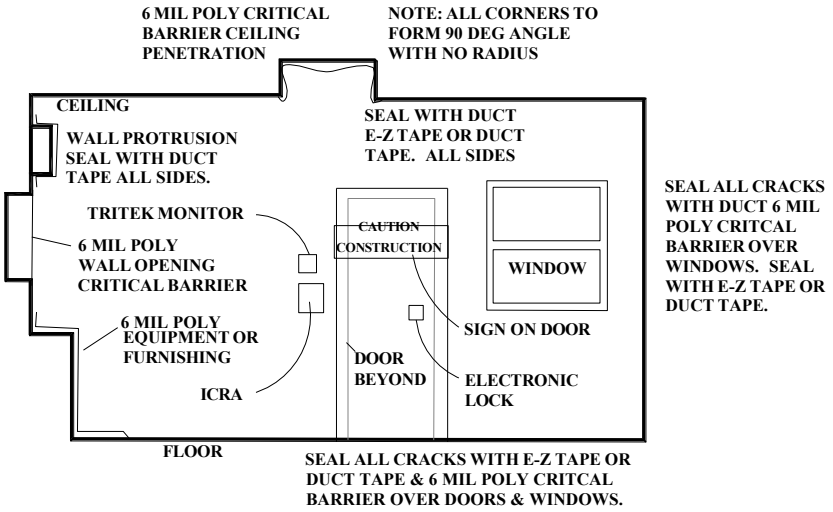


Figure 1

Attachment 1
Pre-Construction Risk
Assessment (PCRA)

DESCRIPTION

A. This section specifies the control of environmental infection control and risk assessment that the Contractor must consider for construction & renovation projects in the dining facility. It includes Precautionary management of, Inspections and Noninvasive activities, small scale, short duration activities, that create minimal dust. Major demolition and construction projects that generate a moderate to high levels of dust. Movement of materials and equipment, and resources that are encountered or generated by the Contractor. The Contractor is obligated to consider the specified control measures with the costs included within the various contract items of work. An ***Infection Control Risk Assessment Matrix of Precautions*** for construction and renovation for activities follows.

Attachment 1

Pre-Construction Risk Assessment (PCRA) Infection Control Risk Assessment (ICRA), Interim Life Safety Measure (ILSM), and Safety Construction Permit.

(For questions about this project, please contact the Project Manager)

Project Number#: JCGU25-7007	Project Title: REPAIR KITCHEN, B334
Project Manager:	Phone Number:
Joseph Hernandez	325-654-1819
Location of Construction: Dining Facility	Project Start Date: March, 2026
Contractor Performing Work:	Estimated Duration: 5-6 months
N/A	Permit Expiration Date: N/A
Description of Project: Complete demolition of existing quarry tile floor and base system in dining facility restrooms, kitchen, dishwashing, and office areas. Other tasks include installing new resinous floor and integral base, removal, storage, and reinstallation of existing kitchen equipment.	

CONSTRUCTION ACTIVITIES

The following are <u>examples</u> of activities that do not require completion of the Pre-Construction Risk Assessment:

1. Paint and wallpaper in business offices.
2. Repair of window blinds.
3. Ceiling tile replacement for areas less than 10 2’ X 2’ tiles, if not in business offices.
4. Check or replace electric outlet.
5. Replace light bulb.
6. Unstop sink/commode with no water on floor.

6. Unstop sink/commode with no water on floor.
7. Unstop commode when water on floor requires maintenance to have Housekeeping clean area immediately.
8. Repair medical gas outlet. (Front Body)
9. Air balance readings.
10. Check air-conditioning.
11. Intermediate jobs that create a moderate amount of dust inside room and is made negative by use of hepa-equipped unit with minimum 10 ACH, and all air discharged outside, hepa unit must run 2 hours after completion of job and Housekeeping must clean room before unit is removed from room. All work and use of hepa unit must be documented and copy forward to Infection Control and Safety. **NOTE: All duct vents to be sealed off during work!**

Yes	No	**NOISE**
X		**Will there be noise generated that will impact a department adjacent to, above, or below the construction area?**
X		a. If so, list the departments that must be notified. Dining rooms & serving areas are adjacent and will remain operational through construction. Dining facility personnel are aware.
X		b. How are you going to reduce the noise to an acceptable level? Contractor to install temporary walls/barriers on existing openings to limit transfer or sounds and dust transfer.
Yes	No	**VIBRATION**
	X	**Will there be vibration generated that will impact a department adjacent to, above, or below the construction area?**
		a. If so, list the departments that must be notified each time this type of work will be performed.
		b. How are you going to reduce the vibration to an acceptable level? Vibrations as a result of demolition tasks are not expected to adversely impact nearby functions.
Yes	No	**EMERGENCY PROCEDURES**
X		**Are Emergency Procedures in place and posted on each job for accidental events that could greatly impact Customer or Life Safety to the facility? Included in these procedures are such things as:** • Emergency telephone numbers of key departments. • A plan that describes where main valves, switches, and controls are for the area in case of an emergency. • A plan for unexpected outages.
Yes	No	**ENVIRONMENTAL**
X		**Are any of the following environmental hazards present?** Fumes as a result of new flooring material.
X		Will hazardous chemicals be used on this project? How will fumes and odors be controlled? ***SDS Sheets are required.***
	X	Is asbestos abatement required on this job? ***If so, notify Safety and Maintenance at the activation.***
	X	Is lead paint removal required on this job? ***If so, notify Safety and Maintenance at the activation.***
	X	Will there be hot work done on this project? If there are, then a hot work permit must be posted on the job site. All hot work must have a fire watch assigned to each area while the hot work is being performed.

		Will there be a Confined Space Entry required on this project?
Yes	No	**UTILITY FAILURES**
X		**Will any of the following systems be out of service at any time during the project? CHECK ALL APPLICABLE BLOCKS.**
		☐ Fire alarm ***(If out for more than 8 hours, Interim Life Safety Measures must be implemented.)*** ☐ Sprinkler ***(If out for more than 10 hours, Interim Life Safety Measures must be implemented.)*** ☑ Electrical ☑ Domestic water ☐ Oxygen ☑ Sewage ☐ HVAC Electrical, domestic water, and sanitary sewerage expected to experience intermittent outages during equipment disconnection and flooring demolition/replacement.
Yes	No	**INTERIM LIFE SAFETY MEASURES (ILSM'S)**
	X	**Will there be any work that will require activation of the Interim Life Safety Measures during this project? Some things that will require ILSM's to be implemented are <u>but not limited to</u>: CHECK ALL APPLICABLE BLOCKS.** ☐ Any construction that impacts an EXIT or stairs. ☐ Any construction that has potential to impact access to emergency services or forces. ☐ Any construction that impacts major breaches in a fire or smoke wall. ☐ Taking the sprinkler system out of service more than 10 hours in a 24-hour period. ☐ Taking the fire alarm system out of service for more than 8 hours in a 24 hours period, ☐ Will construction affect exit routes from occupied areas adjacent to construction site?, ☐ Will project affect traffic patterns in area? ***If yes, explain plan in additional requirements on last page***.
	X	**Answering yes to any question above will require a separate ILSM to be completed. See ESM 138-35 for additional guidance and ILSM forms**.
Yes	No	**ADDITIONAL SAFETY PRECAUTIONS**
		The following must be completed prior to any construction activities. CHECK ALL BLOCKS ONCE COMPLETED!
		☑ Separation wall will be constructed prior to project beginning. ☑ Fire protection systems will remain intact. ☐ Provide extra fire extinguishers in work areas (if required). ☑ Maintain exit lights in work area. ☑ Maintain negative air in construction area (24/7) through duration of project. ☑ Return air from within the construction area to be sealed off from the rest of the building. ☑ Redirect exiting not to go through construction area. ☑ Put signs on doors into construction area "Construction Area – Do Not Enter". ☑ Maintain daily logs and keep a current Hot Work Permit. ☑ Place sticky mats at doors exiting construction area. ☑ All debris removal by covered cart. ☑ Maintain clean and orderly work area. ☐ Will this project affect the departments above, below and adjacent to this project? See applicable ICRA Precautions.
Yes	No	**AIR QUALITY AND INFECTION CONTROL** (*NOTE- the construction activity types are defined by the amount of dust that is generated, the duration of the activity, and the amount of shared HVAC systems.*

X		Will dust be generated during this project? ***If yes, explain location of and plan for interim dust barriers in ICRA comment section below or attach floor plan with barriers clearly marked.*** Barriers to be located at openings into kitchen and dishwashing areas. These are to be walled off and seperated by an approved temporary barrier/partition.
X		Will debris removal be necessary? ***If yes, explain plan for debris removal and control in the ICRA comments section below.*** Likely to be carried or wheeled off site by hand from inside work area to outside dumpster.
X		Negative airflow ventilation and filtration system in place.
X		Exhaust fans in place and functioning.
X		Is supply duct to area closed and HEPA filtration unit in place and functioning in adjacent area?
	X	Will work be done in a sterile area? ***If so, how are you going to maintain sterile atmosphere in work area and access to and from work area?***

Infection Control Risk Assessment Matrix

Part I (Facility Management to Complete):

Using the following table, identify the type of construction project activity (Types A-D)

Type A		**INSPECTION AND NON-INVASIVE ACTIVITIES OR SMALL SCALE, SHORT DURATION ACTIVITIES AND OTHER ACTIVITIES THAT DO NOT GENERATE DUST OR REQUIRE CUTTING OF WALLS OR ACCESS TO CEILINGS OTHER THAN FOR VISUAL INSPECTION** (Inspection, non-invasive activity)
Yes	No	
	X	Removal of ceiling tiles for visual inspection only, e.g., limited to 2 tile per 50 square feet;
	X	Painting (but not sanding);
	X	Wall covering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection;
Type B		**SMALL SCALE, SHORT DURATION, ACTIVITIES THAT CREATE MINIMAL DUST WHERE DUST MITIGATION CAN BE CONTROLLED** (Small scale, short duration projects)
Yes	No	
	X	Installation of telephone and computer cabling;
	X	Access to chase spaces;
	X	Maximum of 4 ceiling replacements within 50 square feet.
	X	Cutting of walls or ceiling where dust mitigation can be controlled.
Type C		**WORK THAT GENERATES A MODERATE TO HIGH-LEVEL OF DUST OR REQUIRES DEMOLITION OR REMOVAL OF ANY FIXED BUILDING COMPONENTS OR ASSEMBLIES (**Activity generates moderate to high-levels of dust, requiring >1 work shift for completion)
Yes	No	
	X	Sanding of walls for painting or wall covering;
X		Removal of floor coverings, ceiling tiles, casework; Includes demolition of quarry tile, substrate, wall base, and preparation to receive new flooring.
	X	New wall construction;
	X	Minor duct work or electrical work above ceilings;
	X	Major cabling activities;
X		Any activity which cannot be completed within a single work shift.
Type D		

Yes	No	**MAJOR DEMOLITION AND CONSTRUCTION PROJECTS (**Major duration and construction activities requiring consecutive work shifts)
	X	Activities which require consecutive work shifts;
X		Requires heavy demolition or removal of a complete building system; Complete removal of flooring system and kitchen equipment.
X		New construction or renovation over 3 workdays duration PoP likely to take 5-6 months of construction.

Part II (Facility Management to Complete):

Please answer the following questions (circle yes or no)

1. Is disruption of essential services (e.g., ventilation, water) to dining facilty/ employees anticipated?

   Yes **No** **Comments:**

   Temporary outages are expected, but facility functions expected to be operational through construction

2. Is relocation of dining facility functions required or being considered?

   Yes **No** **Comments:**

   Not required, food to be delivered from other dining facility.

3. Will the removal of debris pass through dining areas?

   Yes **No** **Comments:**

   No.

Part III (Infection Control to Complete):

Using the following table, identify the risk groups that will be affected:

GROUP 1 **Low Risk**	**GROUP 2** **Medium Risk**	**GROUP 3** **High Risk**	**GROUP 4** **Highest Risk**
1) Office r 2) Basement 3) Facility Support (Engineering, Housekeeping, Conference Rooms, etc.) 4) Non-patient care areas not included in medium, high or highest risk group	1) Cardiology 2) Echocardiography 3) Physical Therapy 4) Respiratory Therapy 5) Admission and Public Areas Patient Care Lobbies & Corridors 6) Cafeteria/Kitchen 7) Acute Medicine (58-2) 8) Pharmacy 9) Patient care units not listed in high or highest risk group	1) Emergency Room/UC 2) Laboratories 3) Endoscopy 4) Radiology/MRI, Nuclear Medicine/Echo/CT Scan	1) Any area caring for immunocompromised patients 2) Cardiac Cath Lab 3) Negative Pressure Isolation Rooms 4) Oncology 5) Operating Rooms 6) Pre-Op, holding area PACU 7) Central Sterile Reprocessing 8) Secondary Supply Room 9) Pharmacy compounding area 10) Other areas where invasive surgical procedures may be done, Clinic Procedure

			(Surgery, Wound Care Clinic, etc.

Risk Level (circle one) Low Medium High Highest

Part IV (Infection Control to Complete)
Using the following table, identify the **Precaution Class** (I, II, III, or IV) or level of infection control activities required for the planned construction project. Match the construction type (A, B, C, D) with the risk level (low, medium, high, highest).

Construction Project Type

Risk Group	TYPE A	TYPE B	TYPE C	TYPE D
LOW risk	**I**	**II**	**II**	**III/IV**
MEDIUM risk	**I**	**II**	**II**	**V**
HIGH risk	**I**	**II**	**III/IV**	**IV**
HIGHEST risk	**II**	**III/IV**	**III/IV**	**IV**

NOTE- An Infection Control- Safety Construction Permit is required for Class III or Class IV projects. Refer to the shaded area on Construction Activity/Risk Group Matrix (above).
Precaution Classes (Levels of Required Infection Control Activities)

All precautions in the determined class must be followed:

PRECAUTIONS AND PROCEDURES THAT ARE REQUIRED FOR EACH CLASS	
CLASS I	1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace any ceiling tile displaced for visual inspection. Upon completion of Project: 1. Clean work area upon completion of task.
CLASS II	1. Provide active means to prevent air-borne dust from dispersing into atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Place dust mat at entrance and exit of work area as needed. 6. Remove or isolate HVAC system in areas where work is being performed. Upon completion of Project: 1. Wipe work surfaces with cleaner/disinfectant. 2. Contain construction waste before transport in tightly covered containers. 3. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area. 4. Upon completion, restore HVAC system where work was performed.

CLASS III	1 *Remove or Isolate HVAC system in area where work is being performed to prevent contamination of duct system. 2 Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. Continuous negative pressure monitoring is required and must be maintained >0.01 4 Contain construction waste before transport in tightly covered containers. 5. Cover transport receptacles or carts. Tape covering unless solid lid. * Use window for negative HEPA air exhaust when accessible. Obtain VA COR approval for exhausting in existing exhaust ductwork. Upon completion of Project: 1 Do not remove barriers from work area until completed project is inspected by owner's Safety Department and Infection Prevention and Control Department and thoroughly cleaned by the owner's environmental Services Department. 2 Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 3. Vacuum work area with HEPA filtered vacuums. 4 Wet mop area with cleaner/disinfectant. 5. Remove isolation of HVAC system in areas where work was performed.
CLASS IV	During Work: 1 Isolate HVAC system in area where work is being performed to prevent contamination of duct system. 2 Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. Continuous negative pressure monitoring is required and must be maintained >0.01. 4 Seal holes, pipes, conduits, and punctures appropriately. 5. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using HEPA vacuum cleaner before leaving the work site or they can wear cloth or paper coveralls that are removed each time they leave the work site. 6. Provide and use adhesive walk-off mats within the anteroom. Replace used mats with new mats in accordance with manufacture's recommendations and when dirty. 7 All personnel entering work site are required to wear shoe covers, which must be changed each time the worker exits the work area. Upon completion of Project: 1 Do not remove barriers from work area until completed project is inspected by owner's Safety Department and Infection Prevention and Control Department and thoroughly cleaned by the owner's environmental Services Department. 2 Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 3. Contain construction waste before transport in tightly covered containers. 4 Cover transport receptacles or carts. Tape covering unless solid lid.

	5. Vacuum work area with HEPA filtered vacuums. 6. Wet mop area with cleaner/disinfectant. 7 Upon completion, restore HVAC system where work was performed.

Additional Risk Assessment:

Is work being conducted in an area where exposure to active TB is possible? Yes/No

If yes, contractor must provide documentation that construction workers have been screened for active TB within 90 calendar days of commencing work. Anyone screening positive must show proof of being on treatment.

Additional Comments:

1. Maintain manpower and equipment including dust mops, wet mops, brooms, buckets, and clean wiping rags for cleaning fine dust from floors and adjacent occupied areas.
2. Contain work areas outside of construction barriers, including spaces above ceilings, with full height polyethylene sheet barrier, tightly taped.
3. Clean up dust tracked outside of construction area immediately.
4. Temporary construction barriers and closures above ceiling must be dust tight.
5. Removal of debris must be in covered containers.

Additional Comments:

Part V: Persons Completing the Infection Control Risk Assessment (ISLM)/ISLM/Safety Construction Permit:

PERMIT REQUESTED BY:	FACILITY MANAGEMENT	INFECTION CONTROL
DATE:	DATE:	DATE:
SAFETY SECTION	SAFETY	
DATE:	DATE:	DATE:

B. Apply Life Safety and standards (APIC) and the following criteria would need to be assured in order to maintain the supply air side open during Class 4 construction activity:

- The air supply is 100% fresh air and the site and adjacent areas can be kept under negative pressure at all times.
- There is no re circulated air in this section
- There is no duct work involved in this section of the demolition
- The site can never be positive to the adjacent areas (i.e. keep the negative air machines on at all times or for 1-2 hours post site work until the negative action can be maintained.
- A log is maintained to document that the negative pressure is checked and has been maintained during those hours when the negative air machines are turned off. (An alarmed device is recommended for this purpose and should be maintained and monitored by the construction personnel).

SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" classification. Submittals not having a "G" classification are for project delivery team quality control approval. Required submittals are identified in the Specification Sections listed by Division of work defined in Section 00 00 00, Table of Contents.

1.2 PROJECT LOCATION

1.2.1 The work is located at 163 Farrow Street, (Building B334, Western Winds Dining Hall) Goodfellow AFB, TX 76908-4113.

1.3 CONTRACT PERFORMANCE PERIOD

1.3.1 The total design-bid-build contract performance period is (164) calendar days. Refer to Section 01 41 00 BID SCHEDULE of the Specifications for all work as awarded by the contract Line-Item Number (CLIN) Schedule.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

1.4.1 General Description of Work

The work consists of furnishing all labor, equipment, material, and performing all work needed for the project described herein. The scope of work includes complete demolition of the existing kitchen quarry tile flooring and base, substrate, and the installation of epoxy-resin flooring system.

The scope of work includes removal, storage, sanitization, and reinstallation of Furnishings, Fixtures, and Equipment (FF&E) as identified in paragraph 1.4.3.

Infection Control: Due to the critical nature of the facility, it is expected that the Government will maintain use and operability of areas not within the project area unless specified below. The scope of work includes construction of infection control measures complying with Section 01 01 10-IC INFECTION CONTROL to separate ongoing food service functions away from construction activities.

Resinous Flooring: Epoxy-Resin Flooring shall be thin-set, heavy duty, troweled floor topping applied using a mixture of a two-component epoxy resin binder and blend of several sizes of prepared aggregates in accordance with Section 09 67 23.13 STANDARD RESINOUS FLOORING.

1.4.2 Project Phasing

B334 is expected to maintain operability in areas not under construction. Existing ceilings, light fixtures, fire suppression systems, vent hood systems, and fire alarm systems are expected to remain and remain operational during construction. Coordinate temporary outages as described in SECTION 01 18 00 PROJECT UTILITIES.

A. Government Transition (Mobilization) Phase 1: Upon issuance of the Notice to Proceed (NTP) and within the initial (14) calendar days, the Government will be permitted to transition personnel out of the project work area and issue notifications to base personnel. During

this initial transition period, the Contractor will not be allowed to perform any demolition or construction activities in the work area. The Contractor will be permitted to purchase materials, establish their laydown area including temporary office trailers and restrooms, submit pre-construction submittals including work and safety plans, perform site visits, and inventory existing kitchen equipment.

B. Construction Phase 2: Upon completion of Phase 1, and as directed by the Contracting Officer, the Contractor will be permitted to begin phase 2. Phase 2 work area includes temporary construction to separate work spaces from serving/eating areas, and demolition/construction of new flooring surfaces in all offices, restrooms, food prep, cooking, and kitchen areas as indicated in the project drawings. During this time, the Contractor must remove, store, and reinstall all furnishings, fixtures, and equipment (FF&E) as described below. Phase 2 will be considered complete upon issuance of partial acceptance of the work performed by the Contracting Officer.

C. Construction Phase 3: Upon completion of phase 2, and as directed by the Contracting Officer, the Contractor will be permitted to begin phase 3. Phase 3 work area includes temporary construction to separate work areas from serving/eating areas, and demolition/construction of new flooring surfaces in storage areas, pot washing station, and dishwashing areas not included in phase 2. During this time, the Contractor must remove, store, and reinstall all FF&E as described below. Phase 3 will be considered complete upon issuance of final acceptance of the work performed by the Contracting Officer.

1.4.3 Furnishings, Fixtures, and Equipment (FF&E)

Prior to start of construction, the Contractor must identify, inventory, remove, and store (FF&E) in the project area and as indicated in the project drawings. The Contractor must reassemble and reinstall all FF&E to its respective place and in accordance with manufacturer instructions. The Contractor must wipe down and sanitize all kitchen equipment as specified in Section 01 01 10-IC INFECTION CONTROL upon reinstallation. The Contractor is not required to use off-site storage or air-conditioned storage units for FF&E. If additional area for storage is required beyond the indicated laydown area identified, the Contractor may request additional space to place storage units. There is no on-base storage available for Contractor use.

A. Furnishings:

1. Includes office furnishings such as chairs, shelves, and materials potentially impacting flooring demolition and construction tasks. Wall mounted items such as first aid kits, bulletin boards, fire extinguisher cabinets, and dispensers must be removed and stored as required to perform work.

2. Includes restroom items such as restroom partitions, lockers, and trash cans.

B. Fixtures:

1. Contractor must remove, store, and reinstall water closets for new flooring removal and installation. Contractor must remove and replace existing floor drains, cleanouts, floor sinks. Provide new wax ring prior to reinstalling water closets.

C. Equipment:

1. The Contractor must disconnect utility connections to all kitchen equipment including water, electricity, and gas hookups. The Contractor must also reconnect and restore service to kitchen equipment upon completion of flooring installation. The Contractor must coordinate floor penetrations, piping to drains, and mounting of equipment in accordance with manufacturer instructions. Refer to SECTION 11 05 40 COMMON WORK RESULTS FOR FOODSERVICE EQUIPMENT for additional information.
2. Kitchen equipment includes all shelves, kettles, dishwashing machines, cleaning materials, cooking equipment, mixers, rolling storage units, and all other equipment and materials normally used in the preparation, storage, sanitization, and transportation of food or food prep areas.

Table-1, Estimated Project Construction Phase Schedule GAFB B334

	Duration	Phase	Description	Milestone
				NTP
1	14	I	Government Transition (Mobilization)	
2	75	II	Construction Phase	
3	75	III	Construction Phase	
	164	Total Days - Phase I, Phase II, & Phase III		

1.4.4 Security Requirements

The Contractor shall ensure all employees comply with all security requirements imposed by AFJI 31-102 and GAFBI 31-102.

1.4.5 Contractor Site Mobilization (Phase 1)

As indicated in the project drawings, the parking lot east of B334 will be available for Contractor lay down area immediately upon signing the contract NTP. The lay down area shall provide office space and material storage. New materials shall be secured and protected in this controlled area. This perimeter fence shall be minimum 6’-0” high portable chain link with portable interlocking panels (no concrete footings) around limits of construction. The Contractor shall locate the project office and material storage in this lay-down area. Note the Contractor shall be responsible for security monitoring and logging everyone entering this controlled area during construction. Any existing site improvements altered by the presence of the fence shall be restored to their original condition and appearance including removal/repairing of all site landscape irrigation sprinkler heads.

If the Contractor requires additional outside storage space, they shall contact the Contracting Officer with a written request to include a single-line site plan diagram with specific dimensions. Note there is no existing on-base building storage space available.

Temporary fencing used by the Contractor to delineate construction site-controlled area shall be securely anchored with tension wires and posts as

required to prevent sagging and an unsightly appearance. Fencing shall be maintained by the Contractor in this manner throughout the extent contract. Due to high winds in West Texas, Contractor shall take every precaution to preclude trash and materials from blowing off site.

All Contractor storage areas shall be maintained including yard/grass regularly cut/trimmed by the Contractor, as required daily. At all times, all Contractor trailers shall always maintain a professional appearance.

All construction debris, trash, dirt, etc. shall be immediately removed, at a minimum daily and as required, at the Contractor's expense in accordance with all local, state, and federal environmental laws and regulations.

At all times, the Contractor shall exercise care to reduce noise and ensure safe construction activities while minimizing disturbances to ongoing dining functions. Nearby areas experience peaks in pedestrian and vehicular traffic between the hours of 1100-1300. The Contractor shall always ensure safe pedestrian access for marching troops and vehicle traffic access around the building and outside construction limits. The Contractor shall conduct all work such that means of facility ingress and egress are always maintained for all surrounding buildings.

The Contractor shall be responsible for providing suitable, approved signs, barricades, roped barriers, etc., to warn occupants of hazardous areas at the job site for the entire duration of the contract at no additional cost to the Government.

1.4.6 Site

1.4.6.1 Upon acceptance of work in Construction Phase III, the Contractor shall demobilize and remove all trailers, site storage, temporary fencing, etc. and restore/return site to pre-construction conditions.

1.4.6.2 ~~A written notification regarding all water, gas, power, or communication outages must be submitted by the Contractor (7) seven calendar days in advance to the Contracting Officer, unless otherwise noted herein. All water, power or communication outages must be scheduled for weekends only to not unnecessarily disturb adjacent training facilities.~~

1.4.6.3 Management Plan: The Contractor shall have the responsibility to prevent freezing of utility lines and stoppages in sanitary sewer lines during construction operations. A management plan outlining the Contractor's methods of achieving this work shall be submitted for Government approval. Upon completion and prior to final inspection, the Contractor shall flush all lines and prove flow through the lines.

1.4.7 Fire Prevention, Safety and Security

1.4.7.1 The contractor shall be responsible for ensuring that all construction openings, penetrations, and door and window openings in the work area are secure and weather tight.

