SPECIFICATION

08-M05106

FOR AN

ARMORY TRAINING BUILDING

AT

U.S. COAST GUARD SECTOR FIELD OFFICE (SFO)

GALVESTON, TEXAS

PREPARED BY:
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PROJECT TABLE OF CONTENTS

SECTION 00102

LIST OF DOCUMENTS, EXHIBITS AND ATTACHMENTS

1.1 SUMMARY

This section lists the Contract Supplemental Drawings, Exhibits and Attachments for the project and supplements Section J "List of Attachments."

1.2 CONTRACT DRAWINGS

Contract Drawings are provided to the Contractor in electronic format on compact disk. Contract drawings are as follows:

DRAWING NO.	SHEET NO.	DISCIPLINE	DRAWING TITLE
DRAWING NO.	SHEET NO.	DISCIPLINE	DRAWING TITLE
G101	1	GENERAL	COVER SHEET
C101	2	CIVIL	SFO EXISTING CONDITIONS
C102	3	CIVIL	EXISTING CONDITIONS PLAN
C103	4	CIVIL	SITE LAYOUT PLAN
A101	5	ARCHITECTURAL	FLOOR PLAN
A102	6	ARCHITECTURAL	MEZZANINE-CEILING
A103	7	ARCHITECURAL	S AND W ELEVATIONS
A104	8	ARCHITECTURAL	N AND E ELEVATIONS

1.3 SUPPLEMENTAL DRAWINGS, EXHIBITS AND ATTACHMENTS
These supplemental drawings, exhibits and attachments are not part of the contract but are provided to the Contractor for information only.

1.3.1 Reference Drawings
The following reference drawing[s] are intended only to show the original construction and proposed construction in the vicinity of the project site. Drawings are the property of the Government and shall not be used for any purpose other than that intended by the contract. The Government does not guarantee that these drawings reflect present conditions and the Contractor is responsible for verifying actual conditions. The drawings are provided in electronic format on compact disk. Full size drawings may be inspected during regular working hours at the office of the SFO Galveston Facility Engineer.

DRAWING NO.	TITLE
M0855 DE2	SITE POWER PLAN
M0855 DE3	SITE POWER PLAN
M0855 DE15	PRIMARY ELECTRIC ONE LINE DIAGRAM
M1520C01	TEMPORARY FACILITIES SITE PLAN
M1520E01	TEMPORARY FACILITIES ELECTRICAL PLAN
M1520E02	TEMPORARY FACILITIES ELECTRICAL RISER DIAGRAM

1.3.2 Boring Logs

The Government does not guarantee that borings indicate actual conditions, except for the exact locations and the time that they were made. Subsurface data, not specified or indicated, have been obtained by the Government for other projects in the general vicinity of the project site. The data are provided to the Contractor in electronic format on compact disk.

1.3.3 Subsurface Data

Subsurface data have been obtained by the Government at the project site. The data are provided to the Contractor in the following attachments in electronic format on compact disk.

1.3.3.1 . “Final Geotechnical Report - Rebuild Waterfront and Multimission Facility - U. S. Coast Guard Station, Galveston” dated February 22, 2002, prepared by URS Group, Inc.

1.3.32. “Geotechnical Engineering Study U. S. Coast Guard Base, SFO Galveston, Texas” dated November 24, 2008, prepared by Southwestern Laboratories.

--End of Section--

SECTION 01110

DESIGN-BUILD GENERAL PARAGRAPHS

PART 1 GENERAL

1.1 SCOPE OF WORK

Design and construct an Armory Training Building at Sector Field Office (SFO) Galveston, Texas including all associated site work and utilities. Do the work in accordance with this specification and as shown on the Government-approved, Contractor-originated drawings.

1.2 CONTRACTING OFFICER'S (CONTRACTING OFFICER'S) REPRESENTATIVE

The term "COR is an abbreviation for "Contracting Officer's Representative."

1.3 NEW UTILITY SERVICES

Make all arrangements with the local utility providers and with the SFO Galveston Facility Engineering Office for Coast Guard furnished utilities, as applicable, and pay all fees, charges, and costs of any nature associated with establishing services, which includes but is not limited to installing new temporary (during construction) and subsequent permanent utility services required to ensure permanent and uninterrupted utility service at project completion. The contract documents provide a conceptual plan for utility layouts. These plans shall be confirmed by the contractor during the bidding stage with the local utility provider to determine the exact materials, equipment placement, and other features that are required by the specific utility provider. The term utility service includes, but is not limited to meters, mains, service lines, high voltage feeders, transformers, force mains, and lift stations. The contractor is responsible for coordinating the work with the utility provider to insure the utility connection to the site is completed and that there is no delay in work or completion of the project. Utility services include electricity, water, sewer, gas, telephone, and cable TV. The local utility providers are:

Utility Provider	Service	Telephone Number
Reliant Energy	Electricity	(877) 524-5231
City of Galveston	Water	(409) 797-3550
City of Galveston	Sewer	(409) 797-3550
Oneok Inc.	Gas	(800) 700-2443
Southwestern Bell/AT&T	Telephone	(877) 213-1057
Comcast	Cable TV	(800) 766-9993
Ms. Utility/DIG–SAFE		(888) 858-9830

1.4 PERMITS

Contractor's responsibility for permits is discussed in Section I contract clause 52.236-7 "Permits and Responsibilities", in Section 01158 paragraph 1.3 "Design Related Permits & Certifications", and paragraph 1.4.1 "Design Requirements Overview." The Contractor shall comply with all terms and conditions of permits, whether the Contractor or the Government obtains the permit.

1.5 DRAWINGS FURNISHED

One compact disc (CD) of the RFP plans and specifications will be furnished to the Contractor without charge.

1.8 RELOCATED EQUIPMENT AND ITEMS

Disconnect, dismantle if necessary, remove, relocate, reinstall, connect, and test items shown on the drawings. Cap disconnected service lines. Provide mechanical and electrical service connections, fittings, fastenings, and other materials needed to assemble and install re-located equipment. Before disconnecting or re-locating items, inspect the items in the presence of the Contracting Officer to determine their existing condition. The Contractor is responsible for damage sustained by the items after this inspection.

1.9 UTILITY OUTAGES

Before interrupting or shutting down any utility, make a request for the interruption to the Contracting Officer at least five days before the anticipated interruption. Identify the utility, reason for interruption, proposed time of interruption, and duration of interruption. Do not interrupt utilities until authorized by the Contracting Officer.

A. Make utility cut-over and interruptions after the normal working hours or on Saturdays, Sundays, and government holidays. Conform to procedures required in contract clause H.3 "Work Outside Regular Work Hours."

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

C. Interruption to water, sanitary sewer, storm sewer, telephone service, electric service, air conditioning, heating, and fire alarm shall be considered utility cut-overs. All outages shall be restored prior to the start of normal working hours on the next work day as defined in contract clause H.3 "Work Outside Regular Work Hours." This time limit includes time for deactivation and reactivation.

D. Operation of Station Utilities: The Contractor shall not operate nor disturb the setting of control devices in station utility systems, including water, sewer, and electrical services. The Government will operate the control devices as required for the normal conduct of the work. The Contractor shall notify the Contracting Officer giving reasonable advance notice when such operation is required.

E. Minimize duration and extent of power outages. Make all arrangements with the COR for system modifications including outages, temporary and permanent equipment locations and connections of new conductors. Submit a detailed plan indicating times, dates and durations of outages and contingencies in the event of unanticipated outage extensions which must be approved by the COR prior to any outages.

1.10 UNDERGROUND UTILITIES

The underground utility locations shown on the drawings are not exact. Notify the Contracting Officer and the cognizant utility companies at least 48 hours before excavating. Mark the excavation route and intersecting utilities. The Contracting Officer or the utility company representative will review the contractor's layout and notify the contractor if any known utilities have been left unmarked. Use hand tools within five feet of each side of the intersection location, where an excavation will cross an existing utility line. Protect exposed underground utilities from damage. Immediately contact the Contracting Officer concerning unidentified utilities for direction.

1.11 CONTRACTOR USE OF PREMISES

The Contractor will be working on an operational Coast Guard installation. Perform and conduct the work to minimize interference with Coast Guard operations. Clear unobstructed access to the USCG boat waterfront piers must be maintained at all times. Become familiar with and obey station fire, traffic, and security regulation. Contractor personnel are not allowed in facilities not directly related to the work required under this contract.

A. PARKING – Available parking will be very limited during construction. All remaining parking lots outside the project construction site will be for Coast Guard use only. The contractor is encouraged to use car/van pool as necessary for labor crews.

B. SECURITY – The work site is a secure military installation. The Contractor will be required to provide and keep a complete and up to date list of all contracted and subcontract personnel and vehicles that require access to the site. All vehicles will be stopped at the main gate and driver' must present a valid U.S. driver's license as well proof of registration and insurance of their vehicle. Occupants of the vehicle must possess valid photo identification. During periods of high level threat conditions, additional security measures and site access controls may be required.

1.12 WEATHER

Delays caused by unusually severe weather are addressed in FAR Clause 52.249-10. Unusually severe weather will be considered unforeseeable if it is more severe than the statistical 3-year average for the appropriate weather parameters established by the National Weather Service. See Section 01320 "Anticipated Weather Delays" for additional requirements. Contractor secure all temporary facilities such as Trailers and Porta-Johns for high winds at all times. Contractor shall properly store and secure any loose material during periods of high winds.

1.13 MANUFACTURER'S INSTRUCTIONS

Particular items and products specified in these sections are to be provided (furnished and installed) according to the manufacturer's printed instructions. For bidding and contract performance purposes, the Contractor is expected to be aware of the requirements of these instructions.

1.14 RECEIPT OF MATERIALS

Shipments of equipment, materials, and supplies shall be addressed to the Contractor - not the government. The Contractor must be on hand to accept shipments; the government will not accept shipments. Contractor shall provide USCG gate guard personnel with sufficient notice clear access for material deliveries. Contractor will be responsible for material delays caused by insufficient notice.

1.15 DELIVERY, STORAGE, AND HANDLING OF MATERIALS

Deliver, store, and handle products and materials according to the manufacturer's printed instructions and as follows:

A. Deliver products and materials in manufacturer's original unopened packages or containers bearing manufacturer's labels.

B. Store products subject to damage from the elements in weather tight enclosures; maintain temperature and humidity within the ranges stated in the manufacturer's printed instructions.

C. Store fabricated products off the ground on platforms, blocking, or skids. Cover or protect products that may discolor or deteriorate due to exposure to the elements. Provide ventilation to avoid condensation.

D. Store loose granulated material on solid surfaces such as paving, plywood, or sheet material to prevent mixing with foreign matter. Provide drainage prevention to prevent mixing with foreign matter. Provide drainage to prevent ponding of rainwater. Prevent mixing of materials.

1.16 MINOR DEMOLITION, CUTTING, AND PATCHING:

A. Provide Contracting Officer with 24 hour notice before commencing demolition operations.

B. Cut surfaces such as masonry, plaster, tile, and metal in straight lines at natural points of division.

C. Materials for patching, filling, repairing, and extending work shall be new, and shall be similar in appearance and equal in quality to materials used in adjoining construction or the removed materials when they were new.

D. Protect existing construction, surfaces, and equipment from damage. Damaged existing construction, surfaces, or equipment shall be restored or replaced to match existing conditions or new adjoining work.

E. Dust: Erect and maintain temporary dust tight partitions or barriers to prevent the spread of dust, fumes, and noise to other parts of the building. Seal off return air grilles in the areas enclosed by dust barriers. Vent areas enclosed by dust barriers to the outside and provide filters on these vents. Before removing the dust barrier, completely clean the area enclosed by the barrier and both sides of the barrier itself. Cover existing equipment to protect it from dust.

F. Disassemble, disconnect, cut, remove, and alter existing construction and equipment without damaging other construction or equipment that is to remain or be reused. Cut and remove to the limits shown on the drawings, or, if not shown, to the minimum extent necessary for the proper installation of new work. Piping shall be removed and capped so as to be concealed in the finished work.

G. Cut, move, and remove existing construction as necessary to do the work; replace and restore when work is completed.

H. Completely remove applied finish flooring such as ceramic floor and base, and resilient tile flooring and base, including mastic, to structural floor.

I. Patching: Patch to provide a neatly finished installation and to restore surfaces and items to the condition they were in before the work started. Where removal leaves holes and damaged surfaces that will be exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces and to provide surfaces that are suitable for the provision of the new work. Install materials according to standard trade practice. Provide a smooth, even line of transition where patched work adjoins existing construction or new work. Patches or repairs shall match existing conditions or new adjoining work and shall provide a uniform finish and texture over the entire surface. When existing finish cannot be matched, refinish the entire surface to the nearest intersection.

J. Transitions: Make smooth and even transitions where new work abuts or aligns with existing construction. Where finished surfaces are cut such that a smooth transition with new work is not possible, terminate the existing surface along a straight line at a natural point of division and submit written recommendations to the Contracting Officer on how to proceed.

K. Adjustments: Where removal of partitions results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, and bulkheads.

1.17 CONTRACTING OFFICER'S AUTHORITY

In no event shall any understanding or agreement between the contractor and any Government employee other than the Contracting Officer on any contract, modification, change order, letter or verbal direction to the Contractor be effective or binding upon the Government. All such actions must be formalized by a proper contractual document executed by an appointed Contracting Officer. The contractor is hereby put on notice that in the event a Government employee, other than the Contracting Officer, directs a change in the work to be performed, or increases the scope of the work to be performed, it is the contractor's responsibility to make inquiry to the Contracting Officer before making the deviation. Payments will not be made without being authorized by an appointed Contracting Officer with the legal authority to bind the Government.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

SECTION 01158

DESIGN/BUILD CRITERIA

1.1 GENERAL PROJECT REQUIREMENTS AND DESCRIPTION

1.1.1 REFERENCES, CODES AND STANDARDS

The codes, standards and publications are referenced in the text by the basic designation only. The latest editions, at the time of bid proposal, shall be used.

New construction and modification to existing construction shall comply with requirements of:

American Society of Civil Engineers- Minimum Design Loads for Buildings and Structures (ASCE-7)
American Concrete Institute- Building Code Requirements for Structural concrete (ACI 318)
American Concrete Institute- Building Code Requirements for Masonry Structures (ACI 530)
American Concrete Institute- Specification for Masonry Structures (ACI 530.1)
American Institute of Steel construction- Steel Construction Manual
Steel Joist Institute- Load Tables and Weight Tables for Steel Joists and Joist Girders
Steel Deck Institute- Deck Design Manual
Steel Deck Institute- Diaphragm Design Manual
American Society of Heating Refrigeration and Air Conditioning (ASHRAE)
International Building Code (IBC)
International Fire Code (IFC)
International Plumbing Code (IPC)
International Mechanical Code (IMC)
Occupational Safety and Health Association (OSHA)
Code of Federal Regulations (CFR)
Illumination Engineering Society of North America (IESNA) Lighting Handbook (LHBK)
National Fire Protection Association (NFPA)
National Life Safety Code (NFPA 101)
National Electrical Code (NEC, NFPA 70)
National Fire Alarm Code (NFPA 72)
National Electrical Safety Code (NESC, IEEE C2)
National Electrical Contractors Association (NECA) National Electrical Installation Standards (NEIS)
Electronics Industry Association (ANSI/EIA -310D) Cabinets, Racks, Panels and Associated Equipment
Telecommunications Industry Association/Electronics Industries Association TIA/EIA-568-B.1 Commercial Building Telecommunications Cabling Standard Part 1: General Requirements (May 2001).
Telecommunications Industry Association/Electronics Industries Association TIA/EIA-568-B.1-1 Commercial Building Telecommunications Cabling Standard Part 1: General Requirements Addendum 1 – Minimum 4-Pair UTP and 4-Pair ScTP Patch Cable Bend Radius (August 2001).
Telecommunications Industry Association/Electronics Industries Association TIA/EIA-568-B.2 Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components (May 2001).
Telecommunications Industry Association/Electronics Industries Association TIA/EIA-568-B.3 Optical Cabling Components Standard (April 2000).
Telecommunications Industry Association/Electronics Industries Association (TIA/EIA-569-B)-Commercial Building Standard for Telecommunications Pathways and Spaces
Telecommunications Industry Association/Electronics Industries Association (TIA/EIA-606-A) Administration Standard for the Commercial Telecommunications Infrastructure
Telecommunications Industry Association/Electronics Industries Association (TIA/EIA-J-STD-607-A) Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
Telecommunications Industry Association/Electronics Industries Association (TIA/EIA-758-A) Customer-Owned Outside Plant Telecommunications Standard

Telecommunications Industry Association/Electronics Industries Association (TIA/EIA-526-7) Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant – OFSTP-7
Telecommunications Industry Association/Electronics Industries Association(TIA/EIA-526-14A) Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant – OFSTP-14
Telecommunications Industry Association (TIA--598-C) Optical Fiber Cable Color Coding
Texas Department of Transportation
Texas Administrative Code
Galveston Health Department
Texas Commission on Environmental Quality
Uniform Federal Accessibility Standards (UFAS)

1.2 ROLE OF REQUEST FOR PROPOSAL (RFP) SPECIFICATIONS AND DRAWINGS

1.2.1 General:

Section 01158, "Design/Build Criteria," and Drawings contain abbreviated minimum facility requirements. The Contractor shall provide all necessary materials, equipment, labor and services required to provide a complete and useable facility for its intended purpose as an armory training building.

1.2.2 Contractor-produced Construction Design Documents

The Contractor shall provide construction design documents in compliance with Section 01160 “Construction Design Documents”.

1.2.3 RFP Drawings

The design and design data indicated on the RFP drawings are the minimum requirements, i.e.; baseline drawing requirements, to be used by the Contractor to develop the project design. The Contractor shall add to, supplement, and complete these drawings to fully comply with the documentation requirements specified in Section 01160, "Construction Design Documents." The design and design data on the RFP drawings shall not be changed unless the requirements of paragraph "Deviations from Procurement Documents" of Section 01160, "Construction Design Documents" are met.

1.2.4 Precedence

In the event of conflict or inconsistency between provisions of the various portions of this contract (the reconciliation of which is not otherwise provided for herein), precedence shall be given in the following order. The provisions of a particular portion shall prevail over those of a subsequently listed portion.

a. The provisions of the Requests For Proposal (RFP) issued in connection with this contract including all addenda, amendments, or other modifications issued there under.

b. The Government reviewed Contractor-produced Design Drawings and Specifications, except to the extent that any deviation therein has been specifically approved in writing pursuant to the provisions of Section 01160, "Construction Design Documents."

1.3 DESIGN RELATED PERMITS & CERTIFICATIONS

1.3.1 PERMITS

Timely acquisitions of all necessary design and construction related permits shall be the responsibility of the Contractor.

The contractor shall be responsible for identifying and obtaining all required permits, approvals, concurrences and certifications (hereafter called permits) from regulatory agencies. The Government will not delegate

"Agent" authority to the contractor; the Coast Guard will sign all submissions to regulatory agencies. The Government will indemnify the contractor for all application fees on a cost basis.

As part of the first design submittal, provide a complete summary of all permits/approvals required for the project. As a minimum, the following information shall be provided for each required permit:

Name of Permit/Approval
Regulatory Review Agency
Regulatory Agency Address
Regulatory Agency Point of Contact
Regulatory Agency Phone Number
Public Notice Required (Yes/No)
Application Fee
Approximate Review Period
Public Meetings Required

The Contractor shall comment on any difficulties expected in obtaining approval for each permit/approval application.

Submit for the Government's review and approval the following:

a. Complete application.
b. Draft application cover letter.
c. Draft public notice advertisement (if any)

Within 7 days of review by the Government, incorporate all Government comments and provide the following for signature and submission (by the Coast Guard) to regulatory agency(s):

a. Completed application form(s)
b. Public notice (if any)
c. Application fees (certified check)
d. Proper number of exhibits/attachments (as required by regulatory agency) to application

Generally, the following text will be used for each application:

Applicant: United States of America in the Person of the
U. S. Coast Guard, Facilities Design and
Construction Center

Signature: James Heinz, P.E.
Captain, U. S. Coast Guard
Commanding Officer
Facilities Design and Construction Center

The following statement is included below the signature: "The above signed has the authority to represent the U. S. Coast Guard."

Place all public notice type newspaper advertisements required for each application. Advertisements shall be placed so as to properly coincide with permit/approval submission.

1.3.2 SUSTAINABLE DESIGN AND LEED-NC CERTIFICATION

Information and resources on sustainable design principles and guidelines are explained in the “Whole Building Design Guide” that can be found at www.wbdg.org.

1.3.2.1 Sustainable Design

This facility shall be designed and constructed in an environmentally responsible manner, utilizing sustainable design concepts, systems and materials to the maximum extent practical to provide a facility that meets the following goals:

a. Energy efficiency; EPACT 2005
b. Executive Order 13423
c. Reduces or eliminates toxic and harmful substances;
d. High indoor air quality (IAQ) conditions;
e. Use of building materials that can be recycled;
f. Use of recycled content materials, including EPA designated products;
g. Efficiency in resource and materials utilization;
h. Minimizes waste products during both the construction and operation of the facility;
i. Promotes O&M practices that reduce or eliminates harmful effects on people and the natural environment;
j. Can be easily modified as occupant needs change and easily adapted or converted to other uses.
k. Incorporate LID (Low Impact Development) in Stormwater Management and BMP’s.

1.3.2.1.1 This project shall incorporate the sustainable design principles and guidelines of the “Whole Building Design Guide” and to be designed with the intent of maximizing the use of sustainable design and development practices. Information and resources on sustainable design principles and guidelines are explained in the “Whole Building Design Guide” that can be found at www.wbdg.org.

1.3.2.1.2 As required in E-PACT 2005, all associated energy consuming products shall be Energy Star qualified product or a FEMP designated products. Qualified product data can be found at www.energystra.gov.

1.3.2.2 LEED-NC for New Construction Certification

Leadership in Energy and Environmental Design for New Construction (LEED-NC) Green Building Rating System™.

1.3.2.2.1 The Contractor shall utilize the principles of integrated sustainable design contained in the latest LEED-NC rating system and will utilize this system in the design and construction of this project. The contractor shall provide an analysis of the LEED-NC criteria as it applies to the design of this project and include that analysis with each design submittal. When estimating energy savings, use ASHRAE 90.1 as the baseline. The analysis report shall include the following:

a. An explanation of each LEED-NC point obtained by the project
b. Total LEED-NC score for the project
c. Latest version of LEED-NC shall be used for the analysis
d. A statement signed by a registered professional engineer or an architect that in their opinion the LEED-NC items listed in “a” and “b” above, will provide at least the minimum points required to meet the LEED-NC classification of “Silver” (unless LEED-NC is not applicable, or justifiable conditions exist that limit the pursuit and accomplishment of the Certified level).

1.3.2.2.2 The facility shall be certified by the US Green Building Council (USGBC) LEED-NC at least at the minimum level of “Certified.”

1.3.2.2.3 Contractor shall pre-register the building with the USGBC, develop the LEED-NC Design strategy, compile all required documentation, fill out USGBC forms and pay all associated fees as required to obtain certification by USGBC.

