

SECTION 01 14 00

WORK RESTRICTIONS

11/11

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Sections 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES and Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

List of Contact Personnel; G

1.2 SPECIAL SCHEDULING REQUIREMENTS

- a. Order of construction completion preference is as shown below. Any variance requires written approval from the Contracting Officer.
  1. Phase 1
  2. Phase 2
  3. Phase 3
  4. Phase 4
  5. Phase 5
- b. The demolition schedule must be coordinated with the Users.
- c. The nearby buildings and utilities will remain in operation during the entire construction period. Conduct operations so as to cause the least possible interference with normal operations of the activity.
- d. Permission to interrupt any activity roads, railroads, or utility service must be requested in writing a minimum of 15 calendar days prior to the desired date of interruption.
- e. The work under this contract requires special attention to the scheduling and conduct of the work in connection with existing operations. Identify on the construction schedule each factor which constitutes a potential interruption to operations.
- F. Government Telecommunications Contractor Access: The Government Telecommunications Contractor must be allowed access to the facility towards the end of construction (finishes 90 percent complete, rough-in 100 percent complete, Inside Plant (ISP)/Outside Plant (OSP) infrastructure in place) to provide equipment in the telecommunications rooms and make final connections. The Contractor will be required to coordinate their efforts with the Government Telecommunications Contractor to facilitate joint use of building spaces during the final phases of construction and work the coordination effort into the construction schedule. Requirements for Government Telecommunications are specified in Part 5, Section 27 10 00 BUILDING TELECOMMUNICATIONS CABLING SYSTEM

### 1.3 CONTRACTOR ACCESS AND USE OF PREMISES

#### 1.3.1 Activity Regulations

Ensure that Contractor personnel employed on the Activity become familiar with and obey Activity regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. To minimize traffic congestion, delivery of materials must be outside of peak traffic hours (6:30 to 8:00 a.m. and 3:30 to 5:00 p.m.) unless otherwise approved by the Contracting Officer. Wear hard hats in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. Mark Contractor equipment for identification.

##### 1.3.1.1 Subcontractors and Personnel Contacts

Provide a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

##### 1.3.1.2 Installation Access

Obtain access to Navy installations through participation in the Defense Biometrics Identification System (DBIDS). No fees are associated with obtaining a DBIDS credential.

Participation in the DBIDS is not mandatory, and Contractor personnel may apply for One-Day Passes at the Contractor Vetting satellite office located at the Piney Green Gate to access an installation.

##### 1.3.1.2.1 Registration for DBIDS

Base access procedures and DBIDS registration info are provided at <https://www.lejeune.marines.mil/Base-Access>. Procedure includes:

- a. Present a letter or official award document (i.e. DD Form 1155 or SF 1442) from the Contracting Officer, that provides the purpose for access, to the base Contractor Vetting Office (CVO) representative.
- b. Provide a letter of authorization on company letterhead referencing the applicable contract(s) and identifying the requesting individual as an authorized employee of the awarded company along with the employee's required access days and times.
- c. Present two (2) valid forms of identification, such as a passport or Real ID Act-compliant state driver's license. All documents must be originals/certified.
- d. Provide completed SECNAV FORM 5512/1 to the base CVO representative to obtain a background check. This form is available for download from the base access website listed in 1.4.1.3.1.
- e. Provide vehicle registration and insurance. Contractors driving aboard the installation must provide an original vehicle registration document. Copies of registration are only accepted for company-owned fleet vehicles. Proof of insurance is also required. A declaration page is required for insurance originating outside the state of North

Carolina. Out of state insurance must meet North Carolina minimums of \$30,000/person, \$60,000/accident, and \$25,000/property damage.

- f. Upon successful completion of the background check, the Government will complete the DBIDS enrollment process, which includes Contractor employee photo, finger prints, base restriction and several other assessments.
- g. Upon successful completion of the enrollment process, the Contractor employee will be issued a DBIDS credential, and will be allowed to proceed to worksite.

#### 1.3.1.2.2 Denial of Access

Persons requesting access to Marine Corps sites will be denied if:

- a. Military or civilian police or VCO/CVO personnel are unable to verify the individual's claimed identity based on reasonable belief the person submitted fraudulent identity information in the attempt to gain access.
- b. The individual has a conviction for espionage, sabotage, sedition, treason, terrorism, armed robbery, or murder.
- c. The individual has a felony conviction for a firearms or explosives violation, regardless of the date of conviction.
- d. The individual has been convicted of crimes encompassing sexual assault or rape.
- e. The individual has been convicted of crime encompassing child molestation, or the possession or production of child pornography.
- f. The individual has been convicted of trafficking in persons.
- g. The individual is a registered sex offender.
- h. The individual has been convicted of drug possession with intent to sell or distribute.
- i. The individual has an active arrest warrant from Federal, state, local, or other civil law enforcement authorities, regardless of offense or violation.
- j. The individual has a felony conviction within the last 10 years, regardless of the offense or violation.
- k. The individual's name appears on any Federal or state agency watch list for criminal behavior or terrorist activity.
- l. The individual is debarred entry or access to a Marine Corps site, other DoD installations or facilities, or other Federal site or facility.
- m. The individual engaged in acts or activities designed to overthrow the U.S. Government by force.
- n. The individual is known to be or reasonably suspected of being a

terrorist or belongs to an organization with known terrorism links/support.