1.4.7.2 All existing life safety systems for fire alarm, and fire suppression shall remain functional at all times. Work which will disturb any suppression or alarm system requires approval by the Contracting Officer.

1.4.7.5 The Contractor shall comply with the requirements of National Fire Protection Association regulation, NFPA 241, "Standard for Safeguarding Construction, Alteration, and Demolition Operations" for the handling and storage of combustible supplies, materials, and waste. The Contractor shall insure his employees know how to initiate a fire alarm.

1.4.7.6 The Contractor shall comply with the provisions of the US Army

Corps of Engineers Manual, EM 385 1-1, most recent edition, entitled "Safety and Health Requirements," and all subparts of Code of Federal Regulations 29 CFR 1910, and Code of Federal Regulations 29 CFR 1926, and will take such additional measures as the CO may determine to be necessary for the safety.

1.4.7.7 Safety Data Sheets (SDS) shall be obtained by the contractor for all hazardous materials to be used in the performance of this contract in accordance with Federal Acquisition Regulation FAR 52.223-3. These SDS and an inventory of hazardous material shall be provided to the CO prior to bringing the material on site. MSDS shall be maintained at the job site and available to all employees and inspectors. The contractor must have an active Hazardous Communication Program place for all employees as required by Code of Federal Regulations 29 CFR 1910.1200.

1.4.7.8 For entry into confined spaces such as manholes and vessels the contractor is required to present a confined space entry program in accordance with Occupational Safety and Health Administration OSHA Title 29 of the Code of Federal Regulations 1910.146. The program must be approved by the Contracting Officer. The contractor shall perform gas free testing prior to entry by any personnel. All personnel shall use tripod and harness devices when entering manholes.

1.4.7.9 The Contractor shall establish and adhere to a Lockout and Tag-out program that effectively disables machinery, utilities, and equipment to prevent unexpected energization, start-up, and release of stored energy. The Lockout and Tag-out program shall comply with the Code of Federal Regulations 29 CFR 1910.147, Control of Hazardous Energy, and the National Safety Council.

1.4.7.10 The contractor is responsible for the installation and maintenance of vehicle and pedestrian barriers at the perimeter of the work areas as needed for safety and security.

1.4.8 Site-Specific Safety Plan (SSSP)

1.4.8.1 The contractor shall prepare and submit a Site-Specific Safety Plan (SSSP) that includes the following safety considerations:

a) Safety barriers, such as traffic safety water filled jersey style barriers, traffic cones, and or yellow plastic tape, to mark off the work areas.

b) Construction safety vests and hard hats

c) Steel toed boots

d) Safety eyewear

e) Hearing protection

f) Hand washing station

g) Spill containment kit

h) First aid kit

i) Fire extinguishers

j) Chemical resistant gloves

k) Smoking areas/No smoking areas

l) Dust and sound control measures including temporary partitions, negative air pressure machines, and EHPA vacuum cleaners.

1.4.9 Protecting Unclassified DoD Data

All DoD and Government data that is shared, stored, or created on non-DoD information systems must be protected and any breach or loss of that data must be reported. The project delivery team shall comply with the security requirements defined in DoD Instruction 8582.01.

1.4.10 Hazardous Material Survey Requirements and Responsibilities

1.4.10.1 Hazardous Materials: Hazardous materials surveys have not identified hazardous materials in Building 334. If the presence of hazardous materials are detected, the project delivery team shall stop work in the immediate area and report any such conditions to the contracting officer.

1.4.10.2 Notification: The Contractor shall cease work and notify the Contracting Officer upon discovery of any suspected lead-based paint, asbestos containing material and regulated waste material, not identified in this contract, thought to be hazardous to workers or personnel in the area. The Government will take steps, as appropriate, to ascertain the material's composition and determine future actions necessary.

1.4.10.3 Asbestos: Should the Contractor encounter/suspect previously unidentified Asbestos Containing Material (ACM) that must be disturbed to comply with the contract documents, the Contractor shall cease all work which would disturb the suspect material and shall immediately notify the Contracting Officer.

1.4.10.4 Lead Based Paint: Should the Contractor encounter/suspect previously unidentified lead-based paint that must be disturbed to comply with the contract documents, the Contractor shall cease all work that would disturb the suspect material and shall immediately notify the Contracting Officer. The Government will take steps, as appropriate, to ascertain the material's composition and determine future actions necessary.

1.4.10.5 Hazardous Material Reports: Previously completed Hazardous Material Reports performed are available upon request from the Government. However, no hazardous materials have been reported in the Asbestos Reports (1992, 1996, 2021) for building 334.

1.4.11 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 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.

1.4.12 Code Compliance

The project delivery team shall comply with all applicable federal, state, and local laws; statutes; Executive Orders; Department of Defense/Air Force manuals, handbooks, regulations, guidance, and policies.

1.4.13 References

The project delivery team shall utilize the National Institute of Building Sciences Whole Building Design Guide Construction Criteria Base (CCB) Unified Facility Criteria (UFC) and all related libraries.

Work shall comply with the most recent editions of the following codes and

publications in effect at the time of solicitation:

A. BUILDING CODES:

INTERNATIONAL BUILDING CODE (IBC)

INTERNATIONAL EXISTING BUILDING CODE (IEBC)

INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

INTERNATIONAL FIRE CODE (IFC)

INTERNATIONAL MECHANICAL CODE (IMC)

INTERNATIONAL PLUMBING CODE (IPC)

NATIONAL ELECTRIC CODE (NEC)

B. GAFB INSTRUCTION:

GAFBI 32-2001 Goodfellow AFB Base Fire Protection Program GAFBI 31-102 Installation Security Instruction

C. GOODFELLOW AIR FORCE BASE FACILITIES STANDARDS

Goodfellow AFB Installation Facilities Standards, 2020 edition

Base Standardization of Building/Utility Distribution Systems (CE Regs), June 2021

D. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10 – Standard for Portable Fire Extinguishers

NFPA 70 – National Electric Code (NEC)

NFPA 101 – Life Safety Code

NFPA 220 – Standard on Types of Building Construction NFPA 241 – Safeguards During Construction

NFPA 241, "Standard for Safeguarding Construction, Alteration, and Demolition Operations

E. OCCUPATIONAL SAFETY & HEALTH (OSHA)

OSHA STD 29 CFR 1910 and 1926

OSHA STD 29 CFR 1910.252 Welding, Cutting and Brazing (General Requirements) OSHA requirements found in 29 CFR 1910 (1910.146 and 1910.147) and 29 CFR 1926

F. UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01 General Building Requirements

UFC 1-300-02 Unified Facilities Guide Specifications Format Standard UFC 3-101-01 Architecture

UFC 3-101-01 Architecture

UFC 3-120-01 Interior Design

UFC 3-190-06 Protective Paints and Coatings

G. UNITED STATES ARMY CORPS OF ENGINEERS

USACE Health and Safety Manual (EM 385-1-1)

H. U.S. AIR FORCE INSTRUCTION (AFI):

AFI 32-7086 Hazardous Materials Management AFI 40-102 Tobacco Free

Living

AFI 91-203 US Air Force Occupational Safety Instruction

I. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) INTERNATIONAL

J. ASTM C881/C881M (2020a) Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete

ASTM D1652 (2011; E 2019) Standard Test Method for Epoxy Content of Epoxy Resins

ASTM D4259 (2018) Standard Practice for Preparation of Concrete by Abrasion Prior to Coating Application

ASTM E303 Standard Test Method for Measuring Surface Frictional Properties using the British Pendulum Tester

K. Society for Protective Coatings/NACE International (NACE)

SSPC-SP 13/NACE No. 6 (1997) Joint Surface Preparation Standard, Surface Preparation of Concrete.

1.4.14 General Requirements

Refer to Section 01 00 00 GENERAL REQUIREMENTS of the Specifications for general performance conditions pertaining to this contract.

1.4.15 Job Meetings

Refer to Section 01 12 17 JOB MEETINGS of the Specifications for conducting weekly job progress meetings during the construction phase.

1.4.16 Utilities

Refer to Section 01 18 00 UTILITIES of the Specifications for identification, interruption, and use of utilities.

1.4.17 Environmental Protection

Refer to Section 01 56 00 ENVIRONMENTAL PROTECTION of the Specifications for environmental protection conditions pertaining to this contract.

1.4.18 Temporary Environmental Controls

Refer to Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS of the Specifications for control of environmental pollution that the project delivery team must consider for air, water, and land resources.

1.4.18 Infection Control

Refer to Section 01 01 10-IC INFECTION CONTROL of the Specifications for controls to limit spread of infectious and airborne pollutants during construction.

1.4.19 Closeout Requirements

Refer to Section 01 78 00 CLOSEOUT SUBMITTALS of the Specifications for contract closeout submittals and requirements.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 12 17

JOB MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION:

The contractor's site superintendent shall attend weekly job progress meetings with the Project Engineer/COR and the Contracting Officer (CO) at GAFB. The contractor's construction manager may attend by telephone.

1.2 GENERAL REQUIREMENTS

A. Construction progress meetings facilitate discussion of issues that may affect the project cost or schedule. The primary purpose of the weekly job progress meetings is to resolve potential delay issues.

B. The contractor shall be prepared to discuss the following agenda topics:

1. Status of Construction
2. Activities in Progress
3. Delay Issues
4. Significant Requests for Information (RFIs)
5. Change Orders
6. Procurement Status (Shop Drawings/Submittals)
7. Safety
8. Action Items

C. The contractor shall submit a 3-Week Short-Interval Production Schedule (SIPS) or Construction Activity Plan (CAP) at each week construction progress meeting to show current work in process in accordance with Section 01 32 16.20 Project Schedule Small Projects.

PRODUCTS (NOT USED)

EXECUTION (NOT USED)

--- END OF SECTION ---

SECTION 01 18 00

PROJECT UTILITIES

(CONTRACTOR IDENTIFIED)

1. SCOPE: This section covers identification, interruption, and use of utilities.

2. IDENTIFICATION: The Government does not know the exact location of all utilities in the work area. The Contractor shall take reasonable precautions in determining the exact location of all existing utilities within the contract work area prior to any excavating, trenching, backfilling, or disturbance. Upon request by the Contractor, the Government shall furnish all available information in its possession concerning utilities in the contract work area. However, the accuracy of the information provided by the Government is not guaranteed and is only intended to provide some measure of assistance to the Contractor. The Government does not have, nor will it provide, record drawings of Verizon telephone cable plant and Suddenlink cable. The Contractor shall call 17 CS/SCMP at 325-654-3010 a minimum of five (5) calendar days in advance to have underground communications cable routes marked. In addition, the Contractor shall also notify 1-800-DIG-TESS. In the event the Contractor identifies utilities in the contract work area, which interfere with the newly proposed construction, the Contracting Officer shall be immediately notified, and the Government will take necessary corrective action at no cost to the Contractor. The Contractor shall furnish to the Contracting Officer as-built drawings clearly identifying the exact location of all utilities identified in the work area prior to project final inspection.

2.1 Contractor must initiate and process for approval a Work Clearance Request AF Form 103 through 17 CES/CENMP a minimum of fourteen (14) calendar days prior to the start of any construction work. Excavation is not authorized without issuance of a completed and approved AF Form 103. After initial issue, it is the Contractor's responsibility to keep the Work Clearance Request coordinated and up to date/current through the remainder of the contract. Historical drawings, as-built drawings, and topographic drawings, the accuracy of which the government does not guarantee, are available for research and review at the 17th Civil Engineer Squadron, Design element located in Building 3511. The contractor shall promptly repair/replace contractor damaged utilities at no additional cost to the Government. The repair/replacement shall be accomplished in a manner that is acceptable to and approved by the Government.

2.2 Any removal/relocation/reconnection of any communication device shall be coordinated in advance with 17 CS/SCMP at 325-654-3010. Any removal/relocation/reconnection of any Cable TV device shall be coordinated in advance with 17 CS. Communications and Cable TV devices to remain shall be protected as required when work proximity dictates.

3. INTERRUPTIONS:

3.1 Planned Utility Outages: The Contractor shall coordinate all requests for utility outages with the Contracting Officer in writing fourteen (14) calendar days prior to date of requested outage. Water, gas, sewer, and

electrical outages shall be held to a maximum duration of 2 hours unless otherwise approved in writing.

3.2 Unplanned Utility Outages (Accidental Disruption of Utilities): In the event of accidental disruption of any utility, the Contractor shall immediately notify the Contracting officer of the unplanned outage. The Contractor shall immediately take every reasonable step to repair the damage in a manner acceptable to the Government and shall restore the utility to full use as soon as practicable. Additionally, if the unplanned interruption affects Military Family Housing (MFH) areas, the Contractor shall provide verbal or written notice to each affected family. If the Contractor so desires, and the Government agrees, the Government will complete necessary repairs to the damaged utility and withhold from payments due to the Contractor the necessary amount to defray all costs associated with the repair of the utility.

3.3 For all drinking water disruptions and new construction, the Contractor shall adhere to 30 TAC 290 Subchapter D paragraph 290.46(g and j). Submit Drinking Water Analysis Report and a "Drinking Water Customer Service Inspection checklist" via an AF Form 3000 for Government Approval. Contact Bioenvironmental Engineering at 325-654-3126 prior to restoring drinking water service.

4. USE AND AVAILABILITY: All reasonable quantities of existing utilities will be made available to the Contractor without charge. Proposed temporary connections must be coordinated with the Civil Engineering Utilities Shop at 325-654-5186 in advance of any connection. Any temporary connections or lines required will be installed by the utility owner. The Contractor shall provide all metering as well as maintain meters as required. Any damage associated with the use of these utilities shall be repaired and/or replaced in a manner satisfactory to the Contracting Officer at Contractor's expense. Prior to using any fire hydrant on Goodfellow AFB, the Contractor must complete the Contractor Request for Use of Goodfellow AFB Fire Hydrants (a copy of which is attached at page 01020-3) and submit to the Contracting Officer and notify the Fire Dept. at 325-654-3532. Contractor shall take appropriate measures to prevent backflow into the base's potable water supply system. Contractor shall always strive to conserve the electric, natural gas, and water utilities at Goodfellow Air Force Base.

5. USE OF FIRE HYDRANTS: The following document entitled "Goodfellow AFB Fire Hydrant Use Request" must be prepared and submitted, on AF Form 3000, Material Approval Submittal, to the 17th Contracting Squadron for approval and coordination with Civil Engineering's Fire Dept and Utilities Element prior to use of base fire hydrants.

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

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	(2014) Safety -- Safety and Health Requirements Manual

1.2 SUBMITTALS

Government approval is required for submittals with a "G" classification. Submittals not having a "G" 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

Progress and Completion Pictures

1.3 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 two sets of digital photographs, 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. Include a date designator in file names. Photographs provided are for unrestricted use by the Government.

1.4 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 State law.

1.5 SUPERVISION

1.5.1 Superintendent Qualifications

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is

satisfactory to the Contracting Officer and has authority to act for the Contractor.

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 superintendent must be a competent person (CP) who has completed the OSHA-30-Hour construction safety training course. To meet the competent person (CP) requirement, the superintendent must submit a copy of the instructor-signed OSHA-30 training card or course completion certificate. 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.

For projects where the superintendent is permitted to also serve as the Quality Control (QC) Manager as established in Section 01 45 00 QUALITY CONTROL, the superintendent must have qualifications in accordance with that section.

1.5.2 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.

1.5.3 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.

1.5.4 Non-Compliance Actions

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

1.6 PRECONSTRUCTION MEETING

Immediately after award, prior to commencing any work at the site, coordinate with the Contracting Officer a time and place to meet for the Preconstruction Meeting. The meeting must take place within 35 calendar days after award of the contract, but prior to commencement of any work at the site. The purpose of this meeting is to discuss and develop a mutual

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

1.6.1 Attendees

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

a. MEETINGS Conduct biweekly job meetings in accordance with Section 01 12 17 Job Meetings.

1.7 MOBILIZATION

Contractor shall mobilize to the jobsite within 60 calendar days after contract award. Mobilize is defined as having equipment AND having a physical presence of at least one person from the contractor's team on the jobsite.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 01 32 16.00 20

SMALL PROJECT CONSTRUCTION PROGRESS SCHEDULES

PART 1 GENERAL

1.1 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. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Baseline Construction Schedule; G

SD-07 Certificates

Monthly Updates

3-Week Look Ahead Short Interval Production Schedule (SIPS)

1.2 PRE-CONSTRUCTION SCHEDULE REQUIREMENT

Within 30 calendar days after contract award and prior to the start of work, prepare and submit to the Contracting Officer a Baseline Construction Schedule in the form of a Bar Chart Schedule in accordance with the terms in Contract Clause FAR 52.236-15 Schedules for Construction Contracts, except as modified in this contract. The approval of a Baseline Construction Schedule is a condition precedent to:

a. The Contractor starting demolition work or construction stage(s) of the contract.

b. Processing Contractor's invoice(s) for construction activities/items of work.

c. Review of any schedule updates.

Submittal of the Baseline Construction Schedule, and subsequent schedule updates, is understood to be the Contractor's certification that the submitted schedule meets the requirements of the Contract Documents, represents the Contractor's plan on how the work will be accomplished, and accurately reflects the work that has been accomplished and how it was sequenced (as-built logic).

1.3 SCHEDULE FORMAT

1.3.2 Bar Chart Schedule

The Bar Chart must, as a minimum, show work activities, submittals, Government review periods, material/equipment delivery, utility outages, on-site construction, inspection, testing, and closeout activities. The Bar Chart must be time scaled and generated using an electronic spreadsheet program.

1.3.3 Schedule Submittals and Procedures

Submit Schedules and updates in hard copy and on electronic media that is acceptable to the Contracting Officer. Submit an electronic back-up of the project schedule in an import format compatible with the Government's scheduling program.

1.4 SCHEDULE MONTHLY UPDATES

Update the Construction Schedule at monthly intervals or when the schedule has been revised. Keep the updated schedule current, reflecting actual activity progress and plan for completing the remaining work. Submit copies of purchase orders and confirmation of delivery dates as directed by the Contracting Officer.

a. Narrative Report: Identify and justify the following:

(1) Progress made in each area of the project;

(2) Longest Path: Include printed copy on 11 by 17-inch paper, landscape setting;

(3) Date/time constraint(s), other than those required by the contract;

Listing of changes made between the previous schedule and current updated schedule including: added or removed activities, original and remaining durations for activities that have not started, logic (sequence, constraint, lag/lead), milestones, planned sequence of operations, longest path, calendars or calendar assignments, and cost loading.

(4) Any decrease in previously reported activity Earned Amount;

(5) Pending items and status thereof, including permits, changes orders, and time extensions;

(6) Status of Contract Completion Date and interim milestones;

(7) Current and anticipated delays (describe cause of delay and corrective actions(s) and mitigation measures to minimize);

(8) Description of current and future schedule problem areas.

For each entry in the narrative report, cite the respective Activity ID and Activity Name, the date and reason for the change, and description of the change.

1.5 CONTRACT MODIFICATION

Submit a Time Impact Analysis (TIA) with each cost and time proposal for a proposed change. TIA must illustrate the influence of each change or delay on the Contract Completion Date or milestones. No time extensions will be granted nor delay damages paid unless a delay occurs which consumes all available Project Float along the critical path and extends the Projected Finish beyond the Contract Completion Date.

a. Each TIA must be in both narrative and schedule form. The narrative must define the scope and conditions of the change; provide start and

finish dates of impact, successor and predecessor activity to impact period, responsible party, describe how it originated, and how it impacts the schedule.

b. TIAs must include any mitigation and must determine the apportionment of the overall delay assignable to each individual delay. Apportionment must provide identification of delay type and classification of delay by compensable and non-compensable events. The associated narrative must clearly describe analysis methodology used, and the findings in a chronological listing beginning with the earliest delay event.

(1) Identify and classify types of delays as follows:

(a) Force majeure delay (e.g. weather delay): Any delay event caused by something or someone other than the Government (including its agents) or the Contractor, or the risk of which has not been assigned solely to the Government or the Contractor. If the force majeure delay is on the critical path, in absence of other types of concurrent delays, the Contractor is granted an extension of contract time, classified as a non-compensable event.

(b) A Contractor-delay: Any delay event caused by the Contractor, or the risk of which has been assigned solely to the Contractor. If the contractor-delay is on the critical path, in absence of other types of concurrent delays, Contractor is not granted extension of contract time, and classified as a non-compensable event. Where absent other types of delays, and having impact to project completion, provide a Corrective Action Plan, identifying plan to mitigate delay, to the Contracting Officer.

(c) A Government-delay: Any delay event caused by the Government, or the risk of which has been assigned solely to the Government. If the Government-delay is on the longest path, in absence of other types of concurrent delays, the Contractor is granted an extension of contract time, and classified as a compensable event.

(2) Use functional theory to analyze concurrent delays, where: Separate delay issues delay project completion, do not necessarily occur at same time, rather occur within same monthly schedule update period at minimum, or within same as-built period under review. If a combination of functionally concurrent delay types occurs, it is considered Concurrent Delay, which is defined in the following combinations:

(a) Government-delay concurrent with Contractor-delay: Excusable time extension, classified non-compensable event.

(b) Government-delay concurrent with force majeure delay: Excusable time extension, classified non-compensable event.

(c) Contractor-delay concurrent with force majeure delay: Excusable time extension, classified non-compensable event.

1.6 3-WEEK LOOK AHEAD SHORT-INTERVAL PRODUCTION SCHEDULE (SIPS)

Prepare and issue a 3-Week Look Ahead schedule to provide a more detailed day-to-day plan of current work in progress, upcoming work identified on

the Construction Schedule. Additionally, the short-interval schedule shall reflect trades onsite, include upcoming outages, closures, preparatory meetings, and initial meetings. Identify critical path activities on the Three-Week Look Ahead Schedule. The detail construction activity work plans are to be bar chart type schedules, maintained separately from the Construction Schedule on an electronic spreadsheet program and printed on 8-1/2 by 11-inch sheets as directed by the Contracting Officer. Activities must not exceed 5 working days in duration and have sufficient level of detail to assign crews, tools and equipment required to complete the work. Deliver three hard copies and one electronic file of the 3-Week Look Ahead Schedule to the Contracting Officer no later than 8 a.m. each Monday, and review during the weekly Job Meeting in accordance with Section 01 12 17 JOB MEETINGS. Sequencing, means-and-methods of construction, safety, and all temporary items remain the responsibility of the Contractor.

1.7 CORRESPONDENCE AND TEST REPORTS:

Correspondence (e.g., letters, Requests for Information (RFIs), e-mails, meeting minute items, Production and QC Daily Reports, material delivery tickets, photographs) must reference Schedule Activities that are being addressed. Test reports (e.g., concrete, soil compaction, weld, pressure) must reference Schedule Activities that are being addressed.

1.8 ADDITIONAL SCHEDULING REQUIREMENTS

Any references to additional scheduling requirements, including systems to be inspected, tested and commissioned, that are located throughout the remainder of the Contract Documents, are subject to all requirements of this section.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 33 00

SUBMITTAL PROCEDURES

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's Quality Control (CQC) System Manager shall 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.

The Contractor shall 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 commencing with the start of work on site. 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.

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.

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-04 Samples

Fabricated or unfabricated physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards ensuring work can be judged. Includes assemblies or portions of assemblies that are to be incorporated into the project and those that will be removed at conclusion of the work.

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.

SD-07 Certificates

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

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

Confined space entry permits

Text of posted operating instructions

SD-08 Manufacturer's Instructions

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

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative at the job site, in the vicinity of the job site, or on a sample taken from the job site, on a portion of the work, during or after installation, to confirm compliance with manufacturer's standards or instructions. The documentation must be signed by an authorized official of a testing laboratory or agency and state the test results; and indicate whether the material, product, or system has passed or failed the test.

Factory test reports.

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.

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" classification. Submittals not having a "G" classification are for information only. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Submittal Register; G

1.4 SUBMITTAL CLASSIFICATION

1.4.1 Government Approved (G)

Government approval is required for critical materials, variations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Government.

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 For Information Only

Submittals not requiring 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 FORWARDING SUBMITTALS REQUIRING GOVERNMENT APPROVAL

1.5.1 O&M Data

Submit data specified for a given item within 30 calendar days after the item is delivered to the contract site.

In the event the Contractor fails to deliver O&M data within the time limits specified, the Contracting Officer may withhold from progress payments 50 percent of the price of the items to which such O&M data apply.

1.6 PREPARATION

1.6.1 Transmittal Form

Transmit each submittal, except sample installations and sample panels to the office of the approving authority using the transmittal form prescribed by the Contracting Officer. Include all information prescribed by the transmittal form and required in paragraph IDENTIFYING SUBMITTALS.

Use the submittal transmittal forms to record actions regarding samples. Use AF IMT 3000 Material Approval Submittal form for submitting both Government-approved and information-only submittals. This form will be furnished to the Contractor. 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.

1.6.2 Identifying Submittals

1.6.3 Submittal Format

1.6.3.1 Format of SD-01 Preconstruction Submittals

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

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

1.6.3.2 Format for SD-02 Shop Drawings

Provide shop drawings not less than 210 by 297 mm 8 1/2 by 11 inches nor more than 1189 by 841 mm 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.

c. Submit electronic copy of drawings in PDF format.

1.6.3.2.1 Drawing Identification

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

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

1.6.3.3 Format of SD-03 Product Data

Present product data submittals for each section as a complete, bound volume. 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.

1.6.3.3.1 Product Information

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

Provide product data in English units of measure and dimensions.

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.

1.6.3.3.2 Standards

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

1.6.3.3.3 Data Submission

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

Submit the manufacturer's instructions before installation.

1.6.3.4 Format of SD-04 Samples

1.6.3.4.1 Sample Characteristics

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

a. Sample of Equipment or Device: Full size.

b. Sample of Materials Less Than 50 by 75 mm 2 by 3 inches: Built up to

210 by 297 mm 8 1/2 by 11 inches.

c. Sample of Materials Exceeding 210 by 297 mm 8 1/2 by 11 inches: Cut down to 210 by 297 mm 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.

d. Sample of Linear Devices or Materials: 250 mm 10 inch length or length to be supplied, if less than 250 mm 10 inches. Examples of linear devices or materials are conduit and handrails.

e. Sample Volume of Nonsolid Materials: 750 ml Pint. Examples of nonsolid materials are sand and paint.

Color Selection Samples: 50 by 100 mm 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.

f. Sample Panel: 1200 by 1200 mm 4 by 4 feet.

g. Sample Installation: 10 square meters 100 square feet.