1.3.2.2.4 The design effort shall seek out integrated design solutions that provide the best value for the facility, and do not increase the overall cost of the project beyond the available budget. Provide documentation as required and coordinate the sustainable features of the design to assure they are properly installed during construction.

1.3.2.3 E-PACT 2005: The federal government is mandated to meet the energy requirements as set forth in E-PACT 2005. In that regard the facilities, unless noted otherwise in the RFP documents, must reflect a 30% energy reduction from the baseline set forth in ASHRAE 90.1-2004.

1.4 CIVIL AND SITEWORK DESIGN

1.4.1 Design Requirements Overview

Location of existing utilities indicated on the site survey and utility maps is approximate only. The Contractor shall scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground where existing underground utilities are discovered. The Contractor shall contact commercial utility companies (i.e.; telephone, cable TV, gas, etc.) to obtain commercial utility information. The Contractor shall ensure the fiber optic cable, water, and any other existing utilities, that are under the proposed building footprint be relocated outside the building footprint (see Section 1.14.8 for specifics regarding the fiber optic cable). The Contractor shall obtain approved station digging permits prior to excavating. Request for digging permits shall be in accordance with current USCG Facilities Engineer's Office policies. All design work shall be in accordance with applicable codes and standards. For general design requirements refer to Section 01160 Construction Design Documents.

1.4.1.1 Site Planning

All new "consumable" type utility systems (i.e.; water, electricity, gas, etc.) shall be designed so a single meter monitors each utility (i.e.; one meter per utility). The location of each meter shall be easily accessible, but not obvious. The meters shall be an open protocol type, capable of providing wireless utility usage data. For example, the water meter shall be a type similar to the 'Badger Meter' that can be fitted with a data transmitter, such as a type similar to the example of "Recordall Transmitter Register".

1.4.2 Site Clearing, Earthwork, and Drainage

The Contractor shall clear and grub vegetation necessary for construction. The Contractor is responsible for obtaining subsurface soil information for design purposes. General and select fill shall come from off-base sources, unless indicated otherwise.

1.4.3 Water System

The new water system shall connect to the nearest existing water line. The new water system shall be designed to be monitored from one meter.

Provide all materials, equipment, labor, testing, and miscellaneous related items to provide water distribution mains and service lines to the building. Provide water distribution system materials, methods, and testing as specified.

1.4.3.1 Water Distribution System

The following materials used for the water distribution system are to terminate approximately 5 feet from the building:

a. Piping materials less than 4 inches:

(1) Copper Piping, ASTM B 42. Fittings, brass or bronze, FS WW-P-460, 125 pound.

(2) Copper Tubing, ASTM B 88, Type K. Solder-type joint ANSI-B-16.18 or ASME/ANSI-B-16.22, compression type joint ASME/ANSI-B-16.26.

(3) PVC Plastic Piping, ASTM B 1785, minimum schedule 40, SDR to provide minimum 150 psi pressure rating. Fittings, ASTM D 2466.

b. Gate Valve smaller than 3 inches:

(1) MSS-SP-80, Class 150, solid wedge, non-rising stem.

c. Piping materials sized 4 inch to 12 inch:

(1) Ductile-Iron, AWWA C151 with cement-mortar lining.

(2) Polyvinyl Chloride (PVC), AWWA C900 with cast iron pipe equivalent outside diameter.

Joints and Jointing materials shall be AWWA C111/A21.11 push-on or mechanical joints for Ductile-iron Pipe. Polyvinyl Chloride (PVC) pipe joint and jointing material shall be push-on ASTM D 3139. Compression-type joints/mechanical joints, can be used as joints between pipe and metal fittings, valves, and other accessories. Gaskets shall be provided.

1.4.3.2 Disinfect new water piping and existing water piping affected by the Contractor's operations in accordance with AWWA C651.

1.4.4 Sanitary Sewer

The Contractor shall provide the new building with a 4” gravity sewer line. Gravity line shall empty into a Collection Well/Grinder Pump (CWGP) system, as designed and sized by the Contractor. The Contractor shall adhere to the design and construction requirements of the City of Galveston’s Building Division and the IPC (latest edition). The CWGP system shall be constructed in accordance with all applicable federal, state, county, and city requirements. Final plans and specifications for the sanitary sewer collection and grinder pump system shall be designed and sealed registered engineer.

The CWGP shall be easily accessible, but not obvious. CWGP system shall be located in the area of the new building in order for the discharge force main to have the most direct route to the sanitary sewer connection point. The Contractor is responsible for paying all necessary connection fees required by any and all applicable regulatory agencies for the sewerage system.

Provide all materials, equipment, labor, testing, and miscellaneous related items to provide sanitary sewage lines necessary for distribution and services to and from the building. The following materials are not allowed for sanitary sewer piping: clay pipe and fittings, concrete pipe and fittings, steel pipe, or asbestos-cement pipe. Ductile iron pipe shall conform to ASTM A746 with AWWA C110 or AWWA C153 fittings. PVC pipe shall conform to ASTM D3034 or F949 with pipe and fittings made from material that conforms to ASTM D1784.

1.4.5 Storm Drainage

Design final grades to drain away from building. Use sheet flow to divert runoff towards property boundaries. Once drainage systems have been established and site improvements completed, a post rain storm event inspection shall confirm that standing water has not collected within the limits of the new building.

Raise the top of the existing Armory’s Wet Well stormwater pump station an additional 12” to prevent ponding water from entering the wet well. New riser shall be compatible to the existing wet well’s material and shall be made waterproof.

Contractor shall ensure that his Designer-of-Record (DOR) shall use site planning, design, construction, and maintenance strategies for the new site development to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow. This will include developing BMP’s (Best Management Practice) that utilizing the LID (Low Impact Development) criteria as found in www.wbdg.org.

The contractor shall submit a Storm Water Pollution Prevention Plan (SWPPP) to the US Coast Guard for approval prior to beginning of mobilization and demolition activities. The storm water pollution prevention shall indicate where and which best management practices are being implemented to prevent storm water runoff contamination to downstream conveyance systems. Unless temporary ponding storage is required to meet

BMP's (i.e., parking lot areas), standing water/ponding shall not be allowed to collect in any area of the new site improvements within the construction limits.

1.4.6 Concrete Pavement and Sidewalks

Provide a concrete slab abutting the bottom of the ramp, the width matching that of the ramp and 10ft long. Finish elevation of the pad shall be one inch above existing grade and provide a smooth transition to the ramp. Provide a concrete slab abutting the bottom of the stairs that is one inch above existing grade. The dimensions shall be 4' wide and the length matching the length of the bottom stair. Materials and methods shall be in accordance with Texas DOT standards. The minimum concrete pavement section for areas subject to vehicular traffic is 6-inches

1.4.7 Treat soil below the building, and to a point five feet beyond the exterior wall, for subterranean termites. Use products approved by EPA, and apply in accordance with manufacturer's recommendations.

1.4.10 LEED Certification

The Building shall be LEED Certified and points can be obtained via best management practices for a sustainable building site, water efficiencies and energy.

1.4.11 Finished Floor Elevations

Finished floor elevations shall be four feet above existing grade.

1.4.12 Baseball Backstop

The existing backstop shall be demolished and disposed of, including cement footings. A new backstop shall be installed at a new location. The new permanent chainlink backstop with hood and wings shall be constructed of galvanized steel. The fence fabric shall be at a minimum 9-guage smooth galvanized chain link. All fasteners shall be galvanize, including, but not limited to, all fittings, nuts, bolts and support members. Crossbars shall be a minimum galvanized 1-5/8" metal tubing. Main upright supports shall be a minimum 2-3/8" O.D. x .095"W galvanized steel. The required embedment depth of posts in concrete shall be based on design wind loads and the existing soil conditions.

1.5 GEOTECHNICAL DESIGN

1.5.1 Geotechnical Site Data

The Government has conducted a subsurface investigation in the vicinity of this project and is attached for the contractor's use. The Contractor shall retain the services of a geotechnical consultant registered as a Professional Engineer, who shall be experienced with soil conditions in the local region. The Contractor's geotechnical consultant shall review the subsurface investigation, soil borings, and laboratory testing for completeness of the design. Any additional geotechnical investigation deemed necessary by the consultant shall be obtained by the consultant and paid for by the Contractor. Additional geotechnical investigations shall be coordinated with the Contracting Officer and shall not interfere with normal Coast Guard operations. The cost of additional required geotechnical work shall be included in the contract sum.

1.5.2 Assumed Foundation Type

For bidding purposes, assume the use of deep pile foundations and a structurally supported first floor to limit the potential of detrimental settlement as described in the supplied subsurface investigation report.

1.5..3 Actual Foundation Type

The actual foundation type, capacity, etc. will be determined after contract award by the Contractor's geotechnical consultant based on the actual loads and geotechnical data. The Contractor shall bear all costs of the actual foundation provided, except under circumstances where adjustments in contract award price may be made under the provisions of Contract Clause FAR 52.236-2, "Differing Site Conditions".

1.6 LANDSCAPING DESIGN

1.6.1 Landscaping General Requirements

Grade the site to ensure proper surface drainage of storm water away from the new building and to provide an orderly transition at the bottom of the ramp and stairs.. Re-establish all lawn areas disturbed by construction activities with sod.

1.7 ARCHITECTURAL DESIGN

1.7.1 Facilities Description including Design Intent

The new facility shall be designed and constructed in accordance with the RFP Drawings and Specifications.

This building will provide support to the Range operations including and armory, weapons maintenance workshop, office space for range personnel, a large training room, a smaller specialized training room, and support spaces such as toilets and showers, and storage for range gear and equipment.

The building is envisioned and shown on the RFP drawings as a standard pre-engineered metal structure with either a Rigid Frame, Clear Span Gable or Tapered Beam, Clear Span, Gable frame configuration, 50’ wide and with bays spaced at 20’ wide bays creating a building with an overall floor plan dimension of 50’ by 80’. It is to be constructed on an elevated platform so as to alleviate problems with periodic flooding of the site. The anticipated nominal eave height should be approximately 20’ to accommodate the relatively high ceiling (+14’) required in the Training Room and a mechanical equipment platform above the toilets and adjacent spaces employed to utilize the vertical space and reduce the platform footprint. This building system was chosen as a basis of design for the RFP because it is well suited to this type of facility, offers a proven construction system for the building structure and envelope, can be constructed relatively quickly and, based on recent projects of similar size and scope, and is cost efficient.

Eave heights may vary between pre-engineered building manufactures or if conventional “stick-built” construction is proposed. A building of less height and with different footprint dimensions to include the mechanical equipment on the primary platform level or in the overhead can be designed if more efficient and cost effective.

As an alternative, the building envelope may be conventionally constructed of either reinforced concrete masonry units or reinforced concrete. Light-gage, cold-formed metal framing will not be allowed below the +9’-4” Armory roof slab and equipment platform level.

As mentioned, the building will be constructed on an elevated platform. The platform should be placed at +4 feet above the highest surrounding grade elevation. It anticipated that the platform will be of concrete and will be pile supported. In addition to the primary building platform, at least two secondary elevated platforms will be required. Provide one ramp at the north building entrance and large enough access by and maneuvering space the range utility vehicle/cart. This platform must be accessed by a ramp with the minimum clear width of 6’ between guardrails/handrails and compliant with UFAS/ADA accessibility requirements. The other secondary platform, on the south side, is needed for egress/access to the training room assembly space and storage rooms and should be accessible by stairs.

Although this structure is being elevated by 4’ in relation to the surrounding grade, it will still very likely experience periodic flooding and should be designed, finished and equipped accordingly.

1.7.2 Exterior Walls

Exterior walls up to the +9'-4" height shall be either reinforced concrete masonry units or reinforced concrete and finished with a high impact resistant Exterior Insulation and Finish System (EIFS). If the pre-engineered structure is used, the pre-engineered building manufacturer's standard wall panels may be used above the +9'-4" height. Alternatively, a conventionally constructed envelope consisting of full-height reinforced concrete masonry walls or combination masonry and cold-formed metal framing finished with a high impact resistant Exterior Insulation and Finish System (EIFS) may be used.

1.7.3 Roof System

If a pre-engineered structure is proposed, the building manufacturer's standard metal panel or standing seam roof panels can be used. If a conventional structure is proposed, acceptable roof systems include open-web steel joists with metal decking, rigid insulation and standing seam metal roof or light gage, cold formed trusses with metal decking, insulation and standing seam roof.

1.7.4 Joint Sealants

Provide appropriate joint sealants for each particular interior and exterior application. Color of sealant shall match color of adjacent surfaces. Provide bond breaker, backstops, and primers according to the recommendations of the sealant manufacturer.

1.7.5 Building Insulation

1.7.5.1 Pre-engineered buildings: Provide fiberglass blanket insulation with a 0.75 lb/cu. ft. density, with flame spread rating of 25 or less when tested according to ASTM E 84. Vapor retarder facing shall be reinforced vinyl scrim. R-values for building insulation (unless required to be greater by the applicable codes), including roof and wall insulation shall be:

Roof = R-19
Walls = R-13

1.7.5.2 Conventional Construction: The following requirements depending on application: Provide vertical and horizontal polystyrene insulation conforming to ASTM C578 or rigid polyisocyanurate board wall insulating products conforming to ASTM C59. Seal the joints in rigid insulation within cavity/veneer walls for additional moisture protection. Provide fiberglass blanket insulation meeting ASTM C665 with flame spread rating of 25 or less when tested according to ASTM E 84. Vapor retarder facing shall be foil face Type III, Class B, Category 1. R-values for building insulation shall be determined by the coordination of code requirements, building/base energy management plan, ASHRAE 90.1 and LEED/sustainable requirements. At a minimum provide: (unless required to be greater by the applicable codes listed above), including roof and wall insulation shall be:

Roof = R-19
Walls = R-13

1.7.5.3 Other Walls: Provide sound attenuation batts in all metal stud wall cavities. Insulation shall be light-density unfaced fiberglass batts, classified as non-combustible by the building code.

1.7.5.4 Exterior Insulation and Finish System (EIFS): All exposed masonry on the building envelope shall be finished with an EFIS system application. Use the EFIS manufacturer's recommended system for hurricane impact protection of costal construction. System components over masonry shall include adhesive, minimum 2" thick insulation board [nominal 1.0 lb/ cubic foot Expanded Polystyrene (EPS) Insulation Board in compliance with ASTM C 578 Type 1 requirements, and EIMA Guideline Specification for Expanded

Polystyrene (EPS) Insulation Board], high-impact reinforcing mesh (nominal 15 ounce/yard interwoven, open weave fiber glass fabric), base coat (cementitious – one part component polymer cement based with less than 33 percent Portland cement by weight), acrylic primer and acrylic based textured wall coating with graded marble aggregate finish coat. EIFS applied to other building envelop construction such as metal framing shall include the above components over a silicone-treated gypsum core sheathing with fiberglass mat facings. As a basis of design and for evaluating any proposed EIFS systems, STO Corporation's STO Therm Hurricane Impact System is used.

1.7.6 Accessibility

All spaces except, for the Armory, Communications Closet, Janitor's Closet and Laundry and mechanical equipment platform , do not need to be accessible to the physically handicapped, in accordance with Uniform Federal Accessibility Standards (UFAS).

1.7.7 Interior Walls

All interior walls and partitions shall be of reinforced concrete masonry unit or concrete construction up to the armory and equipment platform slab heights anticipated to be at + 9'-4" above the platform slab. Partitions construction required above those levels to seal off adjacent spaces such as between the higher ceiling in he Training room and the Range Workshop/Office may utilize light-gage metal stud framing with insulated cavities and water and mold-resistant, paperless gypsum drywall such as those with fiberglass mat facings and silicone-treated cores on both stud faces. Metal stud and drywall construction shall utilize minimum 20 gauge studs and 5/8" thick drywall panels. The perimeter wall construction above the + 9'-4" height shall be the pre-engineered building manufacturer's standard girt, insulation and wall panel system.

1.7.8 Interior Ceilings

Where designated, suspended acoustic tile ceiling (SATC) shall be non-directional fissured, square edge or tegular edged, moisture-resistant, 24" x 24" panels. Suspension system shall be exposed grid, intermediate duty, of aluminum or commercial quality galvanized steel with baked white polyester finish.

Ceilings in those spaces such as the Armory or Toilets which feature concrete ceiling or composite metal decking and concrete construction shall have painted finishes.

1.7.8.1 Exterior Ceilings

Provide a suspended gypsum board ceiling in the Covered Porch area. The gypsum board panels shall be water and mold resistant, with silicone-core and fiberglass mat facings.

1.7.9 Interior Design

1.7.9.1 Wall Finishes:
All interior wall finishes with exception of ceramic or porcelain ceramic tile in the toilet areas shall be paint.

Paint – All interior surfaces, except glass and factory pre-finished materials shall be painted. Paint concrete masonry units or concrete with a minimum of one acrylic resin block surfacer prime coat and two finish coats of latex semi-gloss. The low VOC block surfacer shall have minimum 55% volume solids and the low VOC finish latex paint shall have minimum 50% volume solids and contain an anti-microbial agent which inhibits the growth of microbes on the surface of the paint film.

Select neutral colors for more permanent surfaces (i.e.; ceramic tiles, laminates, etc.) to facilitate future finish material changes. Accent colors of paint or ceramic tile may be used.

Note: Three wall surfaces in the Communications Equipment Closet, RFP Plan Room 107, shall have applied plywood backboard surfaces with a painted finish. On all walls except the door wall, install backboards fabricated from sheets of ¾" thick exterior grade "A/C" plywood (or fire rated plywood). The "A" side of the plywood panel shall face the room's interior. The plywood should be mounted on each wall vertically; 10" off the floor and extend up to the ceiling. The plywood shall be installed in full 4' by 8' sheets, where possible. All exposed plywood surfaces shall be painted with two coats of fire retardant paint (unless clearly stamped as pre-treated, fire retardant plywood).

Ceramic Tile: Provide full-height ceramic tile in the toilet and shower areas. Tile may be ceramic mosaic, porcelain ceramic or glazed wall tile. Select medium or darker grout colors to minimize staining.

1.7.9.2 Hard Surface Floor Finishes:

All interior floor finishes with exception of ceramic or porcelain ceramic tile in the toilet areas and sealed concrete on the equipment platform shall be a paint coating system. There are many suitable systems such as single component urethanes, two-part water based epoxies and single component acrylic. Most systems require two finished coats to be applied over a primer. The intent is to have a high performance low VOC floor finish that can withstand periodic flooding.

Ceramic Floor Tile may be ceramic mosaic or porcelain ceramic. Select medium or darker grout colors to minimize staining.

1.7.10 Interior Specialties

Note: The abbreviations in bold text shown within parentheses have been keyed with the RFP Concept floor plans to indicate where these specialties occur. For example, (**TA**) designates toilet accessories.

1.7.10.1 Toilet Accessories (**TA**):

Toilet accessories shall be constructed of stainless steel unless noted otherwise. Provide the following accessories in each toilet room and/or shower room:

a. Mirrors: 24"x 36" stainless steel angle framed at each sink position or full-vanity width by 36" high mirror at each vanity.
b. Combination Paper Towel Dispenser/Trash Receptacle: Surface mounted or Semi-recessed with 800 multi-fold or 600 C-fold towel capacities and 12 gallon waste receptacle. Alternatively, a combination center pull towel dispenser with one standard center pull roll capacity and 12 gallon waste receptacle can be used. Provide one unit or combination in each toilet room.
c. Soap Dispensers: Lather type, 10 fluid oz. Capacity, stainless steel. Provide a minimum of one in each toilet room.
d. Toilet Paper dispenser: Jumbo roll type dispenser with look-in plastic or stainless steel dispenser case. Provide one in each toilet compartment.
e. Towel Bar: Provide one 24" long commercial grade stainless steel towel bar, at each shower stall.
f. Robe Hook: Provide one stainless steel robe hook, at each shower stall.
g. Toilet Seat Cover Dispenser: Provide one stainless steel toilet seat cover dispenser in each toilet room. Provide one case of a minimum of one 1,000 covers per case for both dispensers.
h. Grab Bars: Provide 1-1/2" O.D. UFAS/ADA compliant grab bars in each accessible toilet compartment and at each shower. Grab bars in toilet compartments may be individual as shown or may be of the corner "L" configuration.
i. Shower Seat: Provide one folding shower seat with Phenolic seat or slats in each shower.
j. Shower Head: Provide a removable hand-held shower head with hose and fixed wall bracket in each shower.
k. Hand Dryer, Surface-Mounted, Sensor Activated: Provide one in each toilet room.

l. Shower Rod, Curtain and Hooks: At the entrance to each shower and to each entry to the shower drying area at the toilet room, provide a 1" O.D. stainless steel shower rod, stainless steel "pear shaped" shower curtain hooks and bacteria and mildew resistant vinyl laminated fiberglass shower curtain.

1.7.10.2 Toilet Partitions and Urinal Screen (**TP**):

Toilet partitions and urinal screens shall be stainless steel faced, formed and bonded to a honeycomb core. Face sheets shall be held rigid and permanently in place by an interlocking strip welded at each corner. Provide stainless steel hardware. Provide a garment hook on the inside of each toilet compartment door.

1.7.10.3 Signage:
Provide interior signage consisting of plastic laminate engraved plaques with Room Name and Number for all spaces. The building user shall verify sign text and room numbers using the final design room names and room numbers as a basis of design determination.

1.7.10.4 Bulletin Board (**BB**):

Where indicated provide aluminum or wood framed cork bulletin boards. Board shall be composed of minimum 1/8" thick cork over 3/8" thick fiberboard.

1.7.10.5 Clothes Washer and Dryer (**CWD**):

In Room 113, provide one unitized or stacked-configuration clothes washer and dryer. As a basis of design, both the Whirlpool 27" model Number WET330S and the GE 27" Model WSM2700/80 were used. The dryer must be vented to the outside in accordance with the unit manufacturer's installation instructions.

1.7.10.6 Garment Rack (**GR**):

In the MLE Equipment Storage Room 106, provide two 48" heavy-duty aluminum combination hanger hook, slated shelf and hanger bar for garments. Provide 30 extruded aluminum hangers. As a basis of design, rack Model No. 36920 and hanger 36944 as offered by ATD American (www.atd.com) was used.

1.7.10.7 Lockers (**LKR**):

In each toilet room provide a minimum of three metal clothes lockers. Each locker shall be 15" wide by 21" deep by 60" high and made of mild cold rolled steel with a high-grade enamel finish. Lockers may be individual units or may be built on the unit principal where each locker has an individual door and frame, top and bottom, back and shelves with common intermediate uprights. Doors shall be formed from one piece cold rolled sheet steel with diamond, square or rectangular perforations approximately ¾" wide by 1-1/2" high to provide free air flow while leaving sufficient metal for rigidity and strength and to conceal the lock bar. The locking device shall be of double-channel steel construction securely contained in the door and engaging the frame at three latching points. Handles shall be the trigger-lift type, non protruding and contained within stainless steel pockets and capable of receiving a combination type padlock. All lockers shall be equipped with one hat/book shelf, a double prong back wall hook and two single prong side wall hook. Lockers shall be mounted on minimum 4" high continuous concrete bases.