- o. The individual is identified in the NCIC KST file, or the TSDB report as known to be, or suspected of being, a terrorist or belonging to an organization with known links to terrorism or support of terrorist activity. If an individual is identified on the NCIC KST files or TSDB, PMO/MCPD or other designated site security personnel will immediately call the NCIS Multiple Threat Alert Center (MTAC) for further coordination. The MTAC will coordinate with the Department of Justice or Federal Bureau of Investigation and provide handling instructions to PMO/MCPD or other designated site security personnel.
- p. The individual is illegally present in the U.S.
- q. The individual has knowingly submitted an employment questionnaire with false or fraudulent information.
- r. The individual is a prisoner on a work-release program or currently on felony probation/parole.
- s. The individual is pending any felony charge.
- t. The individual has been convicted of three or more misdemeanor violations, or attempted violations, within the previous 10 years of the following offenses:
  - 1. Sex crimes;
  - 2. Assaults;
  - 3. Larcenies;
  - 4. Drugs; or
  - 5. Weapons.
- u. The individual has criminal arrest information that the site commander determines the person presents a threat to the good order, discipline, or health and safety on the Marine Corps site.
- v. Any reason the Installation Commander deems reasonable for good order and discipline.

#### 1.3.1.2.3 DBIDS Eligibility Requirements

Throughout the length of the contract, the Contractor employee must continue to meet background screen standards. Periodic background screenings are conducted to verify continued DBIDS participation and installation access privileges. DBIDS access privileges will be immediately suspended or revoked if at any time a Contractor employee becomes ineligible.

An adjudication process may be initiated when a background screen failure results in disqualification from participation in the DBIDS, and Contractor employee does not agree with the reason for disqualification. The Government is the final authority.

#### 1.3.1.2.4 DBIDS Notification Requirements

- a. Immediately report instances of lost or stolen badges to the Contracting Officer.

- b. Immediately collect DBIDS credentials and notify the Contracting Officer in writing under the following circumstances:
  - (1) An employee has departed the company without having properly returned or surrendered their DBIDS credentials.
  - (2) There is a reasonable basis to conclude that an employee, or former employee, might pose a risk, compromise, or threat to the safety or security of the Installation or anyone therein.

#### 1.3.1.2.5 One-Day Passes

Personnel applying for One-Day passes at the Piney Green Gate are subject to daily mandatory vehicle inspection, and will have limited access to the installation. The Government is not responsible for any cost or lost time associated with obtaining daily passes or added vehicle inspections incurred by non-participants in the DBIDS.

#### 1.3.1.3 No Smoking Policy

Smoking is prohibited within and outside of all buildings on installation, except in designated smoking areas. This applies to existing buildings, buildings under construction and buildings under renovation. Discarding tobacco materials other than into designated tobacco receptacles is considered littering and is subject to fines. The Contracting Officer will identify designated smoking areas.

#### 1.3.2 Working Hours

Regular working hours must consist of an 8 1/2 hour period , between 7 a.m. and 5 p.m., Monday through Friday, excluding Government holidays. After hours work is only permitted with written permission from the Contracting Officer.

#### 1.3.3 Work Outside Regular Hours

Work outside regular working hours requires Contracting Officer approval. Make application 15 calendar days prior to such work to allow arrangements to be made by the Government for inspecting the work in progress, giving the specific dates, hours, location, type of work to be performed, contract number and project title. Based on the justification provided, the Contracting Officer may approve work outside regular hours. During periods of darkness, the different parts of the work must be lighted in a manner approved by the Contracting Officer. Make utility cutovers after normal working hours or on Saturdays, Sundays, and Government holidays unless directed otherwise.

#### 1.3.4 Exclusionary Period

No work must be performed between Parachute Road and Holcomb Boulevard, during the hours of 6:00 AM to 8:00 AM and 3:00 PM to 6:00 PM, without prior written approval of the Contracting Officer. This period has not been considered in computing the time allowed for the performance of this contract.

#### 1.3.5 Utility Cutovers and Interruptions

- a. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Conform to procedures

required in the paragraph WORK OUTSIDE REGULAR HOURS.

- b. Ensure that new utility lines are complete, except for the connection, before interrupting existing service.
- c. Interruption to water, sanitary sewer, storm sewer, telephone service, electric service, air conditioning, heating, fire alarm, compressed air, are considered utility cutovers pursuant to the paragraph WORK OUTSIDE REGULAR HOURS. This time limit includes time for deactivation and reactivation.

#### 1.3.5.1 Location of Underground Utilities

Notification Prior to Excavation: Notify the Contracting Officer at least 15 days prior to starting excavation work.

Location and Protection of underground utilities shall be the responsibility of the Contractor. Where existing-to-remain piping, utilities, and underground obstructions of any type are indicated in locations to be traversed by new piping, ducts, and other excavations the elevations of the existing utilities and obstructions shall be determined before the new work is completed.