1.6.3.4.2 Sample Incorporation

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

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

1.6.3.4.3 Comparison Sample

Samples Showing Range of Variation: Where variations in color, finish, pattern, or texture are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range. Mark each unit to describe its relation to the range of the variation.

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

1.6.3.5 Format of SD-05 Design Data

Provide design data and certificates on 210 by 297 mm 8 1/2 by 11-inch paper. Provide a bound volume for submittals containing numerous pages.

1.6.3.6 Format of SD-06 Test Reports

Provide reports on 210 by 297 mm 8 1/2 by 11-inch paper in a complete bound volume.

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

1.6.3.7 Format of SD-07 Certificates

Provide design data and certificates on 210 by 297 mm 8 1/2 by 11-inch paper. Provide a bound volume for submittals containing numerous pages.

1.6.3.8 Format of SD-08 Manufacturer's Instructions

Present manufacturer's instructions submittals for each section as a complete, bound volume. 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.

1.6.3.8.1 Standards

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

1.6.3.9 Format of SD-09 Manufacturer's Field Reports

Provide reports on 210 by 297 mm 8 1/2 by 11-inch paper in a complete bound volume.

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

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

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

1.6.3.11 Format of SD-11 Closeout Submittals

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

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

1.6.4 Source Drawings for Shop Drawings

1.6.4.1 Source Drawings

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

1.6.5 Electronic File Format

Provide submittals in electronic format, with the exception of material samples required for SD-04 Samples items. Compile the submittal file as a single, complete document, to include the Transmittal Form described within. 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/.

1.7 QUANTITY OF SUBMITTALS

1.7.1 Number of SD-01 Preconstruction Submittal Copies

Unless otherwise specified, submit two sets of administrative submittals.

1.7.2 Number of SD-02 Shop Drawing Copies

Provide digital copies as specified, where physical copies are requested provided (2) copies of shop drawings requiring review and approval by the Contracting Officer.

1.7.3 Number of SD-03 Product Data Copies

Submit in compliance with quantity requirements specified for shop drawings.

1.7.4 Number of SD-04 Samples

a. Submit two samples, or two sets of samples showing the range of variation, of each required item. One approved sample or set of samples will be retained by the approving authority and one will be returned to the Contractor.

b. Submit one sample panel or provide one sample installation where directed. Include components listed in the technical section or as directed.

c. Submit one sample installation, where directed.

1.7.5 Submit one sample of nonsolid materials.

1.7.6 Number of SD-05 Design Data Copies

Submit in compliance with quantity requirements specified for shop drawings.

1.7.7 Number of SD-06 Test Report Copies

Submit in compliance with quantity and quality requirements specified for shop drawings, other than field test results that will be submitted with QC reports.

1.7.8 Number of SD-07 Certificate Copies

Submit in compliance with quantity requirements specified for shop drawings.

1.7.9 Number of SD-08 Manufacturer's Instructions Copies

Submit in compliance with quantity requirements specified for shop drawings.

1.7.10 Number of SD-09 Manufacturer's Field Report Copies

Submit in compliance with quantity and quality requirements specified for shop drawings other than field test results that will be submitted with QC reports.

1.7.11 Number of SD-10 Operation and Maintenance Data Copies

Submit three copies of O&M data to the Contracting Officer for review and approval.

1.7.12 Number of SD-11 Closeout Submittals Copies

Unless otherwise specified, submit two sets of administrative submittals.

1.8 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.

1.9 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 "Appendix A - Submittal Register."

1.9.1 Submittal Management

Prepare and maintain a submittal register, as the work progresses. Use an electronic submittal register furnished by the Government. 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.

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.

1.9.2 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.

1.9.3 Contractor Use of Submittal Register

Update the following fields with each submittal throughout the contract.

Approving Authority Use of
Submittal Register

DESIGN BID BUILD SUBMITTALS			
Submittal Classifications shown in Specification Sections	Submittal Classification		
G	Submittal requires Government Approval		
BLANK	Submittal is For Information Only (FIO)		

1.9.4 Delivery of Copies

Submit an updated electronic copy of the submittal register to the Contracting Officer with each invoice request, unless a paper copy is requested by the Contracting Officer. Provide an updated Submittal Register monthly regardless of whether an invoice is submitted.

1.10 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.

1.10.1 Considering Variations

Discussion of variations with the Contracting Officer before submission 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 variation submittal. Failure to point out variations may cause the

Government to require rejection and removal of such work at no additional cost to the Government.

1.10.2 Proposing Variations

When proposing variation, deliver a submittal, clearly marked as a "VARIATION" to the Contracting Officer, with documentation illustrating the nature and features of the variation including any necessary technical submittals and why the variation is desirable and beneficial to Government. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation. The Contracting Officer will indicate an approval or disapproval of the variation request; and if not approved as submitted, will indicate the Government's reasons, therefore. Any work done before such approval is received is performed at the Contractor's risk."

Specifically point out variations from contract requirements in a variation submittal. Failure to point out variations may cause the Government to require rejection and removal of such work at no additional cost to the Government.

1.10.3 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.

1.11 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.

1.12 GOVERNMENT APPROVING AUTHORITY

When the approving authority is the Contracting Officer, the Government will:

a. Note the date on which the submittal was received from the QC manager.

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.

1.12.1 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.

1.13 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.

1.14 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing, and other information are satisfactory. The 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 within 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.

1.15 APPROVED SAMPLES

Approval of a sample is only for the characteristics or use named in such approval and is not to 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.

1.16 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained. 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.

1.17 CERTIFICATION OF SUBMITTAL DATA

Certify the submittal data as follows on AF IMT 3000: "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 --

SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS

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 MECHANICAL ENGINEERS (ASME)

ASME B30.5	(2021) Mobile and Locomotive Cranes
ASME B30.9	(2018) Slings
ASME B30.26	(2015; R 2020) Rigging Hardware

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.34	(2021) Protection of the Public on or Adjacent to Construction Sites
ASSP Z359.0	(2018) Definitions and Nomenclature Used for Fall Protection and Fall Arrest
ASSP Z359.1	(2020) The Fall Protection Code
ASSP Z359.2	(2017) Minimum Requirements for a Comprehensive Managed Fall Protection Program
ASSP Z359.3	(2019) Safety Requirements for Lanyards and Positioning Lanyards
ASSP Z359.4	(2013) Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components
ASSP Z359.6	(2016) Specifications and Design Requirements for Active Fall Protection Systems
ASSP Z359.7	(2019) Qualification and Verification Testing of Fall Protection Products
ASSP Z359.11	(2014) Safety Requirements for Full Body Harnesses
ASSP Z359.12	(2019) Connecting Components for Personal Fall Arrest Systems
ASSP Z359.13	(2013) Personal Energy Absorbers and Energy Absorbing Lanyards

ASSP Z359.14	(2014) Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems
ASSP Z359.15	(2014) Safety Requirements for Single Anchor Lifelines and Fall Arresters for Personal Fall Arrest Systems
ASSP Z359.16	(2016) Safety Requirements for Climbing Ladder Fall Arrest Systems
ASSP Z359.18	(2017) Safety Requirements for Anchorage Connectors for Active Fall Protection Systems

ASTM INTERNATIONAL (ASTM)

ASTM F855	(2019) 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

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(2022; ERTA 1 2021) Standard for Portable Fire Extinguishers
NFPA 51B	(2019; TIA 20-1) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70	(2023) National Electrical Code
NFPA 70E	(2021) Standard for Electrical Safety in the Workplace
NFPA 241	(2022) Standard for Safeguarding Construction, Alteration, and Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

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

29 CFR	1910	Occupational Safety and Health Standards

29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1915	Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.16	Rules of Construction
29 CFR 1926.500	Fall Protection

1.2 DEFINITIONS

1.2.1 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 dangerous to personnel, and who has authorization to take prompt corrective measures with regards to such hazards.

1.2.2 Competent Person, Confined Space

The CP, Confined Space, is a person meeting the competent person requirements as defined EM 385-1-1 Appendix Q, with thorough knowledge of OSHA's Confined Space Standard, 29 CFR 1910.146, and designated in writing to be responsible for the immediate supervision, implementation and monitoring of the confined space program, who through training, knowledge and experience in confined space entry is capable of identifying, evaluating and addressing existing and potential confined space hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.3 Competent Person, Cranes and Rigging

The CP, Cranes and Rigging, as defined in EM 385-1-1 Appendix Q, is a person meeting the competent person requirements, who has been designated in writing to be responsible for the immediate supervision, implementation and monitoring of the Crane and Rigging Program, who through training, knowledge and experience in crane and rigging is capable of identifying, evaluating and addressing existing and potential hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.4 Competent Person, Excavation/Trenching

A CP, Excavation/Trenching, is a person meeting the competent person requirements as defined in EM 385-1-1 Appendix Q and 29 CFR 1926, who has been designated in writing to be responsible for the immediate supervision, implementation and monitoring of the excavation/trenching program, who through training, knowledge and experience in excavation/trenching is capable of identifying, evaluating and addressing existing and potential hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.5 Competent Person, Fall Protection

The CP, Fall Protection, is a person meeting the competent person requirements as defined in EM 385-1-1 Appendix Q and in accordance with ASSP Z359.0, who has been designated in writing by the employer to be responsible for immediate supervising, implementing and monitoring of the fall protection program, who through training, knowledge and experience in fall protection and rescue systems and equipment, is capable of identifying, evaluating and addressing existing and potential fall hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.6 Competent Person, Scaffolding

The CP, Scaffolding is a person meeting the competent person requirements in EM 385-1-1 Appendix Q, and designated in writing by the employer to be responsible for immediate supervising, implementing and monitoring of the scaffolding program. The CP for Scaffolding has enough training, knowledge and experience in scaffolding to correctly identify, evaluate and address existing and potential hazards and also has the authority to take prompt corrective measures with regard to these hazards. CP qualifications must be documented including experience on the specific scaffolding systems/types being used, assessment of the base material that the scaffold will be erected upon, load calculations for materials and personnel, and erection and dismantling. The CP for scaffolding must have a documented minimum of 8-hours of scaffold training to include training on the specific type of scaffold being used (e.g. mast-climbing, adjustable, tubular frame), in accordance with EM 385-1-1 Section 22.B.02.

1.2.7 Competent Person (CP) Trainer

A competent person trainer as defined in EM 385-1-1 Appendix Q, who is qualified in the training material presented, and who possesses a working knowledge of applicable technical regulations, standards, equipment and systems related to the subject matter on which they are training Competent Persons. A competent person trainer must be familiar with the typical hazards and the equipment used in the industry they are instructing. The training provided by the competent person trainer must be appropriate to that specific industry. The competent person trainer must evaluate the knowledge and skills of the competent persons as part of the training process.

1.2.8 High Risk Activities

High Risk Activities are activities that involve work at heights, crane and rigging, excavations and trenching, scaffolding, electrical work, and confined space entry.

1.2.9 High Visibility Accident

A High Visibility Accident is any mishap which may generate publicity or high visibility.

1.2.10 Load Handling Equipment (LHE)

LHE is a term used to describe cranes, hoists and all other hoisting equipment (hoisting equipment means equipment, including crane, derricks, hoists and power operated equipment used with rigging to raise, lower or

horizontally move a load).

1.2.11 Medical Treatment

Medical Treatment is treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even when provided by physician or registered personnel.

1.2.12 Near Miss

A Near Miss is a mishap resulting in no personal injury and zero property damage, but given a shift in time or position, damage or injury may have occurred (e.g., a worker falls off a scaffold and is not injured; a crane swings around to move the load and narrowly misses a parked vehicle).

1.2.13 Operating Envelope

The Operating Envelope is the area surrounding any crane or load handling equipment. Inside this "envelope" is the crane, the operator, riggers and crane walkers, other personnel involved in the operation, rigging gear between the hook, the load, the crane's supporting structure (i.e. ground or rail), the load's rigging path, the lift and rigging procedure.

1.2.14 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.

1.2.15 Recordable Injuries or Illnesses

Recordable Injuries or Illnesses are any work-related injury or illness that results in:

a. Death, regardless of the time between the injury and death, or the length of the illness;

b. Days away from work (any time lost after day of injury/illness onset);

c. Restricted work;

d. Transfer to another job;

e. Medical treatment beyond first aid;

f. Loss of consciousness; or

g. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (a) through (f) above

1.2.16 Government Property and Equipment

Interpret "USACE" property and equipment specified in USACE EM 385-1-1 as Government property and equipment.

1.2.17 Load Handling Equipment (LHE) Accident or Load Handling Equipment Mishap

A LHE accident occurs when any one or more of the eight elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; or collision, including unplanned contact between the load, crane, or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents, even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, or roll over).

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

Accident Prevention Plan (APP); G

SD-06 Test Reports

Notifications and Reports

Accident Reports; GLHE

SD-07 Certificates

Activity Hazard Analysis (AHA)

Confined Space Entry Permit

Hot Work Permit

Certificate of Compliance

License Certificates

Machinery & Mechanized Equipment Certification Form

1.4 MONTHLY EXPOSURE REPORTS

Provide a Monthly Exposure Report and attach to the monthly billing request. 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 voucher.

1.5 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. 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.

1.6 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)

Provide an SSHO that meets the requirements of EM 385-1-1 Section 1.The SSHO must ensure that the requirements of 29 CFR 1926.16 are met for the project. Provide a Safety oversight team that includes a minimum of one person at each project site to function as the Site Safety and Health Officer (SSHO). The SSHO or an equally-qualified Alternate SSHO must be at the work site at all times to implement and administer the Contractor's safety program and Government-accepted Accident Prevention Plan. The SSHO and Alternate SSHO must have the required training, experience, and qualifications in accordance with EM 385-1-1 Section 01.A.17, and all associated sub-paragraphs.

If the SSHO is off-site for a period longer than 24 hours, an equally qualified alternate SSHO must be provided and must fulfill the same roles and responsibilities as the primary SSHO. When the SSHO is temporarily (up to 24 hours) off-site, a Designated Representative (DR), as identified in the AHA may be used in lieu of an Alternate SSHO and must be on the project site at all times when work is being performed. Note that the DR is a collateral duty safety position, with safety duties in addition to their full-time occupation.

1.6.1.1.1 Additional Site Safety and Health Officer (SSHO) Requirements and Duties

The SSHO may also serve as the Quality Control Manager. The SSHO may also serve as the Superintendent.

1.6.1.2 Competent Person Qualifications

Provide Competent Persons in accordance with EM 385-1-1, Appendix Q and herein. Competent Persons for high risk activities include confined space, cranes and rigging, excavation/trenching, fall protection, and electrical work. The CP for these activities must be designated in writing, and meet the requirements for the specific activity (i.e. competent person, fall protection).

1.6.1.2.1 The Competent Person identified in the Contractor's Safety and Health Program and accepted Accident Prevention Plan, must be on-site at all times when the work that presents the hazards associated with their professional expertise is being performed. Provide the credentials of the Competent Persons(s) to the Contracting Officer for information in

consultation with the Safety Office. Competent Person for Confined Space Entry

Provide a Confined Space (CP) Competent Person who meets the requirements of EM 385-1-1, Appendix Q, and herein. The CP for Confined Space Entry must supervise the entry into each confined space in accordance with EM 385-1-1, Section 34.

1.6.1.2.2 Competent Person for Scaffolding

Provide a Competent Person for Scaffolding who meets the requirements of EM 385-1-1, Section 22.B.02 and herein.

1.6.1.2.3 Competent Person for Fall Protection

Provide a Competent Person for Fall Protection who meets the requirements of EM 385-1-1, Section 21.C.04, 21.B.03, and herein.

1.6.2 Personnel Duties

1.6.2.1 Duties of the Site Safety and Health Officer (SSHO)

The SSHO must:

a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the Contractors' daily production report.

b. Conduct mishap investigations and complete required accident reports. Report mishaps and near misses.

c. Use and maintain OSHA's Form 300 to log work-related injuries and illnesses occurring on the project site for Prime Contractors and subcontractors, and make available to the Contracting Officer upon request. Post and maintain the Form 300A on the site Safety Bulletin Board.

d. Maintain applicable safety reference material on the job site.

e. Attend the pre-construction meeting conference, pre-work meetings including preparatory meetings, and periodic in-progress meetings.

f. Review the APP and AHAs for compliance with EM 385-1-1, and approve, sign, implement and enforce them.

g. Establish a Safety and Occupational Health (SOH) Deficiency Tracking System that lists and monitors outstanding deficiencies until resolution.

h. Ensure subcontractor compliance with safety and health requirements.

i. Maintain a list of hazardous chemicals on site and their material Safety Data Sheets (SDS).

j. Maintain a weekly list of high hazard activities involving energy,

equipment, excavation, entry into confined space, and elevation, and be prepared to discuss details during QC Meetings.

k. Provide and keep a record of site safety orientation and indoctrination for Contractor employees, subcontractor employees, and site visitors.

Superintendent, QC Manager, and SSHO are subject to dismissal if the above or any other 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.

1.6.3 Meetings

1.6.3.1 Preconstruction Meeting Conference

a. Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the preconstruction meeting 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.

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.

1.6.3.2 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, foremen, or CDSOs 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 ACCIDENT PREVENTION PLAN (APP)

1.7.1 APP - Construction

A qualified person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1, Appendix A, and as supplemented herein. Cover all paragraph and subparagraph elements in EM 385-1-1, Appendix A. 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 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 authority" for all work site 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 by an officer of the firm (Prime Contractor senior person), the individual preparing the APP, the on-site superintendent, the designated SSHO, the Contractor Quality Control Manager, and any designated Certified Safety Professional (CSP) or Certified Health Physicist (CIH). 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.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction meeting conference for acceptance. 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 ASSP A10.34), and the environment.

1.7.2 Names and Qualifications

Provide plans in accordance with the requirements outlined in Appendix A of 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.

Qualifications of competent and of qualified persons. As a minimum, designate and submit qualifications of competent persons 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.

1.7.3 Plans

Provide plans in the APP in accordance with the requirements outlined in Appendix A of EM 385-1-1, including the following:

1.7.3.1 Confined Space Entry Plan

The Contractor is expected to work in confined space as part of this project. Develop a confined or enclosed space entry plan in accordance with EM 385-1-1, applicable OSHA standards 29 CFR 1910, 29 CFR 1915, and 29 CFR 1926, OSHA Directive CPL 2.100, and any other federal, state and local regulatory requirements identified in this Contract. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by Contractor personnel and the coordination with emergency responders.

1.7.3.2 Multi-Purpose Machines, Material Handling Equipment, and Construction Equipment Lift Plan

Multi-purpose machines, material handling equipment, and construction equipment used to lift loads that are suspended by rigging gear, require proof of authorization from the machine OEM that the machine is capable of making lifts of loads suspended by rigging equipment. Written approval from a qualified registered professional engineer, after a safety analysis is performed, is allowed in lieu of the OEM's approval. Demonstrate that the operator is properly trained and that the equipment is properly configured to make such lifts and is equipped with a load chart.

1.8 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, Section 1 or as directed by the Contracting Officer. Submit the AHA for review at least 15working 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.

1.8.1 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.

1.8.2 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.

1.9 DISPLAY OF SAFETY INFORMATION

1.9.1 Safety Bulletin Board

Prior to commencement of work, erect a safety bulletin board at the job site. Where size, duration, or logistics of project do not facilitate a bulletin board, an alternative method, acceptable to the Contracting Officer, that is accessible and includes all mandatory information for employee and visitor review, may be deemed as meeting the requirement for a bulletin board. Include and maintain information on safety bulletin board as required by EM 385-1-1, Section 01.A.07. Additional items required to be posted include:

a. Confined space entry permit.

b. Hot work permit.

1.9.2 Safety and Occupational Health (SOH) Deficiency Tracking System

Establish a SOH deficiency tracking system that lists and monitors the status of SOH deficiencies in chronological order. Use the tracking system to evaluate the effectiveness of the APP. A monthly evaluation of the data must be discussed in the QC or SOH meeting with everyone on the project. The list must be posted on the project bulletin board and updated daily, and provide the following information:

c. Date deficiency identified;

d. Description of deficiency;

e. Name of person responsible for correcting deficiency;

f. Projected resolution date;

g. Date actually resolved.

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. Government has no responsibility to provide emergency medical treatment.

1.12 NOTIFICATIONS and REPORTS

1.12.1 Mishap Notification

Notify the Contracting Officer as soon as practical, but no more than twenty-four hours, after any mishaps, including recordable accidents, incidents, and near misses, as defined in EM 385-1-1 Appendix Q, any report of injury, illness, or any property damage. For LHE or rigging mishaps, notify the Contracting Officer as soon as practical but not more than four hours after mishap. The Contractor is responsible for obtaining appropriate medical and emergency assistance and for notifying fire, law enforcement, and regulatory agencies. Immediate reporting is required for electrical mishaps, to include Arc Flash; shock; uncontrolled release of hazardous energy (includes electrical and non-electrical); load handling equipment or rigging; fall from height (any level other than same surface); and underwater diving. These mishaps must be investigated in depth to identify all causes and to recommend hazard control measures.

1.12.2 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 mishap. 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. The Contracting Officer will provide copies of any required or special forms.

b. Near Misses: Near miss reports are considered positive and proactive Contractor safety management actions.

c. Conduct an accident investigation for any load handling equipment accident (including rigging accidents) to establish the root cause(s) of the accident. Complete the LHE Accident Report (Crane and Rigging Accident Report) form and provide the report to the Contracting Officer within 30 calendar days of the accident. Do not proceed with crane operations until cause is determined and corrective actions have been implemented to the satisfaction of the Contracting Officer. The Contracting Officer will provide a blank copy of the accident report form.

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.

1.13 HOT WORK

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 Prevention Office, 325.654.3539. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. Provide at least two 9 kg 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 one hour after completion of the task or as specified on the hot work permit.

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, Section 06.H

1.14 CONFINED SPACE ENTRY REQUIREMENTS

Confined space entry must comply with Section 34 of EM 385-1-1, OSHA 29 CFR 1926, OSHA 29 CFR 1910, OSHA 29 CFR 1910.146, and OSHA Directive CPL 2.100. Any potential for a hazard in the confined space requires a permit system to be used.

1.14.1 Entry Procedures

Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. Comply with EM 385-1-1, Section 34 for entry procedures. Hazards pertaining to the space must be reviewed with each employee during review of the AHA.

1.14.2 Forced Air Ventilation

Forced air ventilation is required for all confined space entry

operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its action level. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

1.14.3 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. However, GAFB FD shall be notified in an emergency @ 325.654.7000

1.15 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. Hard Hat

b. Long Pants

c. Appropriate Safety Shoes

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 Use

Each hazardous material must receive approval from the Contracting Office or their designated representative prior to being brought onto the job site or prior to any other use in connection with this Contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material.

3.1.3 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.

3.1.4 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 may be hazardous to human health upon disturbance are encountered during construction operations, stop that portion of work and notify the Contracting Officer immediately. Within 14calendar 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 pursuant to FAR 52.243-4 Changes and FAR 52.236-2 Differing Site Conditions.

3.2 UTILITY OUTAGE REQUIREMENTS

Apply for utility outages at least 15 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, Section 11.A.02 (Isolation). Some examples of energy isolation devices and procedures are highlighted in EM 385-1-1, Section 12.D. In accordance with EM 385-1-1, Section 12.A.01, 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 HECP and HEC procedures, as well as applicable Activity Hazard Analyses (AHAs). In accordance with EM 385-1-1, Section 11.A.02 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, Section 12.A. This meeting must include the Prime Contractor, the Prime and subcontractors performing the work, the Contracting Officer, and 17 CES/CEN COR. 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, Section 12.C. Clarify when personal protective equipment is required during switching operations, inspection, and verification.

3.4 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 ASSP Z359.2 and EM 385-1-1, Sections 21.A and 21.D.

3.4.1 Training

Institute a fall protection training program. As part of the Fall Protection Program, provide training for each employee who might be exposed to fall hazards and using personal fall protection equipment. Provide training by a competent person for fall protection in accordance with EM 385-1-1, Section 21.C. Document training and practical application of the competent person in accordance with EM 385-1-1, Section 21.C.04 and ASSP Z359.2 in the AHA.

3.4.2 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, Section 21.

Provide personal fall protection equipment, systems, subsystems, and components that comply with EM 385-1-1 Section 21.I, 29 CFR 1926.500 Subpart M,ASSP Z359.0, ASSP Z359.1, ASSP Z359.2, ASSP Z359.3, ASSP Z359.4, ASSP Z359.6, ASSP Z359.7, ASSP Z359.11, ASSP Z359.12, ASSP Z359.13, ASSP Z359.14, ASSP Z359.15, ASSP Z359.16 and ASSP Z359.18.

3.4.2.1 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 1633 kg 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 1.8 m 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, Section 21.I.06.

3.4.3 Guardrails and Safety Nets

Design, install and use guardrails and safety nets in accordance with EM 385-1-1, Section 21.F.01 and 29 CFR 1926 Subpart M.

3.4.4 Rescue and Evacuation Plan and Procedures

When personal fall arrest systems are used, ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. Prepare a Rescue and Evacuation Plan and include a detailed discussion of the following: methods of rescue; methods of self-rescue or assisted-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. Include the Rescue and Evacuation Plan within the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP). The plan must be in accordance with the requirements of EM 385-1-1, ASSP Z359.2, and ASSP Z359.4.

3.5 EQUIPMENT

3.5.1 Material Handling Equipment (MHE)

a. Material handling equipment such as forklifts must not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions. Material handling equipment fitted with personnel work platform attachments are prohibited from traveling or positioning while personnel are working on the platform.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions. Material Handling Equipment Operators must be trained in accordance with OSHA 29 CFR 1910, Subpart N.

c. Operators of forklifts or power industrial trucks must be licensed in accordance with OSHA.