1.7.10.8 Marker Board (**MB**):

Marker Boards (a.k.a. Dry Erase Board or White Board) shall be composed of porcelain enamel fused to nominal 28 gauge (0.0149 inches) thick steel, laminated to a minimum ¼" thick core material with a steel, foil or polyester vapor barrier backing sheet and have a continuous extruded aluminum frame. Writing surface

shall be white and capable of supporting paper by means of a magnet. The marker boards shall be a factory assembled unit complete in one piece without joints whenever possible. When marker board dimensions require delivery in separate sections, components shall be prefit at the factory, disassembled for delivery and jointed at the site. Chalk tray or accessory tray shall be aluminum and extend the full length of the marker board. Dry erase markings shall be removable with a felt eraser or dry cloth without ghosting. Each unit shall come complete with an eraser and four different color compatible dry erase markers. Required locations and sizes (W x H) are shown on the RFP Concept Drawings.

1.7.10.9 Audio Visual and Display Specialties:

The Armory-Range Training requires an audio visual system that provides complete, intuitive control of the whole presentation environment including interactive white board operation, projection screen operation, video projector operation, sound system control and room lighting control. An interactive pen display panel/controller located on a podium and connected to a computer (furnished by the Government) shall serve both as a monitor and an input device that recognizes both pen and touch and control all peripheral devices including projectors, sound and lighting. This type of system is required in the Training Room 101. The contractor shall consult and coordinate a system equipment provider to design, furnish and install the following components and related accessories that constitute a complete interactive audio visual system: Such system hardware is offered by manufacturers such as SMART Technologies Inc., Crestron Electronics, Inc., and AMX.

1. An interactive pen display/touch panel controller to be mounted on a podium.
2. A podium for the interactive display/touch panel controller.
3. An electrically operated projection screen. (Provide one in Room 101 and one in Room 108).
4. A ceiling mounted projector for the projection screen (Provide one in Room 101 and one in Room 108).
5. An Interactive White Board with integral projection system.
6. LCD Televisions and wall mounts.
7. A sound system specifically designed for the training room.
8. Room lighting that can be controlled from the interactive pen/touch display panel/controller mounted on the podium.

A projection screen and projector shall be required for the JPC Training Room 108 and the up-down control for the screen can be located in Room 108. The projector in Room 108 will be connected to a CPU and controlled by operators in the JPC Control Room 109.

Specific component requirements follow:

1.7.10.9.1 Interactive Pen Display (**IPD**) and Controller:

Provide an interactive pen display allowing the presenter to have complete, intuitive control over the whole presentation environment including room lighting control and sound control. The interactive pen display will be connected to a computer (furnished by the Coast Guard) and the projector. The screen on the controller shall act as a monitor and input device that recognizes both pen and touch. Provide device with features equivalent to SMART Technologies Sympodium Interactive Pen Display Model DT770 used as a basis of design.

1.7.10.9.2 Podium (**PDM**):

Provide a multimedia AV Podium or Lectern, with a work surface approximately 30” wide by 29” deep capable of accommodating the Interactive Pen/Touch Pad display panel. Unit should be made with furniture grade laminates and feature a slide-out keyboard shelf and full-size document camera drawer that slides out from the side. The cabinet compartment below the sliding drawer should have a divided interior configured with EIA

compliant 10RU rack rails on the right side and a tower PC/ storage space on the left side. Audience side doors and interior cable pass through's should allow access to the rear of the PC and rack mounted equipment. Podium shall feature lockable casters and have door locks on all compartment doors. Provide a multi-outlet power strip with an approximately 10" power cord. Such podiums are available from a number of manufacturer's and vendors including Video Furniture International (www.video-furn.com) form from which these salient features were referenced.

1.7.10.9.3 (Overhead) Projector and Mount (**PRO+M**):

Two projectors will be required. One is to be located in the larger Training Room 101 and the other in the smaller JPC Training Room 108.

1.7.10.9.3.a Projector and Mount (**PRO.1+M**) for Training Room 101:

Provide a projector of approximately 4500 ANSI lumens output with XGA native resolution, contrast ratio of approximately 750:1, aspect ratio of 4:3 and capable of being remotely controlled and be integrated as a component of the audio visual display system requirements outlined above. The projector shall be able to project on the 150" diagonal projection screen and provide optimal viewing for the seating configuration shown on the RFP plans. There are numerous manufacturers of suitable projectors including the ASK Proxima Model 450 as an example. Provide a universal type ceiling mount for the projector that will accommodate most projector modes from different manufacturers.

1.7.10.9.3.b Projector and Mount (**PRO.2+M**) for JPC Training Room 108:

In each of the two training rooms, provide a DLP projector of approximately 3000 ANSI lumens output with minimum XGA native resolution, contrast ratio of approximately 2,000:1, aspect ratios of 4:3, 5:4, 16:9 and capable of being remotely controlled and be integrated as a component of the audio visual display system requirements outlined above. The projector shall be able to project on the projection screens shown on the RFP Concept Drawing plans as specified below or as ultimately designed. There are numerous manufacturers of suitable projectors including the ASK Proxima Model 350 as an example. Provide a universal type ceiling mount for the projector that will accommodate most projector models from different manufacturers.

1.7.10.9.4 Projection Screen (**PS**):

Two projection screens will be required. One is to be located in the larger Training Room 101 and the other in the smaller JPC Training Room 108. Both will be electrically and wall or ceiling mounted.

1.7.10.9.4a Projection screen (**PS 150" DIAG**) for Training Room 101:

Screen Size: minimum viewing area of 87" high by 116" wide with a nominal diagonal of 150". The screen shall be electrically operated from a specially designed motor within the roller mechanism featuring quick reversing, oiled for life, automatic thermal overload cutout, integral gears, capacitor and an electric brake to prevent coasting. Screen to have preset but adjustable limit switches to automatically stop the picture surface in the "up" or "down" positions. Junction box shall be integrated into the housing making it possible to install the housing and wire to the building's electrical system during construction. Case or housing shall be made of extruded aluminum and to be finished in black, lightly textured powder coat. The screen shall have a video format (NTSC 4:3). The screen surface shall be a smooth surfaced vinyl fabric with a white finish for precise image reproduction offering a viewing angle of 60 degrees and a gain of 1.0 and with black masking borders. Each side of fabric shall have a tab guide cable system to maintain even lateral tension and hold surface flat. Bottom of fabric to be inserted into an aluminum slat bar with added weight to provide vertical tension on the

screen surface. Screen to include a three-position control switch and cover to be wall mounted for screen operation. Screen shall be equivalent to the automatic electric projection screen model Tensioned Contour Electrol with Da-Mat screen surface manufactured by Da-Lite Screen Company, Inc used as a basis of design. For this screen, provide wall mounting brackets that position the screen approximately 10” from the wall.

1.7.10.9.4b Projection screen (**PS 84” DIAG**) for JPC Training Room 108:

Screen Size: Shall have a minimum viewing area of 50” high by 67” wide with a nominal diagonal of 84” and with the same specifications on the screen above with the exception of the wall mount brackets. For this screen, provide wall mounting brackets that position the screen approximately 6” from the wall.

1.7.10.9.5 Interactive White Board with Integral Projector (**IWB+P**):

Provide an interactive white board with software for and powered by a computer located in the podium. The touch resolution shall be 4000 x 4000 with a hard-coated polyester surface optimized for projection, compatible with dry erase markers and easily cleaned with whiteboard cleaner. Furnish with black, blue, red and green tray pens and a rectangular eraser. Size approximately 65” by 50” high by 5” deep with active screen area 62” by 46” with a 77” diagonal with features equivalent to SMART Technologies Model 680i3. The integral projector shall be the board manufacturer’s companion projector mounted on a boom and wall plate located at the top of the white board. The projector shall be boom mounted with a limit strap and controlled –collapse feature, extended control panel (ECP), remote control and all necessary cables from the ECP to the projector. The projector’s display type should be True XGA 1024 x 768 and have a brightness of approximately 2000 lumens. SMART Technologies Model UF55 Projector system was used as a basis of design. Provide wall mount bracket for board and projector.

1.7.10.9.6 TV and Mount (**TV+M**):

The two TV’s shown in the Training Room 101 shall be HDTV LCD’s with a screen size of approximately 46” diagonally, resolution of no less than 1,920 x 1,080, Dynamic Contrast Ratio of approximately 70,000:1, ATSC/NTSC tuners, remote controls and sufficient input and outputs to work with the audio visual system components of each training space. As a basis of design, Samsung 46” LCD Model LN46A860 was used. Provide an adjustable tilt wall mount for each television. Mount TV’s at a height to provide optimal viewing for training room occupants.

1.7.10.10 Telecommunications Equipment Rack (**RAC**):

See Specification 01158-1.14.2.8 for the rack to be mounted in the Telecommunications Closet Room 107.

1.7.10.11 Window Treatment (**WT**):

All windows including the two observation windows from Room 109 shall receive 1” wide horizontal stat mini blinds. Use interior mount blind mounting where possible. Each blind, including hardware, accessory items, mounting brackets and fastenings shall be provided as a complete unit produced by one manufacturer. Blinds shall feature a steel channel top rail, enclosed metal bottom rail, aluminum alloyed slats and braded slat support “ladder”. Any steel features shall be treated for corrosion resistance. All blinds shall be capable of nominally 180 degree partial tilting operation and full-height raising. Controls: The slats shall be tilted by a transparent tilting wand, hung vertically by its own weight. The tilter control shall be fully enclosed and shall tilt slats to any desired angle and be designed to prevent over tightening. Provide lift cords to fully raise and fully lower the slats and enable the assembly to stop at any intermediate location. The lift cord shall incorporate a “crash-proof” feature that locks the blind automatically upon release of cord. Finish: The blind finish shall be the manufacturer’s aluminum or brushed aluminum metallic finish or bronze finish.

1.7.11 Doors and Hardware:

All exterior and interior doors and frames shall be made of fiberglass reinforced plastic (FRP) of corrosion-resistant composite construction consisting of integrally colored gel coat door faces made of fiberglass-reinforced polymer plates permanently bonded to a one-piece stile and rail system and filled with polyurethane foam insulation filler. Door frames shall be the door manufacturer's standard reinforced composition door frame of similar construction. Please note that the finish color of the door and frame shall be integral with the door construction and that secondary painting of the door and frame will not be allowed. Provide the door manufacturer's recommended door hardware, molded fiberglass thresholds, astragals on double doors, and weatherstripping and sweeps on exterior doors.

1.7.11.1 Provide all necessary hardware in compliance with the Builders Hardware Manufacturers Association (BHMA), and shall include but not limited to the following:

a. Cylinders with removable cores and Keying: to match existing SFO Galveston's grand master keying system.
b. Hinges: Stainless Steel (630) for exterior doors, and dull chrome (626) for interior doors.
c. Lock/Latch Sets: Series 4000 Grade 1, with lever handles. Provide locksets for all doors except for the toilets which should have push plates and pull handles.
d. Closers: Grade 1, modern covers.
e. Exit Devices (if required): Touch bar type, Grade 1.

Provide all necessary hardware for a complete installation, including, but not limited to the items listed above, and lock trim, overhead holders, stops, pulls, pushes, door protection kick plates, thresholds, and weatherstripping. Entrances, storage rooms, and utility rooms shall have locking hardware. All exterior doors and fire rated doors shall have closers.

1.7.11.2 GSA Vault Door with Day Gate:

Provide a GSA Class V Armory Vault Door with Day Gate which has been tested and approved by the Government under Federal Specification AA-D-600 as the entry to the Weapons Storage and Maintenance Room 212. Class V Vault doors must have a lock meeting Federal Specification FF-L-2740 which requires Class 5-A Armory Doors to have a lock meeting Underwriters laboratory Specification UL 768, Group 1. Vault doors shall be equipped with an emergency release device which will allow anyone accidentally locked inside the vault to unlock the door and exit. Provide a full-height wire mesh day gate. The Armory Vault door is a component of the special construction required for the Armory. See also Section 1.7.15 below.

1.7.12 Windows (including glass block panels, observation windows and roll-up storm and security shutters :

Provide heavy commercial grade operable single-hung or double-hung, windows. Provide windows with 1 inch thick insulated, low "E" glass and thermal break frames. Windows shall meet the requirements of the High Velocity Hurricane Zone section of Florida Building Code, for hurricane and impact resistance (i.e. the Miami-Dade County Notice of Acceptance (NOA)). Provide solid surface window sills at aluminum windows and at glass block panels.

1.7.12.1 Glass Block Panels:

Window panels composed of glass block units have been shown on the RFP Concept drawings to allow natural light transmission while providing security and storm resistance. Glass block units, nominally 8" by 8" by 4" thick shall be made of clear colorless glass with a polyvinyl butyral edge coating. The manufacturer's high performance line with thickened face plate construction especially made for increased storm and fire resistance shall be used.

1.7.12.2 Observation Windows:

Hollow metal frame or FRP frame with ¼" clear float-glass panel, size: approximately 4' wide by 4' high at JPC Control Room 109 for observation of training in Rooms 101 and 109.

1.7.12.3 Roll-Up Storm and Security Shutters:

Over each window install an aluminum roll-up storm and security shutter. Shutter system shall meet the requirements of the High Velocity Hurricane Zone section of Florida Building Code, for hurricane and impact resistance (i.e. the Miami-Dade County Notice of Acceptance (NOA)). Components shall include aluminum extruded double-wall slats, rolled aluminum box cover hood, die-cast aluminum side frames and heavy-duty extruded aluminum track. Shutters shall be manually operated with a gear and crank handle mechanism. Finish color: Bronze or white electrostatically applied paint.

1.7.13 Toilet Room Vanities:

Toilet room lavatory or vanity countertops including edges, aprons and backsplashes shall be fabricated from solid surface materials. The horizontal countertop may be solid surface material over a ¾" plywood backer board. Solid surface materials are cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSIZ124.3 or ANSI Z124.6. Free ends not abutting walls shall be supported. Under-mounted porcelain sinks are specified but integral sinks of the same solid surface material may be designed and specified.

1.7.14 **Special Armory Construction Requirements:**

Armory construction is governed by the following requirements:

Armory Walls: Concrete masonry unit wall construction is indicated on the RFP Concept Drawings. Walls shall be 8" concrete masonry units with No. 4 bars threaded through the block cavities filled with grout and with horizontal reinforcement at every course. Alternately, walls can consist of 8" of concrete reinforced with No.4 reinforcing bars placed vertically at 9" on center in each direction and staggered horizontally on each face to form a grid approximately 4-1/2" square.

Armory Floor and Ceiling: Ceilings and roofs shall be designed to provide a comparable degree of security as that of the walls. Reinforcing bar shall form a grid approximately 4-1/2" square, utilizing No. 4 reinforcing bars or larger. Ceiling construction: If the ceiling or roof is of concrete pan-joist construction, the thinnest portion shall not be less than 6" clear and the clear space between joists will not exceed 20 "; the reinforcing grid requirements for flat slab construction also apply. Do not design a suspended ceiling for the Armory.

Armory Door: Provide a GSA Class V Armory Vault Door with Day Gate conforming to Federal Specification AA-D-600 – See Specification 1.7.12.2 above.

Armory Openings: Operable windows are prohibited. Provide a single 8" by 8" glass block panel as has been shown on the RFP Concept drawings to allow natural light into the Armory. Ducts, vents or similar openings of a size sufficient to permit entry or removal of arms (90 square inches or greater) shall be equipped with:

a. Hardened steel bars (3/4" or larger in diameter) provided that the vertical bars are not more than 4" on center with horizontal bars welded to the vertical bars in such a manner that the openings do not exceed 32 square inches; or

b. Riveted steel grating (weight of 13.2 lbs. /sq. ft.) or welded steel grating (weight of 8.1 lbs. / sq. ft.) with 1x3/16 bearing bars.

c. Bars and steel grating shall be securely embedded in the structure of the building or welded to a steel frame which shall be securely attached to the wall with fasteners inaccessible from the exterior of the arms storage area.

Armory Intrusion Detection System: Provide an intrusion detection system in accordance with Section 1.13.2.8 of this specification.

1.7.15 Government Furnished and Government Installed Equipment (GFGI) and /or Government Furnished and Contractor Installed (GFCI) Equipment.
The following is a list of existing and/or new equipment that the Government will furnish and the Contractor shall install in the facility. The Contractor shall coordinate the design and provide support, and utilities for the items listed below.

The Government will furnish a CPU for installation in the podium and for operation of the Audio Visual System in the Training Room 101.

1.7.16 Operations and Maintenance Manual

Provide Operations and Maintenance Manual for audio and visual display specialties in accordance with Specification 01781.

1.7.17 Training

Provide training for operation and maintenance of audio and visual display specialties, in accordance with Specification 01781; provide a minimum of one hour of training.

1.8 STRUCTURAL DESIGN

1.8.1 Design Load Criteria

The design loads shall be determined in accordance with the latest edition of ASCE Standard 7 entitled "Minimum Design Loads for Buildings and Other Structures." In the event of a conflict between the requirements of ASCE 7 and the requirements of any other specified or referenced codes, standards, or design manuals, the more stringent case shall govern. Consider all loads including but not limited to Dead Loads, Live Loads, Wind Loads, Seismic Loads, Hydrostatic Loads, and Earth Pressures. Include all equipment loads such as the TV Monitors, Projectors including their mounts that will be supported by roof or walls of the Training Room. Required load combinations shall be investigated and design based on worst case for each element of the structure.

A minimum Live Load of 150 PSF shall be used for the mechanical room floor slab and the Mezzanine area floor slab.

Access ramps will be used to haul cases into the facility. The cases will be hauled utilizing a Cushman type cart. The ramp shall be designed to support a point load of 500 pounds to account for the maximum wheel load. This load shall be placed so as to obtain the maximum stresses in the member being designed.

The facility shall be classified as Occupancy Category II for purposes of load calculations.

The seismic loads shall be based on Site Class recommendations of the Contractor’s own geotechnical consultant.

1.8.2 Building Construction

The framing shall utilize structural steel, open web joists, cast-in-place or pre-cast concrete, masonry, or combination of any of these systems. See pertinent sections of paragraph 1.7 ARCHITECTURAL DESIGN for related wall and roof requirements such as insulation, exterior finish, veneer façade, etc. Pre-engineered building frame with roof purlins will be acceptable. The corresponding wall and roof system shall be coordinated with architectural requirements and shall comply with the applicable portions of paragraphs 1.7.

All interior CMU walls shown on architectural conceptual drawings shall be reinforced vertically and horizontally.

Structures shall be designed in accordance with the International Building Code.

Deformations including horizontal drift, deflections, etc shall be considered in the structural design and be limited to acceptable industry standards. The anticipated foundation settlements shall be considered in design and detail of the structure to control cracking, distortion, etc. Construction and control joints shall be provided as required to limit cracking in walls and masonry.

See 1.7 ARCHITECTURAL DESIGN for special construction requirements of Armory Room.

1.8.3 Building Foundation and Ground Floor Slab.

Refer to 1.5 GEOTECHNICAL DESIGN for general related information.

Foundation and slab design shall be based on the recommendations of the Contractor’s Geo-technical Engineer. It is anticipated that the building and the slab will be supported on a suitable deep foundation

system.

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Vapor barrier and capillary barrier shall be provided if and as required and recommended. The ground floor will be elevated four feet above the surrounding grade for flood protection. The floor shall be a reinforced concrete structurally supported slab. Provide slope where required such as at locations of floor drains.

The crawl space shall have a 4 inch thick reinforced concrete slab to prevent growth of weeds, control Insects' infiltration, etc.

All interior CMU walls shall have adequate foundation.

1.9 DEMOLITION

1.9.1 Dust and Debris Control

Prevent the spread of dust and debris to avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution.

1.9.2 Existing Work

Protect existing work, which is to remain in place, be reused, or remain the property of the Government. Repair items that are to remain and which are damaged during performance of the work to their original condition, or replace with new. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal work. Repairs, reinforcement, or structural replacement must have Contracting Officer approval.

1.9.3 Required Data

Submit a demolition plan that shall include procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, a detailed description of methods and equipment to be used for each operation and of the sequence of operations.

1.9.4 Structures Slated for Demolition

The existing baseball backstop shall be demolished and disposed of, including cement footings. Remove the light pole and associated fixtures, identified in drawing C103, while maintaining electrical service to other entities being fed by the electric line.

1.10 FIRE PROTECTION

The fire protection design and construction work shall meet the applicable NFPA codes, and the occupancy type(s) shall be as determined by the latest International Building Code. Provide fire extinguishers in accordance with NFPA 10.

1.10.1 Fire Detection and Alarm System

Provide a complete, supervised automatic, microprocessor based addressable fire detection and alarm system for coverage of the Armory Training Building. Initiating device circuits (IDC) and notification appliance circuits (NAC) shall be Class A and signal line circuits (SLC) shall be Class A, Style 7 in accordance with NFPA 72. Provide smoke detectors in all spaces except provide heat detectors where smoke detectors could be subject to false alarms due to operations or normal environmental conditions in a space. Locate the system control panel in the training room near the north entry door. The system is not required to have a mass notification feature. Provide a battery backup emergency power supply with a minimum of 60 hours standby and 5 minutes alarm. The control panel shall have automatic dialing capability for a minimum of two programmed telephone numbers; provide connection to the telecommunications system as required for automatic dialing. Provide exterior audio visual alarms on the north, east and west side of the building.

1.10.1.2 Testing and Documentation

The system shall be subjected to functional and operational performance tests in accordance with NFPA 72, including tests of each installed initiating and notification appliance. The recommended tests in NFPA 72 shall be considered mandatory. Tests shall include the meggering of system conductors to determine that the system is free from grounded, shorted, or open circuits; the megger test shall be conducted prior to the installation of fire alarm equipment. After completion of successful testing, the Contractor shall submit required NFPA 72 documentation to the Contracting Officer; a copy of the documents shall be included in the O&M Manual.

1.10.1.3 Operations and Maintenance (O&M) Manual

Provide an Operations and Maintenance Manual for the system in accordance with Specification 01781.

1.10.1.4 Training

Provide a minimum of 2 hours training for fire detection and alarm system operation.

1.11 PLUMBING

1.11.1 System Description

The plumbing design and construction work shall conform to the applicable requirements of the latest International Plumbing Code (ICC). Complete plumbing piping systems will be provided for the building. The plumbing installation shall include water, and sanitary services including all pipes, fixtures and equipment. Appropriate handicapped fixtures shall be provided as required. The plumbing system shall be supplied by potable water main system and shall drain by gravity to the sanitary sewer lift station. Plumbing fixtures shall be provided where indicated on the drawings and as noted.

1.11.2 Piping

1.11.2.1 Drain, Waste and Vent (DWV) pipe and fittings shall be as approved by the ICC. Waste piping below ground supported slabs shall be cast iron to a point five feet beyond face of building.