- a. In addition, the Contractor will be responsible for obtaining the services of a professional utility locator prior to digging. Contractor will provide documentation that the site has been surveyed and checked for underground utilities. All utilities must be located, including but not limited to power, water, sewer, storm drains, fiber optics, T.V. cable, telephone, and intrusion detection wiring. A set of known as-built drawings will be available in the ROICC/PWD office for review to assist the locator.
- b. It is mandatory that the Contractor also contact the Base Telephone Office (910-451-2531/3100) prior to accomplishing any digging at Camp Lejeune. A telephone office representative will assist in locating telephone lines.
- c. It is mandatory that the Contractor also contact Public Works Outside Plumbing (910-451-7190) prior to accomplishing any digging at Camp Lejeune, to ensure that all buried water and sanitary lines are identified
- d. It is mandatory that the Contractor also contact Charter Communications, cable TV service prior to accomplishing any digging at Camp Lejeune, to ensure that all buried cable lines are identified. Contact Mr. Nick Brown at 910-376-1785 for assistance.
- e. It is mandatory that the contractor also contact the North Carolina One-Call Center to coordinate the location of underground natural gas infrastructure. North Carolina 811, Inc. can be reached at 811 on a touch-tone phone in the state of North Carolina or toll-free at 1.800.632.4949 if calling from out of state. Work requests may also be submitted online at [www.nc811.org](http://www.nc811.org)

Open Mess Hall Repair (2615)  
Marine Corps Base, Camp Lejeune

Project # 1604F

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 01 20 00.05 20

PRICE AND PAYMENT PROCEDURES FOR DESIGN-BUILD

01/12

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EP 1110-1-8

(2016) Construction Equipment Ownership  
and Operating Expense Schedule

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES:.

SD-01 Preconstruction Submittals

Earned Value Report; G

1.3 EARNED VALUE REPORT

1.3.1 Data Required

This contract requires the use of a cost-loaded Network Analysis Schedule (NAS). The information required for the Schedule of Prices will be entered as an integral part of the Network Analysis Schedule. Within 15 calendar days of notice of award, prepare and deliver to the Contracting Officer an Earned Value Report (construction contract) as directed by the Contracting Officer. Provide a detailed breakdown of the contract price, giving quantities for each of the various kinds of work, unit prices, and extended prices. Costs shall be summarized and totals provided for each construction category.

1.3.2 Schedule Instructions

Payments will not be made until the Earned Value Report from cost-loaded NAS has been submitted to and accepted by the Contracting Officer. For design phase progress payment(s), the Earned Value Report from the Cost Loaded CPM shall include detailed design activities and general (summarized) approach for the construction phase(s) of the project. The Earned Value Report shall be fully developed with detailed construction line items as design progresses. The complete design and construction Earned Value Report must be submitted and accepted prior to starting construction work.

For Fast-Tracked or Critical Path Submittals of construction projects, the Earned Value Report shall include detailed design and construction line items for each fast-tracked/ critical path phase(s), submitted to and



accepted by the Contracting Officer during the Post Award Kickoff Meetings and confirmed prior to starting construction work in that phase.

Additionally, the Earned Value Report must be separated as follows:

a. Primary Facility(s) Cost Breakdown:

Defined as work on the primary facility(s) out to the 5 foot line. Work out to the 5 foot line shall include construction encompassed within a theoretical line 5 foot from the face of exterior walls and shall include attendant construction, such as pad mounted HVAC equipment, that may extend beyond the 5 foot line.

- (1) Provide a cost breakout for all Primary Facility features that support Low Impact Development (LID), such as vegetated roof and rainwater harvesting features. The sum of the Primary Facility Cost above - a. and these Primary Facility LID sub-items - (1) shall equal the total Primary Facility cost. Provide a subtotal cost of all Primary Facility LID sub-items on the Earned Value Report at design complete and project closeout.

b. Supporting Facilities Cost Breakdown:

Defined as site work, including incidental work, outside the 5 foot line.

- (1) Provide a cost breakout for all Supporting Facilities features that support LID, such as bioswales, permeable paving, infiltration basins, tree box filters, etc. The sum of the Supporting Facilities Cost above - b. and these Supporting Facilities LID sub-items - (1) shall equal the total Supporting Facilities cost. Provide a subtotal cost of all Supporting Facilities LID sub-items on the Earned Value Report at design complete and project closeout.

### 1.3.3 Real Property Assets

Real Property Assets identified in Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES paragraph "REAL PROPERTY RECORD" apply to work covered by this specification.

Cost and facility data accumulated under this section are required in the preparation of DD Form 1354. Coordinate with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES paragraph "REAL PROPERTY RECORD".

**NOTE:** Real Property Unique Identifiers (RPUID's) will be provided by the Government but may not be available until later in the project schedule. Coordinate receipt of the RPUID's with the Contracting Officer and the Real Property Accounting Officer. Temporary RPUID's may be required until the actual RPUID's can be provided.

Accumulate data using the appropriate division of the RPUID's/ Category Codes to represent the final constructed facility real property assets that apply to this contract. Include physical data and all associated costs required for completion of DD Form 1354. The Contractor shall meet with the Contracting Officer and the Real Property Accounting Officer during the Post Award Kickoff Meeting and the Project Closeout Meetings to modify and include any necessary changes to the DD Form 1354. Coordinate the Contractor's Price and Payment structure with the structure of the RPUIDs/Category Codes. Asset breakdowns and construction categories may be modified by the Contracting Officer as

necessary during course of work.