3.5.2 Load Handling Equipment (LHE)

The following requirements apply. In exception, these requirements do not apply to commercial truck mounted and articulating boom cranes used solely to deliver material and supplies (not prefabricated components, structural steel, or components of a systems-engineered metal building) where the lift consists of moving materials and supplies from a truck or trailer to the ground; to cranes installed on mechanics trucks that are used solely in the repair of shore-based equipment; to crane that enter the activity but are not used for lifting; nor to other machines not used to lift loads suspended by rigging equipment. However, LHE accidents occurring during such operations must be reported.

a. Notify the Contracting Officer 15 working days in advance of any LHE entering the activity, in accordance with EM 385-1-1, Section 16.A.02, so that necessary quality assurance spot checks can be coordinated. Prior to cranes entering federal activities, a Crane Access Permit must be obtained from the Contracting Officer. A copy of the permitting process will be provided at the Preconstruction Meeting. Contractor's operator must remain with the crane during the spot check. Rigging gear must be in accordance with OSHA, ASME B30.9 Standards safety standards.

b. Comply with the LHE manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in ASME B30.5). Perform all testing in accordance with the manufacturer's recommended procedures.

c. Do not use crane suspended personnel work platforms (baskets) unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Do not lift personnel with a line hoist or friction crane. Additionally, submit a specific AHA for this work to the Contracting Officer. Ensure the activity and AHA are thoroughly reviewed by all involved personnel.

d. Inspect, maintain, and recharge portable fire extinguishers as specified in NFPA 10, Standard for Portable Fire Extinguishers.

e. All employees must keep clear of loads about to be lifted and of suspended loads, except for employees required to handle the load.

f. Use cribbing when performing lifts on outriggers.

g. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

h. A physical barricade must be positioned to prevent personnel access where accessible areas of the LHE's rotating superstructure poses a risk of striking, pinching or crushing personnel. Maintain inspection records in accordance by EM 385-1-1, Section 16.D, including shift, monthly, and annual inspections, the signature of the person performing the inspection, and the serial number or other identifier of the LHE that was inspected. Records must be available for review by the Contracting Officer.

i. Maintain written reports of operational and load testing in accordance with EM 385-1-1, Section 16.F, listing the load test procedures used

along with any repairs or alterations performed on the LHE. Reports must be available for review by the Contracting Officer.

j. Certify that all LHE operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

k. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. At wind speeds greater than 9 m/s 20 mph, the operator, rigger and lift supervisor must cease all crane operations, evaluate conditions and determine if the lift may proceed. Base the determination to proceed or not on wind calculations per the manufacturer and a reduction in LHE rated capacity if applicable. Include this maximum wind speed determination as part of the activity hazard analysis plan for that operation.

l. Follow FAA guidelines when required based on project location.

3.5.3 Machinery and Mechanized Equipment

a. Proof of qualifications for operator must be kept on the project site for review.

b. Manufacture specifications or owner's manual for the equipment must be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.

c. Submit a Machinery & Mechanized Equipment Certification Form to the Contracting Officer prior to being placed into use.

3.5.4 Use of Explosives

Use of explosives is prohibited.

3.6 ELECTRICAL

Perform electrical work in accordance with EM 385-1-1, Sections 11 and 12.

3.6.1 Conduct of Electrical Work

As delineated in EM 385-1-1, electrical work is to be conducted in a de-energized state unless there is no alternative method for accomplishing the work. In those cases obtain an energized work permit from the Contracting Officer. The energized work permit application must be accompanied by the AHA and a summary of why the equipment/circuit needs to be worked energized. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Attach temporary grounds in accordance with ASTM F855 and IEEE 1048. 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.

3.6.2 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.

3.6.3 Arc Flash

All personnel entering an 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.

3.6.4 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.

Check grounding circuits to ensure that the circuit between the ground and a grounded power conductor has a resistance low enough to permit sufficient current flow to allow the fuse or circuit breaker to interrupt the current.

3.6.5 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 and after modification. 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 45 00.00 10

QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM 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	(2021) Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

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 the Bid or Pricing Schedule item.

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. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G

SD-06 Test Reports

Verification Statement

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system that complies with FAR 52.246-12 Inspection of Construction. QC consist of plans, procedures, and organization necessary to produce an end product which complies with the Contract requirements. The QC system covers all construction operations, both onsite and offsite, and be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work and is subject to removal by the

Contracting Officer for non-compliance with the quality requirements specified in the Contract. In this context the highest level manager responsible for the overall construction activities at the site, including quality and production is the project superintendent. The project superintendent maintains a physical presence at the site at all times and is responsible for all construction and related activities at the site, except as otherwise acceptable to the Contracting Officer.

3.2 CONTRACTOR QUALITY CONTROL (CQC) PLAN

Submit no later than 15 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements FAR 52.246-12 Inspection of Construction. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional work.

3.2.1 Content of the CQC Plan

Include, as a minimum, the following to cover all construction-operations, both onsite and offsite, including work by subcontractors fabricators, suppliers and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff will implement the three-phase control system for all aspects of the work specified. Include a CQC System Manager that reports to an individual other than the project superintendent. The individual should be outside of the project superintendent's chain of command and must be shown as at least one level above the project superintendent in the chain of command.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the Contract. Letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities will be issued by the CQC System Manager. Furnish copies of these letters to the Contracting Officer.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures must be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer are required to be used.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including

documentation.

g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and is identified by different trades or disciplines, or it is work by the same trade in a different environment. 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. This list will be agreed upon during the coordination meeting.

j. 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 Inspection Plan requirements in the QC Plan.

3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in the Contractor Quality Control (CQC) Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.3 Notification of Changes

After acceptance of the CQC Plan, notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of 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. Submit the CQC Plan a minimum of 5 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details must be developed, including the forms for recording the CQC operations, 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 Government, signed by both the Contractor and the Contracting Officer and will become a part of the contract file. There can be 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.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a Safety and Health Manager, CQC System Manager, and sufficient number of additional qualified personnel to ensure safety and Contract compliance. The Safety and Health Manager reports directly to a senior project (or corporate) official independent from the CQC System Manager. The Safety and Health Manager will also serve as a member of the CQC Staff Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff maintains a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure Contract compliance. The CQC staff will be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly complete and furnish all letters, material submittals, shop drawing submittals, schedules and all other project documentation to the CQC organization. The CQC organization is responsible for maintaining these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

Identify as CQC System Manager an individual within the onsite work organization that is responsible for overall management of CQC and has the authority to act in all CQC matters for the Contractor. This CQC System Manager is on the site at all times during construction and is employed by the prime Contractor. The CQC System Manager is assigned no other duties with the exception of site safety and health officer (SSHO). Identify in the plan an alternate to serve in the event of the CQC System Manager's absence. The requirements for the alternate are the same as the CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: electrical, mechanical, civil, structural, environmental, architectural. This individual or specialized technical company are directly employed by the prime Contractor and cannot be employed by a supplier or subcontractor on this project; will be responsible to the CQC System Manager; will be periodically available to physically visit the construction site during work on the specialized peronnel's areas of responsibility; have the necessary education or experience in accordance with the experience matrix listed herein. These individuals can perform other duties but need to be allowed sufficient time to perform the specialized personnel's assigned quality control duties as described in the Quality Control Plan. A single person can cover more than one area provided that the single person is qualified to perform quality control activities in each designated and that workload allows.

3.4.4 Additional Requirement

In addition to the above experience and education requirements, the Contractor Quality Control(CQC) System Manager and Alternate CQC System Manager are required to have completed the Construction Quality Management (CQM) for Contractors course. If the CQC System 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 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 CQC System Manager's certificate has expired, retake the course to remain current.

3.4.5 Organizational Changes

Maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, have to comply with the requirements in Section 01 33 00 SUBMITTAL PROCEDURES. The CQC organization is responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

CQC is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control are required to be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

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. This phase includes:

a. A review of each paragraph of applicable specifications, reference codes, and standards. Make available during the preparatory 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 of the Contract drawings.

c. Check to assure that all materials and equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the Contract.

f. Examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. Review of the appropriate activity hazard analysis to assure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. Check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

3.6.2 Initial Phase

This phase is accomplished at the beginning of a definable feature of work. Accomplish the following:

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 are in compliance with the contract.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

e. The Government needs to be notified at least 2 hours in advance of beginning the initial phase for definable feature of work. Prepare separate minutes of this phase by the CQC System Manager and attach to the daily CQC report. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases.

f. The initial phase for each definable feature of work is repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. Record the checks in the CQC documentation. 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. Do not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

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 a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. 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. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

d. 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.

3.7.2 Testing Laboratories

All testing laboratories must be validated by the USACE Material Testing Center (MTC) for the tests to be performed. Information on the USACE MTC with web-links to both a list of validated testing laboratories and for the laboratory inspection request for can be found at: https://mtc.erdc.dren.mil/.

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel is required to meet criteria detailed in ASTM D3740 and ASTM E329.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Conduct an inspection of the work by the CQC System Manager near the end of the work, or any increment of the work established by a time stated in FAR 52.211-10 Commencement, Prosecution, and Completion of Work, or by the specifications. Prepare and include in the CQC documentation a punch list of items which do not conform to the approved drawings and specifications, as required by paragraph DOCUMENTATION. Include within the list of deficiencies the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. Ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Correct any items noted on the Pre-Final inspection in a timely manner. These inspections and any deficiency corrections required by this paragraph need to be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative is required to be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands can also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notify the Contracting Officer at least 14 days prior to the final acceptance inspection and include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the Contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. 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 FAR 52.246-12 Inspection of Construction.

3.9 DOCUMENTATION

3.9.1 Quality Control Activities

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 Contractor/Subcontractor.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom.

d. Test and control activities performed with results and references to specifications/drawings requirements. Identify the control phase (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

e. Submittals and deliverables reviewed, with Contract reference, by whom, and action taken.

f. Offsite surveillance activities, including actions taken.

g. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

h. Instructions given/received and conflicts in plans and specifications.

3.9.2 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 daily within 72 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. 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 Contractor Quality Control(CQC) System Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the CQC System Manager Report.

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, will be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer can 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 claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

SECTION 01 56 00

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

This section provides guidance and requirements to ensure Air Force environmental programs at Goodfellow AFB, TX achieve and maintain environmental quality (Compliance, Conservation and Pollution Prevention) as prescribed by AFPD 32-70 Environmental Consideration in Air Force Programs and Activities.

All personnel working for, or on behalf of, GAFB (including contractors) are required to comply with all federal, state, and local laws and regulations pertaining to environmental requirements and be aware of all environmental impacts associated with the work and take precautions to avoid negative impacts to the environment.

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.

1. APPLICABLE ENVIRONMENTAL REGULATIONS, LAWS, AND PUBLICATIONS:

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. All publications shall be the latest version / edition / revision of the documents listed below, in effect on the date of this solicitation, except where a date is given.

1.1 Code of Federal Regulations (CFR):

29 CFR, Part 1910	Hazardous Waste Operation and Emergency Response
40 CFR 61, Subpart M	National Emissions Standard for Hazardous Air Pollutants
40 CFR, Part 82	Protection of Stratospheric Ozone
40 CFR, Part 117	Determination of Reportable Quantities for Hazardous Substances
40 CFR, Part 122	National Pollutant Discharge Elimination System (NPDES) Regulations
40 CFR, Parts 260 - 282	Solid Waste Regulations
40 CFR, Part 302	Designation, Reportable Quantities, and Notification
49 CFR, Parts 171-176	Hazardous Materials Regulations, Department of Transportation, (DOT) Rules

1.2 Environmental Protection Agency Publication (EPA):

EPA Publication No. SW-846	Test Methods for Evaluating Solid Waste

1.3 Environmental Laws:

Archaeological and Historic Preservation Act (AHPA)

Archaeological Resources Protection Act (ARPA)

Clean Air Act (CAA) and all amendments

Clean Water Act (CWA) as amended

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Endangered Species Act (ESA)

Emergency Planning and Community Right-To-Know Act (EPCRA)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as amended

Federal Water Pollution Control Act (FWPCA)

National Oil and Hazardous Substances Contingency Plan (NCP)

Occupational Health and Safety Act (OSHA)

Oil Pollution Act (OPA)

Pollution Prevention Act (PPA)

Resources Conservation and Recovery Act (RCRA)

Safe Drinking Water Act (SDWA), as amended

1.4 State Regulations (Texas Administrative Code):

25 TAC§295	Occupational Health
30 TAC§205	General Permit to Discharge Waste
30 TAC§290	Public Drinking Water
30 TAC§335	Industrial Solid Waste and Municipal Hazardous Waste

1.5 Air Force Instruction (AFI): 32-7001 Environmental Management

1.6 Air Force Manual (AFMAN): 32-7002 Environmental Compliance and Pollution Prevention

1.7 Energy Independence and Security Act (EISA) Section 438

1.8 SUBMITTALS

SD-01 Preconstruction Submittals

Environmental Management System (EMS) Training Certificates;

Indoor Air Quality Control Plan; G

Erosion and Sedimentation Control Plan; G

Hazardous Material Safety Data Sheet (SDS); G

Contractor Hazardous Material Authorization, Inventory, and Usage Form (AF Form 3000); G

SD-07 Certifications

Disposal of Non-Hazardous and Special Waste, Construction and Debris Reports; G

Air Emissions Reports; G

SD-11 Closeout Submittals

Non-Asbestos Containing Material Usage Certification; G

Hazardous Material Authorization Final Report;G

PART 2

2 ENVIRONMENTAL ISSUES

2.1 Activities which are implemented, in whole or in part with approved funding, must comply with applicable legislation and regulations established to protect the human or physical environment. The Contractor will remain in compliance with Federal statutes during the performance of the contract, including but not limited to the Clean Air Act (CAA), Clean Water Act (CWA), Endangered Species Act (ESA), Resource Conservation and Recovery Act (RCRA), and other applicable laws, regulations, and requirements.

2.2 In order to comply with all Environmental Laws and Regulations as set forth by Federal, State, Department of Defense, Air Force and any other mandated requirements for Federal installations, Goodfellow AFB (GAFB) must comply with and are required to identify, manage and track all chemicals (hazardous materials), air emissions, stormwater, and construction and debris (C&D) that are transported, managed, used, and disposed of from any part of this installation. This requirement is for all installation organizations, workplaces, work centers, shops, and for all Contractors doing any work on the installation. Contractors shall investigate, comprehend, and comply with all environmental rules and regulations applicable to their chosen method of accomplishment of the work under this contract.

2.3 The Contractor will be responsible for and will indemnify and hold the Government harmless for any and all spills, releases, emissions, and discharges of any toxic or hazardous substance, any pollutant, or any waste, whether sudden or gradual, caused by or arising under the performance of this contract or any substance, material, equipment, or facility utilized therefore for the purposes of any environmental statute or regulation. The Contractor will be considered the "operator" for any facility utilized in the performance of the contract and will indemnify and hold the Government harmless for the failure to adhere to any applicable law or regulation established to protect the human or physical environment. The Contractor will be responsible in the same manner as above regardless of whether activities leading to or causing a spill, release, emission, or discharge is performed by the contractor, its agent or designee, an offender, visitor, or any third party.

PART 3

3 PROTECTION OF RESOURCES

3.1 Construction activities are NOT exempt from air emission, stormwater, hazardous waste, and other environmental compliance rules and regulations. Contractor shall investigate, comprehend, and comply with all environmental rules and regulations applicable to his/her chosen method of accomplishment of the work under this contract.

3.2 Protection of Land Resources: The Contractor shall confine his/her construction activities to areas defined by the plans and specifications and/or as approved in his/her Storage Area submittal (refer to paragraph 7). Except in areas to be cleared, the Contractor shall not remove, cut, deface, injure or destroy trees or shrubs without written permission from the Natural Resource Officer/Manager and Contracting Officer. Do not fasten or attach ropes, cables, or guys to existing or nearby trees for anchorage unless authorized by the Natural Resource Officer/Manager and the Contracting Officer. Where such use of ropes, cables, or guys is authorized, the Contractor shall be responsible for any resultant damage.

3.3 Protection of the Stratospheric Ozone: The Contractor shall comply with 40 CFR Part 82. To the maximum extent practicable, the Contractor shall utilize safe alternatives and products made with or containing safe alternatives to Class I or II Ozone Depleting Substances (ODS), identified under 42 U.S.C. 7671K. Class I Ozone Depleting Substance is defined in section 602 (a) of the Clean Air Act (CAA).

Per manufacturer’s recommendations, Contractor’s shall utilize acceptable refrigerant substitutes such as:

HCFC - 134a HFC - 410a

3.4 Protection of Historical and Archaeological Resources: All known Historical, Archaeological, and Cultural Resources, if any, within the Contractors work area will be designated on the contract drawings. The Contractor shall take precautions during the contract to preserve all Resources as they existed at the time of contract award and comply with the Archaeological and Historic Preservation Act (AHPA) and the Archaeological Resources Protection Act (ARPA). The Contractor shall provide all protective devices such as off limit markings, fencing, barricades, or other devices as designated on the contract drawings and shall be responsible for preservation of the sites during this contract.

3.4.1 Recording and Preserving Historical and Archaeological Finds: All items having any apparent historical or archaeological interest outside of designated areas which are discovered in the course of any construction activities shall be carefully preserved. The Contractor shall protect the find in-place by leaving the archaeological find undisturbed and by using flags to mark a fifty-foot radius area around the find. The find shall be immediately reported to the Contracting Officer and the Cultural Resources Manager so that the proper authorities may be notified. All work shall be stopped at once in the immediate area of the discovery until directed by the Contracting Officer to resume work. Any work required to preserve or protect these finds shall be accomplished before work resumes.

3.5 Protection of Water Resources: The expected disturbance area is less than 1 acre, therefore a Stormwater Pollution Prevention Plan (SWPPP)is not required. The Contractor shall not pollute streams, lakes, or reservoirs with fuels, oils, bitumens, calcium chloride, acids, construction wastes, siltation from stormwater runoff, or other harmful materials identified in 40 CFR Parts 117 and 302. It is the responsibility of the Contractor to investigate, comprehend, and comply with all applicable Federal, State, County, and Municipal regulations and ordinances concerning pollution of rivers and streams. All work under this contract shall be performed in such a manner that objectionable or nuisance conditions will not be

created in lakes, reservoirs, or streams through or adjacent to the project areas. At least 30 days prior to the start of construction, the Contractor shall apply for coverage under the storm water construction general permit TX 150000, by filing a Notice of Intent (NOI) via the Texas Commission on Environmental Quality (TCEQ) Form 20022 or applicable online database, for stormwater discharges associated with his/her construction activities for all soil disturbance of more than one acre. A pre-requisite of filing the NOI is to prepare a Storm Water Pollution Prevention Plan (SWPPP) meeting all regulatory requirements and show the Contractor's proposed methodology for controlling erosion, sedimentation, and pollution at the site. Copies of this plan shall be submitted for Government Approval and copies of the NOI shall be submitted to the Contracting Officer (forward to Environmental Office). All non-storm water discharges shall be in accordance with the governing State and Federal regulations. Any Task Order which adds 5,000 SF or more of new horizontal impervious surface must be Energy Independence and Security Act (EISA) Section 438 compliant.

3.5.1 For all soil disturbance of more than one acre, the Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) meeting all requirements specified in the construction general permit and will include the Contractor's Best Management Practices for erosion and sedimentation control at the site. Copies of this plan shall be submitted for Government Approval via AF Form 3000.

3.5.2 Regardless of the amount of soil disturbed, all non-storm water discharges shall conform with the base's Storm Water Management Program regulated by TPDES General Permit TXR040000 for Small Municipal Separate Storm Sewer Systems (MS4).

3.5.3 If a Notice of Intent (NOI) is required for permit coverage, the Contractor shall submit the NOI to the State and provide copies to the Government via Form 3000. The Contractor shall make the required MS4 notifications to the City of San Angelo and the base. Copies of all notifications will be provided to the Contracting Officer via Form 3000. The Contractor shall be responsible for fees associated with obtaining coverage under permit TXR150000.

3.5.4 The Contractor shall also file a Notice of Termination (NOT) on TCEQ Form 20023 or appliable electronic database, promptly after site stabilization is achieved, in accordance with the construction general permit. These forms may be found at the TCEQ website (https://www.tceq.texas.gov). The prime Contractor's principal shall sign to certify the NOI/NOC/NOT or Construction Site Notice. A copy of the NOT shall be provided to the Contracting Officer (forward to Environmental Office).

3.5.5 The Government will specify if the contracted project is part of a larger common development requiring additional storm water measures be taken to obtain permit coverage, or if the project area of construction is greater than five acres.

3.5.6 Post-Construction Cleanup or Obliteration: The Contractor shall obliterate all evidence of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess materials, or any other vestiges of construction. It is anticipated that excavation, filling, and plowing of roadways shall be required to restore the area to near natural conditions, which will permit the growth of vegetation thereon. The disturbed areas shall be graded and filled as required, and topsoil shall be spread to a depth of approximately four inches over the entire area and the entire area seeded with thirty pounds (pure live seed) of common Bermuda per 1000 square feet, and then watered as required until a lush, hardy growth is established in compliance

with TXR 150000 Construction General Permit. Restoration to original contours is required unless otherwise directed by the Contracting Officer.

3.6 Drinking Water: No water connection from any public drinking water supply system shall be allowed to any residence or establishment where an actual or potential contamination hazard exists unless the public water facilities are protected from contamination. No direct connection or cross-connections between the public drinking water supply and a potential source of contamination is permitted. Potential sources of contamination shall be isolated from the public water system by an air-gap or an appropriate backflow prevention device.

3.6.1 Contractor shall comply with and provide documentation required by 30 TAC 290.46 (j), pertaining to customer service inspections.

3.6.2 General: The Contractor shall ensure a customer service inspection (CSI) certificate is completed and approved by the CO prior to providing continuous water service to all new construction, to existing service where contaminant hazards are suspected, or in conjunction with major renovation or expansion of the drinking water distribution system.

3.6.3 Form: The Contractor shall use the most current TCEQ approved CSI certificate form (TCEQ Form 20699) A copy of the completed CSI form shall be provided to the Contracting Officer (forward to Environmental Office).

3.6.4 License: The inspection and certificate may only be completed by a Plumbing Inspector, a Water Supply Protection Specialists licensed by the Texas State Board of Plumbing Examiners, or a Customer Service Inspector who has completed a TCEQ-approved course, passed an examination administered by the executive director, and holds a current professional certification or endorsement as a customer service inspector.

3.6.5 No pipe or pipe fitting which contains more than 0.25% lead may be used for the installation or repair of plumbing at any connection which provides water for human use.

3.6.6 No solder or flux which contains more than 0.2% lead can be used for the installation or repair of plumbing at any connection which provides water for human use.

3.6.7 All fire hydrants on base that are to be used by the Contractor must be used in conjunction with an approved Class III Back Flow Preventer (reduced-pressure principle backflow assembly device) and screw type globe valve attached to the hydrant. At the Contractors expense the backflow prevention device must be properly installed, tested and maintained. Copies of the testing and maintenance records, if applicable, shall be provided to the Contracting Officer, and GAFB Environmental Element.

3.7 Protection of Fish and Wildlife: The Contractor shall follow all Federal, State, County, and Municipal laws regarding the protection of fish and wildlife. The Contractor shall at all times perform all work and take such steps required to prevent any interference of disturbance to fish and wildlife. The Contractor shall not alter water flows or otherwise disturb native habitat adjacent to the project

area, which, through Contracting Officer and GAFB Natural Resources Officer/Manager, that are critical to fish or wildlife. Construction of check dams in live streams will not be permitted. Fouling or polluting of water will not be permitted. Harassment, harvesting, or taking of any wildlife is not permitted on Federal property, nor is the taking of any resource such as antler sheds, skulls, plant life, or rocks/gems.

3.8 Protection of Air Quality: The Contractor shall investigate, comprehend, and comply with all applicable Federal, State, County and Municipal laws concerning air pollution, particularly the CAA (and all subsequent amendments). All work under this contract shall be performed in such a manner that objectionable or nuisance conditions will not be created in the air, nor will objectionable particulates be released to the air. Material usage of welding rods, welding gases, paints, thinners, solvents, fuels, and asphalt will require reporting to the Contracting Officer (Forward to Environmental Office) monthly throughout the project (VIA form Appendix A and AF Form 3000). No open burning shall be permitted on base.

3.8.1 Dust Control: The Contractor shall maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust in accordance with all applicable local, state, and Federal regulations for the control of dust and particulate emissions. Temporary methods of stabilization consisting of sprinkling with water are required to control dust. Sprinkling with water shall be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Gravel paving shall be provided for entrance and exit drives, parking areas, and unpaved roads carrying more than 25 vehicles per day on the construction site.

PART 4

4 HAZARDOUS MATERIALS:

4.1 Contractors using any type of chemicals (hazardous materials) on Goodfellow AFB must comply with the review and approval process and shall provide the Contracting Officer with a list of proposed materials that it plans to use on the installation during the performance of the contract.

4.2 The Contractor shall provide to the Contracting Officer an AF Form 3000, a Material and Approval Submittal, listing all materials that will be utilized during the contract period. If any of those materials are classified as hazardous and are covered under the Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001-11050) or other applicable host Nation, Federal, State, or Local tracking or reporting requirements and also covered under the Occupational Safety and Health Administration (OSHA) Hazard Communication (HAZCOM) Standard (29 CFR 1910.1200) then those materials must be included in the material list submittal.

4.2.1 The Installation HAZMAT Management Program (IHMP) office will determine if any of the proposed materials to be used are hazardous materials (HAZMATs) and will require approval authorizations prior to bringing on or using any of those materials on the installation.

4.3 The Contractor will submit a current Safety Data Sheet (SDS) for each hazardous material to be used under this contract. The Contractor must maintain an on-site file of all SDS during the performance of this contract.

4.4 The Contractor must obtain written authorization from the Contracting Officer and IHMP office prior to bringing or using any hazardous chemicals on the

installation. The Contractor shall submit a hazardous chemicals usage report of all hazardous chemicals for Government Approval (via AF Form 3000) to the Contracting Officer on a monthly, quarterly basis, or at the end of the contract, as determined by the Contracting Officer and the IHMP.

4.4.1 The main Contractor is responsible for the hazardous chemical submittals for approval to the Contracting Officer and then to the IHMP office.

4.5 A copy of the DOD INSTALLATIONS OR FACILITIES STANDARD OPERATING PROCEDURE (SOP) - Contractor Tracking Requirement document will be provided to the Contractor at the pre-performance meeting describing the requirement for all Contractors to submit a Contractor Hazardous Materials Usage Tracking Form (to be completed by the Contractor) and copies of the Safety Data Sheets (SDS's) for all chemicals that will be used under any contract.

4.6 If additional hazardous materials are required during the course of the contract, the Contractor shall complete an authorization worksheet and provide an SDS for each additional hazardous material via AF Form 3000 for Government approval prior to bringing or using any additional hazardous materials onto the installation. The Contractor shall submit the new authorization worksheet no later than 15 days prior to delivery of the hazardous materials onto the installation.

4.7 The Contractor shall report hazardous material usage data via AF Form 3000 to the Contracting Officer (forward to the Environmental Office) on a monthly, quarterly, or end of project basis, as determined by the Contracting Officer. The report will show the product name and part number (stock number if already assigned to each material), any amount received during this period, unit of issue, amount used during this period, and any balance left to still be used by the Contractor.

4.8 Safety Data Sheets (SDS) are required as specified in the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract) for any material designated by a government representative as potentially hazardous and requiring safety controls. SDSs must be submitted by the Contractor upon contract award. Failure to provide SDSs or certificate when requested could result in the Contractor being considered non-responsive and result in termination of the contract.