1.11.2.2 Water piping shall be as approved by ICC. Solder shall be lead free. Provide water hammer arresters as required. All distribution water piping shall be protected from freezing. All water piping shall be insulated.

1.11.2.3 The domestic water supply lines to each item of equipment or fixtures, except faucets, flush valves, or other control valves which are supplied with integral stops, shall be equipped with an accessible shut off valve to enable isolation of the item for repair and maintenance without interfering with operation of other equipment or fixtures. A pressure reducing valve shall be provided on each of the incoming water systems if required. Plumbing piping shall be sized to accommodate flush valve plumbing fixtures. Reduced pressure backflow preventers shall also be installed on make-up water lines for hydronic systems and on any other water lines feeding potentially harmful items/systems.

1.11.3 Fixtures

1.11.3.1 Urinals, and Water Closets

Shall be of white vitreous china, low-flow type, and shall meet ADA requirements for the handicapped where required. Water closets shall be the floor-mounted elongated vitreous china bowl type with top supply spud. Provide with white solid plastic elongated open-front seat. Flushometer valve shall be large diaphragm type with non-hold open feature, back check angle control stop, and vacuum breaker. Urinals shall be wall-hanging, with integral trap and extended shields, ASME A112.19.2M siphon jet, top supply connection, and back outlet. Flushometer valves shall be large diaphragm type with non-hold open feature, back check angle control stop, and vacuum breaker. Fixture selections may be able to contribute to project LEED requirements. Waterless urinals may be considered if life cycle cost effective. Provide trap primers for floor drains in areas where the possibility of traps drying out will allow sewer gas to escape into the building.

1.11.3.2 Electric Water Cooler

Shall be stainless steel and UFAS (Fed. Std 795) compliant. Provide wall-hung, air-cooled condensing unit type, with minimum of 4.75 gph capacity meeting ARI 1010 requirements.

1.11.3.3 Domestic Water Heater

Shall conform to ASHRAE 90A high efficiency requirements. Point-of Use may be utilized where appropriate.

1.11.3.4 Wall hydrants

Provide exterior frost-proof wall hydrants with an integral vacuum breaker/backflow preventer on each side of the building (as a minimum) and adjacent to mechanical room, and as determined necessary for coverage by a 100ft hose.

1.11.3.5 Hose Bibbs

Provide angle type copper alloy hose bibb with lockshield and handwheel, ¾" external hose threads, where required.

1.11.3.6 Access Panels

Access panels shall be provided for all concealed plumbing that requires adjustment or maintenance.

1.11.3.7 Emergency Shower/Eye and Face Wash

Provide a combination shower/eye and face wash design meeting ANSI Z358.1 standard. Eye wash shall deliver 3 gpm at 30 psig flow pressure, with eye and face wash nozzles 33-45 inches above finished floor. Shower shall deliver 30 gpm at 30 psig flow pressure.

1.11.3.8 Mop Sink

Provide IAPMO listed/ANSI Z124.2, white, one piece molded 24" x 24" corner sink with elevated self-draining shelf. Provide wall supported and braced faucet with vacuum breaker, pail hook with ¾" external hose thread, 4' hose and hose holder, wall mounted mop hanger strip and bumper guards for sink edge.

1.11.3.9 Utility Sink

Provide 24"wide x 24" deep with 14" deep single compartment sink, 16 gauge stainless steel sink with hemmed edges with 8" high backsplash and 1 ½" diameter 304 stainless steel legs with adjustable levelers, 8" spout and 8" centerset faucet.

1.11.3.10 Washing Machine Connection Box

Recessed wall box fabricated of aluminum, stainless steel, or hot-dip galvanized steel. Provide drain nipple and locknut with cover nut for locking drain outlet to box. Provide brass pipe fittings for connecting each supply pipe to valve and locking to box. Provide hot water and cold water supply valves similar to hose bibbs.

1.11.3.11 Countertop Sinks

Counter-top sinks shall be solid surface countertop and sink (e.g. Corian type) or solid surface counter top with vitreous china under counter mounted sink. Faucets shall be a two-handle blade type with goose neck faucet, with high temperature safety stop and 0.5 gpm flow vandal resistant aerator.

1.11.3.12 Floor Drains

Provide floor drain with drainage flange, and slotted or perforated bronze or polished stainless steel strainers in all Men's and Women's Toilets, shower/locker room areas, janitor's closet, mechanical room, and laundry areas as needed. Provide trap primers in areas where the possibility of traps drying out will allow sewer gas to escape into the building.

1.11.3.13 Showers

Shower heads shall be non-adjustable spray, chromium plated brass with ball joint. Mixing valves will be pressure balancing thermostatic lever type with temperature limit setting to prevent scalding. Front access shower valves shall be utilized. Shower stall shall be 36” x 36” and shall be built-in place with sloped floor to floor drain or one piece pre-fabricated unit with drain connection.

1.11.4 Operations and Maintenance Manuals

Provide Operations and Maintenance Manuals for appropriate components for plumbing systems.

1.11.5 Testing

Plumbing systems shall be cleaned and tested in accordance with ICC International Plumbing Code and NFPA 54.

1.11.6 Training

Provide instruction of Coast Guard personnel for all plumbing systems and equipment. Duration of training shall be a minimum of two hours for each system or discipline. Electronic audible/visual recordings of the training shall be provided to the users for operation and maintenance of all systems (3 copies).

1.12 HEATING, VENTILATING AND AIR-CONDITIONING (HVAC)

1.12.1 Requirements

The HVAC design work and construction shall conform to the latest ASHRAE manuals and standards, the ICC International Mechanical Code (IMC), SMACNA, EPAct 2005, Leadership in Energy and Environmental Design for New Construction (LEED-NC),and NFPA. Outside design condition shall be based on ASHRAE's 99% values or documented local historic condition, whichever is more stringent. The HVAC systems selection shall be designed to accommodate all building operations and equipment selection shall ensure that the building environment shall be properly maintained within the desired parameters during "off-peak" conditions, as well as during "peak" conditions. EPAct-2005 and ASHRAE 90.1 are to be utilized as the baseline when estimating energy savings.

1.12.1.2 All areas of the building, with the exception of the storage room, Janitor's closet, and the mechanical/electrical room, shall be conditioned to meet ASHRAE 55 standards, to 72°F in the winter and 76°F in the summer in accordance with standard practices of the area.

1.12.1.3 Provide air conditioning in all normally occupied spaces including offices, open office, and training/resource center areas. Ventilation exhaust shall be continuous. Air conditioning will not be provided in spaces not normally occupied by personnel, such as janitor closets, mechanical room, and storage room. Toilets/locker rooms and any critical storage areas, when in A/C zones, may be treated by drawing conditioned air through these areas via exhaust systems if sufficient make up air is available.

1.12.1.4 The storage areas shall be ventilated in accordance with ASHRAE and the IMC, and conditioned to 65°F in the winter. The use of infrared heaters is recommended where appropriate. Fresh air ventilation shall be provided in accordance with ASHRAE 62 and the IMC.

1.12.1.5 The Telecommunication Closet shall be conditioned by providing positive air flow from an air-conditioned space at a minimum 10 ACH.

1.12.1.6 Utility type spaces shall be ventilated in accordance with ASHRAE 62.1 and IMC, and conditioned to 55 to 65°F in the winter.

1.12.2 Ductwork

1.12.2.1 HVAC ductwork shall be sheet metal, fabricated, constructed, braced, reinforced, installed, supported, and sealed in accordance with the latest SMACNA DCS. Ducts requiring insulation, other than exhaust ducts, shall be insulated with exterior duct wrap insulation. Exhaust ducts shall be insulated the last 6 feet to the weather. All HVAC equipment returns shall be ducted. Ceiling plenums are not allowed for return air usage.

1.12.3 Systems

1.12.3.1 HVAC Systems shall be of commercial quality, designed as much as possible for efficiency, reliability, ease of maintenance, and minimized life cycle cost. Cooling systems, depending on life cycle cost, may be chilled water or DX (Direct Expansion) based as best suited for the location, the project, and which aid in meeting LEED requirements. Indoor equipment is desired, grade mounted equipment is acceptable so long as equipment is mounted at the finished floor height. Roof mounted equipment is not acceptable.

1.12.3.2 Heating fuels used for this project shall be electric or Natural gas, as justified by a life cycle cost analysis. Natural gas shall be designed and installed IAW NFPA 54. Solar heating energy should be considered as well but use would have to be justified by life cycle cost analysis.

1.12.4 Ventilation

1.12.4.1 Fresh air ventilation shall be provided in accordance with ASHRAE 62.1 and the IMC. Stratification of hot, humid air in overheads shall be avoided. The HVAC systems shall be designed to accommodate all building operations and shall be designed to maintain desired pressure relationships between spaces. Energy conservation shall be a primary concern in designing and controlling HVAC systems. Energy recovery systems should be considered if proven life cycle cost effective.

1.12.4.2 Laundry driers shall be vented directly to the exterior in accordance with dryer manufacturer's recommendations.

1.12.5 HVAC Controls

1.12.5.1 Controls shall be as simple as possible and applicable for system selected. Pneumatic controls are not allowed. Provide wall mounted, digital, electronic controls including adjustable programmable thermostats with COOL-OFF-HEAT system switch and AUTO-ON fan switch. Thermostats shall be provided by unit manufacturers electrical/electronic type.

1.12.6 System Testing

1.12.6.1 Test, balance and adjust systems and equipment to provide the specified operation. Provide system test, control sequence of operation test and an independent certified airflow test/adjustment/balance (TAB), include the coil data sheets. The TAB agency shall be certified by either the Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB). Submit three copies of the TAB report to the Contracting Officer for approval.

1.12.7 Commissioning

1.12.7.1 Commission all HVAC systems and equipment, including controls, and all systems requiring commissioning for LEED-NC Fundamental commissioning, in accordance with ASHRAE Guideline 1 and LEED-NC. The contractor shall hire the Commissioning Authority, certified as a Commissioning Authority by AABC or NEBB, as described in Guideline 1. The Contracting Officer's Representative will act as the Owner's representative in performance of duties spelled out under OWNER in Annex A2 of ASHRAE Guideline 1.

1.12.8 Operations and Maintenance Manual

1.12.8.1 Provide Operations and Maintenance Manual for the entire HVAC system and equipment.

1.12.9 Training

1.12.9.1 Provide instruction of Coast Guard personnel for all HVAC systems and equipment. Duration of training shall be a minimum of one hour for each system or discipline. Video taped training shall be provided to the users for operation and maintenance of all systems.

1.13 ELECTRICAL

Electrical system design and construction shall comply with NFPA 70 and IEEE C2, as applicable. Install materials and equipment in compliance with applicable codes and manufacturers' printed instructions. In each code and standard referenced, consider advisory provisions to be mandatory as though the word "shall" had been substituted for "should" everywhere "should" appears.

1.13.1 Exterior Electrical Systems

1.13.1.1 Electrical Service:

1.13.1.1.1 Existing Conditions: Reliant Energy Company provides 12.47KV, three phase electrical service to SFO Galveston to a 200 ampere fused primary switch located near the main gate. Electrical power is distributed on the site from a Coast Guard owned 15 KV service distribution switch which serves three radial 12.47 KV feeders installed in underground conduit and manhole system with low voltage (<600 volts) services to facilities provided from step down transformers at various locations. One of the 12.47 KV radial feeders runs in the vicinity of the new project site with the nearest manhole to the project site located near the northeast corner of the existing Exchange Building. A three phase 12.47 KV feeder runs from the manhole to a 75 KVA. 120/208 volt transformer adjacent to the former EM club location, which is noted as a concrete slab on the RFP drawings. The transformer provides a single phase 120/208 volt service to a panelboard at the existing firing range and to a light pole in the existing baseball field. The transformer will be used to provide power to a new temporary Fitness/training room facility which will be installed under a separate project at the concrete slab location. A single phase 12.47 KV feeder runs from the manhole to a transformer located off the Coast Guard property at the Navy site that is currently not serving any existing loads.

1.13.1.1.2 General Scope of Exterior Electrical Work:

1.13.1.1.2.1 Provide 208/120 volt, three phase power to the new Armory Training Building from the existing electrical distribution system by extending the existing 12.47 KV distribution system to a new transformer at the new Armory Training Building site.

1.13.1.1.2.1.1 If connection to the 12.47 KV distribution system is made at the existing manhole near the Exchange building, the existing single phase 12.47 KV feeder to the transformer at the Navy site may be disconnected and abandoned if necessary for making new cable splices to the existing 12.47 KV conductors.

1.13.1.1.2.2 Disconnect power from the existing baseball field light pole as required for demolition of the pole. Maintain electrical service to the existing firing range panelboard. Existing conduit and direct buried conductors not reused shall be cut off a minimum of 12" below grade and abandoned in place.

1.13.1.2 Wiring methods:

Underground conductors shall be installed in conduit: use either rigid galvanized steel, or PVC schedule 40 except PVC type EB may be used where encased in concrete. Conduit run under roadways shall be either rigid galvanized steel or PVC type EB encased in steel reinforced concrete ductbanks. High voltage conductors shall be run in a concrete encased ductbank with 4" conduits and a minimum 3" concrete encasement around all conduits. Provide one spare conduit with pull wire in all electrical ductbanks. Provide a minimum 24 inch cover to the top of the concrete ductbank. Provide new manhole(s) as required for high voltage conductor ductbanks. Provide handholes as required for new low voltage conductors or other systems cabling (e.g. telecommunications, public address, etc). Manholes and handholes are required for changes in direction of duct runs where the run would have the equivalent of more than two 90 degree bends and for more than 400 foot lengths of straight duct runs.

1.13.1.3 High voltage (>600 volt) conductors shall be 15 KV rated, copper type EPR, pvc-jacketed, MV-105 with 133% insulation level.

1.13.1.4 Provide an electronic watt-hour demand meter for Government monitoring of the new building electrical energy usage. The meter shall have open protocol RS-232/RS485 communication capability.

1.13.1.5 High Voltage (>600 volt primary) Transformer:

High voltage transformers shall be 12.47 KV primary voltage, less flammable liquid insulated, two winding, 60 hertz, 65 degree C rise, self cooled, 95 KV BIL rated. The high voltage compartment shall contain the incoming line, insulated high voltage load break connectors, bushing well inserts, load break switch handle(s), access to oil immersed fuses, dead-front surge arresters, tap changer handle, connector parking stands and ground pad.

1.13.1.5.1 Insulated high voltage load break connectors shall be rated 15 KV, 95 KV BIL, 200 ampere rms continuous current and have a steel reinforced hook-stick eye, grounding eye and test point.

1.13.1.5.2 Load break switch shall be radial feed oil immersed type rated 15 KV, 95 KV BIL, [200] ampere rms continuous current.

1.13.1.5.3 Current limiting fuses shall be oil immersed type, connected ahead of load break switch with 50,000 rms amperes symmetrical interrupting rating.

1.13.1.5.4 Surge arresters shall be fully shielded, dead-front, metal-oxide-varistor, elbow type with resistance rated gap, suitable for plugging into inserts.

1.13.1.5.5 The transformer pad elevation shall be at the same elevation as the finished floor elevation of the Armory Training Building. The transformer may be mounted on a minimum 8 inch thick steel reinforced concrete pad or on an elevated platform. Pads shall be sloped to drain, shall be sized to extend a minimum 8 inches beyond the transformer enclosure and shall have ½" chamfers at the edges.

1.13.1.6 Cable terminations and splices shall be made by qualified personnel: submit medium voltage cable terminator certification of competency and experience to the Contracting Officer for approval 30 days before terminations or splices are made in medium voltage cables. Experience during the immediate past 3 years shall include performance in terminating and splicing cables of the same type and classification as required.

1.13.1.7 Manholes shall be pre-cast or cast-in-place concrete with minimum six inch thick walls, top and bottom. Manholes shall have drain sumps approximately 12 inches in diameter and 4 inches deep. Manhole size shall be 6' x 6' x 6' unless indicated otherwise. Provide cable racks, pulling in irons and other accessories as required for cable installation.

1.13.1.8 Handholes and covers shall be constructed of polymer concrete, reinforced with heavy weave fiberglass.

1.13.2 Interior Electrical Systems:

Provide service entrance equipment and a system of panelboards, feeders and branch circuits as required to provide electrical power to equipment and outlets. Provide a surge protective device (SPD) to protect service entrance equipment. Provide a service entrance main circuit breaker. Provide heavy-duty type disconnect switches where switches are rated higher than 240 volts and for double throw switches. Short circuit current rating and bracing of equipment shall exceed available fault current by at least 10 percent. Short circuit current rating and bracing of equipment shall be selected based on calculated fault current values; use the infinite bus method if actual system values are not available. Receptacles and other system outlets shall be mounted a minimum of 20 " aff to the bottom of the outlet box.

1.13.2.3 Panelboards:

Provide bolt-on circuit breaker type panelboards with copper busses. Provide 10% spare circuit breakers and 10% space only for all panelboards. Do not use series rated circuit breakers. Do not use fuses unless required for short circuit coordination. Provide a minimum of one spare conduit to accessible areas from flush mounted panelboards. Directory cards shall identify load locations by room number or name. The main service panelboard should be located in the mechanical/electrical room, as practical.

1.13.2.4. Wiring methods:

All wiring shall be installed in conduit, minimum size ½ inch except: 1) where larger sizes are recommended by equipment manufacturers or required for code compliance; 2) cable tray may be used to carry telecommunications and other low voltage cable; and 3) Type MC cable may be used for branch circuit wiring run above suspended ceilings. Wiring shall be run concealed or above suspended ceilings in finished spaces and may be run exposed elsewhere. Provide a green color insulated equipment grounding conductor in all raceway with ungrounded conductors. Provide a separate neutral conductor with each branch circuit in offices and computer workstation areas. Wiring to outlets and other wall mounted equipment shall be run down from the overhead rather than up from the floor.

1.13.2.4.1 Conduit shall be: rigid steel (zinc-coated); intermediate metal conduit, zinc-coated steel only; electrical metallic tubing (EMT); flexible metal conduit; liquid-tight flexible steel conduit; and other types as specified for special power systems.

a. Cable tray may be aluminum ladder rack or welded steel wire basket type.

b. Fittings: Cadmium or zinc coated for metal conduit, EMT and flexible metal conduit; threaded type (split couplings are unacceptable) for rigid metal conduit and IMC; and compression type for EMT.

c. Conductors: All conductors shall be copper, manufactured within 12 months of date of delivery. Power and lighting conductors shall be 600 volt, type THWN/THHN or XHHW.

d. Provide color coding of ungrounded conductors for 208/120 volt thee phase systems as follows:

Phase A – black
Phase B – red
Phase C – blue

1.13.2.5 Receptacles and Equipment Connections:
Provide electrical receptacle outlets and hard-wired equipment connections as: required for specific equipment items; required by the National Electrical Code (NFPA 70); as a minimum in accordance with the following general criteria; and as otherwise specified. Receptacle outlets shall be specification grade, heavy duty, grounding type, wall mounted 18" above the finished floor unless specified otherwise. Receptacle outlets shall be NEMA 20R duplex type connected to 20 ampere, 120 volt circuits unless otherwise specified;

no more than six duplex or three quad receptacles shall be connected on a single branch circuit. Provide special purpose receptacle outlets for cord and plug connected equipment with configurations to match equipment plug requirements. Provide GFCI protected outlets per NFPA 70 and as specified.

1.13.2.5.1 General Criteria

a. Offices: Provide a quadruplex outlet at each workstation location shown on the RFP drawings. Provide duplex outlets at non-workstation locations so that there is one outlet for every 10 feet of wall space measured at the floor line with a minimum of one outlet on the three non-entry walls in private offices.

b. Training Room 101: Provide an outlet at each location shown on the RFP drawings for television monitors and overhead projectors. Provide general purpose wall mounted duplex outlets with a minimum of one outlet on each wall.

c. JPC Training Control room: Provide an outlet at the location shown on the RFP drawings for the overhead projector location. Provide a minimum of one duplex outlet on each wall.

d. Toilet Rooms/Areas: Provide a minimum of one GFCI protected outlet per space; locate outlets at sink locations, 6 inches above the countertop or top of the sink.

e. Shop spaces: All duplex outlets in shop spaces shall be either GFCI type or GFCI protected.

1) At work bench locations: provide multi-outlet assemblies or general purpose duplex outlets with a minimum of four duplex outlets per work bench, mounted approximately six inches above the work bench surface where work benches are located along walls; provide an overhead 20 ampere, 120 volt duplex receptacle cable reel with minimum 20 foot cable length and spring driven auto rewind above workbenches which are located in open areas away from walls.

2) Provide general purpose duplex outlets on walls in other than workbench locations with a minimum of one outlet per 20 feet of wall length, mounted 48” aff.

3) Provide dedicated receptacle for the ultrasonic cleaner.

f. Telecommunications room: Provide a dedicated outlet on the backboard for telephone equipment use. Provide one duplex outlet on either the north or south wall for general purpose use.

g. Mezzanine: Provide at least two general purpose duplex outlets. Outlets provided per NFPA 70 requirements for HVAC equipment maintenance may be counted as a required outlet.

h. Storage Rooms: Provide one outlet for every 50 feet of wall length, with a minimum of one outlet per space, located near the entry door .

i. Other spaces: Provide one outlet for every 50 feet of wall length, with minimum of one outlet per space.

j. Exterior: Provide a dedicated receptacle on the front porch area (which will be utilized for charging an electric cart.) Provide an outlet at the rear platform area. Provide additional outlets as required by NFPA 70 for HVAC equipment maintenance. All exterior outlets shall be GFCI type or GFCI protected.

k. Provide a duplex NEMA 5-20R receptacle outlet connected to a dedicated 20 ampere circuit for the following equipment:
Copiers
Water Coolers
Clothes Washers

l. Provide power connections for control panels as required for special systems such as the fire detection and alarm system, intrusion detection, and other system control panels requiring electrical power.

m. Provide and/or locate required duplex outlets so that there is a duplex outlet between 12 and 18 inches from each quad telecommunications outlet.

n. Provide special purpose receptacle outlets and/or connections for GFCI (Government Furnished Contractor Installed) and GFGI (Government Furnished, Government Installed) equipment items as specified in Section 1.7.16. Coordinate with the Contracting Officer for determining the exact requirements for this equipment. The Contractor shall provide receptacle outlets and/or power connections for each piece of equipment. Locations of each piece of equipment will be verified during design.

h. Laundry room: Provide dedicated outlet(s) as required for the combination washer and dryer; receptacle configuration and branch circuit characteristics shall match equipment requirements. Provide one GFI protected general purpose duplex outlet adjacent to the sink location.

1.13.2.6 Lighting:

1.13.2.6.1 Interior Lighting:
General Requirements: Interior illumination shall be provided by fluorescent and LED type lamps; incandescent lamps shall not be utilized unless they are only type of lamp available for a specific lighting application. Minimize the number of different lamp types utilized. Provide dimming for training rooms. Use the following design target maintained illumination levels for the spaces listed; use IESNA recommendations for other spaces unless specified otherwise; calculations shall be based on the IESNA thirty six month LDD factor for the category of luminaire. Any reduction of illumination level below 80% of target illumination level for a space in order to meet ASHRAE 90.1 lighting power density requirements or for obtaining LEED points for optimizing energy performance shall be approved by the Contracting Officer.