#### 1.3.4 Schedule Requirements for HVAC TAB

The field work required by Design-Build Contractor prepared Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC shall be broken down in the Earned Value Report from the cost-loaded NAS by separate line items which reflect measurable deliverables. Specific payment percentages for each line item will be determined on a case by case basis for each contract. The line items shall be as follows:

- a. Approval of Design Review Report: The TABS Agency is required to conduct a review of the project plans and specifications to identify any feature, or the lack thereof, that would preclude successful testing and balancing of the project HVAC systems. The resulting findings shall be submitted to the Government to allow correction of the design. The progress payment will be issued after review and approval of the report.
- b. Approval of the pre-field engineering report: The TABS Agency submits a report which outlines the scope of field work. The report shall contain details of what systems will be tested, procedures to be used, sample report forms for reporting test results and a quality control checklist of work items that must be completed before TABS field work commences.
- c. Season I field work: Incremental payments are issued as the TABS field work progresses. The TABS Agency mobilizes to the project site and executes the field work as outlined in the pre-field engineering report. The HVAC water and air systems are balanced and operational data shall be collected for one seasonal condition (either summer or winter depending on project timing).
- d. Approval of Season I report: On completion of the Season I field work, the data is compiled into a report and submitted to the Government. The report is reviewed, and approved, after ensuring compliance with the pre-field engineering report scope of work.
- e. Completion of Season I field QA check: Contract QC and Government representatives meet the TABS Agency at the jobsite to retest portions of the systems reported in the Season I report. The purpose of these tests are to validate the accuracy and completeness of the previously submitted Season I report.
- f. Approval of Season II report: The TABS Agency completes all Season II field work, which is normally comprised mainly of taking heat transfer temperature readings, in the season opposite of that under which Season I performance data was compiled. This data must be compiled into a report and submitted to the Government. On completion of submittal review to ensure compliance with the pre-field engineering report scope, progress payment is issued. Progress payment is less than that issued for the Season I report since most of the water and air balancing work effort is completed under Season I.

#### 1.4 CONTRACT MODIFICATIONS

In conjunction with the Contract Clause "DFARS 252.236-7000, Modification Proposals-Price Breakdown," and where actual ownership and operating costs of construction equipment cannot be determined from Contractor accounting

records, equipment use rates will be based upon the applicable provisions of the EP 1110-1-8.

## 1.5 CONTRACTOR'S INVOICE AND CONTRACT PERFORMANCE STATEMENT

### 1.5.1 Content of Invoice

Requests for payment will be processed in accordance with the Contract Clause "FAR 52.232-27, Prompt Payment Construction Contracts," and shall include items required by FAR 52.232-5, "Payments Under Fixed-Price Construction Contracts". The Requests for payment shall include the documents listed below.

- a. The Contractor's invoice, on NAVFAC Form 7300/30 furnished by the Government, showing in summary form, the basis for arriving at the amount of the invoice. Form 7300/30 must include certification by Quality Control (QC) Manager as required by the contract. Provide one (1) original and two (2) copies to the Contracting Officer.
- b. The Earned Value Report from the cost-loaded NAS, showing in detail: the estimated cost, percentage of completion, and value of completed performance for each of the construction categories stated in this contract. Use NAVFAC Form 4330/110 on NAVFAC contracts when a Monthly Estimate for Voucher is required. Provide one (1) original and two (2) copies to the Contracting Officer.
- c. Updated Project Schedule and reports required by the contract if not already submitted per Section 01 32 17.00 20 NETWORK ANALYSIS SCHEDULES (NAS) FOR DESIGN-BUILD.
- d. Contractor Safety Self Evaluation Checklist.
- e. Other supporting documents as requested.
- f. Updated copy of submittal register.
- g. Invoices not completed in accordance with contract requirements will be returned to the Contractor for correction of the deficiencies.
- h. Subcontractor and supplier payment certification.
- i. Materials on Site.
- j. Affidavit to accompany invoice (LANTDIV NORVA Form 4-4235/4 (Rev.5/81)).

### 1.5.2 Submission of Invoices

If NFAS Clause 5252.232-9301 is included in the contract, the documents listed in paragraph titled "CONTENT OF INVOICE" above must be provided in their entirety as an attachment in Wide Area Work Flow (WAWF) for each invoice submitted. The maximum size of each WAWF attachment is two megabytes, but there are no limits on the number of attachments. If a document cannot be attached in WAWF due to system or size restriction it shall be provided as instructed by the Contracting Officer. All other paper invoices must be forwarded with specific marking on the envelope. This marking must be in the front lower left hand corner, in large letters, "INVOICES - ENCLOSED."

Monthly invoices and supporting forms for work performed through the anniversary award date of the contract shall be submitted to the Contracting Officer within 5 calendar days of the date of invoice. For example, contract award date is the 7th of the month, the date of each monthly invoice shall be the 7th and the invoice shall be submitted by the 12th of the month.