4.8.1 While there is no single definition that encompasses every type of hazardous chemical, these items generally have a Safety Data Sheet (SDS) prepared by the manufacturer. It is important to note that not every material with an SDS is automatically considered a hazardous material. When there is a question regarding whether or not a material is hazardous, additional guidance should be sought from the CO/COR where they can then forward questions about those materials to the installations Environmental, Safety and Occupational Health (ESOH) team thru the Environmental Office.

4.8.2 Globally Harmonized System (GHS) of Classification and Labeling of Chemicals, per 29 CFR 1910.1200(g) requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) for each hazardous chemical to downstream users to communicate information on these hazards. It also mandates that all workplaces shall not have any SDSs older than five (5) years old and meet the new GHS requirements.

4.9 The Contractor shall not use products that are, or contain any Toxic 17 chemicals, Extremely Hazardous Substances (EHS), Ozone Depleting Substances (ODS), CFC's, or Persistent Bio-accumulative and Toxic (PBT) chemicals. Any Hazardous

Material (HM) containing any of these banned substances will not be allowed on the installation.

4.10 If the hazardous material request is for a Class I ODS, CE will ensure there is an applicable and current Air Force Senior Acquisition Official (SAO) approval for contract Class I ODS requirements before approving the hazardous material authorization and make this information available to the Contractor.

4.11 For each Contractor-identified chemical that the IHMP determines does not meet the definition of a hazardous material, then the IHMP requirements do not apply. The IHMP will notify the Contracting Officer that the Contractor has authorization to bring and use that material on the installation without reporting usage unless required under the Green Procurement Program or specifications require data submittals.

PART 5

5 DISPOSAL OF NON-HAZARDOUS AND SPECIAL WASTES:

5.1 Non-Hazardous Wastes: Non-hazardous solid waste is regulated under 42 U.S. Code Chapter 82 – Solid Waste Disposal - Resource Conservation and Recovery Act (RCRA) Subtitle D, 40 CFR Part 239-259 and under State of Texas 30 TAC §330 - Municipal Solid Waste Rules. Regulations established under Subtitle D ban open dumping of waste and set minimum federal criteria for the operation of municipal waste and industrial waste landfills. The Contractor shall transport and dispose of all non-hazardous wastes to and in a State of Texas permitted facility or other disposal facility permitted by the state in which the disposal facility is located.

5.2 Special Wastes: Special Wastes are any wastes that are non-hazardous, yet have to be stored, transported, and/or disposed of in a special manner; for example, asbestos containing wastes or petroleum contaminated soil. The Contractor shall store, transport and dispose of all Special Wastes in accordance with all Federal, State, and Local laws, rules and regulations as applicable. The disposal facility must also be approved by the Installations Environmental Office prior to transportation. The Contractor shall make all necessary arrangements with the disposal facility for disposal of Special Wastes.

5.3 The Contractor shall submit all transportation and disposal documentation to the Contracting Officer (forward to the Environmental Office), including but not limited to, waste profiles, bills of lading, manifests, etc. at no additional cost to the Government. Refer to Appendix B: Construction & Demolition Debris for appropriate form.

PART 6

6 HAZARDOUS WASTE:

6.1 The Contractor shall accumulate, transport, and dispose of all hazardous waste in accordance with Federal hazardous waste regulations 40 CFR 260-279 and the Texas hazardous waste regulations described in 30 TAC Chapter 335, and Federal transportation regulations 49 CFR 171-176. The Contractor shall prepare and maintain all records, shipping documents, training certificates, plans, and other documents required by regulation. The Contractor shall submit copies of records, shipping documents, training certificates, plans, manifests, land disposal restrictions and other documents pertaining to this contract and required by 30 TAC, Chapter 335 to the Contracting Officer (forward to Environmental Office). All

manifests and land disposal restrictions must be signed by the Installations Environmental Office.

6.2 The Contractor shall remove all hazardous waste pertaining to this contract from Goodfellow AFB daily unless the accumulation and storage is specifically approved in writing by the Contracting Officer and the Installations Environmental Office. Such approval must be given prior to the generation of any hazardous waste. Approval for accumulation or storage of hazardous wastes more than 55 gallons or greater than 1 quart of acutely hazardous waste, for greater than three (3) calendar days will require a minimum lead time of forty-five (45) calendar days from the date of the receipt of the request. The Contractor shall transport hazardous wastes from Goodfellow AFB to a Treatment, Storage, or Disposal Facility (TSDF) permitted by the State of Texas, the EPA, and approved by the Base Environmental Coordinator. Under no circumstances shall disposal or treatment of hazardous wastes be allowed on Goodfellow AFB by the Contractor.

6.3 Reasonable and appropriate measures shall be taken by the Contractor to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and construction materials or debris from polluting the construction site and surrounding area.

6.3.1 The Contractor will be responsible for all spills, releases, emissions, and discharges of any toxic or hazardous substance, any pollutant, or any waste, whether sudden or gradual, caused by or arising under the performance of the contract or any substance, material, equipment, or facility utilized therefore for the purposes of any environmental statute or regulation to protect the human or physical environment.

6.3.2 The Contractor will be responsible in the same manner as above, regardless of whether activities leading to or causing a spill, release, emission or discharge is performed by the contractor, its agent or designee, an offender, visitor, or any third party. If the contractor spills or releases any substance into the environment, the Contractor will immediately report the incident to the Contracting Officer, the Installation Environmental Office and the Installation Fire Department.

6.3.3 The liability for the spill or release of such substance’s rests solely with the contractor and its agent and at no time will the contractor dispose of hazardous, toxic or caustic substances by unsafe methods. Unsafe methods include spreading or pouring it onto the ground, dumping in a lake, river or stream, and flushing into sewers.

6.3.4 Any materials to be disposed including wastes, effluents, trash, garbage, oil, grease, chemicals, and similar hazardous substances shall be transported to a suitable disposal site by the Contractor subject to the approval of the Contracting Officer and the Environmental Office.

6.3.5 Aerosol Cans: Aerosol cans, after use, must be punctured and drained of product and propellant via approved equipment manufactured for that purpose. The empty cans may then be recycled as scrap metal. Disposal of the internal aerosol can contents shall be accomplished according to its waste classification.

6.3.6 Other Containers: Refer to 30 TAC§335.41(f) for criteria regarding management and disposal of other containers.

6.3.7 The Contractor shall submit all transportation and disposal documentation to the Contracting Officer (forward to the Environmental Office), including but not

limited to, waste profiles, bills of lading, manifests, etc. at no additional cost to the Government prior to the Final Inspection.

6.3.8 The Government will, as is deemed necessary, inspect the Contractor's operations and records for compliance with Air Force, State and Federal regulations. The Contractor shall cooperate fully with the TCEQ, US EPA and/or Government representatives during these inspections, if any. The Contractor shall be fully and completely responsible for payment of all fines and/or penalties imposed by the TCEQ or US EPA for violation of regulations governing Environmental Management during performance of this contract.

6.3.9 NOTICE: No hazardous materials, lubricants, oils, liquids, general refuse or related materials shall be deposited in the refuse containers on base. The contractor will adhere to all other Federal, State, and Local guidelines regarding environmental practices.

6.3.10 ONSITE DUMPING/CLEANING: Dumping/cleaning out of concrete trucks on Goodfellow AFB is prohibited. Concrete truck chutes only may be rinsed at the construction site. Wastewater and concrete from this rinse shall be collected in a high-density polyethylene plastic-lined box or pit provided by the Contractor at an approved located at the jobsite. At the end of pouring operations, the Contractor shall excavate all the waste and liner and properly dispose of the same. The pit shall be completely backfilled, and the site restored to original conditions.

PART 7

7. MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

7.1. During the life of this contract the Contractor shall maintain all facilities constructed for pollution control under this contract for as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. During the construction period, the Contractor shall conduct frequent training courses for his/her maintenance personnel. The curricula shall include methods of detection of pollution, familiarity with pollution standards, and installation and care of vegetation covers, plants, and other facilities to prevent and correct environmental pollution.

PART 8

8. PESTICIDES (INSECTICIDES, FUNGICIDES, HERBICIDES, ETC.)

8.1. The application of all pesticides shall be accomplished by licensed pest control applicators or under the direct supervision of a State of Texas licensed pesticide applicator. Delivery and storage of pesticides shall be monitored by licensed personnel to insure the adequacy of containers and the safe storage of toxic materials. Disposal of containers and chemicals will be monitored to prevent pollution of natural drainage systems or the unintentional release of pesticide particulates into the air. The Contractor shall comply with FIFRA and submit copies of certifications to the Contracting Officer (via AF Form 3000) for approval prior to application of pesticides. Additionally, the CE Entomology Section at GAFB shall be notified at (325)-654-3496 at least five calendar days in advance by the Contractor of proposed application of any pesticides and copies of all application records shall be submitted to the CE Entomology Section. The Contractor shall use the GAFB pesticide Application Form, available at CE Operations Flight.

PART 9

9. SPILLS

9.1. Goodfellow AFB maintains, follows, and enforces the following spill plans for regulated substances.

a) Hazardous Materials Emergency Response Plan
b) Spill Prevention Control and Counter Measures Plan

9.2. These plans are maintained by the Installation Management Flight of Civil Engineering at 460 E. Kearney Blvd, Goodfellow AFB. The Contractor shall take preventive measures (secondary containment for fuel storage, avoid overfilling of trucks, etc.) to avoid spills. If a spill does occur, the Contractor shall immediately notify the Goodfellow AFB Fire Department at phone number 325-654-3532 or 325-654-7000. The Installation Fire Department is the first responder who will take charge to secure/neutralize the event, if required and will coordinate cleanup/remedial actions. Notification shall be made even if the spill is within the cleanup capabilities of the Contractor.

9.3. If the Contractor spills or releases any substance into the environment, the contractor shall immediately report the incident to the Installation Environmental Office at 325-654-5946. The Contractor shall be liable for containment and environmental clean-up of the spill or release.

9.4. The Contractor may be held liable for all expenses incurred by the Government during the spill response and any cleanup operations including, but not limited to a hazardous materials/waste cleanup Contractor, supplies and equipment rental, waste transportation, laboratory analysis, and disposal costs.

PART 10

10. DEMOLITION

10.1. Demolition Notification: When a project involves demolition, a written notification on the form specified by the Texas Department of State Health Services (DSHS), shall be submitted to the DSHS at least twenty (20) calendar days prior to Contractor’s proposed demolition start date. The notification shall be signed by the Base Environmental Coordinator. The Contractor shall be responsible for completing the notification and timely mailing to the DSHS. Contractor shall submit a copy of the signed notification to the Contracting Officer annotated with the date of mailing to the DSHS. The Contractor shall be responsible for timely payment of all fees associated with the work and permit.

PART 11

11. ASBESTOS:

11.1. Abatement: For asbestos abatement work, provide personnel or subcontractors that are licensed, registered, or accredited by the Texas Department of State Health Services (DSHS) and insured for the appropriate asbestos related activity.

Provide an on-site supervisor, or ensure the subcontractor has a supervisor, meeting the requirements under OSHA for a “Competent Person” for all work involving Asbestos Containing Materials (ACM) where the asbestos content is greater than 1%. The competent person must be familiar with and experienced in asbestos abatement and other related work and must enforce the use of all safety procedures and

equipment. The supervisor must be knowledgeable of all EPA, OSHA, DSHS and NIOSH requirements and guidelines. Provide documentation of the supervisor's qualifications to the CO.

11.2. Asbestos Containing Building Materials: Under no circumstances, under the provisions of this contract, shall the Contractor be allowed to provide asbestos containing building materials, or products containing encapsulated asbestos or mineral fibers as defined in the 40 CFR 61, National Emission Standards for Hazardous Air Pollutants of 1990, to Goodfellow AFB.

11.3. Asbestos Storage and Disposal: ACM that has been removed may be temporarily stored on-site provided the storage methods comply with the provisions in the Project Specifications. Do not allow any accidental release of dust. Take removed ACM to a disposal facility licensed or approved to accept such materials as indicated in the Project Specifications. Comply with NESHAP and TAHPR regulations regarding handling and transporting ACM. Take coating chips and spent abrasives with no ACM present to an appropriate disposal facility. Transport all materials in a manner to prevent accidental release of dust. In accordance with NESHAP, indicate on any shipping manifest for containers of ACM that the Government is the generator of the waste, the name of the transporter, the name of the administering agency (DSHS), and the name of the disposal facility.

11.4. Asbestos – Free Certification: Prior to final acceptance, the Contractor shall submit a signed statement, accompanied by SDS sheets for project materials, from a licensed asbestos inspector or the project architect or engineer, or officer of the company, proclaiming that no asbestos-containing building materials were used in the construction via Form 3000 for Government Approval.

PART 12

12. LEAD:

12.1. Under no circumstances, under the provisions of this contract, shall the Contractor be allowed to provide Lead Based Paint (LBP), paint products or lead building materials. The definition of Lead Based Paint is paint or other surface coating that contains lead to or in excess of 1.0 milligrams per square centimeter or more than .5% by weight (5000ppm).

12.2. No pipe or pipe fitting which contains more than 0.25% lead may be used for the installation or repair of plumbing at any connection which provides water for human use.

12.3. No solder or flux which contains more than 0.2% lead can be used for the installation or repair of plumbing at any connection which provides water for human use.

PART 13

13. RELEASE OF FLUIDS TO THE SANITARY SEWER SYSTEM:

13.1. Goodfellow AFB's sanitary sewer system discharges into the Publicly Owned Treatment Works (POTW) operated by the City of San Angelo, Texas. This POTW has established testing requirements for certain constituents as well as discharge limits of those same constituents. Accordingly, any Contractor performing work at Goodfellow AFB and contemplating a release of non-hazardous water into the sanitary sewer system shall comply with the testing/release requirements established by the

City of San Angelo. The Contractor is also responsible for any and all testing, monitoring, measuring, documenting, etc. to prove compliance with same.

PART 14

14. GREEN PROCUREMENT PROGRAM (GPP)

14.1. Green Procurement is defined as "The purchase of environmentally preferable products and services in accordance with Federally mandated "green" procurement preference programs.

14.2. Priority should be given to products that emphasize the source reduction aspect of the Air Force's Pollution Prevention hierarchy and those that incorporate one, or all, of the following mandatory GPP elements: Recovered Materials, Energy and Water Efficient, Alternate Fuels and Fuel Efficiency, Bio-based, Ozone Depleting Substances, Priority Chemicals, and Environmentally Preferable Products (EPP).

PART 15

15. AIR EMISSION SOURCE REPORTING

15.1. The Contractor shall comprehend and comply with all applicable Federal, State, County and Municipal laws concerning air pollution, particularly the Clean Air Act (CAA) and all subsequent amendments. All work under this contract shall be performed in such a manner that objectionable or nuisance conditions will not be created in the air, nor will objectionable particulates be released into the air.

PART 16

16. CONSTRUCTION & DEBRIS

16.1. Construction and Demolition (C&D) debris consists of the waste generated during construction, renovation, and demolition projects. Covering a wide array of materials, this waste often contains bulky, heavy materials, including concrete, wood, asphalt (from roads and roofing shingles), gypsum (the main component of drywall), metals, bricks, plastics, and plant materials from site clearing. C&D debris also includes salvaged building components such as doors, windows, and plumbing fixtures.

16.2. When a project involves any type of construction, remodeling, or demolition, the Contractor shall use all means available to divert to the greatest extent practicable and economically feasible, construction and demolition waste from landfills. At the end of the project, and prior to final acceptance, the Contractor shall submit a solid waste diversion report (the form is included in this document Appendix B) identifying the materials and weights either recycled or diverted from solid waste disposal to other re-use as well as weights of waste disposed in a landfill. The report shall be submitted via AF Form 3000 to the Contracting Officer (forward to Environmental Office).

PART 17

17. TRAINING

17.1. The Contractor shall ensure all employees complete the required Hazardous Communication (HAZCOM), Hazardous Materials and Hazardous Waste training required for this project. If hazardous materials are used and/or hazardous wastes are

generated as part of this contract, then the Contractor shall appoint a primary and alternate HAZMAT and Hazardous Waste monitor. The Contractor is responsible for training all Contractor personnel regarding environmental aspects associated with the project.

PART 18

18. ENVIRONMENTAL MANAGEMENT SYSTEM (EMS):

18.1. The Contractor's on-site supervisory personnel shall complete the EMS Awareness Training (EMS100AFIT00004) program prior to commencement of any activities. The Installation Environmental Office should be contacted at (325) 654-5946 for information about this 7-minute awareness training within 60 days of contract award or a new contract employee supervisor begins work. The training will be accomplished utilizing web based The Environmental Awareness Course Hub (TEACH) available through any internet access at https://usaf.learningbuilder.com/

18.2. The training above will be tracked by the Environmental System Administrator.

Appendix A: Air Emission Source Reporting

Air Emission Source Reporting				
1. From:		**2. 17 CES/CEIE 460 E. Kearney Blvd Bldg. 3511, Rm 130 Goodfellow AFB, Texas 76908**		**3. Month/Year Ending (mmm/yyyy)**
4. PRODUCT	**5. AMT RECEIVED**	**6. U/I**	**7. AMT USED**	**8. BALANCE**
Fuels - Gasoline		**Gallons**		
Fuels - Diesel		**Gallons**		
Propane / LPG		**Gallons**		
Natural Gas		**CU FT**		
Welding rods/wire		**Pounds**		

9. REPORTED BY (Name, Orgn, Phone)	**9a. DATE**	**10. ENTERED BY (Name, Orgn)**	**10a. DATE**

Form Instructions:

1) Organization and address of organization and/or contractor providing the report

2) Organization and address of office receiving the report

3) Ending month and year for data being reported

4) Name of product being reported, for example JP8, Mogas, Diesel, etc.

5) Total quantity received in the reporting month

6) Unit of issue for the product reported – I.e., gallons, pounds

7) Total quantity issued or used in the reporting month

8) Balance of product – The end balance of unused materials that are still on the installation or transported off-site by a contractor.

9) Name, organization and phone number of person providing report
a. Date of report

10) Name of person performing data entry
a. Date of data entry

Appendix B: Construction & Demolition Debris

Material Type	Recycled (pounds)	Recycling Company	Landfill (pounds)	Landfill Used	Costs / Proceeds
Asphalt					
Bricks					
Concrete					
Dirt/Soil					
Dumpster Debris					
Freons/Refrigerants					
Light Bulbs					
Lumber/Wood					
Metals					
Oil/Petroleum					
Plastics					
Roofing					
Steel					
Wastewater					
Tress/Brush					
Other					

San Angelo Area Recycling Haulers and Markets

Ric Abbott Co., 6577 S. US Hwy 277, San Angelo, TX (325) 651-7330
Acme Iron & Metal Co., 720 N. Buchanan, San Angelo, TX (325) 653-1407
Butts Recycling Inc., 615 W 11th St, San Angelo, TX (325) 653-8957

San Angelo Area Landfill

Republic Services Inc., 3002 Old Ballinger Hwy, San Angelo, TX (325) 655-6869 (7:00 AM -5:30 PM Mondays-Fridays / 7:00 AM -12:00 PM Saturdays / Closed Sundays)

END OF SECTION

SECTION 01 57 19

TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies the control of environmental pollution and damage that the Contractor must consider for air, water, and land resources. It includes management of visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants and resources encountered or generated by the Contractor. The Contractor is obligated to consider specified control measures with the costs included within the various contract items of work.

B. Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which:

1. Adversely affect human health or welfare,
2. Unfavorably alter ecological balances of importance to human life,
3. Effect other species of importance to humankind, or;
4. Degrade the utility of the environment for aesthetic, cultural, and historical purposes.

C. Definitions of Pollutants:

1. *Chemical Waste*: Petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals, and inorganic wastes.
2. *Debris*: Combustible and noncombustible wastes, such as leaves, tree trimmings, ashes, and waste materials resulting from construction or maintenance and repair work.
3. *Sediment*: Soil and other debris that has been eroded and transported by runoff water.
4. *Solid Waste*: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations and from community activities.
5. *Surface Discharge*: The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "water of the United States" and would require a permit to discharge water from the governing agency.
6. *Rubbish*: Combustible and noncombustible wastes such as paper, boxes, glass and crockery, metal and lumber scrap, tin cans, and bones.
7. *Sanitary Wastes*:
   a. Sewage: Domestic sanitary sewage and human and animal waste.
   b. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.2 QUALITY CONTROL

A. Establish and maintain quality control for the environmental protection of all items set forth herein.

B. Record on daily reports any problems in complying with laws, regulations, and ordinances. Note any corrective action taken.

1.3 REFERENCES

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

B. U.S. National Archives and Records Administration (NARA):

33 CFR 328..... Definitions

1.4 SUBMITTALS

A. In accordance with contract submittal procedures , furnish the following:

1. Environmental Protection Plan: After the contract is awarded and prior to the commencement of the work, the Contractor shall meet with the Contracting Officer’s Representative (COR) to discuss the proposed Environmental Protection Plan and to develop mutual understanding relative to details of environmental protection. Not more than 20 days after the meeting, the Contractor shall prepare and submit to the Contracting Officer for approval, a written and/or graphic Environmental Protection Plan including, but not limited to, the following:

    a. Name(s) of person(s) within the Contractor's organization who is (are) responsible for ensuring adherence to the Environmental Protection Plan.

    b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site.

    c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

    d. Description of the Contractor's environmental protection personnel training program.

    e. A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control, noise control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations, and permits.

    f. Methods for protection of features to be preserved within authorized work areas including trees, shrubs, vines, grasses, ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, and archeological and cultural resources.

    g. Procedures to provide the environmental protection that comply with the applicable laws and regulations. Describe the procedures to correct pollution of the environment due to accident, natural causes, or failure to follow the procedures as described in the Environmental Protection Plan.

    h. Permits, licenses, and the location of the solid waste disposal area.

i. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials. Include as part of an Erosion Control Plan approved by the Contracting Officer.

j. Environmental Monitoring Plans for the job site including land, water, air, and noise.

k. Work Area Plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas. This plan may be incorporated within the Erosion Control Plan.

l. Inclusion of “best management practices” and methodologies.

B. Approval of the Contractor's Environmental Protection Plan will not relieve the Contractor of responsibility for adequate and continued control of pollutants and other environmental protection measures.

1.3 PROTECTION OF ENVIRONMENTAL RESOURCES

A. Protect environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this contract. Confine activities to areas defined by the specifications and drawings. Protection of Land Resources: Prior to construction, identify all land resources to be preserved within the work area. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and landforms without permission from the COR. Do not fasten or attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted. Provide erosion control plans, in phases where required.

1. *Work Area Limits:* Prior to any construction, mark the areas that require work to be performed under this contract. Mark or fence isolated areas within the general work area that are to be saved and protected. Protect monuments, works of art, and markers before construction operations begin. Convey to all personnel the purpose of marking and protecting all necessary objects.

2. *Protection of Landscape:* Protect trees, shrubs, vines, grasses, landforms, and other landscape features shown on the drawings to be preserved by marking, fencing, or using any other approved techniques.

   a. Box and protect from damage existing trees and shrubs to remain on the construction site.

   b. Immediately repair all damage to existing trees and shrubs by trimming, cleaning, and painting with antiseptic tree paint.

   c. Do not store building materials or perform construction activities closer to existing trees or shrubs than the farthest extension of their limbs.

3. *Reduction of Exposure of Unprotected Erodible Soils*: Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. Clear areas in reasonably sized increments only as needed to use. Form earthwork to final grade as shown. Immediately protect side slopes and back slopes upon completion of rough grading.

4. *Temporary Protection of Disturbed Areas*: Construct diversion ditches, benches, and berms to retard and divert runoff from the construction site to protected drainage areas approved under paragraph 208 of the Clean Water Act.

   a. Institute effluent quality monitoring programs as required by Federal, State, and local environmental agencies.

5. *Erosion and Sedimentation Control Devices*: The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's activities. Construct or install all temporary and permanent erosion and sedimentation control features on the Environmental Protection Plan.

6. Manage and control spoil areas on Government property to limit spoil to areas shown on the Environmental Protection Plan.

7. Handle and dispose of solid wastes in such a manner that will prevent contamination of the environment. Place solid wastes (excluding clearing debris) in containers that are emptied on a regular schedule. Transport all solid waste off Government property and dispose of waste in compliance with Federal, State, and local requirements.

8. Store chemical waste away from the work areas in corrosion resistant containers and dispose of waste in accordance with Federal, State, and local regulations.

9. Handle discarded materials other than those included in the solid waste category as directed by the COR.

B. *Protection of Water Resources*: Keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters and sewer systems. Implement management techniques to control water pollution by the listed construction activities that are included in this contract.

1. Monitor water areas affected by construction.

C. *Protection of Air Resources*: Keep construction activities under surveillance, management, and control to minimize pollution of air resources. Burning is not permitted on the job site. Keep activities, equipment, processes, and work operated or performed, in strict accordance with the State of TexasState Air Pollution Statue, Rule, or Regulation and Federal emission and performance laws and standards. Maintain ambient air quality standards set by the Environmental Protection Agency, for those construction operations and activities specified.

1. Particulates: Control dust particles, aerosols, and gaseous by-products from all construction activities, processing, and preparation of materials (such as from asphaltic batch plants) at all times, including weekends, holidays, and hours when work is not in progress.

   2. Particulates Control: Maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause a hazard or a nuisance. Sprinklering, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators, or other methods are permitted to control particulates in the work area.

3. Hydrocarbons and Carbon Monoxide: Control monoxide emissions from equipment to Federal and State allowable limits.

4. Odors: Control odors of construction activities and prevent obnoxious odors from occurring.

D. *Reduction of Noise*: Minimize noise using every action possible. Perform noise-producing work in less sensitive hours of the day or week as directed by the COR. Maintain noise-produced work at or below the decibel levels and within the time periods specified.