Space	Target Illumination Level
Storage Rooms	20 FC
Mechanical Mezzanine	20 FC
Laundry	30 FC

Rest Rooms (toilets)]	30 FC
Training and Control Rooms	50 FC (dimmable)
Shop Spaces	50 FC
Telecomm Equip rooms	50 FC
Offices	50 FC

1.13.2.6.1.1 Fluorescent fixtures shall have electronic ballasts. Maximize use of fixtures with T-8 lamps. Industrial and strip fixtures shall have full solid steel end plates and shall have guards where subject to damage by operations in the space. Fixtures in office and computer work areas may be indirect, indirect/direct or parabolic type to reduce glare; fixtures with minimum .156 inch thick prismatic acrylic lenses may be used in other finished areas.

1.13.2.6.1.2 Exit lights shall be LED type with emergency battery back-up.

1.13.2.6.1.3 Provide emergency battery lighting to illuminate paths of egress as required by NFPA 101, and in toilet rooms, the armory, the range workshop, and JPC training room, and any other areas where loss of light could present immediate personnel danger upon loss of illumination. Emergency battery lighting may be provided either by separate battery pack type fixtures or by use of battery packs in standard lighting fixtures. Battery pack type fixtures shall have maintenance free nickel cadmium or lead acid batteries.

1.13.2.6.1.4 Provide occupancy sensors in offices, toilet rooms, storage areas and other spaces as appropriate. Do not provide occupancy sensors in equipment rooms or areas and other spaces where loss of light would endanger occupant safety or interfere with operations in the space.

1.13.2.6.2 Exterior/Site Lighting

1.13.2.6.2.1 Provide exterior lighting for task illumination, physical security and personnel safety. Use IESNA recommendations for footcandle levels except where higher illumination levels are required for physical security or special operations.

1.13.2.6.2.2 Provide exterior building mounted wall pack lighting for illumination of all building entries and for adjacent approaches and sidewalks. Building mounted lighting shall be photocell controlled.

1.13.2.7 Lightning Protection System:
Provide a lightning protection system for the new Armory Training Building. The system shall be master labeled by a testing laboratory or by a testing laboratory or certified installer. Provide a perimeter ground ring around the building with #1/0 bare stranded copper cable and 10 foot x ¾ inch copper clad steel ground rods at 20-foot intervals. All connections to the ground ring shall be exothermically welded.

1.13.2.8 Intrusion Detection System:
Provide an intrusion detection system (IDS) for coverage of the armory. Provide a control panel, balanced magnetic switch on the entry door, and a volumetric detector within the armory. Locate the IDS control panel within the armory area. Provide a remote alarm bell on the exterior of the building. The control panel shall have automatic dialing capability for a minimum of two programmed telephone numbers; provide connection to the telecommunications system as required for automatic dialing. The IDS system have a battery back up system with battery capacity to provide power for a minimum of 60 hours in standby mode and 5 minutes in alarm mode; system shall be compatible for operation with 12vdc batteries.

1.13.2.9 Special system wiring requirements

1.13.2.9.1 Training Room (101): Provide wiring systems as required for the Audio Visual and Display Specialties specified in paragraph 1.7.11.9. Cable pathways and wiring shall be concealed in the wall and above the suspended ceiling as practicable.

1.13.2.9.2 JPC Training Room (108): Provide a flush mounted pull box near the workstation location in the JPC control room (109) with a 2 inch conduit with pull wire from the box to above the suspended ceiling and terminated near the overhead projector location.

1.13.3 Provide tests and inspection of electrical systems. Tests shall include: insulation resistance of wiring; ground resistance of grounding systems; intrusion detection system operation, and operational tests of all electrical equipment. Tests shall include those recommended by the equipment manufacturer and those required by applicable codes and NEMA and ANSI standards. Equipment shall not be placed in service until testing has been completed and test results have been evaluated.

1.13.4 Operations and Maintenance Manual

Provide an Operations and Maintenance Manual for electrical equipment in accordance with Specification 01781.

1.13.5 Training

Provide training for operation and maintenance of each system, including the intrusion detection system, in accordance with Specification 01781; provide a minimum of one hour of training.

1.14 TELECOMMUNICATIONS

1.14.1 General Scope of Work:

1.14.1.1 Provide infrastructure and cabling for the Armory Training Building telecommunications system.

1.14.1.2 Provide exterior conduit, pathways and manholes, handholes and cabling as required for telecommunications service to the new Armory Training Building.

1.14.1.3 Provide and connect telecommunications equipment.

1.14.2 General requirements:

1.14.2.1 Contractor/subcontractor designing the horizontal and campus telecommunications cabling infrastructure shall be a certified BICSI RCDD or hold an industry equivalent certification.

1.14.2.2 Contractor/subcontractor performing horizontal and campus telecommunications cabling installation shall be a certified BICSI Level 2 Installer or hold an industry equivalent certification or higher.

1.14.2.3 Contractor/subcontractor performing horizontal and campus telecommunications cabling testing shall be a certified BICSI Technician or hold an industry equivalent certification or higher.

1.14.2.4 All horizontal cable shall be enhanced CAT5 UTP and shall conform to EIA/TIA 568. All workstation outlets and terminations in closets and equipment rooms shall be terminated T568A by the contractor in accordance with TIA/EIA 568.

1.14.2.5 Connections in the telecommunications spaces and cabinets shall be terminated T568A by the contractor in accordance with TIA/EIA 568 in rack mounted CAT 5e patch panels using 110-style back planes.

1.14.2.6 All copper telecommunications cabling and fiber optic cabling shall be installed and terminated in accordance with TIA/EIA 568.

1.14.2.7 All cabling and equipment shall be installed to conform to the requirements of TIA/EIA 569, J-STD-607-A, the National Electric Safety Code (NESC) and the NFPA 70 (NEC).

1.14.2.8 Equipment racks and cabinets shall meet the requirements of ANSI/EIA 310D. Racks shall be of the standard 19-inch width, seven feet tall with power strip unless otherwise specified.

1.14.2.9. All telecommunication spaces (entrance facility, equipment rooms, telecommunications closets and pathways) shall be built to conform to the requirements of TIA/EIA 569.

1.14.2.10 The administrative and documentation requirements of the telecommunication system in the new building shall be accomplished in accordance with TIA/EIA 606 by the contractor and provided to the Coast Guard.

1.14.2.11 All single mode fiber optic cables shall conform to the requirements of TIA/EIA 526-7. All multi mode fiber optic cables shall conform to the requirements of TIA/EIA 526-14. All fiber optic cables shall meet the requirements of Article 770 of the NEC (NFPA 70) for its application.

1.14.2.12 All outside plant cabling, spaces and pathways shall conform to the requirements of TIA/EIA 758.

1.14.2.13 Contractor shall provide CAT 5e patch panels, fiber optic patch panels, racks, cabinets and all other equipment and cabling required unless otherwise specified.

1.14.3 Additional requirements

1.14.3.1 All workstation locations shall be quad outlets (two voice, two data) instead of duplex unless otherwise specified.

1.14.3.2 All new permanent outside plant cabling shall be run underground in conduit. Outside plant cabling for temporary facilities may be above ground. All aerial copper cable for temporary facilities shall be filled self-supporting cable.

1.14.3.3 All outside plant conduit shall be a minimum of four-inch diameter. All conduits shall be encased in concrete of minimum 2500 lb/in^2 compressive strength where vehicular traffic (i.e. automotive, railway) is above the pathway.

1.14.3.4. Unless otherwise specified, all intra-building (between rooms/inside) fiber optic cables shall be multimode, 62.5/125 µm core/cladding diameter, tight-buffered, with the number of strands specified and it shall not exceed 700 ft in length.

1.14.3.5 Unless otherwise specified, all inter-building (outside plant/between buildings) fiber optic cables shall be multimode, 50/125 µm core/cladding diameter, loose-buffered, gel-filled, with the number of strands specified and it shall not exceed 1800 ft in length.

1.14.3.6 Unless otherwise specified, all inter-building fiber optic cables exceeding 1800 ft shall be single mode, 8.5/125 µm core/cladding diameter, loose-buffered, gel-filled, with the number of strands specified. Ensure that the end equipment specifies single mode fiber.

1.14.3.7 Unless otherwise specified, all fiber optic cable shall be type OFNR except for applications where the NEC requires type OFNP or type OFCP. Fiber optic cable shall be color coded in accordance with TIA-598-C.

1.14.3.8 Appropriate fan-out kits must be used in the termination of any loose tube optical fiber incorporated in the design. Check with the Coast Guard technical representative if in doubt of the applicability of fan-out kits.

1.14.3.9 Multimode, 62.5/125 Fiber Optic Cabling shall be terminated using ST style connectors. Single Mode 8.5/125 Fiber Optic Cabling shall be terminated using ST style connectors. Multimode, 50/125 Fiber Optic Cabling shall be terminated using SC style connectors.

1.14. 3.10 Unless otherwise specified, all outside plant copper cable shall be CAT 3, number of pairs specified, 24 AWG, PE89 copper cable.

1.14.3.11 Contractor shall provide maps/drawings of all new cable layout areas.

1.14.4 Existing conditions

1.14.4.1 The point of demarcation is located in the Administration Building Bldg (3500) at the same location as the SFO Galveston telephone switch. The CGDN+ server for SFO Galveston is also located in the Administration Building.

1.14.4.2 The telecommunications room located in the Administration building is the Main Distribution Frame (MDF) room for SFO Galveston.

1.14.4.3 The first floor telecommunications room (117) in the Multi-Mission Building will become the new MDP (Main Distribution Point) for SFO Galveston following completion of the Multi-mission Building construction project, which is presently under construction under a separate contract.

1.14.4.4 A fiber optic cable run exists from the VTS Communications Building 3950 to the telephone terminal building outside of the main gate to the base. The pathway of this cable goes through the proposed location of the new Armory-Training building and it belongs to the telephone company.

1.14.5 Telecommunications Infrastructure for the building. Build telecommunications infrastructure including installing cabling, cabinets, racks, patch panels, conduit paths and miscellaneous support equipment in accordance with the requirements herein.

1.14.5.1 The telecommunications room will be the MDP for telecommunications infrastructure within the building.

1.14.5.2 Provide drops from the telecommunications room for quad outlets (two voice/two data) as shown on the RFP drawings.

1.14.6 Provide underground conduit pathway from the telecommunications room of the IDS Card trailer to the telecommunications room in the new Armory Training Building. Conduits shall be-in accordance with specification 01158, paragraph 1.13.1.2. Provide either separate minimum size 2 inch conduits for copper and fiber optic cables or a single 4 inch conduit with fiber optic cable installed in innerduct. Provide additional manhole/handholes as required.

1.14.7 Provide, terminate and test the following cables from the telecommunications room of the IDS Card trailer to the telecommunications room in the new Armory Training Building, utilizing new and exiting conduit pathways.

a. 25-pair category 3 telephone cable. Terminate cable on 66-style blocks.

b. 12-strand 62.5/125 um multimode fiber optic cable terminated in patch panels.

1.14.8 Coordinate with the telephone company to determine if the existing telephone company owned fiber optic cable, identified in paragraph 1.14.4.4, is in the way of new construction; and if so, co-ordinate with the telephone company for replacement of the fiber optic cable prior the start of construction of the new Armory-Training building and before removal of the existing fiber optic cable.

Once the cutover is complete, then removal of the old cable and construction at the site of the new building may begin.

1.14.9 Test all cabling installed. Contractor shall submit a test plan to the Contracting Officer or Contracting Officer's representative a minimum of ten calendar days prior to any testing. The submitted test plan must be approved by the Contracting Officer prior to any testing. The Contracting Officer's Representative and/or other designated Coast Guard personnel (including ESD Galveston) shall witness all testing and validate results. The Contractor shall correct all testing and discrepancies and re-test corrected items. Contractor shall provide test documentation to the Contracting Officer within 30 calendar days after completion of all testing; documentation shall be in both electronic and hard copy format.

- END OF SECTION -

SECTION 01160

CONSTRUCTION DESIGN DOCUMENTS

PART 1 GENERAL

1.1 GENERAL DOCUMENTATION REQUIREMENTS

The Contractor shall provide design documents for constructing the Armory Training Building to representatives of the Contracting Officer for review and validation of conformance to specified project criteria. The design documents shall represent a project design that conforms to the design/build criteria specified in Section 01158, "Design/Build Criteria." Construction Design Documents shall be provided as specified herein.

1.2 DESIGN OWNERSHIP

All design documentation, including all supporting data, when submitted to the Government, shall become the property of the Government, except as specified otherwise in the contract.

1.3 QUALIFICATIONS OF DESIGNER

All of the work specified in this section and Section 01158, "Design/Build Criteria" shall be designed by and prepared under the direct supervision of the registered A/E design team submitted with the contractor's proposal.

1.4 SUBMITTALS

Construction design documents shall be submitted for approval as specified and shall be accompanied by pertinent calculations and documentation as specified herein.

1.5 CONSTRUCTION DESIGN DRAWINGS

Submit Contractor produced construction design documents for all work required by this Request For Proposals (RFP). Construction design documents shall be in sufficient detail to show compliance with the RFP contract requirements.

Utilization of the Government's RFP drawings as part of the Contractor produced construction design documents constitutes acceptance of the design responsibility by the Contractor.

1.5.1 Drawing and Computer Aided Drafting and Design Standards

Except as specified otherwise in this specification section, the construction design drawings shall meet the applicable drawing standards contained in the Tri-Services CAD Standard Release 1.8, and National CAD Standard (NCS) Version 1, with some minor modifications to comply with the FDCCLANT Standards. The FDCCLANT modifications consist of: colors and pen weights or "plot styles" for plotting, drawing and sheet numbers, CAD file names, and symbols.

All CADD drawings shall use the FDCC LANT titleblock furnished to the Contractor by the Government. The design, configuration and attributes of this titleblock shall not be altered in any way. The Government uses a file management software program, "*Adept*", which extracts data from the attributes in each of the titleblock fields. If the attributes are changed, the data will not be extractable. The Contractor's electronic drawing files will be checked at each submission for compliance, and if they are not acceptable, the Contractor will be required to insert new titleblocks and edit the fields appropriately.

The CAD program to be used to generate the design drawings shall be compatible with and provided in AutoCad Release 2005 or earlier (.dwg format). Submit all CAD files for each design submittal on CD ROM disks. Each CAD drawing shall be a separate “dwg” file; multiple sheets may not be combined into one file.

A CD (compact disk) containing electronic files of the RFP drawings, RFP specifications, Reference Drawings, and Subsurface Data as listed in Section 00102 List of Documents, Exhibits and Attachments will be provided to the Contractor for use in preparing the Contractor-produced construction design documents.

1.5.2 Facilities Design and Construction Center Drawing Numbers

The Contractor-produced construction design drawings shall be numbered consecutively with FDCCLANT drawing numbers. Drawing numbers shall be assigned by FDCCLANT, and issued to the Contractor by FDCCLANT’s Design Project Manager.

1.5.3 Seal on Documents

All Final Contractor-produced construction design drawings and calculations shall be signed, dated, and shall bear the seal of a registered Architect and or Engineer, and a Registered Communications Distribution Designer (RCDD) for Telecommunications Design Documents. The seal shall be the seal of the Designer of Record for that drawing.

1.5.4 As-Built Construction Design Drawings

The Contractor's Designer(s) of Record shall provide as-built CAD drawings. The modified as-built CADD files shall be forwarded, along with the marked-up as-built (project record) drawings to the Contracting Officer at the completion of the contract. As-Built CAD files shall have all XREFs “bound” (inserted), so that there is only one electronic file required per sheet.

1.5.5 State And Local Government Consultation, Review And Inspection:

The Contractor’s Designer is required to coordinate its efforts with appropriate state and local officials and designated Coast Guard officials, which include the Facility Engineer at USCG Sector Field Office, Galveston at Galveston, TX, as well as FDCCLANT’s Commanding Officer, or his authorized representative. The Contractor’s Designer is an independent contractor and is not an agent of the Government. Accordingly, during consultations, the Contractor’s Designer must inform state and local officials of its status and cannot bind the Coast Guard to any course of action. The Contractor’s Designer shall, in preparing the design for the facility, consult with appropriate state and local governmental officials from the station's locale.

Upon a request by state or local officials, and on approval by the Contracting Officer, submit the design in a timely manner to such officials for review and comment. Submittal of the design for state and/or local code and zoning review for permitting purposes however, is at the Coast Guard's direction and does not constitute recognition of, or an obligation to, comply with state or local administrative procedural requirements including but not limited to obtaining building permits. Accordingly, the Contractor's Designer will not, without the Contracting Officer's approval, appear at formal local or state public meetings or hearings or make application for building permits or zoning variances. The Contractor's Designer will, however, notify the Contracting Officer of any such meetings or hearings where the proposed project is to be considered and may be requested to attend such meetings or hearings with the Contracting Officer or other Government officials.

1.6 CONSTRUCTION DESIGN TECHNICAL SPECIFICATIONS

Contractor-produced construction design technical specifications may be incorporated into the construction drawings, in lieu of producing a separate bound specification manual. Specifications

included on the construction drawings shall identify materials, and methods or standards of installation and execution.

1.6.1 Specifications Furnished with this RFP

Even though a separate bound specification is not required, the requirements of Section 01158, “Design/Build Criteria”, establish a minimum level of material/product quality and execution quality expected by the Government. Where product manufacturers and brand names are indicated in the RFP documents, manufacturers offering products that do not substantially differ from those specified and which comply with the specified requirements may be provided.

1.6.2 Submittal Reduction Procedures

Construction product and equipment submittals required by the Contractor’s construction design documents, such as manufacturer's product data, may be waived for this project if the Contractor provides proprietary materials, methods, or systems as specified below.

1.6.2.1 Contractor Specified Proprietary Materials or Methods

Contractor construction design documents may list manufacturer's names and model numbers for products. Each product description shall include manufacturer, product name, model number, options, and alterations to the standard manufacturer's product.

1.7 DESIGN SCHEDULE

See Section 01320 for schedule requirements. The Contractor is not prohibited from “fast tracking” (e.g. sitework and civil work phase, geotechnical work phase, foundation work phase, structural work phase, building enclosure work phase, remaining work phase). If the Contractor elects to fast track the design and construction, it shall be reflected in the project schedule.

1.8 DEVIATIONS FROM RFP REQUIREMENTS

Deviations from RFP requirements shall not appear on Contractor-produced Construction Design Document submittals unless the deviation has been previously submitted to, reviewed by, and approved by the Contracting Officer. Deviations shall be clearly presented so that these differences are easily identifiable during the review process.

The review of design submittals does not constitute approval or acceptance of any deviations from the RFP, unless such deviations have been specifically pointed out in writing by the Contractor and specifically approved in writing by the Contracting Officer.

1.9 VARIATIONS

A variation is considered to occur when there is a change to a contractor’s submitted design and/or construction method that does not affect compliance with the terms of the contract. Variations require endorsement from the A/E of record prior to implementation. Variations do not require Contracting Officer’s approval but notification of the planned change is required at least two working days in advance.

1.10 SITE VISIT INSPECTIONS

Provide site visits during construction. Representatives with the Contractor's Designers of Record shall periodically visit the site during construction at the completion of major structural work, as well as at the completion of electrical, plumbing and mechanical rough-ins. They shall also be present during the final inspection. Trip reports shall be prepared and submitted to the Government. Trip reports

shall note the overall quality of construction, percent complete, and whether or not the construction is in conformance with the approved construction documents.

A minimum of three site inspections for each designer of record architect, structural, mechanical and electrical shall be provided over the period of construction. Inspections shall be included as tasks in the Contractor's schedule. The Contractor shall provide seven days notice to the Contracting Officer prior to the inspections.

PART 2 PRODUCTS

2.1 DESIGN SUBMITTAL PROCESS

2.1.1 Fast Track/Traditional Design Option

Contractor has the option to either fast track construction or start construction after the design is completed. In either case the contractor is proceeding at his own risk until the Government has completed their review and accepted the design documents as meeting project requirements. Any non-conforming work completed will be removed and replaced at no further cost to the Government. Rework of non-conforming work will not serve as the basis for a time extension. The design package (or packages for fast tracking) shall consist of the following submittals:

a. 65% Construction Design Submittal

b. Final Construction Design Submittal

c. Corrected Final Construction Design Submittal

2.1.2 Design Reviews by FDCCLANT and SFO Galveston

Submit copies of all submittals required by this specification section to:

Contracting Officer
Facilities Design and Construction Center – Atlantic
5505 Robin Hood Road Suite K
Norfolk, VA 23513-2431
ATTN: Cheryl Allen

Commanding Officer
U.S. Coast Guard
(SFO) Station Field Office Galveston
P.O. Box 1912
Galveston, TX 77553
ATTN: Tommy Mount

2.1.2.1 Duration of Reviews

The Contractor shall allow the number of consecutive calendar days specified below, as the time required by the Government to review each design submittal. The time for review begins upon receipt of the submittal at FDCCLANT and ends when submittal leaves FDCCLANT.

a. 65% Construction Design Submittal:	21 calendar days
b. Final Construction Design Submittal	14 calendar days
c. Corrected Final Construction Design Submittal	14 calendar days

2.1.2.2 Quantities of Design Documents

a. 65% Construction Design Submittal: Submit 8 (2) half-size (11”x17”) design drawing sets, (2) 1 copies of calculations, manufacturer's product catalog data, and supporting data; quantities in parenthesis are part of total quantities, but shall be sent directly to SFO Galveston (as noted above). Provide one CD with CAD “dwg” files and Adobe “pdf” files for each drawing and document submitted.

b. Final Construction Design Submittal: Submit 8(2) half-size (11”x17”) drawing sets and 2(1) copies of new calculations, manufacturer's product catalog data, and supporting data and revisions to documents previously submitted; quantities in parenthesis are part of total quantities, but shall be sent directly to SFO Galveston (as noted above). Return the review comments from the 65% Submittal with Designer of Record comment responses to the comments. Provide one CD with final CAD “dwg” files; Adobe “pdf” files for each drawing, new and revised document ; and Designer of Record comment responses in MS Word format (.doc).

c. Corrected Final Construction Design Submittal: Submit 4(1) full size drawing sets of sealed and signed original drawings, 10 (2) half-size (11”x17”) drawing sets reproduced from the full-size originals, and 3(1) copies of revisions to other documents previously submitted; quantities in parenthesis are part of total quantities, but shall be sent directly to SFO Galveston (as noted above). Return the review comments from the 100% Submittal with Designer of Record responses to the comments. Provide one CD with final CAD “dwg” files; Adobe “pdf” files for each drawing, new and revised document ; and Designer of Record comment responses in MS Word format (.doc).