#### 1.5.3 Final Invoice

- a. A final invoice shall be accompanied by Final Release Form, NAVFAC Form 4330/07, furnished by the Government. If the Contractor is incorporated, the release shall contain the corporate seal. An officer of the corporation shall sign the release and the corporate secretary shall certify the release.
- b. For final invoices being submitted via WAWF, the original Contractor's Final Release form must be provided to the respective Contracting Officer prior to submission of the final invoice. Once receipt of the original Final Release form has been confirmed by the Contracting Officer, Contractor shall then submit final invoice and attach a copy of the Final Release form in WAWF.
- c. Final invoices not accompanied by Final Release will be considered incomplete and will be returned to the Contractor.
- d. Request for final payment must include the following: one copy of NC Tax certified statement and report for the prime and each subcontractor (FAR 52.229-7); As-built drawings, warranties, O&M manuals.

#### 1.6 PAYMENTS TO THE CONTRACTOR

Payments will be made on submission of itemized requests by the Contractor which comply with the requirements of this section, and will be subject to reduction for overpayments or increase for underpayments made on previous payments to the Contractor.

##### 1.6.1 Obligation of Government Payments

The obligation of the Government to make payments required under the provisions of this contract will, at the discretion of the Contracting Officer, be subject to reductions and/or suspensions permitted under the FAR and agency regulations including the following in accordance with "FAR 32.503-6:

- a. Reasonable deductions due to defects in material or workmanship;
- b. Claims which the Government may have against the Contractor under or in connection with this contract;
- c. Unless otherwise adjusted, repayment to the Government upon demand for overpayments made to the Contractor; and
- d. Failure to provide up to date record drawings not current as stated in Contract Clause "FAC 5252.236-9310, Record Drawings." NC State tax certified statement and report in accordance with FAR 52.229-2; labor payrolls in accordance with FAR 52.222-6; as-built drawings in accordance with Section 01 45 00.05 20, "DESIGN AND CONSTRUCTION QUALITY CONTROL".

#### 1.6.2 Payment for Onsite and Offsite Materials

Progress payments may be made to the contractor for materials delivered on the site, for materials stored off construction sites, or materials that are in transit to the construction sites under the following conditions:

- a. FAR 52.232-5(b) Payments Under Fixed Price Construction Contracts.
- b. Materials delivered on the site but not installed, including completed preparatory work, and off-site materials to be considered for progress payment **shall** be major high cost, long lead, special order, or specialty items, not susceptible to deterioration or physical damage in storage or in transit to the construction site. Examples of materials acceptable for payment consideration include, but are not limited to, structural steel, non-magnetic steel, non-magnetic aggregate, equipment, machinery, large pipe and fittings, precast/prestressed concrete products, plastic lumber (e.g., fender piles/curbs) and high-voltage electrical cable. Materials not acceptable for payment include consumable materials such as nails, fasteners, conduits, gypsum board, glass, insulation, and wall coverings.
- c. Materials to be considered for progress payment prior to installation **shall** be specifically and separately identified in the Contractor's estimates of work submitted for the Contracting Officer's approval in accordance with Earned Value Report requirement of this contract. Requests for progress payment consideration for such items **shall** be supported by documents establishing their value and that the title requirements of the clause at FAR 52.232-5 have been met.
- d. Materials are adequately insured and protected from theft and exposure.
- e. Provide a written consent from the surety company with each payment request for offsite materials.
- f. Materials to be considered for progress payments prior to installation must be stored either in the Continental United States.

#### PART 2 PRODUCTS

**Not used.**

#### PART 3 EXECUTION

**Not used.**

-- End of Section --

SECTION 01 30 00.05 20

ADMINISTRATIVE REQUIREMENTS FOR DESIGN-BUILD

03/13

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Insurance

Salvage Plan; G

1.2 PROGRESS AND COMPLETION PICTURES

Photographically document site conditions prior to start of construction operations. Provide monthly, and within one month of the completion of work, digital photographs, 1600x1200x24 bit true color in JPEG file format showing the sequence and progress of work. Take a minimum of 20 digital photographs each week throughout the entire project from a minimum of ten views from points located by the Contracting Officer. Submit a view location sketch indicating points of view. Submit with the monthly invoice two sets of digital photographs each set on a separate CD-R, cumulative of all photos to date. Indicate photographs demonstrating environmental procedures. Photographs for each month shall be in a separate monthly directory and each file shall be named to indicate its location on the view location sketch. The view location sketch shall also be provided on the CD as digital file. All file names shall include a date designator. Cross reference submittals in the appropriate daily report. Photographs shall be provided for unrestricted use by the Government.

1.3 MINIMUM INSURANCE REQUIREMENTS

Procure and maintain during the entire period of performance under this contract the following minimum insurance coverage:

- a. Comprehensive general liability: \$500,000 per occurrence
- b. Automobile liability: \$200,000 per person, \$500,000 per occurrence for bodily injury, \$20,000 per occurrence for property damage
- c. Workmen's compensation as required by Federal and State workers' compensation and occupational disease laws.
- d. Employer's liability coverage of \$100,000, except in States where workers compensation may not be written by private carriers,
- e. Others as required by the State.

#### 1.4 ELECTRONIC MAIL (EMAIL)

- a. The Contractor is required to establish and maintain electronic mail (email) capability along with the capability to open various electronic attachments in Microsoft, Adobe Acrobat, and other similar formats.
- b. Within 10 days after contract award; the Contractor shall provide the Contracting Officer a single (only one) email address for the ROICC office to send communications related to this contract correspondence. The ROICC office may also use email to notify the Contractor of base access conditions when emergency conditions warrant, such as hurricanes, terrorist threats, etc.
- c. Multiple email addresses are not authorized.
- d. It is the Contractor's responsibility to make timely distribution of all ROICC email within its own organization, including field office(s).