1. Perform construction activities involving repetitive, high-level impact noise only between 8:00 a.m. and 5:00p.m unless otherwise permitted by local ordinance or the COR. Repetitive impact noise on the property shall not exceed the following dB limitations:

Time Duration of Impact Noise	Sound Level in dB
More than 12 minutes in any hour	70
Less than 30 seconds of any hour	85
Less than three minutes of any hour	80
Less than 12 minutes of any hour	75

2. Provide sound-deadening devices on equipment and take noise abatement measures that are necessary to comply with the requirements of this contract, consisting of, but not limited to, the following:

a. Maintain maximum permissible construction equipment noise levels at 15 meter (50 feet) (dBA):

EARTHMOVING		MATERIALS HANDLING	
FRONT LOADERS	75	CONCRETE MIXERS	75
BACKHOES	75	CONCRETE PUMPS	75
DOZERS	75	CRANES	75
TRACTORS	75		
		PILE DRIVERS	95
GRADERS	75	JACK HAMMERS	75

TRUCKS	75		
PAVERS, STATIONARY	80	PNEUMATIC TOOLS	80
PUMPS	75		
GENERATORS	75	SAWS	75
COMPRESSORS	75	VIBRATORS	75

b. Use shields or other physical barriers to restrict noise transmission.

c. Provide soundproof housings or enclosures for noise-producing machinery.

d. Use efficient silencers on equipment air intakes.

e. Use efficient intake and exhaust mufflers on internal combustion engines that are maintained so equipment performs below noise levels specified.

f. Line hoppers and storage bins with sound deadening material.

g. Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.

3. Measure sound level for noise exposure due to the construction at least once every five successive working days while work is being performed above 70 dB(A) noise level. Measure noise exposure at the property line or 15 m (50 feet) from the noise source, whichever is greater. Measure the sound levels on the A weighing network of a General-Purpose sound level meter at slow response. To minimize the effect of reflective sound waves at buildings, take measurements at 900 to 1800 mm (three to six feet) in front of any building face. Submit the recorded information to the COR noting any problems and the alternatives for mitigating actions.

E. *Restoration of Damaged Property*: If any direct or indirect damage is done to public or private property resulting from any act, omission, neglect, or misconduct, the Contractor shall restore the damaged property to a condition equal to that existing before the damage at no additional cost to the Government. Repair, rebuild, or restore property as directed or make good such damage in an acceptable manner.

F. *Final Clean-up*: On completion of project and after removal of all debris, rubbish, and temporary construction, Contractor shall leave the construction area in a clean condition satisfactory to the COR. Cleaning shall include off the station disposal of all items and materials not required to be salvaged, as well as all debris and rubbish resulting from demolition and new work operations.

--- END OF SECTION ---

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

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 60percent 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

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.

1.3.3 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.

1.3.4 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. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Waste Management Plan; G

SD-06 Test Reports

Quarterly Reports Annual Report

SD-11 Closeout Submittals

Final Construction Waste Diversion Report; G

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 00.00 10 QUALITY CONTROL. At a minimum, discuss and document waste management goals at following meetings:

a. Preconstruction meeting.

b. Regular site (job) meetings.

c. Work safety meeting (if applicable).

1.6 CONSTRUCTION WASTE MANAGEMENT PLAN

Submit Construction Waste Management Plan not less than 60 calendar days before scheduled final site or building design approval. Revise and resubmit Construction Waste Management Plan until it receives final approval from the Contracting Officer, in order for construction to begin. 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. Actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.

b. Description of the regular meetings to be held to address waste management.

c. 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.

d. Name of landfill and incinerator to be used.

e. 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.

f. 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.

g. Identification of materials that cannot be recycled or reused with an explanation or justification, to be approved by the Contracting Officer.

h. Description of the means by which materials identified in item (g) above will be protected from contamination.

i. 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).

j. 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, 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. Ensure reports are coordinated monthly with SECTION 01 56 00 Construction and Debris Reports.

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.

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.

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 Beneficial Occupancy Date (BOD).

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:

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.

1.11.2 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.

1.12.4 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

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM E1971	(2005; R 2011) Standard Guide for Stewardship for the Cleaning of Commercial and Institutional Buildings

GREEN SEAL (GS)

GS-37	(F2017) Cleaning Products for Industrial and Institutional Use

U.S. ARMY CORPS OF ENGINEERS (USACE)

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)

FC 1-300-09N	(2014; with Change 6, 2021) Navy and Marine Corps Design
UFC 1-300-08	(2009; with Change 2, 2011) 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 or red-lined PDF files. These files serve as the basis for the creation of the record drawings.

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).

1.5 SUBMITTALS

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

SD-03 Product Data

Final Cleaning

SD-08 Manufacturer's Instructions

Posted Instructions

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals; G

SD-11 Closeout Submittals

As-Built Drawings; G

Interim DD FORM 1354; G

Checklist for DD FORM 1354; G

1.6 WARRANTY MANAGEMENT

1.6.1 Warranty Management Plan

Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction. At least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan narrative must contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Submit warranty information, made available during the construction phase, to the Contracting Officer for approval prior to each monthly pay estimate. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period must begin on the date of project acceptance and continue for the full product warranty period. Conduct a joint 4 month and 9-month warranty inspection, measured from time of acceptance; with the Contractor, Contracting Officer and the Customer Representative. The warranty management plan must include, but is not limited to, the following:

a. Roles and responsibilities of personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

b. For each warranty, the name, address, telephone number, and e-mail of each of the guarantor's representatives nearest to the project location.

c. A list and status of delivery of Certificates of Warranty for extended warranty items, including roofs, HVAC balancing, pumps, motors, transformers, and for commissioned systems, such as fire protection and alarm systems, sprinkler systems, and lightning protection systems.

d. As-Built Record of 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.

1.6.2 Performance Bond

The Performance Bond

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.

1.6.3 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.

1.6.4 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

Not Used

PART 3 EXECUTION

3.1 AS-BUILT DRAWINGS

Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings. Maintain the as-builts throughout construction as red-lined hard copies on site and red-lined PDF files. Submit As-Built Drawings 30 days prior to Beneficial Occupancy Date (BOD).

3.1.1 Markup Guidelines

Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the As-Built drawing. Show what was changed, how it was changed, where item(s) were relocated and change related details. These working as-built markup prints must be neat, legible and accurate as follows:

a. Use base colors of red, green, and blue. Color code for changes as follows:

(1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.

(2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.

(3) Additions (Green) - Added items, lettering in notes and leaders.

b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.

c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.

d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.

e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.

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.

f. For deletions, cross out all features, data and captions that relate to that revision.

g. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with leaders to the applicable location.

h. 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.

i. Incorporate all shop and fabrication drawings into the markup drawings.

3.1.2 As-Built Drawings Content

Revise As-Built Drawings and] or red-lined PDF files in accordance with ERDC/ITL TR-19-6 and ERDC/ITL TR-19-7. 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 and compliance with FC 1-300-09N procedures.

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 FINAL APPROVED SHOP DRAWINGS

Submit final approved project shop drawings 30 days after transfer of the completed facility.

3.3 CONSTRUCTION CONTRACT SPECIFICATIONS

Submit final PDF file record construction contract specifications, including revisions thereto, 30 days after transfer of the completed facility.

3.4

3.4 OPERATION AND MAINTENANCE MANUALS

Provide project operation and maintenance manuals

3.5 CLEANUP

Provide final cleaning in accordance with ASTM E1971 and submit two copies of the listing of completed final clean-up items.

Leave premises "broom clean." Comply with GS-37 for general purpose cleaning and bathroom cleaning. Use only nonhazardous cleaning materials, including natural cleaning materials, in the final cleanup. 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. Clean filters of operating equipment and comply with the Indoor Air Quality (IAQ) Management Plan. 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. Recycle, salvage, and return construction and demolition waste from project in accordance with 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

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 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. Completed DD FORM 1354

Submit the completed Checklist for DD FORM 1354 of Installed Building Equipment items. Attach this list to the updated DD FORM 1354.

-- End of Section --

SECTION 02 41 00

DEMOLITION

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

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

40 CFR 61	National Emission Standards for Hazardous Air Pollutants

1.2 PROJECT DESCRIPTION

1.2.1 Definitions

1.2.1.1 Demolition

Demolition is the process of tearing apart and removing any feature of a facility together with any related handling and disposal operations.

1.2.1.2 Deconstruction

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

1.2.1.3 Demolition Plan

Demolition Plan is the planned steps and processes for managing demolition activities and identifying the required sequencing activities and disposal mechanisms.

1.2.1.4 Deconstruction Plan

Deconstruction Plan is the planned steps and processes for dismantling all or portions of a structure or assembly, to include managing sequencing activities, storage, re-installation activities, salvage and disposal mechanisms.

1.2.2 Demolition/Deconstruction Plan

Prepare a Demolition Plan and submit proposed demolition, and removal procedures for approval before work is started. Include in the plan procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, disconnection schedule of utility services, removal, and reinstallation of kitchen equipment, and a detailed description of methods an dequipment to be used for each operation and of the sequence of operations. Coordinate with Waste Management Plan in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Provide procedures for safe conduct of the work in accordance with EM 385-1-1. Plan must be approved by Contracting Officer prior to work beginning.

1.2.3 General Requirements

Prior to beginning demolition, the Contractor shall be required to provide temporary protections from food handling and food service functions. See paragraphs below and 01 00 00 GENERAL REQUIREMENTS for additional information regarding temporary construction requirements for food handling areas. Do not begin demolition or deconstruction until authorization is received from the Contracting Officer. Remove rubbish and debris from the project site daily; do not allow accumulations inside the buildings. In the interest of occupational safety and health, perform the work in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections.

1.3 ITEMS TO REMAIN IN PLACE

Comply with FAR 52.236-9 to protect existing vegetation, structures, equipment, utilities, and improvements. Coordinate the work of this section with all other work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition, deconstruction, or removal work. Repairs, reinforcement, or structural replacement require approval by the Contracting Officer prior to performing such work.

1.3.1 Existing Construction Limits and Protection

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

1.3.2 Utility Service

Maintain existing utilities indicated to stay in service and protect against damage during demolition and deconstruction operations. Prior to start of work, utilities serving each area of alteration or removal will be shut off by the Government and disconnected and sealed by the Contractor.

1.3.3 Facilities

Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities. Floors, roofs, walls, columns, pilasters, and other structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, must remain standing without additional bracing, shoring, or lateral support until demolished or deconstructed, unless directed otherwise by the Contracting Officer. Ensure that no elements determined to be unstable are left unsupported and place and secure bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract.

1.4 BURNING

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

1.5 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

Demolition Plan; G

Existing Conditions; G

SD-07 Certificates

Notification; G

Notification of Demolition and Renovation Form

SD-11 Closeout Submittals

Receipts

1.6 QUALITY ASSURANCE

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

1.6.1 Dust and Debris Control

Prevent the spread of dust and debris to occupied portions of the building and avoid the creation of a nuisance in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Vacuum and dust the work area daily.

1.7 PROTECTION

1.7.1 Traffic Control Signs

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

1.7.2 Protection of Personnel

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

1.8 EXISTING CONDITIONS

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Contracting Officer or the Contracting Officer's Representative showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs or electronic images with a minimum resolution of 3072 x 2304 pixels, capable of a print resolution of 300 dpi, will be acceptable as a record of existing conditions. Include in the record the elevation of the top of foundation walls, finish floor elevations, possible conflicting electrical conduits, plumbing lines, alarms systems, the location and extent of existing cracks and other damage and description of surface conditions that exist prior to starting work. Inventory, record, and photograph all existing furnishings, fixtures, and equipment described in SECTION 11 05 40 COMMON WORK RESULTS FOR FOODSERVICE EQUIPMENT. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document. Submit survey results to the Contracting Officer or the Contracting Officer's Representative.

PART 2 PRODUCTS

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

Inspect and evaluate existing structures onsite for reuse. Disassemble existing construction scheduled to be removed for reuse. Dismantled and removed materials are to be separated, set aside, and prepared as

specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified. Designate materials for reuse onsite whenever possible.

3.1.1 Utilities and Related Equipment

3.1.1.1 General Requirements

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Contracting Officer. Do not interrupt existing utilities serving facilities occupied and used by the Government except when approved in writing and then only after temporary utility services have been approved and provided. Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

3.1.1.2 Disconnecting Existing Utilities

Terminate utilities in a manner conforming to the nationally recognized code covering the specific utility and approved by the Contracting Officer. When utility lines are encountered but are not indicated on the drawings, notify the Contracting Officer prior to further work in that area.

3.1.2 Masonry

Sawcut and remove masonry so as to prevent damage to surfaces to remain and to facilitate the installation of new work. Where new masonry adjoins existing, abut or tie the new work into the existing construction as specified for the new work. Provide square, straight edges and corners where existing masonry adjoins new work and other locations..

3.1.3 Patching

Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces, using on-site materials when available. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new work. Make finished surfaces of patched area flush with the adjacent existing surface and match the existing adjacent surface as closely as possible to texture and finish. Provide patching as specified and indicated, and include the following:

a. Concrete and Masonry: Completely fill holes and depressions, left as a result of removals in existing masonry walls to remain, with an approved masonry patching material, applied in accordance with the manufacturer's printed instructions.

b. Where existing partitions have been removed leaving damaged or missing resilient tile flooring, patch to match the existing floor tile.

c. Patch acoustic lay-in ceiling where partitions have been removed. Make the transition between the different ceiling heights by continuing the higher ceiling level over to the first runner on the lower ceiling and closing the vertical opening with a painted sheet metal strip.

3.1.4 Mechanical Equipment and Fixtures

Disconnect mechanical hardware at the nearest connection to existing services to remain, unless otherwise noted. Disconnect mechanical equipment and plumbing fixtures at fittings. Remove service valves attached to the unit. Salvage each item of equipment and fixtures as a whole unit; listed, indexed, tagged, and stored. Salvage each unit with its normal operating auxiliary equipment. Transport salvaged equipment and fixtures, including motors and machines, to a designated storage area as directed by the Contracting Officer. Do not remove equipment until approved.

3.1.4.1 Preparation for Storage

Remove water, dirt, dust, and foreign matter from units; drain tanks, piping and fixtures; if previously used to store flammable, explosive, or other dangerous liquids, steam clean interiors. Seal openings with caps, plates, or plugs. Secure motors attached by flexible connections to the unit. Change lubricating systems with the proper oil or grease.

3.1.4.2 Piping

Disconnect piping at unions, flanges and valves, and fittings as required to reduce the pipe into straight lengths for practical storage. Store salvaged piping according to size and type. If the piping that remains can become pressurized due to upstream valve failure, attach end caps, blind flanges, or other types of plugs or fittings with a pressure gage and bleed valve to the open end of the pipe to ensure positive leak control. Carefully dismantle piping that previously contained gas, gasoline, oil, or other dangerous fluids, with precautions taken to prevent injury to persons and property. Store piping outdoors until all fumes and residues are removed. Box prefabricated supports, hangers, plates, valves, and specialty items according to size and type. Wrap sprinkler heads individually in plastic bags before boxing. Classify piping not designated for salvage, or not reusable, as scrap metal.

3.1.4.3 Fixtures, Motors and Machines

Remove and salvage fixtures, motors and machines associated with plumbing, heating, air conditioning, refrigeration, and other mechanical system installations. Salvage, box and store auxiliary units and accessories with the main motor and machines. Tag salvaged items for identification, storage, and protection from damage. Classify broken, damaged, or otherwise unserviceable units and not caused to be broken, damaged, or otherwise unserviceable as debris to be disposed of by the Contractor.

3.1.5 Electrical Equipment and Fixtures

Salvage motors, motor controllers, and operating and control equipment that are attached to the driven equipment. Salvage wiring systems and components. Box loose items and tag for identification. Disconnect primary, secondary, control, communication, and signal circuits at the point of attachment to their distribution system.

3.1.5.1 Fixtures

Remove and salvage electrical fixtures. Salvage unprotected glassware from the fixture and salvage separately. Salvage incandescent, mercury-vapor, and fluorescent lamps and fluorescent ballasts manufactured

prior to 1978, boxed and tagged for identification, and protected from breakage.

3.1.5.2 Electrical Devices

Remove and salvage switches, switchgear, transformers, conductors including wire and nonmetallic sheathed and flexible armored cable, regulators, meters, instruments, plates, circuit breakers, panelboards, outlet boxes, and similar items. Box and tag these items for identification according to type and size.

3.1.5.3 Conduit and Miscellaneous Items

Salvage conduit except where embedded in concrete or masonry. Consider corroded, bent, or damaged conduit as scrap metal. Sort straight and undamaged lengths of conduit according to size and type. Classify supports, knobs, tubes, cleats, and straps as debris to be removed and disposed.

3.2 DISPOSITION OF MATERIAL

3.2.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, become the property of the Contractor and must be removed from Government property. Materials approved for storage by the Contracting Officer must be removed before completion of the contract. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Showing for sale or selling materials and equipment on site is prohibited.

3.2.2 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. Coordinate the re-use of materials and equipment with the re-use requirements in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Capture re-use of materials in the diversion calculations for the project.

3.2.3 Salvaged Materials and Equipment

Remove materials and equipment that are to be removed by the Contractor and that are to remain the property of the Government, and return to the Government as directed by the Contracting Officer.

a. Salvage items and material to the maximum extent possible.

b. Store all materials salvaged for the Contractor as approved by the Contracting Officer and remove from Government property before completion of the contract. Coordinate the salvaged materials with tracking requirements in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Capture salvaged materials in the diversion calculations for the project.

c. Remove salvaged items to remain the property of the Government in a manner to prevent damage, and packed or crated to protect the items from damage while in storage or during shipment. Items damaged during removal or storage must be repaired or replaced to match existing items. Properly identify the contents of containers.

3.3 CLEANUP

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

3.4 DISPOSAL OF REMOVED MATERIALS

3.4.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other nonsalvageable materials resulting from removal operations with all applicable federal, state and local regulations as contractually specified.

3.4.2 Burning on Government Property

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

3.4.3 Removal to Spoil Areas on Government Property

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

3.4.4 Removal from Government Property

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

3.5 REUSE OF SALVAGED ITEMS

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

-- End of Section --

SECTION 03 01 00

REHABILITATION OF CONCRETE

PART 1 GENERAL

1.1 SCOPE

This specification governs the rehabilitation of structural concrete.

1.2 DEFINITIONS

1.2.1 Bracing

Temporary supplemental members used to avoid local or global instability during construction, evaluation, or repair that are intended to be removed after completion of construction.

1.2.2 Delamination

A planar separation in a material that is roughly parallel to the surface of the material.

1.2.3 Rehabilitation

Repairing or modifying an existing structure to a desired useful condition.

1.2.4 Repair

The reconstruction or renewal of concrete parts of an existing structure for its maintenance or to correct deterioration, damage, or faulty construction of members or systems of a structure.

1.2.5 Shoring

Props or posts of timber or other material in compression used for the temporary support of excavations, formwork, or unsafe structures; the process of erecting shores.

1.2.6 Termination Joint

The interface where a placement of repair material meets existing concrete, the edge of an expansion joint, or other existing surfaces.

1.2.7 Unsound Concrete

Concrete that is fractured, delaminated, spalled, deteriorated, defective, contaminated or otherwise damaged.

1.3 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 CONCRETE INSTITUTE (ACI)

ACI 117	(2010; Errata 2011) Specifications for Tolerances for Concrete Construction and Materials and Commentary
ACI 548.4	(2011) Standard Specification for Latex-Modified Concrete (LMC) Overlays
ACI 548.10	(2010) Specification for Type MMS (Methyl Methacrylate Slurry) Polymer Overlays for Bridge and Parking Garage Decks

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE/SEI 37	(2015) Design Loads on Structures During Construction

ASTM INTERNATIONAL (ASTM)

ASTM C33/C33M	(2023) Standard Specification for Concrete Aggregates
ASTM C387/C387M	(2023) Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar
ASTM C882/C882M	(2020) Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
ASTM C928/C928M	(2020a) Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs
ASTM C1059/C1059M	(2021) Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete
ASTM C1077	(2017) Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1438	(2013; R 2017) Standard Specification for Latex and Powder Polymer Modifiers for use in Hydraulic Cement Concrete and Mortar
ASTM C1583/C1583M	(2013) Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)
ASTM C1600/C1600M	(2017) Standard Specification for Rapid Hardening Hydraulic Cement
ASTM C1602/C1602M	(2022) Standard Specification for Mixing Water Used in Production of Hydraulic Cement Concrete

ASTM D93	(2019) Standard Test Methods for Flash-Point by Pensky-Martens Closed Cup Tester
ASTM D323	(2015a) Vapor Pressure of Petroleum Products (Reid Method)
ASTM D542	(2014) Index of Refraction of Transparent Organic Plastics
ASTM D1078	(2011) Standard Test Method for Distillation Range of Volatile Organic Liquids
ASTM D3418	(2015) Transition Temperatures of Polymers by Differential Scanning Calorimetry
ASTM D4016	(2014) Viscosity of Chemical Grouts by Brook field Viscometer (Laboratory Method)
ASTM D4580/D4580M	(2012) Standard Practice for Measuring Delaminations in Concrete Bridge Decks by Sounding
ASTM E329	(2021) Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

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

Qualifications; G

Work Plan; G

Quality Control Plan; G

SD-03 Product Data

Conventional Concrete

Polymers

Miscellaneous Materials And Equipment

SD-05 Design Data

Repair Procedures; G

Mixture Proportioning; G

SD-06 Test Reports

Mixture Proportioning

Quality Control

Conventional Concrete

Polymers

Miscellaneous Materials And Equipment

SD-07 Certificates

Qualifications

1.5 QUALITY ASSURANCE

1.5.1 General Requirements

a. To protect personnel from overexposure to toxic materials, conform to the applicable manufacturer's Safety data sheets or local regulations. Submit manufacturer's Safety Data Sheets for all polymers as well as other potentially hazardous materials.

b. Submit the repair procedures for executing the work as well as the test data and documentation on materials used for repair. Submittal must include component materials, mixture proportions, and supplier's quality control program.

d. Inspection and testing of surface preparation as well as placement of reinforcing steel must be in accordance with provisions included herein and the Contract Document.

e. Sampling and testing of materials, as well as inspection and testing of work, must be in accordance with established procedures, manufacturer's instructions, specific instructions from the Contracting Officer if given, or recommended practices as referenced herein and the Contract Documents.

f. Trial batches and testing requirements for various repair materials specified are the responsibility of the Contractor.

g. The testing agency must inspect, sample, and test repair materials and concrete production as required. When it appears that material furnished or work performed by Contractor fails to conform to Contract Documents the testing agency will immediately report such deficiency.

1.5.2 Quality Control Plan

Submit a quality control plan as specified in Sections 01 45 00 QUALITY CONTROL.

1.5.3 Qualifications

The submittals must where applicable, identify agencies and individuals who will be working on this contract and their relevant experience. Do not

make changes in approved agencies or personnel without prior approval of the Contracting Officer.

1.5.3.1 Testing Agencies

Test concrete materials to meet the requirements of ASTM C1077. Testing agencies that test or inspect placement of reinforcing steel must meet the requirement of ASTM E329. Submit data on qualifications of Contractor's proposed testing agency for acceptance.

1.5.3.2 Quality Control Personnel

Field tests of repair materials required must be made by an ICRI Concrete Surface Repair Technician Tier 2. Submit resumes, pertinent information, past experience, training and education of all operators of specialized demolition equipment if needed for this and the three paragraphs above.

1.5.3.3 Contractor Qualifications

The contractor performing the repair work must have been involved in a minimum of three concrete repair projects similar in size and scope to this project for at least five years. Submit information, including name, dollar value, date, and point-of-contact for similar projects which demonstrates the required experience and/or training.

1.5.3.4 Worker Qualifications

a. Each worker engaged in the use of specialized removal or application equipment, including saw operators, milling machine operators, hydromilling equipment operators, epoxy injection, must have satisfactorily completed an instruction program and three years of experience in the operation of the equipment. The worker must have active experience with the equipment within five years of the project.

b. Workers installing adhesive anchors must be ACI Adhesive Anchor Installer certified or equivalent.

1.5.3.5 Regulatory Requirements

Perform all work in accordance with applicable Federal, State, and local safety, health, and environmental requirements. The Contractor is responsible for obtaining all permits required by Federal, State, and local agencies for the performance of the work.

1.5.4 Pre-Construction Conference

Conduct a pre-construction conference to discuss repair materials performance requirements, control provisions, and roles and responsibilities for the Work to ensure that the Contractor's personnel understand all aspects of the repair material, its properties and application procedures. The conference must include the Contracting Officer or authorized representative, the Contractor's field superintendent and foreman, and a competent Technical Representative of the material manufacturer, and other involved trades or supplier representatives. The Technical Representative must be fully qualified to perform the work.

1.5.5 Work Plan

Prepare a work plan describing the methods of concrete removal and repair, including methods, equipment and materials to be used for each feature. Submit the work plan for approval at least 30 days prior to the start of the work. The plan must include, but not be limited to, repair materials to be used with specific information on products and/or constituents, and requirements for handling, storage, etc., equipment to be used, surface preparation, and requirements for placement, finishing, curing and protection specific to the materials used. Include a description of field demonstrations in the work plan. Do not commence work until the work plan and field demonstration representative of the type of work are approved.

1.6 ACCEPTANCE OF REHABILITATION WORK

1.6.1 General Requirements

a. Completed concrete rehabilitation work must conform to applicable requirements of Contract Document and this specification. The Contractor is responsible to bring Work into compliance with requirements of Contract Documents if the Concrete repair work fails to meet one or more requirements of Contract Documents.

b. Correct rejected repair work by removing and replacing or by strengthening with additional construction acceptable to the Contracting Officer. Use repair methods that meet applicable requirements for function, durability, dimensional tolerances, and appearance.

c. Submit proposed work plan, repair methods, materials, and modifications to the Work needed to correct rejected repair work to meet the requirements of Contract Documents.

1.6.2 Tolerances

a. Construction tolerances for repairs must conform to ACI 117. Where existing conditions do not allow tolerances to conform to ACI 117, use the details and materials for such conditions as indicated in the Contract Documents. For conditions not shown or that are different than indicated in the Contract Documents, notify the Contracting Officer before proceeding with the work at those locations.

b. Inaccurately formed concrete surfaces resulting in concrete members with dimensions that exceed ACI 117 tolerances are subject to rejection.

1.6.3 Appearance

Concrete surfaces not meeting the requirements of the Contract Documents must be brought into compliance.

1.7 PROTECTION OF COMPLETED REHABILITATION WORK

a. Do not allow construction loads to exceed the loads that a structural member or structure is safely capable of supporting without damage. Provide supplemental support if construction loads are expected to exceed safe load capacity.

b. Protect repaired and adjacent areas from damage by construction

traffic, equipment, and materials. During the curing period, protect repair materials from damage by mechanical disturbances, including load-induced stresses, shock, and vibration.

c. Protect repair materials from environmental damage by weather events during the length of the curing period.

PART 2 PRODUCTS

Products or materials used must conform to the requirements included herein as well as the Contract Documents. The usage of other products or materials not covered by this requirement or specified in the Contract Documents are permitted upon approval by the Contracting Officer. Additional information and submittals for products and materials not included in this document including product data, samples, design data, test reports, certificates, manufacturer's instructions, and field reports must be submitted as requested by the Contracting Officer.