2.1.3 Fully Assembled Design Submittal (fast tracking)

Fully Assembled Design Submittal: Original full-size reproducibles of all previously approved design drawings (and specifications if applicable), ten combined, assembled, and bound half-size copies of all “previously approved design “submittals, and 1 CD with electronic files (2005 autocad “dwg”, ms word “doc” and adobe “pdf” formats).

2.1.4 Revisions to Final Construction Design Drawings

Any variations to Corrected Final Construction Design documents must be brought to the attention of the Contracting Officer prior to implementing the variation. Deviations from the Corrected Final Construction Design drawings must be submitted for approval by the Contracting Officer prior to implementing the deviation. Deviations are considered revisions and must be annotated on the drawing, logged in the revision block and must clearly indicate the specific scope and location of the revision. Drawing revisions shall be accomplished either by revised drawings or revision sketches, and incorporated into as-built drawings.

2.1.5 LEED-NC Submittals

Contractor shall submit with the 65% design submittal, a list of the LEED-NC credits proposed to reach the target identified in the Contractor’s Proposal during solicitation. Submissions are to include all necessary justifications for attempting the specific LEED-NC points. EPAct-2005 and ASHRAE 90.1 are to be utilized as the baseline when estimating energy savings. See Section 01158 for additional LEED-NC requirements.

2.2 SITEWORK AND CIVIL WORK DESIGN SUBMITTAL

2.2.1 Site work and Civil Work Design Drawings accompanying the RFP

The site work and civil work design drawings accompanying this RFP present the baseline requirements to be used by the Contractor to develop the project design. The Contractor shall add to, supplement, and complete these RFP drawings to fully comply with the specified RFP site work and civil work design/build criteria. The design and design data presented on the RFP drawings shall not be changed unless the requirements of the paragraph "Variations From RFP Documents" are met.

The Contractor shall complete the site work and civil work design by revising the RFP drawings as specified below. If additional drawings are required, they shall be generated in compliance with the RFP. Obtain a survey of the site and any additional information that may be required for a complete design and construction project. Obtain any necessary digging permits prior to start of excavation. The Contractor shall obtain the services of an independent utility marking company. Scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground, pier deck or paved surface where existing underground utilities or utilities encased in pier structures are discovered. Verify the elevations of existing structures, piping, utilities, and any type of underground or encased obstruction not indicated to be specified or removed but indicated or discovered during scanning in locations to be traversed by piping, ducts, and other work to be conducted or installed. Adjust any existing structures to meet proposed grades.

2.2.2 Civil Construction Design Calculation Submittal

Provide design calculations at the 65% Construction Design submittal.

2.2.3 Civil Construction Design Documents

Construction Design Documents shall be in sufficient detail to show compliance with the RFP contract requirements.

2.3 GEOTECHNICAL WORK CONSTRUCTION DESIGN SUBMITTAL

2.3.1 Contractor's Geotechnical Report

Submit a written Geotechnical Report based upon subsurface investigation data and all field and laboratory testing accomplished by the Contractor's Geotechnical Consultant or provided by the Government with this RFP and all additional field and laboratory testing accomplished at the discretion of the Contractor's Geotechnical Engineer. A registered Professional Engineer regularly engaged in geotechnical engineering shall seal and sign the Geotechnical Report.

2.3.2 Geotechnical Site Data Drawings

Provide geotechnical site data drawings at the 65% Construction Design Submittal.

For borings performed by the Contractor, the boring logs including the hole number, date of drilling, make of drill, type of drilling, sampling depths, blow counts, driller's visual description of the soil, unified soil classifications, surface elevation at each boring referenced to boring referenced to the vertical datum utilized for the project, water table elevations 24 hours after completion of drilling, and locations of these borings shall be indicated on the drawings submitted with the Contractor’s design. Boring data shall not be scanned, but must be drawn in the CAD drawing.

2.4 STRUCTURAL

2.4.1 General:

2.4.1.1 General notes on the Structural Construction Design Drawings shall show, in addition to the requirements of the IBC, the following:

(1) Material strengths, such as f'_c for concrete, F_y, for steel, or F_b for timber.
(2) Codes and criteria used
(3) Pile data or allowable soil bearing capacity

2.4.1.2 On the first sheet of the Structural Construction Design Drawings, provide a statement (certification) that the design conforms to all applicable requirements of ASCE-7 and IBC including all seismic load effects required by ASCE 7.

2.4.2 Structural Construction Design Documents:

Documents shall be in sufficient detail to show compliance with the RFP contract requirements.

2.4.3 Structural Calculations: Provide at the 65% Construction Design Submittal.

2.5 ARCHITECTURAL

2.5.1 General

On the first sheet of the Architectural Construction Design Drawings, provide building code information (Building area, Use Group, Occupancies, Construction Type, Egress requirements, fire ratings, etc.)

2.5.2 Architectural Construction Design Documents:

Construction Design Documents shall be in sufficient detail to show compliance with the RFP contract requirements.

2.6 MECHANICAL DESIGN

2.6.1 General

Construction Design Documents shall be in sufficient detail to show compliance with the RFP contract requirements.

2.6.2 Mechanical Construction Design Documents:

a. Heating, Ventilating and Air Conditioning Plans:

Provide floor plan(s) showing functional layouts of mechanical features such as equipment location, ductwork, accessories and all associated sizes.

Provide complete schedules for all equipment. Provide legend, symbols and abbreviations for each item indicated on the drawings.

Location of room thermostats, ventilation air control, and timed setback override switches shall be shown on the drawings.

HVAC Testing Adjusting and Balancing: The Contractor's designer shall indicate on the drawings (in addition to the duct class, seal class, and leakage class) the leakage test pressure to be used to test ductwork, or duct sections. Refer to SMACNA HVACADLTM, Appendix B, "Sample Leakage Analysis" for guidance in determining leakage test pressures.

TAB's testing personnel shall be from an independent, certified NEBB or AABC authorized, testing firm and test report shall be in the form of one of these organization's samples.

Provide Building Life Cycle Cost (BLCC) for 25 year life expectancy. Analysis shall include first costs, annual utility cost, annual maintenance costs. Costs shall not include salvage costs. BLCC efforts shall be provided for all system considerations for LEED certification efforts and provided NLT than the 65% submittal efforts.

Mechanical Calculations:

a. Provide a load analysis as part of the 65% Construction Design submittal and revised calculations as part of the Final Construction Design submittal utilizing a commercially available HVAC program, such as Carrier, Trane, or Elite. The calculations shall include the flow and friction loss calculations for the various medium (duct and pipe losses.) Ensure that all corrected data is provided at the final acceptance submittal.

b. Plumbing Plans:

Provide floor plan(s) showing fixtures, equipment locations, piping runs, accessories and all associated sizes. Potable water and sanitary piping shall be shown on separate floor plans. Provide elevations and details where necessary to provide clarity for construction. Include the following:

(1) Legend and symbols for each item indicated on the drawings.

(2) Location of fixtures, associated equipment, and piping.

(3) Show locations of all access panels required to service, replace or operate concealed plumbing fixtures (isolation valves, water hammer arrestors, shower control valves, etc.

(4) Provide one-line isometric riser diagrams of major piping systems.

Plumbing Calculations: Provide analysis as part of the 65% Construction Design submittal and revised calculations as part of the Final Construction Design submittal.

c. Fire Protection Plans:

Provide detail-working drawing of system layout in accordance with NFPA 13, "Working Drawings (Plans)".

Fire Protection Calculations: Provide analysis as part of the 65% Construction Design submittal and revised calculations as part of the Final Construction Design submittal, to substantiate compliance with hydraulic design requirements and NFPA code requirements. These calculations shall be generated from a commercially available computer program dedicated to providing hydraulic calculations for sprinkler systems, and shall reflect signed approval by the Fire Protection engineer, or a NICET III or IV certified technician.

2.7 ELECTRICAL DESIGN

2.7.1 General

Construction design documents shall be in sufficient detail to show compliance with the RFP contract requirements.

2.7.2 Electrical Construction Design Documents:

a. Legend and Symbols

Provide a legend showing symbols for each item indicated on the drawings, and a listing of all abbreviations used on drawings with their meanings.

b. Floor Plans

Provide floor plan drawings showing locations of electrical equipment and circuits to which items are connected. Provide separate floor plan(s) for lighting and power. Telecommunications system shall be shown on separate plans from electrical systems plans.

c. Riser Diagrams

Power One-Line/Riser Diagrams: Provide a power and/or one-line diagram showing the service feeder, distribution transformer, secondary feeder, main distribution panel (MDP), and large loads and subpanels served from the MDP with associated wire and conduit quantities and sizes shown on the diagram. Show available fault current at all busses and characteristics of all protective devices.

d. Schedules

(1) Panelboard Schedules

(2) Lighting Fixture Schedule. Lighting fixture schedule may include fixture manufacturer's model numbers.

e. Site Plan

Provide a site plan drawing showing existing and new conditions including locations of new handholes, ductbanks, conduit and direct buried conductors. Electrical and telecommunications site work may be shown on a common site plan drawing.

2.7.3 Electrical Design Calculations

Submit design calculations for the following requirements:

(1) Short Circuit Current Analysis: Provide calculations for the electrical distribution system based on the one line/riser diagram.

(2) Lighting: Provide interior lighting calculations as part of the 65% Construction Design submittal and revised calculations as part of the Final Construction Design submittal, keyed to the lighting floor plan and the lighting fixture schedule. Provide catalog cut sheets of proposed manufacturer's lighting fixtures where review of fixtures for compliance with RFP requirements is requested.

(3) Load Analysis: Indicate connected load and demand load using appropriate diversity and demand factors. Provide load calculations for panelboards and calculations for associated feeders (conduit and conductor sizes and quantities).

2.8 TELECOMMUNICATION DESIGN

2.8.1 General

Construction Design Documents shall be in sufficient detail to show compliance with the RFP contract requirements. Telecommunications interior design should be shown on separate drawings from the electrical systems drawings.

2.8.2 Telecommunications Construction Design Documents

a. Legend and Symbols

Provide a legend showing symbols for each item indicated on the drawings, and a listing of all abbreviations used on drawings with their meanings.

b. Floor Plans

Provide floor plan drawings showing locations of telecommunications equipment and cable trays, as applicable.

c. Site Plan

Provide a site plan drawing showing existing and new conditions including locations of new handholes, ductbanks and cabling. Telecommunications and electrical site work may be shown on a common site plan drawing.

d. Riser Diagram:

Provide a riser diagram showing telecommunications system incoming cable, terminal blocks, cabinets and equipment racks, patch panels, grounding and horizontal distribution.

PART 3 EXECUTION

Not Used.

End of Section

SECTION 01200

DESIGN-BUILD PROGRESS PAYMENTS

1. GENERAL

This section covers the submittal requirements for design-build progress payments.

1.1 RELATED CONTRACT CLAUSE

Section I contract clause 52.232-5 "Payments under Fixed-Price Construction Contracts."

1.2 DESIGN SUBMITTALS

a. 65% Construction Design Submittal
b. Final Construction Design Submittal
c. Corrected Final Construction Design Submittal
d. Construction Submittal Reviews
e. Site Visit Reports During Construction
f. Final Inspection Reports
g. As-Built Construction Design Drawings

1.3 SUBMITTALS DURING CONSTRUCTION

SD-01 Preconstruction Submittals

a. Schedule of Prices.

1.3.1 Request for Progress Payment

Payment requests during design may be made upon submission of each design submittal, and will be based on the portion of the Base Bid for Design Services indicated in Part 3 of this section. Apply for progress payments using "Contractor's Monthly Estimate for Payment Voucher" which includes (form FD&CC-4) and the required payment certification that are available from the Contracting Officer. Electronic copies are available.

1.3.1.1 Documentation for Materials Delivered But Not Installed

Paid invoices for materials stored on site for which progress payments are requested shall accompany the application for payment. Requests for payment for materials stored offsite will normally not be approved.

Payment requests for services provided for construction submittal review, site visits during construction, and final inspections may be made monthly based on the portion of the Base Bid for Design Services indicated in Part 3 of this section.

Payment request for As-Built Construction Design Drawings may be made upon submission of the as-built drawings (see Section 01160, paragraph 1.5.4), and will be based on the portion of the Base Bid for Design Services indicated in Part 3 of this section.

1.3.1.2 Required Schedule Updates

In accordance with FAR Clause 52.236-15, Schedules for Construction Contracts and section 01320, submit updated progress documentation along with the request for payment, including request for final payment.

1.4 TIMING FOR SUBMITTALS DURING CONSTRUCTION

1.4.1 Initial Submission

Submit an original schedule of prices with the progress documentation required by section 01320 for the Government's approval in accordance with section 01320.

1.4.2 Progress Payments

Progress payment requests may be submitted once a month to coincide with the progress update.

2 PRODUCTS

Not used.

3 EXECUTION

3.1 SCHEDULE OF PRICES

The schedule of prices shall be prepared in conjunction with the development of the complete performance schedule. Prepare and deliver to the Contracting Officer a schedule of prices on the forms furnished by the Government. Provide a detailed breakdown of the contract price, giving quantities for each of the various kinds of work, design phases, unit prices and extended prices therefore.

3.1.1 Design Phase

65% Construction Design Submittal	35% of Design Base Bid
Final Construction Design Submittal	40% of Design Base Bid
Corrected Final Construction Design Submittal	5% of Design Base Bid

Note: If the Contractor chooses to Fast Track the design, then the percentages above will be divided in proportion to the number and content of submittals)

3.1.2 Construction Phase

Construction Submittal Reviews	8% of Design Base Bid and any option
Site Visits During Construction & Final Inspection	7% of Design Base Bid and any option
As-Built Drawings	5% of Design Base Bid and any option

3.1.3 Contract Modifications

Each contract modification shall be added to the end of the approved schedule of prices.

3.2 CONTRACTOR MONTHLY VOUCHER ESTIMATE

The contractor's monthly voucher estimate consists of the approved schedule of prices and the data elements below.

a. Percent of Installation Complete To Date: Insert the percent complete value for this activity.

b. Material Invoices Submitted To Date: The sum of the paid material invoices for the specific activity shall be placed in this field.

c. Amount Payable To Date: The value in this field shall be automatically calculated and shall not be overtyped. The amount payable to date for stored material equals the greater of (1) the material invoices submitted to date column or (2) the material activity cost multiplied by the percent of installation complete to date value for the activity. The total amount shall not exceed the material activity cost. The labor value payable to date is calculated by multiplying the labor value activity cost by the percent of installation complete to date.

d. Amount Payable To Date Last Month: The value in this field is carried over from the previous months approved invoice amount payable to date column.

e. Amount Payable This Month: This value shall be automatically calculated and shall not be overtyped. The value is calculated by subtracting the amount payable to date last month value from the amount payable to date column. This value represents the amount earned for a specific activity without regard to retainage.

f. Required Calculations: The last page of the contractor monthly voucher estimate shall include the following calculated values - (1) The Total Contract Value which is the sum of the activity cost field column values which shall also equal the current total contract price, including approved modifications; (2) Subtotals of the amount payable columns (to date, to date last month, this month); (3) Percent Complete Based On Installed Material which is the sum of the activity cost labor column multiplied by the percent of installation complete to date and then divided by the sum of all of the values listed in the activity cost labor column; and, (4) Percent Earned To Date which is the total amount payable to date divided by the total contract value.

3.2.1 Payment for Stored Materials

Although Section I contract clause 52.232-5 does not require payment for materials received but not installed, the Contracting Officer may consider requests for, and may authorize payment for the cost of the material based on the lesser of the following: (1) The total value of all invoices submitted for the activity; and (2) The value listed in the material total cost field. In order for requests for payment to be considered, the material shall be per the approved submittal, on site, and properly stored or protected.

3.2.1.1 Material Invoices

Paid material invoices shall be legible and clearly document the type, quantity and cost of the materials covered by the invoice. The contractor shall clearly mark on each invoice the activity number which payment is being requested. For invoices covering more than one activity, the contractor shall indicate both the activity number and the percentage of the total invoice to be applied. Incomplete or unreadable invoices will not be considered when processing payment requests.

End of section

SECTION 01320

DESIGN BUILD PROGRESS SCHEDULE

PART 1 GENERAL

1.1 DESCRIPTION

Prepare a time-scaled construction performance schedule (Horizontal Bar Gantt Chart Style with activity links and critical path shown) pursuant to the clause 52.236-15 "Schedules for Construction Contracts" of the Contract. Include scheduling of design phase activities as well as construction phase. Utilize conventional network analysis precedence diagram techniques.

1.2 DEFINITIONS

1.2.1 Preliminary Performance Schedule

Is defined as the planned operations during the first 120 days after the Contract Award. All activities relating to the preparation of construction design documents and obtaining permits during this period shall be included. The preliminary performance schedule shall consist of a diagram as described elsewhere in this section. No progress payments will be processed until the complete performance schedule has been approved by the Government.

1.2.2 Complete Performance Schedule

Is defined as the planned operations for the entire contract as described by contract clause 52.236-15.a. The complete performance schedule shall consist of a chart and required reports as described elsewhere in this section.

1.2.3 Float and Slack

Is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date of any of the activities in the network analysis schedule. Float or slack is not time for the exclusive use or benefit of either the Government or the contractor.

1.2.4 Schedule Update

A schedule update shall provide actual start, current percent complete, and actual finish field updates to the complete performance schedule. No other fields shall be changed as part of an update.

1.2.5 Schedule Revision

Schedule revisions consist of the addition of new activities, as well as, changes in the approved work schedule, in contract completion date, logic and/or duration of existing activities. Approved schedule revisions change the schedule baseline only from the effective date of the revision for incomplete activities.

1.2.6 Schedule Baseline

The current approved performance schedule prior to updates.

1.2.7 Activity Description

Each activity shall be described to clearly define the feature of work and its location (Example: Phase I, first floor rough electrical).

1.2.8 Responsibility Code

Field identifying the organization completing the specific activity (i.e. prime contractor, subcontractor's name, Government, etc.).

1.3 SUBMITTALS

Submit the following in accordance with section 01330 "Submittal Procedures":

1.3.1 SD-01 Preconstruction Submittals

a. Preliminary Performance Schedule

- Network Schedule Chart

b. Original Complete Performance Schedule

- Network Schedule Chart
- Reports

c. Monthly Updates

- Network Schedule Chart (3 color copies)
- Progress Payments (See section 01200)
- Reports

d. Schedule Revisions

- Revised Network Schedule Chart
- Narrative description of changes to activity logic/duration
- Reports

1.3.2 Submittal Requirements

For the above submissions submit the following: 3 color copies of all documents plus an electronic copy on CD-ROM disk.

1.4 TIMING

1.4.1 Preliminary Performance Schedule

Within 21 days after Notice of Award, submit a preliminary Gantt Chart schedule defining the planned activities during the first 120 days after Contract Award.

1.4.2 Original Complete Performance Schedule

Submit the complete schedule for the full project duration, consisting of charts and reports, within 90 days after Notice of Award.

1.4.2.1 Resubmittals

Changes necessary as a result of this review shall be submitted for approval of the Contracting Officer within 15 days.

1.4.3 Monthly Updates

Shall be submitted each month along with the request for payment, see section 01200.

1.4.4 Schedule Revisions

Shall be submitted within 15 days of the Contracting Officer's request.

1.5 SOFTWARE

1.5.1 Software Description

The Contractor shall use a commercially available, MS Windows based, scheduling software program to manage the project. The software package shall have the characteristics and be capable of producing the time-scaled charts and reports described elsewhere in this section. The program shall also be capable of accepting actual activity start/completion dates, and recompilation of tabulation dates and float accordingly without deleting the original proposed activity dates.

1.5.2 Payment Requests

Payment request may be prepared for submission using programs other than the scheduling software. See section 01200, Construction Progress Payments for specifics.

1.6 CONTRACT MODIFICATIONS

When a contract modification to the work is required, submit proposed revisions to the network reflecting the impact. Submit the proposed network revisions with the cost proposal for each proposed change. Should it be determined that a mathematical analysis utilizing the computer is necessary to analyze the impact, submit three copies of the proposed Project Activities Report and input data with the cost proposal. Incorporate contract modifications into the subsequent monthly update only after approved by the Contracting Officer.

Contract Modifications shall be added as items posted at the bottom of the original schedule with new activity numbers.

PART 2 PRODUCTS

2.1 PROGRESS SCHEDULE CHART

Prepare a horizontal time scaled Gantt Chart progress schedule with the total project divided and subdivided into a sufficient number of work activities to accurately graphically display the work schedule, sequence in which the work is to be accomplished, activity duration, and interdependence of activities. A bar shall depict the start, finish, and duration of each activity. The bar shall be shaded to indicate progress. In addition to construction activities, procurement times for critical items, including submittal turn-around, shall be shown on the schedule. The diagram shall clearly show the activities of the critical path.

2.1.1 Format

Provide Progress Schedule charts on E-size sheets (30 inches by 42 inches). Use continuation sheets as required. Establish the time schedule for the entire project duration across the top of the sheet;

divide into months and subdivide into weeks. Extend these division lines vertically from top to bottom of page. Units of 1/2 inch equal to 1 week are suggested. Indicate project name, location, contract number, data date, submission date on each sheet. Provide a legend defining all symbols.

2.1.2 Required Columns

The following columns shall be provided on the left side of each sheet:

- Activity Number (ID #)
- Activity Name
- Duration
- Early and late start dates
- Percent complete

2.1.3 Activity Bars

Each of the activity bars shall be color coded and hatched to distinguish between the baseline, critical, non-critical, milestones, and also indicate progress. Critical path activities shall be colored red. Each activity bar shall be labeled with the activity name and percent complete.

2.1.4 Required Sorts

The original progress schedule chart shall be sorted by early start and then by early finish dates. The activity numbers shall be assigned in ascending order based on the results of this sort and shall not change for the remainder of the project duration.

2.1.5 Quantity and Numbering of Activities

The minimum number of activities in the final performance schedule shall be 200. New activity numbers shall be assigned to activities required to be added to a revised schedule for contract modifications or logic changes.

2.1.6 Required Activities

The following specific activities shall be shown on the diagram and in the numerical analysis. The durations indicated are minimum.

- Bond
- Each Design submittal called out in Specification 01160
- All Permit applications and review periods
- Submittal Submission per Specification Section 01330 (120 day maximum duration activity linked only to final inspection activity)
- Critical Submittal Approvals per Submittal Section (Include a 21 day review period activity with each critical submittal approval entry)
- Procurement time for critical items
- Government furnished materials and equipment utilizing delivery dates indicated in "FAR 52.245-2, Government Furnished Property (Fixed-Price Contract)."
- Pre-Start Meetings with Major Subcontractors (e.g. mason, carpenter, roofer, plumber, electrician)
- Mechanical Testing & Balancing Report Submitted
- Mechanical Testing & Balancing Approval (21 day duration)
- Draft O&M Manuals Preparation
- Draft O&M Manual Review
- Corrected O&M Manuals Preparation

- Corrected O&M Manual Review (Reviewed as part of final inspection)
- Final O&M Manual Submission (14 days)
- Request for Final Inspection (minimum of 14 days prior to requested date)
- Final Inspection [Drafter indicate either 2 or 3 day duration]
- Instruction to Government Personnel
- Correct Punchlist (14 days)
- Coast Guard Acceptance (On or before contract completion date)

2.1.7 Final Inspection

The final inspection activity will only be held after the following events have occurred. Contractor shall ensure that all applicable activities are indicated as predecessors:

Facility ready for use for intended purpose.
All systems are operational.
All Test & Inspection Reports received.
Mechanical Testing & Balancing Report has been approved.
All submittals approved.
Up to date as-built drawings at the site.
Corrected O&M Manuals submitted to the Government.
Receipt of a letter request from the contractor at least 2 weeks in advance requesting the inspection.