#### 1.5 CONTRACTOR PERSONNEL REQUIREMENTS

##### 1.5.1 Subcontractor Special Requirements

##### 1.5.1.1 Asbestos Containing Material

All contract requirements of PART 4, F20 SELECTIVE DEMOLITION, assigned to the Private Qualified Person (PQP) must be accomplished directly by a first tier subcontractor.

##### 1.5.1.2 HVAC TAB

All contract requirements of TAB work required by Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC, shall be accomplished directly by a first tier subcontractor. No TAB work required by Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC, is allowed to be accomplished by a second tier subcontractor.

##### 1.5.1.3 Qualified Testing Organization

All contract requirements of work required to be performed by a Qualified Testing Organization in PART 3, D50 ELECTRICAL and G40 SITE ELECTRICAL UTILITIES and PART 5 specifications, shall be accomplished directly by a first tier subcontractor. No work to be performed by a Qualified Testing Organization, required by PART 5 specifications, is allowed to be accomplished by a second tier subcontractor.

##### a. Telecommunication and High Voltage Work

When telecommunications and high voltage work is required, all work associated with telecommunications and high voltage shall be accomplished by a first tier subcontractor. The contractor must possess a valid North Carolina Public Utility - Electrical, contractor's license and be insured to do such work in the State of North Carolina.

##### b. Paving Associated with Utility Cuts

All pavement repairs associated with utility cuts shall be

completed within 14 days of completing work within paved area.

#### 1.6 DISCLOSURE OF INFORMATION

Contactor shall comply as follows:

- a. The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless -

- (1) The Contracting Officer has given prior written approval;  
or
- (2) The information is otherwise in the public domain before the date of release.

- b. Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

- c. The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

#### 1.7 SUPERVISION

Have at least one qualified supervisor capable of reading, writing, and conversing fluently in the English language on the job site during working hours. In addition, the Quality Control (QC) representative shall also have fluent English communication skills.

#### 1.8 AVAILABILITY OF CAD DRAWING FILES

After award and upon request, the electronic "Computer-Aided Design (CAD)" drawing files, if it exists, will be made available to the Contractor for use in preparation of construction drawings and data related to the referenced contract subject to the following terms and conditions.

Native CADD files will not be made available to bidders prior to award. Files shall be turned over to the Contractor post-award in the following formats:

- a. RFP Proposed Facility Layout Drawings: These are available in available in AutoCAD format upon request.

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



These electronic CADD drawing files are not construction documents. Differences may exist between the CADD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CADD files, nor does it make representation to the compatibility of these files with the Contractors hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished CADD files, the signed and sealed construction documents shall govern. The Contractor is responsible for determining if any conflict exists. Use of these CADD files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate the work of all contractors for the project.

If the Contractor uses, duplicates or modifies these electronic CADD files for use in producing construction drawings and data related to this contract, all previous indicia of ownership (seals, logos, signatures, initials and dates) shall be removed.

#### 1.9 PRECONSTRUCTION CONFERENCE

After award of the contract but prior to commencement of any work at the site, meet with the Contracting Officer to discuss and develop a mutual understanding relative to the administration of the value engineering and safety program, preparation of the schedule of prices, shop drawings, and other submittals, scheduling programming, salvage plan, and prosecution of the work.

Major subcontractors who will engage in the work shall also attend.

#### 1.10 CLEANUP

Leave premises "broom clean." Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Replace filters of operating equipment. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site.

#### PART 2 PRODUCTS

Not used.

#### PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 31 19.05 20

POST AWARD MEETINGS

10/2019

PART 1 GENERAL

1.1 SUMMARY

This document includes post-award requirements for project kickoff and subsequent design and preconstruction meetings.

1.2 SUBMITTALS

All submittals (Hard copies or in electronic format) must be approved by the DOR and QC Manager before they are submitted to the Government CM. Government approval is required for submittals with a "G" designation; the Government will not accept submittals without the aforementioned approvals..

Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES:.

SD-01 Preconstruction Submittals

Design Submittal Packaging Proposal; G

Performance Assessment Plan (PAP); G

CDW Preliminary Concept Design; G

CDW Basis of Design with Cost Estimate; G

CDW Concept Design Report; G

1.3 POST AWARD KICKOFF MEETING

The Post Award Kickoff (PAK) meeting is made up of Contract Administration, and Scheduling. If mutually beneficial to the Contractor and the Government, these elements may be addressed in either a single meeting or multiple meetings.

1.3.1 PAK Meeting Schedule and Location

Within 45 calendar days after contract award, and prior to commencing work, meet with the Contracting Officer for the PAK meeting. The meeting must be located at a specific time and place to be determined by the Contracting Officer. The meeting will be combined with the Concept Design Workshop, CDW.