2.1 MATERIALS FOR SHORING AND BRACING

2.1.1 Shoring and Bracing Systems

Use commercially manufactured and engineered shoring and bracing systems and components, except where custom built assemblies of lumber or other suitable materials are permitted by the Contracting Officer.

2.1.2 Design Requirements

The design of the bracing and shoring must be based on ASCE/SEI 37.

a. Non-manufactured shoring and bracing systems must have calculations signed and sealed by a Licensed Design Professional.

b. Members of non-manufactured shoring systems, must be designed in accordance with the provisions of the governing building code for the specific material of the member.

c. Members of manufactured shoring systems, consisting of pre-engineered components designed and produced specifically for structural shoring, must be used in accordance with the manufacturer's recommendations.

2.2 EQUIPMENT FOR CONCRETE PREPARATION

Means and methods used for concrete removal and surface preparation must be selected and used such as to minimize damage to the structure and to the concrete substrate that remains.

2.2.1 Equipment for Concrete Removal

Removal equipment and techniques must be suitable to produce concrete surface profiles and level of cleanliness in designated areas as required by this specification and the contract Documents.

2.2.1.1 Cutting Equipment

a. The following cutting equipment are permitted: High-pressure water jet without abrasives, shotblasting equipment for surface roughening, and Saw cutting.

b. Cutting, lifting, and transporting equipment must be adequate to cut, support, and transport concrete sections without incurring any damage to the existing structure.

2.2.1.2 Concrete Breakers

a. Provide sharp tips on breaker equipment to minimize microcracking damage in partial depth removal.

b. The use of the following impact equipment and methods is permitted: Hand-held breakers.

2.2.2 Surface preparation and cleaning equipment

2.2.2.1 Abrasive Blasting

a. Use dry or wet oil-free abrasive blasting capable of removing loose micro-fractured (bruised) or otherwise damaged or pulverized concrete surfaces, and rust from exposed steel reinforcement, and providing a surface profile in compliance with the Contract Documents.

b. Use the following abrasive blasting methods: Shotblasting

2.2.2.2 Other Cleaning Equipment

Use equipment that delivers oil free air capable of cleaning loose material and debris from repair areas. If necessary to dry the concrete surface, clean, dry, compressed air may be used. Also, use vacuums capable of removing loose material and debris.

2.3 MATERIALS FOR FORMWORK AND EMBEDDED ITEMS

structure or repair material.

b. Forms used for polymer concrete/mortars must be tight enough to hold the material that is used without leaking. All surfaces where bond is not desired, but which are exposed to the monomer or resin, must be treated with a form release agent.

2.4 REINFORCEMENT AND REINFORCEMENT SUPPORTS

2.4.1 Steel Bars, Wires, and Fiber-reinforced Concrete

a. Repair coating damage incurred during shipment, storage, handling, and placing of reinforcing bars in accordance with the appropriate ASTM standard practices for repair of damaged reinforcement. Damaged areas must not exceed 2 percent of surface area in each linear foot of each bar.

c. Mechanical splices for coated reinforcement must have compatible coatings, in accordance with manufacturer's instructions. Splices for galvanized reinforcement must be galvanized or coated with dielectric material. Splices used with epoxy-coated or dual-coated reinforcement must be coated with dielectric material.

2.5 CONVENTIONAL CONCRETE

Use cementitious materials of the same brand and type from the same

manufacturing plant as the cementitious materials used in the concrete represented by the submitted field test records or used in trial mixtures.

e. Aggregates used in concrete must be obtained from the same sources and have the same size range as aggregates used in the concrete represented by submitted historical data or used in trial mixtures.

2.6 POLYMERS

a. The requirements for the properties of polymers and aggregates used in polymers must meet the requirements specified in this paragraph as well as the properties specified in the referenced specifications and the Contract Documents.

b. Polymers used must be compatible with other polymers and materials used on the project. Unless repair materials are specified in the contract documents, the Contractor is responsible for verifying material compatibilities.

c. Submit product data, manufacturer's Safety Data Sheets,samples, design data, test reports, certificates, manufacturer's instructions, and field reports for materials as required by this document as well as the referenced specifications and the Contract Documents.

2.6.1 Epoxies

a. Epoxy mortars used for repairing defects and depressions in hardened portland cement concrete or concrete crack repair must meet the requirements of ASTM C580, ASTM C307, and ASTM C531. Epoxy mortars must be 100% solids, high strength, low exotherm blends where deep-pours are expected and as recommended by epoxy flooring manufacturer instruction dictates.

2.6.2 Latexes

a. Latex used in polymer modified portland cement concrete/mortar must meet the requirements of ASTM C1438.

b. Latex used in polymer modified portland cement concrete overlays must meet the requirements of ACI 548.4.

c. Latex used for bonding freshly mixed concrete and hardened concrete must meet the requirements of ASTM C1059/C1059M, Type II.

2.6.3 Methacrylates

a. Methyl methacrylate slurry (MMS) used for overlays must meet the requirements of ACI 548.10.

b. High molecular weight methacrylate (HMWM) must be a 2-component, rapid curing, and solvent-free system.

c. HMWM monomers must be a high molecular weight or substituted methacrylate that conforms the following properties:

Physical Properties of HMWM Monomer		
Property	Test Method	Criteria
Vapor Pressure Flash Point Density	ASTM D323 ASTM D93	Less than 0.02 psi at 77 degrees F Greater than 200 degrees F Greater than 8.4 lbs. per gal. at 77 degrees F
Viscosity Index of Refraction Boiling point @ 0.02 psi Shrinkage on cure	ASTM D4016 ASTM D542 ASTM D1078	12 ± 4 cps at 73 degrees F 1.470 ± 0.002 158 degrees F Less than 11 percent
Glass Transition Temperature (DSC)	ASTM D3418	158 degrees F
Curing Time (100 g mass)	ASTM D3418	Greater than 40 minutes at 73 degrees F, with 4 percent cuemene hydroperoxide
Bond Strength	ASTM C882/C882M	Greater than 1,500 psi

d. The initiator/promoter system for HMWM must be capable of providing a surface cure time of not less than 40 minutes nor more than 3 hours at the surface temperature of the concrete during application. The initiator/promoter system must be such that the gel time may be adjusted to compensate for changes in temperature that may occur throughout the treatment application.

d. The initiator/promoter system for HMWM must meet the following criteria:

Initiator Cuemene Hydroperoxide	78 percent
Promoter Cobalt Napthenate	6 percent

2.6.4 Aggregate

a. Unless otherwise specified or recommended by the polymer material manufacturer, aggregate used with polymers must meet ASTM C33/C33M requirements.

b. Aggregate properties and proportions used with polymers must meet the requirements of the polymer material manufacturer, the requirements of

the referenced polymer standard, and the Contract Documents.

c. Aggregate used with polymers must be dry and free of dirt, asphalt, and other organic materials. Aggregate moisture content must be less than 0.2 percent by weight.

d. For patch repairs, the maximum-sized aggregate must not be greater than one third the depth of the patch area.

2.7 MISCELLANEOUS MATERIALS AND EQUIPMENT

2.7.1 Packaged and proprietary materials

The required properties for the materials listed in this paragraph must meet the properties specified in the Contract Documents. Submit , design data, test reports, certificates, manufacturer's instructions, as required by the Contracting Officer and the Contract Documents.

a. Packaged, rapid hardening concrete repair materials must conform to ASTM C928/C928M.

b. Packaged, mortar and concrete must conform ASTM C387/C387M.

c. Rapid hardening cement must conform to ASTM C1600/C1600M.

Water used with packaged and proprietary materials must meet ASTM C1602/C1602M requirements. Aggregates must meet the repair material manufacturer's requirements if available and ASTM C33/C33M if such requirements are not specified.

2.7.2 Miscellaneous Equipment

a. Equipment designed specifically for the application of repair materials must be used as required by the repair material manufacturer and the referenced specification.

b. Equipment not listed in this specification but referenced or used for repairs must be clean and in good operating condition.

c. All supplies and equipment must be available in sufficient quantities to allow continuity in the installation project and quality assurance.

2.8 MIXTURE PROPORTIONING

a. Polymer concrete/mortar/resin/monomer proportioning, handling, and mixing procedures as well as equipment used for mixing these materials must conform to the requirements of the referenced material specifications and the repair material manufacturer's directions.

b. Proportioning and mixing materials not specified above must follow the requirements provided by the repair material manufacturer.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

3.1.1 Examination

Locate area of unsound concrete or delamination using hammer sounding or

chain drag sound methods in accordance to ASTM D4580/D4580M. Denote and mark perimeter boundaries and notify the Contracting Officer to approve the unsound concrete layout boundaries.

3.1.2 Protection

Protect pedestrians, motorized traffic, mechanical, electrical, and plumbing equipment, surrounding construction, project site, landscaping, and surrounding buildings from damage or injury resulting from concrete rehabilitation work.

a. Construct dust and debris barriers surrounding repair work perimeter to control dust and to protect and control construction traffic. Refer to Section 01 01 10-IC INFECTION CONTROL for additional temporary dust/sound barrier requirements.

b. Dispose of runoff from wet demolition or surface preparation operations in accordance with all local ordinances. Disposal methods must avoid soil erosion, avoid undermining pavements and foundations, damage to landscaping and vegetation, and minimize water penetration through other parts of buildings.

c. Collect and neutralize alkaline wastes and acid wastes and dispose in accordance with local, state, and federal regulations.

d. Comply with local noise ordinances during demolition operations.

e. Perform demolition work and surface preparation work in a manner that minimizes disturbances of operations. Coordinate work with the Contracting Officer.

f. Submit a proposed protection plan for approval by owner representative and Licensed Design Professional.

3.1.3 Formwork and Shoring

3.1.3.1 Formwork

a. Construct forms to sizes, shapes, lines, and dimensions to match existing adjacent surfaces and textures. Provide forms that match openings, offsets, chamfers, anchorages, inserts and other features as described on Contract Documents. Construct forms to accommodate installation of products by other trades. Provide forms for easy removal to minimize damage to concrete surfaces and adjacent surfaces. Apply form release coating over formwork surfaces prior to each concrete placement. Form release agents must not be applied to or come in contact with the repair area concrete substrate or reinforcement.

b. Do not damage repair material during removal of formwork for columns, walls, sides of beams, and other parts not supporting weight of concrete or repair material. Perform needed repair and treatment required on vertical surfaces at once and follow immediately with specified curing. Remove all formwork anchors embedded in existing concrete. Fill anchor holes and repair all damage to existing concrete at anchor holes.

3.1.4 Concrete preparation

a. Remove concrete as needed per the removal requirements of this

section. Limits on removal equipment are specified in the paragraph titled EQUIPMENT FOR CONCRETE PREPARATION.

b. Remove foreign material, such as dirt, oil, grease, or other chemicals, from the cracks before injection using compressed air, low-pressure water, or vacuuming. Allow wet surfaces to dry at least 24 hours.

c. Immediately before placing the repair material or installing formwork, make the repair area available for inspection by the Contracting Officer. Obtain acceptance by the Contracting Officer of surface preparation before proceeding with Work. If the Work is rejected, perform additional operations to the satisfaction of Contracting Officer.

e. The prepared surface must have a concrete surface profile equivalent to CSP 4, or as recommended by coating manufacturer, at existing concrete locations where new coating is to be applied.

3.1.5 Quality Control

3.1.5.1 Quality control of surface preparation

Evaluation of prepared substrate must be continuously monitored to assure that the prepared substrate surface meets project requirements.

3.1.5.2 Quality control of repair overlays

All components of overlay PPCC materials must be certified by the material manufacturer or aggregate supplier to meet all project testing requirements. During the PPCC overlay, take mixed samples and check that the materials are mixed properly. Confirm that the right PC overlay thickness was applied by recording the volume of PC overlay materials and the substrate surface area covered by the overlay.

3.1.6 Curing

For polymer concrete/mortar Work, follow manufacturer's requirements for curing

c. For polymer modified portland cement concrete work follow manufacturer's requirements for curing.

3.1.7 Clean up

a. Clean and remove all spills and leaks of injection adhesive and stains caused by the injection adhesives.

b. Dispose wastewater used for cutting and cleaning without staining or damaging the existing surfaces of the structure or the environment of the project area. The method of disposal must meet all the requirements of Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

3.1.8 Safety

a. Provide Material Safety Data Sheets (MSDS) for products on site reviewing them before work begins.

b. Provide safety guards, maintenance, and warnings for all machinery and

equipment.

c. Have personal protection equipment practice in place - eye protection and face guards.

d. Have all workers in contact with wet cementitious material wear protective gloves and clothing.

e. Provide eyewash facilities on-site with location signage.

f. Provide dust masks for workers operating mixers.

g. Have confined space procedures in place including adequate ventilation in closed spaces before operating equipment or using products that emit potentially dangerous or toxic exhaust, fumes, or dust.

h. Provide secured storage available for all hazardous or flammable materials.

i. Conduct safety meetings prior to beginning repair operations.

3.2 CRACK REPAIR

3.2.1 Preparation

3.2.1.1 General Requirements

a. Clean all cracks in accordance with the paragraph titled Concrete Preparation.

b. Do not repair cracks when the temperature of the concrete is below freezing and moisture conditions indicate the possibility of ice on the internal surfaces of the crack.

c. Do not apply adhesive if the temperature of the concrete is not within the range of application temperatures recommended by the manufacturer of the adhesive.

3.2.1.2 Crack routing

Inspect surfaces adjacent to crack to receive repair material. If deteriorated, route a V-groove section at the crack face until sound concrete is reached.

3.2.1.3 Sealing

a. For epoxy injection, apply a surface seal over all exterior faces of the crack that can be reached to contain the injection adhesive in the crack.

b. For gravity fill repairs, apply a surface seal along the bottom surface of the element that can be reached to contain the repair material in the crack.

3.2.2 Application

3.2.2.1 Epoxy Injection

a. Install the injection entry and venting ports using flush mounted or

drilled fittings per proprietary manufacturer's instructions.

b. Space the ports at a distance equal to the thickness of the member.

c. Inject the epoxy using material manufacturer's recommended equipment.

d. Apply recommended manufacturer's injection pressure.

e. For vertical or inclined cracks, apply injection by pumping epoxy into entry ports at the lowest elevation, cap, and move upward.

f. For horizontal cracks, apply injection by proceeding from one end of the crack to the other until the crack is fully sealed.

g. After 10 min., repeat injection procedure until all ports refuse injection.

h. Remove ports and remove the surface seal by chipping, or grinding or other acceptable means after the injected epoxy has cured.

3.2.2.2 Gravity fill

a. Mix resin or monomer per material manufacturer's instructions.

b. Pre-fill cracks at least 0.125 in. wide with aggregate.

c. Pour resin or monomer onto the surface, over the cracks and spread with brooms, rollers, or squeegees.

d. Work material back and forth over the cracks to maximize fill in crack.

e. Allow at least 20 minutes for material to penetrate cracks.

f. Remove excess material once cracks have been filled to refusal.

g. Broadcast 1 to 2 lbs per square yard of sand.

h. Allow material to cure per material manufacturer's recommendations.

i. Remove sealant and grind smooth.

3.3 CORROSION AND SURFACE REPAIR

3.3.1 Preparation

3.3.1.1 Identification of Extent of Concrete Removal

a. Configure geometry of removal area to maximize the use of right-angle geometry, avoiding reentrant corners, and to obtain uniformity of depth. Determine the depth, location, and size of reinforcing bars prior to removal of concrete.

b. Perform visual inspection and hammer tapping, chain drag sounding, or other methods acceptable by the Contracting Officer to identify cracked, delaminated, spalled, disintegrated, and otherwise unsound concrete for removal. Mark boundaries of repair area before concrete removal.

c. Inspect the marked boundaries with the Contracting Officer prior to commencing with the concrete removal. Revise the repair area boundaries as instructed by the Contracting Officer.

3.3.1.2 Shoring and Formwork

a. Provide shoring and formwork per the paragraph titled Formwork and Shoring.

b. For post-tensioned concrete, detension strands and wires as required by Contract Documents prior to repair.

3.3.1.3 Concrete Removal

a. Do not damage embedded reinforcing and adjacent concrete. The removal methods must produce minimal microcracking (bruising) of the prepared substrate surfaces. Avoid directly striking reinforcing steel with impact tools used for concrete removal.

3.3.1.4 Preparation of Concrete Substrate Surface

a. Confirm perpendicular edges at repair area perimeter, and reinstate if damaged by concrete removal process. Remove loosely bonded concrete, bruised or fractured concrete, and bond-inhibiting materials such as dirt, concrete slurry, or any other detrimental materials from the concrete substrate using approved methods. Where concrete has been removed by impact methods, abrasive blasting must be used to prepare the surface and remove bruised concrete.

b. Visually inspect and sound substrate surface to confirm that no further delaminations or otherwise unsound concrete remains. If encountered, notify the Contracting Officer.

c. Clean the substrate per the paragraph titled Concrete preparation.

3.3.2 Application

3.3.2.1 Existing Reinforcement Preparation

a. Clean existing reinforcement that will remain. Remove corrosion and/or other laitance and notify the Contracting Officer if section loss is greater than 20%.

reinforcement by the Contracting Officer.

3.3.2.2 Placement of Concrete

Finish the surface to match surface finish and texture of existing concrete foundation.

3.3.2.3 Placement of Other Repair Materials

a. Equilibrate repair material(s) and substrate to the temperature, cleanliness of substrate and reinforcement, and moisture requirements of the repair material manufacturer's requirements.

b. Comply with the repair material manufacturer's requirements for

batching, mixing, placing and curing repair materials.

c. Review consistency of the mixed repair material(s) relative to the parameters documented in the repair material manufacturer product data sheet. If non-conforming, adjust consistency in compliance with the repair material manufacturer's requirements.

d. Apply or install repair material(s) within the application time frame (pot life) requirements of the repair material manufacturer's requirements, and place and consolidate to provide well-compacted repair.

e. Finish and tool repair materials, finished in accordance with the repair material manufacturer's written instructions and as indicated in Contract Documents.

f. Protect installed repair material(s) from damage, exposure to environmental conditions that are detrimental to the uncured or cured properties of the material. Cure in accordance with the requirements of the repair material manufacturer's requirements.

3.3.3 Quality Control

a. Protect concrete surfaces, beyond limits of surfaces receiving bonding agent adhesive, against spillage. Immediately remove any bonding agent adhesive that has spilled beyond desired area. Perform cleanup with material designated by bonding agent adhesive manufacturer. Avoid contamination of work area.

b. The bond strength between the existing concrete and the repair material must be a minimum of 250 psi per ASTM C1583/C1583M.

-- End of Section --

SECTION 09 67 23.13

STANDARD RESINOUS FLOORING

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM D2240	(2015; E 2017) Standard Test Method for Rubber Property - Durometer Hardness
ASTM D4259	(2018) Standard Practice for Preparation of Concrete by Abrasion Prior to Coating Application
ASTM F1869	(2023) Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
ASTM F2170	(2019a) Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

1.2 ADMINISTRATIVE REQUIREMENTS

1.2.1 Pre-Installation Meetings

Pre-installation Conference: Conduct conference at Project site.

1.2.2 Product Data

Within 30 days of contract award, submit manufacturer's catalog data for the following items:

a. Epoxy-Resin Binder/Matrix

b. Cured Epoxy Binder

c. Aggregate

d. Surface Sealing Coat

1.2.3 Design Mix Data

Within 30 days of contract award, submit design mix data for the following items, including a complete list of ingredients and admixtures:

a. Epoxy-Resin Binder/Matrix

b. Cured Epoxy Binder

c. Surface Sealing Coat

d. Aggregate

e. Surface Sealing Coat

Ensure applicable test reports verify the mix has been successfully tested and meets design 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-02 Shop Drawings

Installation Drawings; G

SD-03 Product Data

Manufacturer's Catalog Data; G

SD-04 Samples

Hardboard Mounted Epoxy Flooring; G

Mockups; G

SD-05 Design Data

Design Mix Data; G

SD-07 Certificates

Listing of Product Installations

Referenced Standards Certificates

SD-11 Closeout Submittals

Warranty; G

Maintenance and Cleaning Information;

1.4 DELIVERY, STORAGE, AND HANDLING

Protect materials from weather, soil, and damage during delivery, storage, and construction. Deliver materials in original packages, containers, or bundles bearing brand name and name of material.

Maintain materials used in the installation of floor topping at a temperature between 65 and 85 degrees F.

1.5 QUALITY CONTROL

Prior to commencement of work, submit referenced standards certificates for the following, showing conformance with the referenced standards contained in this section:

a. Epoxy-Resin Binder/Matrix

b. Cured Epoxy Binder

c. Aggregate

d. Surface Sealing Coat

e. Surface Sealing Coat

1.5.1 Mockups

Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution. Apply full-thickness mockups including integral cove base in Exterior Storage Closet RM127 (CAN WASH). Simulate finished lighting conditions for the review of mockups.

1.5.2 Qualifications

Submit a listing of product installations for heavy duty epoxy flooring in commercial kitchens including identification of at least 5 units, similar to those proposed for use, that have been in successful service for a minimum period of 5 years. Identify purchaser, address of installation, service organization, and date of installation.

Ensure floor system applicators are experienced in the application of troweled and broadcast Quartz aggregate flooring.

1.5.3 Sampling

Submit hardboard mounted epoxy flooring samples not less than 12 inch square for each required color.

Provide panels showing nominal thickness of finished toppings, color, and texture of finished surfaces. Finished floor toppings and the approved samples are to match in color and texture.

1.6 WARRANTY

Submit a minimum 1 year written warranty for all materials and installation work.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

Submit installation drawings for heavy duty epoxy flooring systems clearly designating the areas of application and the installation plan. Include in the installation plan, methods to control sand and dust if sand blasting is required.

System shall consist of a monolithically poured, multi-component epoxy

chemistry comprised of 100 percent solids epoxy, marble-chip and quartz aggregatethat is a troweled in place, evenly textured, slip-resistant finish of between 1/8 inch (3 mm) and 3/16 inch (4.8 mm) thickness. System shall be complete with an integral cove and wall base, UV resistant clear coat, and compliant with USDA standards for federally inspected facilities.

2.2 MATERIALS

2.2.1 System Components

Verify specific components as systems vary by manufacturer. Verify build up layers and installation method. Verify compatibility with substrate. Use manufacturer's standard components, compatible with each other as follows:

2.2.1.1 Primer

Type recommended by the manufacturer to penetrate into the pores of the substrate and bond with the floor surfacing matrix to form a permanent monolithic bond between substrate and surfacing matrix.

a. Type: Broadcast Primer Epoxy or Urethane as directed by manufacturer

b. Formulation description: multi-component high solids epoxy recommended for priming as a crack bridging sealer before application of epoxy mortar or topcoats.

c. Application method: Brush, roller, or serated squeegee in accordance with manufacturer recommendations.

d. Thickness of Coat(s): 10-50 mil

2.2.1.1 Binder

Provide a high solids, clear, two-component epoxy resin compatible system:

a. Resin: Epoxy

b. Formulation description: Multiple component high solids.

c. Application Method: notched squeegee, backroll, double step second and remaining passes

d. Thickness of Coat(s): Verify thickness as systems vary by manufacturer; approximately from 1/8 to 3/16 inch.

e. Aggregate: Verify rate of application by manufacturer.

f. Number of Coats: Verify number of coats by manufacturer.

g. Additional comments: Provide fibrous members as required by manufacturer instructions to prevent sagging of material during curing.

2.2.1.2 Surface Sealing Coat

Provide a clear, high solids, UV resistant clear coat designed for stain and chemical resistant applications.

a. Type: 100% Solids Epoxy

b. Description: UV Resistant two component 100% solids epoxy clear coating compatible with resinous binder system.

c. Application: Finish roller, dip into coating and back roll in accordance with manufacturer instructions.

d. Thickness: 5-10 mil

2.2.2 System Characteristics

a. Color and Pattern: As selected by Architect from manufacturer's standard colors.

b. Integral Cove base: 1 inch radius cove keyed into concrete and resinous flooring system. Verify cove base installation with manufacturer instructions.

c. Total system thickness: Verify thickness as systems vary by manufacturer; between 3/16 inch and 1/4 inch.

d. Finish: Satin finish and anti-slip resistant to meet or exceed a dynamic coefficient of friction of 0.42 dry and 0.42 wet, in accordance with ANSI A326.3.

PROPERTY	TEST METHOD	REQUIREMENT
Tensile strength, psi* at test temperature: 77 degrees F	ASTM D307	4500 to 6500
Water absorption, percent 24 hours at 77 degrees F, maximum	ASTM C413	0.40
Hardness, Shore D	ASTM D2240	74 to 82
Bond Strength to Concrete	ASTM D4541	100% Bond to Concrete failure
*1/8 inch thick castings		
**1/8 by 1 by 3 inch castings, aged in forced draft oven		

PART 3 EXECUTION

3.1 PREPARATION

Prior to applying resinous flooring material, inspect substrate and immediately report any unsatisfactory conditions that exist and repair.

Verify that the concrete substrates are dry and the moisture-vapor emissions are within acceptable levels according to the manufacturer's written instructions using either of the tests listed below. Contractor must perform tests in the presence of Contracting Officer. Failure to

report test results will results in the Contractor being required to perform testing again.

a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with application of resinous flooring only after substrates have a maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. of slab area in 24 hours.

b. Relative Humidity Test: Use in situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

3.1.1 Safety Precautions

Prior to application in confined spaces of toppings and coatings containing flammable or toxic properties, institute safety precautions recommended by the manufacturer of the product.

Erect "NO SMOKING" signs, and prohibit smoking or use of spark- or flame-producing devices within 50 feet of any mixing or placing operation involving flammable materials.

Provide the personnel required to handle, mix, or apply toppings containing toxic or flammable properties with such items of personal protective equipment and apparel for eye, skin, and respiratory protection as are recommended by the manufacturer of the product. Ensure all personnel are trained in the appropriate use and wearing of personal protection equipment.

3.1.2 Protection of Adjacent Surfaces

In addition to the protection of adjacent surfaces during installation, provide areas used to store and mix materials with a protective covering under the materials. After application of the sealer coats, protect finished flooring during the remainder of the construction period. In areas of expected minimum or moderate traffic, cover floors with a 30-30-30 waterproof kraft paper, with strips taped together and edges secured to prevent roll-up. Place fiberboard, plywood, or other suitable material that does not mar the flooring over the paper to protect areas used as passages by workmen and areas subject to floor damage because of subsequent building operations. Upon completion of construction, remove the protection, clean flooring and, where necessary, repair, reseal, or both, at no additional cost to the Government.