2.1.8 Anticipated Weather Delays:

Schedule activity duration(s) shall be formulated with allowance for normal adverse weather conditions. Any activity duration, which could be impacted by normally anticipated adverse weather (precipitation, high or low temperature, wind, etc.), due to the time period that the Contractor has scheduled the work, shall include an adjustment to include the anticipated weather delay. The Contractor shall anticipate delay by comparing the contractually imposed environmental restrictions in the Contract Documents to the National Oceanic and Atmospheric Association's (NOAA) historical monthly averages for the NOAA location at http://www.srh.noaa.gov/data/forecasts/VAZ097.php. The number of anticipated adverse weather delays allocated to an activity will be reflected in the activity's calendar. A lost workday, due to weather conditions, is defined as a day in which the Contractor's workforce cannot work 50 percent or more of the day on the impacted activity(s). The Contractor shall immediately notify the Contracting Officer when a lost day has occurred due to weather, will record on the Daily Reports the occurrence of adverse weather and resultant impact to the normally scheduled work. If the number of actual adverse weather delay days exceeds the number of days anticipated, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days and issue a modification in accordance with the contract clauses.

2.2 REPORTS

2.2.1 Narrative Report

A narrative report shall be provided with all schedule revision submissions to identify and explain the changes from the previously approved schedule. The report shall identify each changed activity by ID number, description, and the specific change. The narrative report shall be sorted by ID number.

2.2.2 Logic Report

A logic report shall be provided with the original complete network schedule submission and all subsequent revisions. The report shall be generated with the schedule software, sorted by ID number

and include the ID number, activity description, predecessor activity ID number(s), and successor activity ID number(s). Critical path activities in shall be highlighted.

PART 3 EXECUTION

3.1 MONTHLY SCHEDULE UPDATES

Monthly schedule updates for progress payments shall be prepared in conjunction with the monthly invoice. The contractor and on-site Government representative shall jointly review the update progress schedule to verify the listed actual start dates, percent complete for activities in progress, and actual finish dates for completed activities. Additionally, field verification of the materials stored on-site including required submittals, the material invoices, and material costs for the applicable activity on the schedule of values shall be conducted. Mutual agreement by the contractor and Government representative for each of the entries on the schedule update and payment voucher is desired, however, the Government's estimate of the percent complete for an activity shall govern. Activities not agreed upon shall be so noted by the contractor and initialed by the Government's on-site representative prior to formal submission. Note: Combination of a schedule update and schedule revision as a single submittal will be immediately rejected and returned to the contractor without review. If a schedule revision is required by the Government or desired by the contractor (concurrently with an update/pay request), it shall be submitted separately for approval by the Government.

3.3 SCHEDULE REVISIONS

3.3.1 Procedures

A revised performance schedule shall be prepared when changes in the approved logic, duration, work schedule, or contract performance time in response to significant deviations from the approved schedule baseline occur. The revised network schedule shall not be utilized for schedule updates until approved by the Government. If a proposed revision is disapproved by the Government, the previously approved network schedule shall continue to be used for monthly updates.

3.3.1.1 Changes in Means and Methods

If changes in the method of operating and scheduling are desired, the Contracting Officer shall be notified in writing stating the reasons for the change. If the Contracting Officer considers these changes to be of a significant nature, the contractor may be required to revise and submit for approval, without additional cost to the Government, the modified progress schedule charts and required sorts.

3.3.2 Contract Modifications

As part of a schedule revision, each contract modification involving either time, money, or both shall be entered into the network schedule as a new activity following the last activity number from the most recent approved schedule. Modifications may be subdivided into multiple activities to facilitate the appropriate logic requirements for the new activities.

3.4 JUSTIFICATION OF DELAYS

The approved network schedule shall be the basis upon which the Contracting Officer evaluates proposed contract changes which may involve time extensions.

End of Section

SECTION 01330

DESIGN-BUILD SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 PERMIT, DESIGN AND CONSTRUCTION SUBMITTALS REQUIRED

A. Permit Submittals. See requirements in Section 01158, paragraph titled “Design Related Permits” for required permit submittals.

B. Design Submittals. See requirements in Section 01160 for required design submittals, quantities of design submittals and other pertinent requirements.

C. In-Progress Construction Submittals. Submit any technical data, catalog cuts, manufacturers test reports, concrete trip tickets, etc., required and approved by the designer of record.

D. Use the standard Coast Guard submittal forms as cover sheets on all submittals required and approved by the designer of record when submitting for information only copies of submittals. Number submittals sequentially. When re-submitting a submittal due to rejection, keep the same submittal number with the suffix “rev (#)”, where the # is the appropriate revision number. Keep track of all submittals sent and received on the submittal register. The In-Progress submittals will be determined and numbered by the designer of record.

E. See section 013xx Design-Build Schedule Progress Documentation for additional information. Update the design-build schedule and equipment delivery schedule at weekly intervals or when schedule has been revised. Reflect any changes occurring since the last update.

1.1.1 Shop Drawings

Defined in FAR clause 52.236-21 "Specifications and Drawings for Construction."

1.2 TIMING OF SUBMITTALS

Submit submittals in sufficient time and in such sequence to avoid delays in the work. Submittals, test reports and certifications shall be submitted and approved prior to payment for the applicable item.

Except when substitutions or deviations are involved, submittals requiring approval by the contracting officer will be reviewed and returned to the contractor within 3 weeks.

1.3 DEFINITIONS

1.3.1 Types of Submittals

All submittals are classified as indicated in paragraph "Submittal Descriptions (SD)". Submittals also are grouped as follows:

a. Shop drawings: As used in this section, drawings, schedules, diagrams, and other data prepared specifically for this contract, by contractor or through contractor by way of subcontractor, manufacturer, supplier, distributor, or other lower tier contractor, to illustrate portion of work.

b. Product data: Preprinted material such as illustrations, standard schedules, performance charts, instructions, brochures, diagrams, manufacturer's descriptive literature, catalog data, and other data to illustrate portion of work, but not prepared exclusively for this contract.

c. Samples: Physical examples of products, materials, equipment, assemblies, or workmanship that are physically identical to portion of work, illustrating portion of work or establishing standards for evaluating appearance of finished work or both.

d. Administrative submittals: Data presented for reviews and approval to ensure that administrative requirements of project are adequately met but not to ensure directly that work is in accordance with design concept and in compliance with contract documents.

1.3.2 Submittal Descriptions (SD)

SD-01 Preconstruction Submittals

Certificates of insurance
Surety bonds
List of proposed subcontractors
List of proposed products
Construction Progress Schedule
Submittal schedule
Schedule of prices
Health and safety plan
Work plan
Quality control plan
Environmental protection plan

SD-02 Shop Drawings

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

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

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

SD-03 Product Data

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

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

SD-04 Samples

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 by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Calculations, mix designs, analyses or other data pertaining to a part of 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. (Testing must have been within three years of date of contract award for the project.)

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

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

Investigation reports

Daily checklists

Final acceptance test and operational test procedure

SD-07 Certificates

Statements signed by responsible officials of manufacturer of product, system or material attesting that 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 supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

Factory test reports.

SD-11 Closeout Submittals

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

As-built drawings

1.3.3 Request for Information (RFI)

A request from the contractor or a subcontractor to the Government, seeking an interpretation or clarification of some requirement of the contract documents. The contractor shall clearly and concisely (e.g. citing specifications and/or drawing references) set forth the issue for which clarification or interpretation is sought and why a response is needed from the Government. The contractor shall, in the written request, set forth their interpretation or understanding of the contract's requirements, along with reasons why such an understanding has been reached. Responses from the Government will not change any requirements of the contract documents unless so noted in the Request for Information response by the Government. Responses to contractor inquiries shall be as outlined in paragraph 3.4 of this section.

1.3.4 Drawing/Plan Clarification

An answer from the Government, in response to an inquiry from the contractor, intended to make some requirement(s) of the drawings or plans clearly understood. Drawing/plan clarifications may be sketches, drawings, or in narrative form and do not change any requirements of the drawings or plans. Responses to contractor inquiries shall be as outlined in paragraph 3.4 of this section.

1.3.5 Field Changes/Adjustments

A bilateral agreement between the Government and prime contractor which involve minor changes in the plans and specifications to facilitate the proper execution of work; does not change scope, time, quality or price; and, does not affect terms or conditions of the contract. Field changes are normally prepared by the COR/Government inspector and are effective upon signature by the Coast Guard Project Manager and the prime contractor's authorized representative. Combining of changes to achieve the no impact requirement is not allowable. Deviations in material or means and methods of execution shall not be authorized by use of field changes.

1.4 SUBMITTAL REGISTER

A submittal register will be provided by the contractor on or before the pre-construction conference following award of the contract. Required submittals are identified on the cover sheet of the drawings. The contractor shall indicate critical submittals to the Contracting Officer with dates to be submitted and critical dates for approval prior to the pre-construction conference. Maintain at the site an up-to-date Submittal Register showing the status of all submittals.

1.5 MAILING REQUIREMENTS

Submittals shall be submitted as follows:

Item	Submitted to for Approval	Copies Required
Permits per section 01158	Contracting Officer (KO)	See 01158 for quantity of permits required
Design Submittals per section 01160	KO	See 01160 for quantity of design submittals
Submittals required by sections 01110 or 01330 or FAR clause	KO	See paragraph 1.7

(i.e. Schedule of Values, Progress schedules, Payment vouchers, etc.)		
Sample Panels or Installations	COR @ Site	See paragraph 1.7
Technical Construction Type: catalog cuts, shop drawings, calculations and certificates required by the DoR except Sample Panels or Installations	Designer of Record (DoR)	KO & COR at Site (with Designer's annotations)
Test Reports (Factory & Field), Certificates required by DoR	DoR	KO & COR at Site (with DoR's annotations)

1.6 IDENTIFYING SUBMITTALS

Identify submittals requiring contracting officer approval, except sample panel and sample installation, with the following information permanently adhered to or noted on each separate component of each submittal and noted on the transmittal form. Mark each copy of each submittal identically, with the following:

a. Project title and location.

b. Construction contract number.

c. The section number of the specification from which the submittal is required.

d. The submittal description (SD) number of each component of the submittal.

e. When a resubmission, an alphabetic suffix on the submittal description, for example, SD-10A, to indicate the resubmission.

f. The name, address, and telephone number of the subcontractor, supplier, manufacturer and any other second tier contractor associated with the submittal.

1.6.1 Format for Product Data (only for product data requiring contracting officer approval):

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

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

c. Supplement product data with material prepared for the project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for the project.

1.6.2 Format for Shop Drawings (only for shop drawings requiring contracting officer approval):

a. Shop drawings shall not be less than 8 1/2 by 11 inches nor more than 30 x 42 inches and shall be drawn to a minimum scale of 1/8-inch equals 1 foot.

b. Present 8 1/2 x 11 inches sized shop drawings as part of the bound volume for the submittals required by the section. Present larger drawings in sets.

c. Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to the information required in the paragraph entitled "Identifying Submittals."

d. Dimensional drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Identify materials and products for work shown.

1.6.3 Format of Administrative Submittals:

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

1.7 QUANTITY OF SUBMITTALS

1.7.1 Number of Copies of Product Data:

Submit (4) four copies of product data requiring review and approval by the Contracting Officer. Two will be returned to the Contractor.

1.7.2 Number of Copies of Shop Drawings

Submit shop drawings in compliance with the quantity requirements specified for product data.

1.7.3 Number of Copies of Administrative Submittals:

a. Unless otherwise specified, submit the administrative submittals in compliance with the quantity requirements specified for product data.

b. Submit administrative submittals required under "SD-19, Operation and Maintenance Manuals" to conform to section 01781, "Operation and Maintenance Data."

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS FOR SUBMITTALS REQUIRING CONTRACTING OFFICER APPROVAL

3.1.1 Contractor Review and Certification

Review and certify all submittals before submitting them to the FDCC LANT Construction Project Manager. Word the certification as follows:

I certify that the material or equipment shown and marked in this submittal is the same as that proposed to be incorporated into Contract Number [_____], complies with the contract documents, can be installed in the allocated space, and is submitted for Government approval.

Certified by _____ Date_____

The certification shall be signed by the person designated in writing by the contractor as having that authority. Stamp each sheet of submittals except that data submitted in a bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only. The signature shall be in original ink. Stamped signatures are not acceptable. Submittals will not be processed unless this review and certification has been provided by the contractor.

3.1.2 Material Approval Request

Every submittal shall be accompanied by a Material Approval Request form completed in full. Material Approval Request forms will be provided to the Contractor. Do not submit items from more than one specification section on the same Material Approval Request Form. As far as practical, submit all submittals for each section as one submission. Each item included with each submittal shall be listed as a separate line item on the Material Approval Request form. In addition to the information to be provided on the Material Approval Request form, submittals shall include the following information:

a. Names of contractor, supplier, or manufacturer, as applicable.

b. Identification of revisions on resubmittals.

c. Identification of Substitution or Deviation: If an item submitted is a substitution or deviation from contract requirements, stamp "Substitution" on the submittal and note and explain the reasons for and details of the substitution or deviation, a list of sources contacted to obtain specified product, a cost comparison, identify variations from contract requirements and changes required in other work or products. In submitting substitutions or deviations, the contractor represents that he/she will coordinate the installation of accepted substitutions or deviations, and additional costs or delays caused by the substitution or deviation will not constitute grounds for any adjustments to the contract price.

NOTE: Substitutions or deviations require approval of the Contracting Officer and if allowed will require a contract modification. Substitutions or deviations may increase the processing time for reviewing submittals.

3.1.3 Resubmittals

Make changes and corrections required by Approving Authority. Indicate changes made which were not requested. Resubmit as originally specified. Use same submittal number as initial submittal except add a suffix of -A, -B, etc. for each subsequent resubmittal. Contractor may be subject to payment of costs incurred by the Government for the review of resubmittals. Stamp/mark resubmittals as "RESUBMITTAL".

3.2 SUBSTITUTION OR DEVIATION:

a. If an item submitted is a substitution or deviation from contract requirements, stamp "Substitution" on the submittal and note and explain the reasons for and details of the substitution or deviation, a list of sources contacted to obtain specified product, a cost comparison, identify variations from contract requirements and changes required in other work or products.

b. In submitting substitutions or deviations, the contractor represents that he/she will coordinate the installation of accepted substitutions or deviations, and additional costs or delays caused by the substitution or deviation will not constitute grounds for any adjustments to the contract price.

c. Substitutions or deviations require approval of the Contracting Officer and if allowed will require a contract modification. Substitutions or deviations may increase the processing time for reviewing submittals.

3.3 REQUESTS FOR INFORMATION (RFI)

a. In the event that the contractor, subcontractor, or supplier, at any tier, determines that some portion of the drawings, specifications, or other contract documents require clarification or interpretation by the Government, the contractor shall submit a Request for Information in writing to the Contracting Officer's Representative. Requests for Information may only be submitted by the contractor and shall only be submitted on the Request for Information form provided by the Government. The contractor shall clearly and concisely set forth the issue for which clarification or interpretation is sought and explain why a response is needed from the Government. In the Request for Information, the contractor shall set forth their interpretation or understanding of the requirement, along with reasons why such an understanding has been reached.

b. The Government will review all Requests for Information to determine whether they are requests for information within the meaning of this term. If the Government determines that the document is not a Request for Information or missing required information from the contractor, it will be returned to the contractor, unreviewed as to content, for resubmittal in the proper manner (i.e. submittal, request for deviation, etc.).

c. Responses to requests for information shall be issued within 10 days of receipt of the request from the contractor, unless the Government determines that a longer period of time is necessary to provide an adequate response. If a longer period of time is determined necessary by the Government, the Government will, within 10 days of receipt of the request, notify the contractor of the anticipated response time. The 10 days referred to herein will start on the date stamped received "in from the contractor" by the Government. If the contractor submits a Request for Information on an activity with 10 days or less of float on the current project schedule, the contractor shall not be entitled to any time extension due to the time it takes the Government to respond to the request, provided that the Government responds in the 10 days set forth above.

d. Responses from the Government will not change any requirement of the contract documents unless so noted in the response to the Request for Information. If noted as a change, the Government will issue either a no-cost Field Adjustment or formal modification under the Changes clause of the contract. If the contractor believes that a response to a Request for Information will cause a change to the requirements of the contract documents, the contractor shall immediately give written notice to the Contracting Officer stating that the contractor considers the response to be a change order. Failure to give such written notice immediately shall waive the contractor's right to seek additional time or cost under the Changes clause of the contract.

END OF SECTION

SECTION 01450

QUALITY CONTROL

PART 1 GENERAL

1.1 APPLICABLE PUBLICATIONS

1.1.1 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

ASTM E329	Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 GENERAL

This contract will be administered under Section E contract clause 52.246-12 "Inspection of Construction."

1.3 SUBMITTALS

Submit the following as specified in section 01330 "Submittal Procedures":

1.3.1 Statement of Special Inspections.

Provide a “Statement of Special Inspection” in accordance with International Building Code Section 1704.1.1 to be approved by the Contracting Officer.
Contractor may use CASE Form 101 or other similar form form this purpose. The Statement shall be prepared and sealed by the Designer of Record.

1.3.2 SD-07 Certificates

Laboratory Accreditation.

1.3.3 Construction Quality Control Documents, Test Reports, Factory Test Reports, Field Test Reports, and Field Inspections

Field test reports and field inspections conducted and submitted at the job-site on the same day, shall be attached to the Daily Construction Report in lieu of submission using a Material Approval Request form.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 INSPECTION, SAMPLING AND TESTING

Provide all necessary equipment, instruments, qualified personnel, facilities, and test fluids and gases, and perform all inspections, sampling, testing, and certifications specified in the individual sections.

3.1.1 Advance Notification and Documentation

Notify the COR at least 48 hours in advance of the dates and times scheduled for all field tests. Note in block 11 of the Daily Construction Report and submit separate reports for each field test or inspection conducted indicating the following information on the report:

a. Specification Section
b. Paragraph Number
c. Name of the Test or Inspection
d. Location of Test (provide sketch if necessary to clearly document location at the site)
e. Name of Inspector/Technician
f. Name of Laboratory, if applicable
g. Date and Time of the Inspection/Test
h. Minimum Requirements/Acceptable Test Results
i. Actual Inspection/Test Results
j. Statement indicating whether or not the work meets the specified requirements

3.1.2 Testing Labs

Provide an independent construction materials testing laboratory accredited by a laboratory accreditation authority to perform sampling and tests required by this Contract. Laboratories engaged in testing of construction materials shall meet the requirements of ASTM E329. Laboratories engaged in Hazardous Materials Testing shall meet the requirements of OSHA and EPA.

3.1.3 Repeated Tests and Inspections

Repeat tests and inspections after each correction made to nonconforming materials and workmanship until tests and inspections indicate the materials, equipment, and workmanship meet contract requirements. Repeated tests and inspections shall be performed at no additional cost to Government.

3.2 DAILY INSPECTION REPORTS

Fill out Daily Construction Report (DCR) forms as documentation and submit the forms to the Government inspector by 10:00 a.m. on the first work day after the day the work was performed. Block 7 of the DCR shall include the description and activity number from the approved progress schedule, and the actual start and finish dates for the work performed. Sample forms are at the end of this Section. Daily Construction Report forms will be furnished to the Contractor.

3.3 NONCONFORMANCE NOTICE

A notice issued by the Contracting Officer's Representative documenting that the work, or some portion thereof, has not been performed in accordance with the requirements of the contract documents. Sample forms are at the end of this Section. Payment shall not be made on any portion of the work for which a nonconformance notice has been issued and the work not corrected to the satisfaction of the Contracting Officer's Representative. Upon receipt of a Nonconformance Notice, the contractor shall provide a written response within 7 days. The contractor's response shall detail either (a) why they believe that the work was performed in accordance with the contract documents, or (b) what corrective action they intend to take, at their sole expense, to correct the nonconforming work. If the contractor disputes issuance of the notice, the Government will respond by either (a) withdrawing the Notice of Nonconformance or (b) directing the contractor to correct the work. If directed to correct the work, the contractor shall do so within 7 days after receipt of such direction from the Contracting Officer, or such other time as may be agreed to with the Contracting Officer.

DAILY CONSTRUCTION REPORT

Complete Report in detail daily and submit to the Government Representative by 10:00AM on the following workday. Attach additional sheets if required. Contractor shall initial and date additional sheets. Attach test reports, records of inspection, delivery slips, and references.

Box 7 - Indicate contractor or trade responsible for work described in Box 8. Note all deficiencies where indicated.

1. Contractor	2. Report No.	3. %Complete

4. Contract No.	Project Title	Location	5. Date

6. Weather:	A.M. Temperature	P.M. Temperature

7. Contractor or Subcontractor	Location & Description of Work Performed Today	Worker Class	No. of Workers	Total Hours

8. Equipment Used on Site	9. Idle Equipment & Personnel on job

10. Spec Para and/or Dwg No.	MATERIAL DELIVERED TO SITE	Submittal No.

11. Spec Para and/or Dwg no.	Inspection and Tests Performed	Tester	Results

12. Directives Received or Issues:

13. Remarks: Include Visitors & Compliance Notices

14. **I certify this report to be complete and accurate, and all equipment and material used, and all work performed during this report period are in compliance with the contract documents to the best of my knowledge, except as noted above.**

Date **Superintendent**

15. Spec Para and/or Dwg No.	DISCREPANCIES DISCOVERED Location	Nature of Discrepancy

16. Contractor's Proposed Remedial	17. Corrective Action Taken

18. COR/Govt Inspector Remarks (attach additional sheets as required)

COR/Govt Inspector Date PM Contract Spec

Page 2 of _____

Routing: Original to Contracting Officer Copy – Contractor Copy – COR

NOTICE OF NONCONFORMANCE

NOTICE NO. ☐

PROJECT TITLE: _____

CONTRACT NO: **HSCG47-** _____

CONTRACTOR: _____

NONCONFORMANCE INFORMATION

DRAWING REFERENCE ☐ **SPECIFICATION SECTION** ☐

CONDITION REQUIRING CORRECTION:

_____

_____

_____

_____

_____

_____

_____

_____

_____

GOVERNMENT REPRESENTATIVE: _____
(SIGNATURE) **DATE**

ACKNOWLEDGEMENT

I ACKNOWLEDGE RECEIPT OF THIS NOTICE.