1.3.2 PAK Meeting Outcomes

The meeting(s) outcomes are:

- a. Integrate the Contractor and all client representatives into the project team.
- b. Achieve consensus from the project team on any issues and concerns with the Contractor's technical proposal. If necessary, the User(s) may make a presentation of their functional requirements. **Achieve consensus that**

**User's functional requirements are understood and will be implemented into the project design.**

- c. Establish and explain policies and procedures for completion of a successful project.
- d. Establish clear lines of communication and points of contact for Government and Contractor team members.
- e. Establish clear expectations for the Concept Design Workshop.
- f. Establish project design schedule, design submittal packaging, and preliminary construction schedule in accordance with Section 01 32 17.00 20 COST-LOADED NETWORK ANALYSIS SCHEDULE (NAS) FOR DESIGN-BUILD. Discuss design milestones and events that will be included in the Quality Control Communication Plan.
- g. Establish procedure for design packages reviews, Contractor's resolution to comments, and Government's role in review of packages.
- h. Establish clear expectations and schedules for facility turnover, providing DD Form 1354 asset management records, eOMSI submittals, and training of Government maintenance personnel.

#### 1.3.3 PAK Meeting Contractor Attendees

The following Contractor key personnel must attend the PAK meeting: Project Manager, Project Scheduler, Designer-of-Record (DOR), Design Staff responsible for each architectural/engineering discipline, Superintendent and QC Manager. Optional attendees include: Principal, Assistant Project Manager and major subcontractors and specialized supplemental QC personnel.

#### 1.3.4 Contract Administration

Contract administration roles and responsibilities will be addressed.

#### 1.4 CONCEPT DESIGN WORKSHOP (CDW)

Provide a Concept Design Workshop (CDW) for this project. This effort will examine project functions and requirements, quality and life safety costs, analyze alternate design concepts, expose and resolve project issues, and develop the final conceptual design. The outcome of the CDW must be an acceptable conceptual design including floor and site plans, signed by the client, Contractor and other key team members.

- a. The CDW must be based on the presentation of actual options developed by the designers.
- b. The options must be done with accurate site information, for example, completed site survey, completed field verification of existing conditions with regards to dimensions, lay-out, materials, etc.
- c. Demonstrate a thorough understanding of the existing load bearing walls that will need to be demolished and replaced with new structural items.
- d. The presentation of information must follow the format and order of presentation. The Government would consider at the PAK meeting, variations to the presentation format proposed by the Design Build-GC team.

For each trade:

- a. Provide narrative that demonstrates thorough understanding of the scope of work.
- b. Provide coordinated presentation exhibits showing the description of the proposed utilities for each building and the interconnections.

A. ARCHITECTURAL

- a. Phasing Plans: Provide graphic representation of each phase. The phasing plans must only show what will occur in that particular phase. For instance: building under renovation/demolition, buildings used by the Government, temporary relocations of offices, construction barriers, construction staging, entry points, storage of existing furniture to be re-used, access points for buildings used by the Government, etc. Phasing plans showing all phases at once with demarcation lines and phasing numbers will not be accepted.
- b. Code and Life Safety Analysis: Provide a fully developed Code, and Life Safety Analysis per FC1-300-09N/7-5 Code Compliance Summary Sheets. Provide plumbing fixture count for each facility as applicable. This information must be presented in drawing format which will be part of the subsequent design submittals and the construction documents. The presenter must use the information to present the major findings and issues that may impact the RFP only. The presenter must not go over each code matter in detail beyond what is required to demonstrate to the CDW audience the outcome that may or may not impact the user utilization of their building.
- c. Fully developed floor plans of each level of the building: The floor plans for each level must be shown in one sheet without match lines. The floor plans must be color coded in such a way to aid the user in the evaluation of the options with regards to space usage, adjacencies, circulations, etc.
- d. Exterior features (Entry Canopy, Wing Stairs, Pitch SSMR roof, new Mechanical Room Doors, Ramps/Railing, Sidewalks, Parking Spaces).
- e. Balance of Architectural requirements

B. INTERIORS

- a. Provide narrative that demonstrates thorough understanding of the scope of work.
- b. Room finish schedule

C. LANDSCAPE ARCHITECT

- a. Provide an aesthetically pleasing design layout depicting the proposed future exterior conditions. The landscape vegetation must be kept to a minimum, mainly to replace existing bushes and trees affected by the renovation. The MCBCL does not maintain landscape features other than lawn areas and bushes that do not require maintenance.

D. STRUCTURAL

- a. Provide a narrative that demonstrates a thorough understanding of the scope of work
- b. Discuss the impacts of the scope of work on the existing structure
- c. Discuss where reinforcement and/or replacement may be required.

E. CIVIL

- a. Provide narrative and site plan that demonstrates a thorough understanding of the scope of work. Narrative will discuss permitting actions with state and federal agencies.
- b. The site plan will included the following:
  - b.1 Connections to existing utilities (domestic water, waste water and storm water).
  - b.2 New utilities (domestic water, waste water and storm water)
  - b.3 Conveyance of storm water from the site (permanently and during construction). Site plan will ensure positive drainage of the site. Narrative will discuss erosion control during construction.
  - b.4 Roadway improvements.
  - b.5 Parking lot improvements (includes layout, entrances, exits and circulation).
  - b.6 Improvements to and new sidewalks. Connections with existing road, sidewalk and trail network.