3.1.3 Concrete Subfloor

3.1.3.1 Existing Concrete Floors

Clean existing concrete floors, with hard troweled or contaminated areas in conformance with ASTM D4259. Ensure the concrete is free of all paint, sealers, curing agents, oil, grease, moisture, dirt or any other contaminants. Remove any loose or corroded segments of existing concrete. Patch with a grouting compound as recommended by the resinous flooring manufacturer. Fill all cracks with an elastomeric jointing compound compatible with the resinous flooring system used.

3.1.4 Mixing Of Materials

Select the job mix proportions on the trial batch proportions used to

prepare the floor topping samples as submitted and approved.

Use mechanical equipment for mixing of materials in accordance with the manufacturer's instructions.

Use rotating paddle-type masonry mortar mixers for preblending the three sizes and color pigment, if any, of the walnut shell aggregate and addition of the mixed epoxy resin binder. Ensure mixing times are as recommended by the materials supplier(s), provided mixing times result in homogeneous mixtures. Limit quantity of material mixed at one time to that which can be applied and finished within the working life of the mixtures. Verify that the temperature of materials at the time of mixing are between 65 and 85 degrees F.

3.2 APPLICATION

3.2.1 Areas of Application

Anchor plates set with the top surface at or above the finished epoxy floor level do not require coverage with this flooring material. Extend flooring under equipment, except when the equipment base is indicated to be flush against the structural floor. Cover and/or mask surfaces not to receive the epoxy floor topping, such as equipment or cabinets installed prior to surface-preparation efforts and adjacent to the flooring installation. Provide manufacturer approved expansion joint where areas are poured or troweled in separate batches.

3.2.2 Application of Prime Coat and Troweling

Combine the epoxy binder components A and B in the proportions specified by the manufacturer to form a clear compatible system immediately on mixing. Cure combined components to a clear film possessing a glossy, non-greasy surface at relative humidities less than 80 percent, having the following properties after curing 24 hours at 77 degrees F, followed by 24 hours at 125 degrees F:

Ensure that the prepared subfloor surface is dry and at a temperature of not less than 60 degrees F when application of the floor topping is initiated. Immediately before application of the prime/scratch coat on the prepared surface, remove dust or other loose particles by blowing with compressed air or vacuum cleaned. Use only an air compressor equipped with an efficient oil-water trap to prevent oil contamination or wetting of surface.

Apply a thin roller coat of the epoxy binder specified to the prepared subfloor as a prime coat. Ensure proper sloping of floor towards drains as indicated. Provide epoxy based mortar and floor repair as recommended by manufacturer. Prior to application of the prime/scratch coat, fill cracks in the concrete per manufacturer's instructions, and make provisions to keep control or expansion joints open.

Place the floor topping prior to final gelling of the prime/scratch coat. Immediately after the materials are mixed as specified, dump the mixture in the placement area and spread to prolong troweling life. Screed or rough trowel placed materials to the specified thickness and then compact by the use of a smooth roller prior to finish troweling to a nominal thickness of 3/16 inch plus or minus 1/16 inch. Ensure all finished surfaces are free of ridges, hollows (bird-baths), trowel marks, and smoothness varies no more than 1/8 inch when tested with an 8 foot

straightedge. Make provisions to maintain the work areas in a relatively dust-free environment during curing of the topping.

3.2.3 Sealer Coat

After the floor topping has set firmly (approximately 6 to 16 hours depending on subfloor temperature) in a relatively dust-free environment, apply two thin coats of the sealer coat, by means of brush, roller, squeegee, or notched trowel to provide a pore-free, easy-to-clean surface. At the time of sealer application, ensure that the surface is dust-free. Depending on relative humidity, allow the applied sealer to cure to a tack-free condition in 2 to 4 hours. Do not apply second coat until after the initial coat has cured to a tack-free, hard film. Maintain topping areas in a relatively dust-free environment during curing of the sealer coats.

3.2.4 Integral Cove Base

Provide a 6 inch high integral cove base to all wall surfaces as indicated on the drawings. Install so as to provide a 1 inch radius at the juncture of the floor and the wall.

3.3 FIELD QUALITY CONTROL

3.3.1 Repairing

Remove and replace damaged or unacceptable portions of completed work with new work to match adjacent surfaces at no additional cost to the Government.

3.4 ADJUSTING AND CLEANING

Clean surfaces of the new work, and adjacent surfaces soiled as a result of the work. Remove all equipment, surplus materials, and rubbish associated with the work from the site.

-- End of Section --

SECTION 10 26 00

WALL AND DOOR PROTECTION

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM A167	(2011) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

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-03 Product Data

Corner Guards; G

Wall Guards; G

SD-10 Operation and Maintenance Data

Corner Guards; G

Wall Guards; G

1.3 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the project site in manufacturer's original unopened containers with seals unbroken and labels and trademarks intact. Keep materials dry, protected from weather and damage, and stored under cover. Store materials at approximately 70 degrees F for at least 48 hours prior to installation.

1.4 WARRANTY

Provide manufacturer's warranty to repair or replace defective materials and workmanship for a 1 year period of one year from date of final acceptance of the work.

PART 2 PRODUCTS

2.1 STANDARD PRODUCTS

To the maximum extent possible, provide wall and door protection items that are standard products of a single manufacturer and furnished as detailed. Drawings show general configuration of products required.

Submit manufacturers' descriptive product data for each wall and door protection item indicated. Include manufacturers' literature, finishes, profiles and thicknesses of materials.

Submit manufacturers' operations and maintenance data for each wall and door protection item indicated in accordance with Section 01 78 23 OPERATIONS AND MAINTENANCE DATA.

2.1.1 Fungal and Bacterial Resistance

Provide materials resistant to fungi and bacteria conforming to NSF Standard 51 for direct food contact in food serviceareas.

2.2 CORNER GUARDS

2.2.1 Stainless Steel Corner Guards

Provide stainless steel base material that contains a minimum of 60 percent post-consumer recycled content. Fabricate stainless steel base material ofmin. 16 gauge thick material conforming to ASTM A167, type 430 or 304. Provide corner guards that are 4 feet high with 2 inch x 2 inch wings. Form corner guard to dimensions shown.

2.3 END-WALL GUARDS

Provide stainless steel end-wall caps where indicated. Ensure end-wall caps are fabricated using min. 16 guage thick material conforming to ASTM A167, type 430 or 304. Provide end-wall caps that are 4 feet high with 2 inch x 2 inch wings. Field adjust all end caps and corners to assure close alignment. Field verify wall thickness prior to installation.

2.4 TRIM, FASTENERS AND ANCHORS

Provide fasteners and anchors for each specific installation as indicated. Use predilled holes and secure using manufacturer provided hardware for countersunk appearance. Provide masonry or wall anchors where corner guards and end-wall caps are provided.

2.5 FINISH

2.5.1 Stainless Steel Finish

Provide stainless steel finish in accordance with ASTM A167, Type 302 or 304, finish number 4.

2.6 ADHESIVES

Provide adhesive for resilient material in accordance with manufacturers recommendations.

PART 3 EXECUTION

3.1 INSTALLATION

Do not install items that show visual evidence of biological growth. Install items on surfaces that are clean, smooth, and free of obstructions.

3.1.1 Stainless Steel Guards

a. Mount guards on external corners of interior walls, partitions and columns and in accordance with manufacturer's recommendations.

b. Where corner guards are installed on walls, partitions or columns finished with plaster or ceramic tile, anchor corner guards using heavy duty masonry anchor sleeves or toggle bolts as necessary for snug and secure fit.

c. Field bend corner guard and end-wall guards as needed to ensure snug fit. Any damage to corner guards or existing tile finishes as a result of Contractor bending, drilling, or fastening shall be repaired or replaced at no additional cost to the Government.

d. Where corner guards are installed on gypsum board, clean surfaces and anchor guards with a neoprene solvent-type contact adhesive specifically manufactured for use on gypsum board construction. Remove excess adhesive from the guard edges and allow to cure undisturbed for 24 hours.

-- End of Section --

SECTION 11 05 40

COMMON WORK RESULTS FOR FOODSERVICE EQUIPMENT

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)

ANSI/ASHRAE 15 & 34	(2013) ANSI/ASHRAE Standard 15-Safety Standard for Refrigeration Systems and ANSI/ASHRAE Standard 34-Designation and Safety Classification of Refrigerants

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME A112.19.3/CSA B45.4	(2022) Stainless Steel Plumbing Fixtures
ASME B16.22	(2021) Wrought Copper and Copper Alloy Solder Joint Pressure Fittings

AMERICAN WELDING SOCIETY (AWS)

AWS A5.8/A5.8M	(2019) Specification for Filler Metals for Brazing and Braze Welding
AWS D1.1/D1.1M	(2020; Errata 1 2021) Structural Welding Code - Steel
AWS D9.1/D9.1M	(2018) Sheet Metal Welding Code
AWS D10.4	(1986; R 2000) Recommended Practices for Welding Austenitic Chromium-Nickel Stainless Steel Piping and Tubing

ASTM INTERNATIONAL (ASTM)

ASTM A269/A269M	(2022) Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
ASTM A270/A270M	(2023) Standard Specification for Seamless and Welded Austenitic and Ferritic/Austenitic Stainless Steel Sanitary Tubing
ASTM A276/A276M	(2023) Standard Specification for Stainless Steel Bars and Shapes
ASTM A666	(2023) Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel

	Sheet, Strip, Plate and Flat Bar
ASTM B32	(2020) Standard Specification for Solder Metal
ASTM B43	(2020) Standard Specification for Seamless Red Brass Pipe, Standard Sizes
ASTM B88	(2022) Standard Specification for Seamless Copper Water Tube
ASTM C920	(2018) Standard Specification for Elastomeric Joint Sealants
ASTM C1330	(2023) Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
ASTM D520	(2000; R 2011) Zinc Dust Pigment

CSA GROUP (CSA)

CSA Directory	(updated continuously online) Product Index

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI/NEMA LD 3	(2005) Standard for High-Pressure Decorative Laminates
NEMA 250	(2020) Enclosures for Electrical Equipment (1000 Volts Maximum)
NEMA ICS 2	(2000; R 2020) Industrial Control and Systems Controllers, Contactors, and Overload Relays Rated 600 V
NEMA ICS 6	(1993; R 2016) Industrial Control and Systems: Enclosures
NEMA MG 1	(2021) Motors and Generators
NEMA MG 2	(2014) Safety Standard for Construction and Guide for Selection, Installation and Use of Electric Motors and Generators

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 54	(2021) National Fuel Gas Code
NFPA 70	(2023; ERTA 4 2023) National Electrical Code

NSF INTERNATIONAL (NSF)

NSF/ANSI 2	(2022) Food Equipment
NSF/ANSI 6	(2023) Dispensing Freezers
NSF/ANSI 7	(2023) Commercial Refrigerators and

	Freezers
NSF/ANSI 14	(2022) Plastics Piping System Components and Related Materials
NSF/ANSI 35	(2020) High Pressure Decorative Laminates for Surfacing Food Service Equipment
NSF/ANSI 37	(2021) Air Curtains for Entranceways in Food and Food Service Establishments
NSF/ANSI 51	(2023) Food Equipment Materials

U.S. DEPARTMENT OF DEFENSE (DOD)

DOD 4000.25-1-M	(2006) MILSTRIP - Military Standard Requisitioning and Issue Procedures

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

29 CFR 1910-SUBPART D	Walking - Working Surfaces

UNDERWRITERS LABORATORIES (UL)

UL 207	(2022) UL Standard for Safety Refrigerant-Containing Components and Accessories, Nonelectrical
UL 471	(2010; Reprint Sep 2019) UL Standard for Safety Commercial Refrigerators and Freezers
UL 489	(2016; Rev 2019) UL Standard for Safety Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
UL 763	(2018; Reprint Jul 2023) UL Standard for Safety Motor-Operated Commercial Food Preparing Machines

1.2 GENERAL REQUIREMENTS

Provide detailed Food Service Equipment Schedule conforming to DOD 4000.25-1-M.

1.2.1 Mechanical General Requirements

Stainless steel plumbing fixtures must conform to ASME A112.19.3/CSA B45.4

Coordinate the location of drainage receptacles with food preparation equipment requiring plumbing connections. All plastics and piping system components must conform to NSF/ANSI 14. Materials must conform to NSF/ANSI 51. Refrigeration equipment must conform to ANSI/ASHRAE 15 & 34, NSF/ANSI 37, NSF/ANSI 6, NSF/ANSI 7, UL 207, and UL 471.

1.2.1.1 American Gas Association Laboratories Standards

Gas-burning equipment must be designed for operation with the type of gas specified and be approved by CSA. Acceptable evidence of meeting the

requirements of the applicable CSA Directory standards must be either CSA mark on equipment, a photostatic copy of the CSA appliance certificate, a listing of the specific food service equipment or appliance in the CSA Directory, or a certified test report from a nationally recognized independent testing laboratory, indicating that the specified equipment has been tested and conforms to the requirements of the applicable CSA standards.

1.2.2 Electrical General Requirements

All electrical work must conform to NFPA 70, and NEMA 250. Motors and controllers must conform to the requirements of NEMA ICS 2, NEMA ICS 6, NEMA MG 1, NEMA MG 2 and UL 763.

1.3 DESCRIPTION OF WORK

The work includes removing, storing, and reinstalling exsting food service preparation equipment and related work. Verify all existing dimensions, contract drawings, product data and all related conditions prior to commencing rough-in work. Advise the Contracting Officer of all discrepancies prior to ordering equipment. Submit Contractor's Field Verification Data prior to the preconstruction meeting addressing the following:

a. Field verify all horizontal and vertical dimensions.

b. Review contract drawings and submittal data for accuracy and completeness.

c. Field check installed utility capacity and location.

d. Review critical systems/components for application and capacities such as for exhaust hoods, refrigeration systems,fire suppression systems, gas, water, and steam/condensate line sizes and manifold configurations.

e. Coordinate and verify delivery for access through finished openings and vertical handling limitation within the building.

Provide rough-in and connect utilities to equipment in accord with requirements specified in other sections of this specification and in accord with the physical dimensions, capacities, manufacturer's instructions, and other requirements of the equipment furnished.

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 Pre-Construction Submittal

Pre-installation meeting; G

SD-02 Shop Drawings

Food Service Equipment Schedule; G

SD-06 Test Report

Equipment Startup and Operational Tests; G

SD-07 Certificates

Food Service Equipment Manufacturer's Qualifications; G

1.5 QUALITY ASSURANCE

1.5.1 Standard Products

Materials must be the standard products of manufacturer regularly engaged in the manufacture of the products and be essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. Applications must be for equipment and materials under similar circumstances and of similar size.

1.5.2 Nameplates

Contractor must adequately identify furnishing, fixtures, and equipment in coordination with the Food Service Equipment Schedule. Name plates must identify name of manufacturer, serial number if available, make, model, operating characteristics, pertinent ratings, and location prior to removal. Information may also include electrical characteristics and other applicable data, such as flow rate, temperature, pressure, capacity, and material of construction. Securely fasten equipment identification plates with the contract number marked thereon, to the surface of each piece of equipment.

1.5.3 Underwriters Laboratories Standards

Reinstall electrically operated equipment in accordance with applicable UL standards UL 489 and UL 763.

1.5.4 Pre-Installation Conference

Thirty days prior to the commencement of work, notify the Contracting Officer that the following items are prepared and ready for review:

a. Preconstruction Submittals:

(1) Contractor's Field Verification Data

(2) Manufacturer's Qualifications

b. Shop Drawings, product data and installation instructions

(1) Food Service Equipment Schedule

(2) Food service equipment utilities

c. Manufacturer's Instructions

Manufacturer's Instructions for shipping, handling, storage, installation, and start-up.

1.6 STORAGE AND HANDLING

Unless otherwise directed, the following procedures apply:

1.6.1 Storage of Equipment and Accessories

Store delivered items with protection from weather, humidity, and temperature variation, dirt and dust, or other contaminants. Clearly label and identify all components with respective number as enumerated in approved Food Service Equipment Schedule.

1.6.2 Protection of Fixed/Fabricated Manufactured Equipment

Follow equipment manufacturer's recommendations to protect materials and equipment and prevent damage. Tape fiberboard or plywood to surfaces as required by equipment shape and installation access requirements. Do not use tape which may possibly damage finished surface.

1.6.3 Prohibited Use of Equipment

Do not use food service equipment as tool or material storage, work bench, scaffold, or stacking area.

1.6.4 Damaged Equipment

Immediately submit documentation to the Contracting Officer with a recommendation of action for repair or replacement and the impact on project schedule.

PART 2 PRODUCTS

2.1 MATERIALS

Floor areas adjacent to food preparation equipment point of operation, and working surfaces must conform to 29 CFR 1910-SUBPART D

2.1.1 Stainless Steel Pipe, Tubing and Bars

ASTM A269/A269M, ASTM A270/A270M, ASTM A666. Provide seamless or welded pipe and tubing, of the gauge specified, of true roundness, and of material as specified for stainless steel. Seamless tubing must be thoroughly annealed, pickled, and ground smooth. Welded tubing must be thoroughly heat-treated, quenched to eliminate carbide precipitation and then drawn true to size and roundness, and ground. Provide No. 3 or 4 finish tubing when exposed to view.

Provide bars conforming to ASTM A276/A276M, ASTM A666, Type 302 or Type 304 or Type 316.

2.1.2 Galvanizing Repair Compound

ASTM D520, Type I pigment.

2.1.3 Brazing and Braze Welding Material

AWS A5.8/A5.8M, class as applicable.

2.1.4 Coatings

Provide durable, nontoxic, nondusting, nonflaking, and mildew-resistant type coatings, suitable for use with food service equipment and in conformance with NSF/ANSI 2. Application must be in accordance with the recommendations of the manufacturer.

2.1.5 Brass Piping and Fittings

Pipe must conform to ASTM B43. Fittings must conform to ASME B16.15.

2.1.6 Copper Tubing and Fittings

Provide copper tubing conforming to ASTM B88, Type K, annealed, for buried or embedded in concrete installation and Type L, hard drawn, for above grade installation. Fittings must conform to ASME B16.18, above grade, ASME B16.22 or ASME B16.26, above or below grade.

2.1.7 Solder Material

ASTM B32, Sn96.

2.1.7.1 Lead-Free Solder

ASTM B32, 95.5 tin-antimony solder or other "lead-free" solder. Use for all potable water copper tubing and fitting connections, and for solder joints in contact with food.

2.1.7.2 Tin-Lead Solder

ASTM B32, alloy grade 50B for temperatures up to 150 degrees F and alloy grade 95TA for temperatures over 150 degrees F.

2.1.7.3 Silver Solder

AWS A5.8/A5.8M, 15 percent silver base brazing alloy, melting point not less than 1000 degrees F.

2.1.8 Laminated Plastics

ANSI/NEMA LD 3 and NSF/ANSI 35.

2.1.9 Sealants

Sealants must conform to the requirements of ASTM C1330, ASTM C920.

2.2 FABRICATED EQUIPMENT

2.2.1 Fastening Devices

Provide fastening devices of the same material as the metal being joined when joint pieces are of similar metal. Fastening devices must be stainless steel, ASTM A666 when stainless steel is joined to dissimilar metal. Provide minimum 1/4-20 stainless steel stud bolts with length necessary to accept washers, and required nuts, and weld 9 inches on center maximum. Exposed surfaces of equipment must be free of bolts, screws, and rivet heads. Use stainless steel stud bolts to fasten tops of counters or tables to angle framing and trim to other surfaces. Such bolts must be the concealed type. Cap threads of stud bolts which are on

the inside of fixtures and are either visible or might come in contact with a wiping cloth, with chrome plated washers, lock washers, and chromium-plated brass cap nuts. Wherever bolts are welded to the underside of trim or tops, uniformly finish the reverse side of the welds with the adjoining surface of the trim or the top. Dimples at these points are not be acceptable.

2.2.2 Welding

2.2.2.1 Welds

Use tungsten inert gas process. Use filler metal compatible with the material being welded. Do not use carbon arc welding on tops of counters, tables, drainboards, exposed shelving, or sinks. Make welds ductile and of same color as adjoining surfaces.

2.2.2.2 Welding Rods

Perform all welding with welding rods of the same composition as the sheets or parts welded. Factory weld long section components to the greatest lengths possible to minimize field welded joints.

2.2.2.3 Weld Quality

Weld quality must conform to the requirements of AWS A5.8/A5.8M, AWS D1.1/D1.1M, AWS D10.4 and AWS D9.1/D9.1M. Factory weld long section components to the greatest lengths possible to minimize field welded joint.

2.2.3 Sound Deadening of Counters and Sinks

Provide sound deadening for counter tops and sinks with 1/2 inch wide rope sealant positioned continuously between all contact surfaces of the frame-members and the underside of counter top, overshelves and undershelves. Tighten stud bolts for maximum compression and trim any excess sealant.

PART 3 EXECUTION

3.1 INSTALLATION

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

Prior to commencement of installation, perform a complete walk down of the facility with the Contracting Officer to verify readiness for installation.

Provide adequate protection of all finished surfaces, fixtures, furnishings and other equipment to prevent any damage during the installation work.

Conduct installation procedures conforming to applicable NSF, OSHA and UL standards specified, and the manufacturer's instructions.

Set all equipment plumb and level. Except for mobile and adjustable-leg equipment, securely anchor and attach items and accessories to walls, floors, or bases with stainless steel bolts.

Flash food service cabinets located in wall openings to the walls with 20 gage stainless steel. Seal around equipment flashing and flanges, at walls and floors in accordance with manufacture instructions. Fillers must be

continuous, without opening.

No drilling, cutting, burning, or welding of structural parts of building is permitted.

3.1.1 Equipment Connections

Complete equipment connections for all utilities. Unless otherwise specified, provide chromium-plated copper alloy or stainless steel exposed piping as required per manufacturer. Provide access panels of sufficient size and so located that concealed items may be serviced and maintained or removed and replaced.

3.1.2 Gas Equipment

Installation of gas operated equipment must conform to NFPA 54. Fasten a heavy duty steel cable, 3 to 6 inch shorter than the equipment connector, to the equipment and the walls.

3.1.3 Electrical Work

Electrical systems, components and accessories must be certified to be in accordance with NFPA 70 and the following:

3.1.3.1 Installed Equipment Load

If the electrical load of the approved equipment differs from that specified or shown on the drawings, provide and install electrical service compatible with the approved equipment.

3.1.3.2 Electrical Equipment and Components

Food service equipment furnished under this section must have loads, voltages, and phases compatible with building system, and conform to manufacturer standards.

3.1.3.3 Cords and Caps

Coordinate all food service equipment cord/caps with related receptacles. All 120/208/240 volt "plug-in" equipment must have Type SO or SJO cord and a plug with ground, fastened to frame/body of item.

3.1.3.4 Final Electrical Connection Provisions

Tag final electrical connection points of equipment with item number, name (as indicated on FOOD SERVICE EQUIPMENT SCHEDULE) of devices on the circuit, total electrical load, voltage, and phase. Fabricated equipment containing electrically-operated components or fittings, indicated on utility connections drawings to be direct-connected, must have each component, fitting, or group thereof prewired to a junction box for final connection. Refer to As-Builts for circuit loading.

Field-assembled equipment (example, prefabricated cold storage assemblies, conveyor systems, exhaust hoods) must have electrical components completely interconnected by this section for final connection as indicated on utility connection drawing. Prewire the following groups of cold storage assembly electrical devices to a top-mounted junction box for final connection per compartment grouping, unless otherwise indicated.

a. Light fixtures, switches, and heated pressure-relief vent.

b. Door/jamb heater and temperature monitors/alarms.

c. Evaporator fans, defrost elements, freezer fan door switch, and drain line heaters.

3.1.4 Plumbing Work

Tag all plumbing final connection points of equipment, indicating item number, name of devices or components, and type of utility (water, gas, steam, drain). Provide extensions of indirect waste fitting to open-sight hub drain, floor sink or floor drains from food service equipment.

3.1.4.1 Steam Connection Provisions

Compartment steam cookers must have piping manifolded from all compartment exhaust valves to a floor drain, floor sink, or drain trench. Provide steam generators specified within this section with automatic boiler blowdown and a cold water condenser. Separate equipment, devices or components indicated to be connected to a steam-generator, provided under this section, must be provided with all unions, ells, gate valves, nipples, brackets, clamps, etc., required for the complete operating system for final connection.

Steam supply piping must be insulated with 1 inch fiberglass insulation (3 pounds/cubic foot density) and have factory-applied fire retardant. Install a full-length 16 gauge stainless steel pipe enclosure with sloping top, jacket, and vapor barrier over steam lines.

3.2 MANUFACTURER'S FIELD SERVICES

Furnish manufacturer's representatives who are directly employed by the equipment manufacturers and trained to perform the services specified. The manufacturers representatives must provide advice and services on the following matters:

Starting equipment and training Government personnel as to its proper care, operation, maintenance and safety procedures.

3.3 LOCATIONS AND CLEARANCES

Locate equipment to provide working space for necessary servicing such as shaft removal, disassembling, replacing or adjusting drives, motors, or shaft seals, access to water heads and valves of shell and tube equipment, tube cleaning or replacement, access to automatic controls, lubrication, oil draining and working clearance.

3.4 IDENTIFICATION TAGS AND PLATES

Provide equipment with tags numbered and stamped for their use as indicated on the Food Service Equipment Schedule. Provide brass or non-ferrous plates and tags. Minimum letter and numeral sizes are 1/8 inch high.

3.5 TESTS

Notify the Contracting Officer, in writing, 10 days before performing tests. Perform tests in the presence of the Contracting Officer.

3.5.1 Initial Start-Up and Operational Test

Provide all lubricants and accessories before initial start-up. Start and operate all equipment. Follow the manufacturer's procedures and place the systems under all modes of operation. Supplement initial charges of lubricating oil to assure maximum operating capacity. Adjust all safety and automatic control instruments. Record manufacturer's recommended readings hourly. Operational tests must cover a period of not less than 3 days.

3.5.2 Test Reports

Submit the final field test reports for each system tested, describing test apparatus, instrumentation calculations, and equipment data based on industry standard forms or reasonable facsimiles thereof.

3.5.3 Cleaning and Adjusting

Test and adjust equipment for proper operation. Test rotating components and motors for proper rotation. Lubricate moving parts if suggested by manufacturer's literature. Prior to acceptance of project, clean and sanitize equipment both inside and outside.

3.6 CONTRACTOR'S WARRANTY for INSTALLATION

Submit contractor's warranty for installation to the Contracting Officer prior to final commissioning and acceptance.

-- End of Section --