CONTRACTOR'S REPRESENTATIVE: _____
(SIGNATURE) **DATE**

CORRECTION INFORMATION

RESOLUTION:

_____

_____

_____

_____

_____

_____

GOVERNMENT REPRESENTATIVE: _____
(SIGNATURE) **DATE**

Routing: Original to Contracting Officer Copy – Contractor Copy - COR

SECTION 01500

TEMPORARY FACILITIES

1 GENERAL

This section covers temporary facilities in support of the construction activities.

Provide and maintain temporary facilities during the contract as required by BOCA National Building Code, NEC, OSHA, and NFPA codes, other health and safety codes, the requirements of section 01575 "Temporary Environmental Controls", and all applicable local/state codes and ordinances. Obtain the approval of the COR before installing or relocating temporary facilities. Install temporary facilities before starting work unless otherwise approved by the COR.

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.

FEDERAL HIGHWAY ADMINISTRATION (FHWA)

FHWA MUTCD (1988) Manual on Uniform Traffic Control Devices

1.2 SUBMITTALS

Submit the following in accordance with section 01330, "Submittal Procedures."

1.2.1 SD-01 Preconstruction Submittals

a. Traffic control plan

b. Construction site plan

1.2.1.1 Construction Site Plan

Field office trailer, materials, and equipment may be stored in area adjacent to the new building. Prior to the start of work, submit a site plan showing the locations of temporary facilities including layouts and details, interior space layout and HVAC provisions, site adaptation drawings and details, and utilities capacity requirements and connection details, equipment and material storage area (onsite and offsite), and access and haul routes used for this contract. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

1.3 ELECTRICITY FOR USE DURING CONSTRUCTION

The contractor will be allowed to connect to the Coast Guard Unit's electrical distribution system without charge, but Contractor shall limit power usage to 120/240 volt AC, single phase, 60 hertz, 50 amperes. Install and maintain the temporary connection, convert and transfer power to the work, and disconnect it upon completion of work. Make connection arrangements with the COR.

1.4 POTABLE WATER FOR USE DURING CONSTRUCTION

The contractor will be allowed to connect to the Coast Guard's potable water system and use reasonable amounts of potable water without charge. Install and maintain the temporary connection, transfer water to the work, and disconnect it upon completion of work. Provide backflow preventers on connections to domestic water lines. Make connection arrangements with the COR.

1.5 SANITARY FACILITIES

Provide chemical toilets or equally effective units for employees and require their use. Periodically empty and dispose of waste. Keep facilities clean and free of nuisance such as pests, odor, and vermin. Place facilities where directed by the COR. Upon completion of the work remove the sanitary facilities and leave the area clean and free of nuisance.

1.6 CONSTRUCTION FENCE

Provide and maintain a minimum 8-foot high fence to encompass all of the construction operation area. Provide gates, with hasps and padlocks, as required for access. The fence and gates shall be chain link fencing. Where necessary/applicable provide temporary safety fence (including gates and warning signs). Fence shall be bright orange, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on minimum 10 foot centers. Remove all fencing prior to final acceptance of the work.

1.7 CONSTRUCTION PROJECT SIGN

Provide a 4’x8’ construction project sign, with graphics painted by a professional sign painter. The sign shall include the Graphics and Logo for USCG FDCCLANT. The Government shall approve the sign layout. Coat all exposed surfaces of supports, framing, and surface material with at least one coat of primer and one coat of exterior paint.

1.8 HEATING, COOLING, VENTILATING AND ENCLOSURE OF WORK

Provide as required to accommodate construction; maintain environmental conditions specified in other sections; protect materials and finishes from damage due to temperature, humidity, or weather; cure materials and disperse humidity; and to prevent accumulations of dust, fumes, vapors, and gases.

1.9 RAMPS, STAIRS, LADDERS, STAGING AND SIMILAR ACCESS ELEMENTS

Provide as required to perform work and facilitate its inspection during installation. Comply with requests of Government authorities (such as OSHA inspectors) performing inspections. When permanent stairs or elevators are available for access during construction, cover and protect finished surfaces from damage and deterioration.

1.10 BARRIERS

Provide temporary barriers with warning lights where construction work intersects existing roads, walkways, at open excavations, and where pedestrian and driver safety may be endangered in the area of work. Provide barriers and warning signs to re-route pedestrians and drivers around potentially dangerous areas.

1.11 INTERRUPTION OF VEHICULAR TRAFFIC

If during the performance of work, it becomes necessary to modify vehicular traffic patterns at any locations, notify the Contracting Officer at least 15 days prior to the proposed modification date, and provide a Traffic Control Plan detailing the proposed controls to traffic movement for approval. The

plan shall be in accordance with State and local regulations and the FHWA MUTCD, Part VI. Provide cones, signs, barricades, lights, or other traffic control devices and personnel required to control traffic.

1.12 WARNING SIGNS

Provide warning signs at the limits of construction stating that access is restricted to authorized personnel and that hard hats are required. Also provide warning signs to warn pedestrians and drivers around potentially dangerous areas.

1.13 DISPOSITION OF TEMPORARY FACILITIES

Relocated Coast Guard facilities and contractor-furnished facilities shall become property of the contractor and shall be removed from the site upon completion of the project.

2 PRODUCTS

Not used.

3 EXECUTION

Not used.

End of Section

SECTION 01575

TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.1 APPLICABLE PUBLICATIONS

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 265	Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

1.2 GENERAL

Protect the environment and preserve the natural resources during construction. Comply with Federal, State and Local regulations that pertain to the environment. Prepare and submit an Environmental Protection Plan for the project. Although contract performance will result in some adverse environmental impacts, The Environmental Protection Plan shall address each of the following subparts and discuss measures that will be used to meet the requirements of each subpart.

1.3 SUBMITTALS

Submit the following to the Contracting Officer within 30 days after contract award and before performing any work at the site. Submit for approval in accordance with section 01330, "Submittal Procedures."

1.3.1 SD-01 Preconstruction Submittals

Environmental Protection Plan

1.3.1.1 Purpose

The purpose of the Environmental Protection Plan is to describe in detail methods and procedures by which the contractor intends to minimize/mitigate adverse impact to the environment resulting from this work. As a minimum the plan shall document the contractor's means and methods for complying the specification requirements with the following elements included:

a. General Information: Provide a general overview of the plan including its purpose, general site information and a letter designating an Environmental Manager for the project signed by an officer of the firm.

b. Protection and Preservation of Natural Resources

c. Protection of Historical and Archeological Resources

d. Storm Water Management & Control

e. Waste Management

f. Volatile Organic Compounds

1.4 CLASS 1 ODS PROHIBITION

Class 1 ODS as defined in Section 602(a) of the Clean Air Act shall not be used in the performance of this contract, nor be provided as part of the equipment associated with the work. This prohibition shall be considered to prevail over any other provisions, specification, drawing, or referenced document.

1.5 QUALIFICATIONS AND DUTIES OF THE ENVIRONMENTAL MANAGER

The Environmental Manager shall be directly responsible for coordinating contractor and subcontractor compliance with Federal, State, local and station requirements. The Environmental Manager shall ensure compliance with hazardous materials and hazardous waste requirements, implement the Environmental Protection Plan, ensure compliance with storm water management requirements and coordinate any remediation of regulated substances. The Environmental Manager shall have successfully completed the training program specified in 40 CFR 265 for the waste streams anticipated as part of the work.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PROTECTION AND PRESERVATION OF NATURAL RESOURCES

Upon completion of work, repair, restore, or replace scarred or damaged features to an equivalent or improved condition. The Contracting Officer shall approve the repair or restoration method in advance. Confine construction activities to within the work area(s) indicated or specified.

3.1.1 Protection

Except as designated, do not remove, cut, deface, injure or destroy trees or shrubs without written authorization from the Contracting Officer. Provide necessary protection for trees & shrubs in such areas as to prevent injury, defacing, destruction or other damage by construction operations. Do not use trees or shrubs as anchorage points for any ropes, cables, or guys without written authorization from the Contracting Officer. Replace trees and other landscaping features damaged by unauthorized activities as directed by the Contracting Officer. Remove displaced rocks from uncleared areas. Protect monuments, markers, and works of art.

3.1.2 Temporary Construction

Remove traces of temporary construction such as haul roads, work areas, and stockpiles of materials. Restore areas of temporary construction to an equivalent or improved condition as existed before construction activities occurred.

3.1.3 Seeding

Grade, till, and seed all areas disturbed by construction. Include topsoil and nutriment during seeding.

3.1.4 Water Resources

Perform work in a manner that minimizes adverse environmental impacts on water resources. Take precautions necessary prevent, contain, and collect and release of fuels, oils, or other hazardous substances on the water. Notify the Contracting Officer immediately (within 2 hours) in the event of a fuel, oil or other hazardous substance spill.

3.1.5 Other

Fuel and lubricate equipment in a manner that protects against spills and evaporation. Provide a temporary berm around temporary fuel and liquid chemical storage tanks to contain the tank contents in the event of a leak or spill.

3.2 HISTORICAL AND ARCHEOLOGICAL RESOURCES

Carefully protect in-place and report immediately to the Contracting Officer if items that may be of historical or archeological interest or human remains are discovered or uncovered. Stop work in the immediate area of discovery until directed by the Contracting Officer to resume work. The Government retains ownership and control over historical and archeological resources.

3.3 STORM WATER MANAGEMENT AND CONTROL

3.3.1 Burn-off

Burn-off of ground cover is not permitted.

3.3.2 Erosion Protection

Earthwork brought to final grade shall be immediately finished. Protect side and back slopes upon completion of rough grading. Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. Use the following methods to prevent erosion, control sedimentation, and prevent waterborne soil from entering surface waters, ditches, and storm drain inlets:

a. Mechanical Control: Divert runoff by constructing ditches or berms, and then filter runoff using straw bale dikes, filter fabric dams, or other methods.

b. Sediment Basins: Trap sediment in temporary basins sized to accommodate the runoff of a local 50-year storm. Pump basins dry and remove accumulated sediment after each storm. Use a paved weir or vertical overflow pipe for overflow. Institute effluent quality monitoring programs.

c. Vegetation and Mulch: Provide temporary protection on side and back slopes as soon as rough grading is completed or sufficient soil is exposed to require protection to prevent erosion. Protect slopes by accelerated growth of vegetation, mulching, or netting. Stabilize slopes by hydroseeding, sodding, anchoring mulch or netting in place, or other methods.

d. Silt Fencing: Provide install and maintain silt fencing around perimeter of earthwork areas and encompass all soil material stockpiles.

e. Construction Entrance Tracking Pad: Provide, install, and maintain crushed stone construction entrance at locations where construction vehicles transition from bare soil to pavement such that silt and sediments will be removed from tires and not tracked on to pavements.

3.4 WASTE MANAGEMENT

3.4.1 Solid Waste Control

Pick up waste and debris and place in covered containers furnished by the Contractor. Empty containers and remove waste and debris from Government property at least weekly. Remove wastes without spilling or contaminating streets, the site, and other areas. Offsite disposal shall be at a licensed landfill and shall comply with all local, state and federal requirements.

3.4.2 Control and Disposal of Hazardous Wastes

Hazardous wastes are defined in 40 CFR 261. The Contractor shall identify all activities that may generate hazardous waste and provide documented waste determination for the waste stream to the Contracting Officer. Hazardous wastes that are produced as a result of performing work under this contract shall be handled, stored, transported, and disposed of according to 40 CFR 262, where applicable. Prevent hazardous wastes from entering the ground, drainage areas, and surface waters. Immediately notify the COR of hazardous material spills. Hazardous wastes generated on Government property shall be identified as being generated by the Government. All necessary documentation including hazardous waste manifests shall be signed by an authorized representative of the facility prior to removal of waste from the site. Under no circumstances shall hazardous waste be brought onto Government property.

3.5 VOLATILE ORGANIC COMPOUNDS (VOC)

The Contractor and all subcontractors are required to comply with the local VOC laws and regulations and shall have an acceptable VOC compliance plan. The plan shall demonstrate that the use of paints, solvents, adhesives, and cleaners comply with local VOC laws and regulations governing VOC materials, and that all required permits have been obtained or will be obtained prior to starting work involving VOC's, in the air quality district in which the work will be performed. An acceptable compliance plan shall contain, as a minimum, a listing of each material subject to restrictions in the air quality management district in question, the rule governing its use, a description of the actions which the contractor will take, a description of the actions which the contractor will use to comply with the laws and regulations, and any changes in the status of compliance during the life of the contract. Alternatively, if no materials are subject to the restrictions in the air quality management district where the work will be performed, or if there are no restrictions, the compliance plan shall so state.

3.6 DUST CONTROL

Keep dust down at all times including non-working hours. Dry power brooming is not permitted; instead use vacuuming, wet mopping, or wet brooming. Air blowing is permitted only for cleaning non-particulate debris such as steel reinforcing bars. When sandblasting, provide tarp drop cloths and windscreens under and around blasting operations to confine and collect dust, sand, paint, and debris. Concrete blocks, concrete, and asphalt shall be wet cut.

End of Section

SECTION 01720

RECORD DRAWINGS

PART 1 GENERAL

1.1 GENERAL

Maintain at the site, for the Government, one as-built record copy of full-size blue or black line prints of the drawings. Maintain the drawings in clean, dry, legible condition and in good order. Do not use record drawings for construction purposes.

1.2 SUBMITTALS

Submit in accordance with this section and section 01330, "Submittal Procedures."

1.2.1 SD-11 Closeout Submittals

a. Project Record Drawings

b. Fire Protection Record Drawings

c. Electronic Files of Fire Protection Record Drawings

1.3 EXAMINATION BY THE CONTRACTING OFFICER

Record drawings shall be available at all times for examination by the Contracting Officer's Representative. Requests for partial payments will be approved only if the record drawings are kept current.

Deliver the record drawings to the Contracting Officer upon completion of the work and prior to final inspection.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PROJECT RECORD DRAWINGS

Label each drawing "PROJECT RECORD" in neat, large, printed red letters. Record information daily as work progresses. Do not conceal work until information is recorded. Legibly and accurately mark each drawing in red to record actual construction. Information to be recorded includes but is not limited to:

a. Depths of various elements of foundation in relation to finish first floor.

b. Horizontal and vertical locations of underground utilities and appurtenances. Establish with dimensions to permanent surface improvements.

c. Location of utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

d. Dimensions of equipment and equipment foundations.

e. The topography and gradients of drainage installed during or affected by construction.

f. Changes resulting from modification and field changes.

g. Changes resulting from instructions issued by the Contracting Officer.

h. Details not on original contract drawings.

3.2 FIRE PROTECTION RECORD DRAWINGS

In addition to the requirements of the above paragraph "PROJECT RECORD DRAWINGS", the Contractor shall provide as-built drawings developed from the working drawings of each fire suppression/extinguishing system for record purposes. Drawings shall be in accordance with design drawing requirements of section 01160 and shall be submitted with the as-built drawings in accordance with section 01160, paragraph 1.5.4.

SECTION 01781

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.1 OVERVIEW

This Section describes the requirements for:

a. Project O&M (Operation and Maintenance) Manual.

b. Posted operating instructions.

c. Equipment nameplates.

d. Valve tags.

e. Instruction of Coast Guard personnel.

1.1.1 Phased Construction Projects

Provide an O&M Manual, posted operating instructions, nameplates, valve tags, and instruction of Coast Guard personnel upon completion of each phase or stage of projects that are constructed in phases or stages.

1.2 SUBMITTALS

Submit in accordance with this section and section 01330, "Submittal Procedures."

1.2.1 SD-10 Operation and Maintenance Data

a. Draft O&M Manuals

b. Corrected O&M Manuals

c. Final O&M Manuals

1.2.1.1 Submissions

a. Draft O&M Manuals

Submit two copies of a draft O&M manual for review by the Contracting Officer and correction by the contractor prior to the final inspection.

During equipment start-up/testing, compare actual operating procedures to those stated in the manual; revise manual as needed.

b. Corrected O&M Manuals

Submit two copies of the corrected O&M manual for verification during the final inspection. Comments and one copy of the manual will be returned to the contractor for final correction.

c. Final O&M Manuals

Provide three sets of final O&M Manuals to Contracting Officer within 14 days after approval of the corrected O&M Manual.

1.2.2 Schedule of Instruction

Submit a proposed schedule of systems/equipment operational instruction to the Contracting Officer at least 7 days before the first instruction session. Instructions shall be coordinated to occur as part of the last day or two of the final inspection.

PART 2 PRODUCTS

2.1 O&M MANUAL

Provide Operation and Maintenance (O&M) Data/Manuals which are specifically applicable to this contract and a complete and concise depiction of the provided equipment or product. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. The manual shall be a one-point reference source for Coast Guard personnel and maintenance contractors to operate and maintain the systems and equipment listed in the specification sections. Prepared text and instructions shall be written at a Flasch-Kincaid Grade Level of 7 to 8 with a Flasch Reading Ease Score of 60 to 70. Compile the manual using the equipment manufacturers' data along with supplemental instructions and drawings that you prepare. Supplemental instructions shall include a complete description of the system operation along with step-by-step procedures for start-up, shut down, seasonal changes, and dealing with emergency situations. Include tables indicating any set points and drawings indicating location of equipment, valves, etc. as described below.

Manuals shall be in vinyl-covered three ring binders sized for 8-1/2-by-11-inch pages. Provide a title page and table of contents. For each chapter provide hard paper tab dividers with chapter title or equipment name printed on the faces and tabs. On the spine and front cover of the manual, print, in lines that are horizontal when the manual is upright on a shelf:

{Operation and Maintenance Manual
Title of Project}

2.1.1 Format and Content

Arrange the manual so there is a separate chapter for each system or major piece of equipment. Then subdivide each chapter into sections that provide the following information for each system or major piece of equipment:

a. Narrative: Describe the function and sequence of operation, and provide a trouble-shooting chart, for each system and major piece of equipment. Included when any O&M Data Package is specified in an individual technical sections.

b. Equipment Information: Provide manufacturer's printed description, specifications, and drawings for each piece of equipment. Equipment model number, characteristics (BTU, gpm, head, horsepower, voltage, etc.), equipment nameplate symbol, and manufacturer shall be listed. Equipment model provided shall be indicated on all schedules, charts and lists along with accessories provided. Inapplicable information on accessories not provided or unrelated manufacturers equipment shall be crossed out. Correlate identification of equipment with nomenclature used on plans, e.g.: FCU-1 (fan coil unit-1), etc. Included when O&M Data Package 2, 3, 4, or 5 is specified in an individual technical sections.

c. Operating Instructions: Provide detailed step-by-step instructions for the system or each piece of major equipment as it is used on this project. Discuss operating procedures, sequences, and options; control sequence; start up; adjustments; typical flow rates,

pressures, temperatures, and other variables; shut-down; safety precautions; and negative and prohibitive instructions. Data that can only be determined by test operation shall be written in blanks provided for that purpose. Make reference to nameplate data, valve numbers, manufacturers' literature, schematics, and other parts of the manual to help personnel understand the procedures. Included when O&M Data Package 3, 4, or 5 is specified in an individual technical sections.

d. Maintenance Instructions: Describe routine maintenance to be performed and the maintenance interval (daily, weekly, 1,000 hours, etc.) for each piece of equipment including batteries. Develop a maintenance schedule reflecting these intervals based on manufacturer's written data. In a separate subsection, provide overhaul instructions for equipment that can be overhauled. Provide manufacturers' detailed instructions if available. Included when any O&M Data Package is specified in an individual technical sections.

e. Spare Parts: For major pieces of equipment provide a list of manufacturer's recommended spare parts as well as special tools or instruments needed to perform routine maintenance. Special tools required shall be provided with the equipment at time of installation. Included when O&M Data Package 2, 3, 4, or 5 is specified in an individual technical sections.

f. Parts List: For major pieces of equipment provide a parts list with part numbers and sources of supply. Included when O&M Data Package 2, 3, 4, or 5 is specified in an individual technical sections.

g. Motor Data: Identify each motor and provide voltage rating, code letter, full load amperes, horsepower, speed, service factor, duty and type. Included when O&M Data Package 2, 3, 4, or 5 is specified in an individual technical sections.

h. Drawings, Diagrams, and Charts:

(1) Provide piping and duct diagrams and schematics for HVAC, plumbing, fuel, and compressed air systems showing all major equipment, major valves and controls. Identify equipment by nameplate symbol. Identify valves by valve tag number with normal or seasonal operating positions indicated. Provide half-size scaled drawings systems with individual systems highlighted in contrasting colors with system color identification chart.

(2) Provide wiring diagrams of HVAC systems electrical power and temperature controls. Ensure operation of the temperature controls is identified in the operating instructions (paragraph 2.1.1.c).

(3) Provide wiring diagrams and schematics of all electrical systems, emergency generator and transfer switch systems, fire detection and alarm systems, intrusion detection and alarm systems, public address systems, telephone systems, cable TV systems, computer systems and major pieces of equipment.

i. Provide manufacturer's warranty information.

2.2 BATTERIES

Provide charging instructions and maintenance information, e.g.:

a. Normal and abnormal reading of:

(1) Voltages

(2) Currents (charging and float)

(3) Specific gravity

2.3 POSTED OPERATING INSTRUCTIONS

Provide and post operating instructions and valve line-ups for the equipment and systems specified in other sections. Include start up, adjustment, operation, shutdown, safety-precautions, and other items of instruction necessary for safe operation.

Unless otherwise specified in sections 02 through 16, the instructions shall be typed or printed, framed under plastic, and posted next to the equipment. Instructions exposed to the weather shall be made weather tight. Safety precautions shall be "double-struck, boldface" print, or printed in red to draw attention to the precautions.

2.4 NAMEPLATES

Unless otherwise specified in sections 02 through 16, provide minimum 3/4-by-2-1/2-by-1/16 inch thick black laminated plastic nameplates with 3/16-inch high white block lettering for the equipment and systems specified in other Sections. Nameplates shall be lettered with the following:

a. Item ID name or symbol shown on drawings.

b. Capacity or size if not on manufacturer's nameplate.

c. For monitoring and measuring equipment such as meters, gages, and thermometers, nameplate shall also identify what is being measured. For example, the nameplate for thermometer No. 1 in a hot water supply line shall indicate "Thermometer No. 1 - HWS" or similar wording.

2.5 VALVE TAGS

Provide stainless steel valve tags for all valves except stop valves in supplies to plumbing fixtures. Secure tags with beaded chains or other means acceptable to the COR. Provide a valve chart that identifies each valve, its function, and the system of which it is a part. Frame one copy of the valve chart under plastic and wall-mount in the Mechanical Room. Provide another copy of the valve chart in the O&M Manual.

2.6 INSTRUCTION OF COAST GUARD PERSONNEL

Provide instructors to instruct Coast Guard personnel in the operation, trouble shooting, maintenance, and adjustment of the systems and equipment specified in other sections. Duration of instruction shall be as specified in the other sections. Instruction shall be given as part of the final inspection. Contractor shall submit a syllabus to contracting officer 10 days in advance on proposed training to be approved prior to start of training. Only one system shall have instruction at a time. The instruction sessions shall be recorded on video. Provide two copies on CD-DVD format to the Contracting Officer.

PART 3 EXECUTION

Not used.