F. PLUMBING

- a. Provide Design Analysis as follows:
  - a.1 Building occupancy, estimated male to female ratio.
  - a.2 Plumbing fixture determination
  - a.3 Number of fixture units requiring drainage, venting, cold and hot water piping.
- b. Provide Calculations for:
  - b.1 Domestic water volume coming into the building (looking for a preliminary calculation on the water volume. Needed to determine if the existing water main has the size/capacity for demand).
  - b.2 available water pressure (If the water pressure is suspect, a water pressure calculation is needed to determine if domestic water pump is required).
  - b.3 Water Heater Size/Storage (preliminary calculation on the water heater/storage tank size).
  - b.4 Sanitary sewer size coming into the building (preliminary calculation on the sanitary sewer size to determine if the existing main has the size/capacity for demand).
  - b.5 Building Utilities (Gas, preliminary calculation on the utility capacity demand vs. supply).
- c. Plans:
  - c.1 Show plumbing fixtures, floor drains and equipment locations.
  - c.2 Site Plan. Show connections, such as to gas, water and sanitary distribution.

G. MECHANICAL

- a. Document ventilation, temperature and humidity requirements, occupancies, functions, usage schedules, equipment loads, and exhaust requirements by space).
- b. Identify the governing codes and criteria utilized for the design. Include the titles and the date of the applicable edition or publication.
- c. Determine energy sources available at the project site. Describe the source of thermal energy that will be used (e.g. natural gas).
- d. Provide a narrative description of all systems. Describe in detail all systems and components at a preliminary design stage to include the modeled energy use.
- e. Calculations:
  - e.1 Show calculations and assumptions supporting equipment selections in a clear and organized manner. When charts or tables are referenced in the design analysis, cite the source and date of the publication.
  - e.2 Provide calculations used to size equipment, piping, ductwork and all accessories. Provide the model number and manufacturer of each major piece of equipment used in the basis for the design.
- f. Plans:
  - f.1 Show mechanical equipment locations.
  - f.2 Site Plan. Show connections, such as to gas distribution.

#### H. ELECTRICAL

- a. Provide in accordance with UFC 3-501-01.
- b. The drawings need not provide extensive details but must be complete enough to thoroughly express the Designer's intentions
- c. Existing Site and Demolition Plan
- d. Site Plan
- e. Single Line Diagram
- f. Preliminary floor plans with dedicated space clearly identified for electrical and telecommunications rooms.

#### I. FIRE PROTECTION

Provide narrative (if applicable) regarding the following:

- a. Building Code summary
- b. Life safety Plan
- c. Available water supply
- d. Water requirements
- e. Fire service location
- f. FDC location
- g. Sprinkler riser location
- h. Smoke detection
- i. Fire alarm
- j. Exit illumination
- k. Exit lights
- l. Fire extinguisher cabinets

#### 1.4.1 Meeting Attendees (CDW, SD, and DD Over the Shoulder)

The following Contractor key personnel must attend the meetings: Project Manager, Project Scheduler, Cost Estimator, and Lead Designer-of-Record (DOR), Design Staff responsible for each architectural/engineering discipline, Superintendent, QC Manager. Optional attendees include: Principal, Assistant Project Manager, major subcontractors and specialized supplemental QC personnel.

#### 1.4.2 General

##### 1.4.2.1 Facilitator

The Contractor will provide a Facilitator who is experienced in conducting Concept Design Workshops. Provide CDW Facilitator Experience Resume for approval prior to the CDW. The CDW Facilitator must be acceptable to the Contracting Officer. The Facilitator will; be responsible for guiding the meeting in such a manner that all elements of the agenda are covered within the target time frame, carefully listen to issues and encourage discussion that results in an agreeable solution, document key takeaways from the meeting, organize the design concept documents for on-site approval and provide the CDW Concept Design Report upon conclusion of the meeting.

##### 1.4.2.2 Contractor's Design Team

The primary functions of the Design Team will be to investigate, develop and present alternate design solutions. The entire Design Team will participate in all phases of the Concept Design Workshop effort and provide assistance to the Facilitator in development of the Concept Design Workshop Report, including most of the required documentation.

##### 1.4.2.3 Award Amount

With each alternate design solution the Contractor must verify that the concept is within the contract award amount.

##### 1.4.2.4 CDW Concept Design Report

The CDW Concept Design Report will summarize the final conceptual design and will be produced almost entirely on-site during the workshop. The CDW Concept Design Report must not be formatted as meeting notes and/or re-stating the RFP. This document must not be construed to take precedence over the contractual RFP except on those items that may deviate from the RFP. The CDW Concept Design Report must clearly identify:

- a. Items needing clarification/confirmation/approval from the Government.
- b. Action items identifying the responsible party.
- c. Drawings, reports, items required in the CDW but omitted in the presentation.
- d. Additional drawings, reports, etc. to further illustrate the Design team's understanding of the RFP SOW.

The CDW Concept Design Report must be itemized and submitted in RFI-spread sheets similar to the PPI's used during the solicitation. This will allow the Government to provide clear direction as well as provide a mechanism to track the status of each item.

#### 1.4.3 Procedure

##### 1.4.3.1 Preliminary Work

The Contractor's Design Team must complete the following prior to the on-site workshop:

- a. Review the contract documents and references explaining the project scope and history.
- b. Schedule an appropriate conference room convenient to the project site and/or Users for use by the Design Team and Government participants during the workshop.
- c. CDW and PAK to be combined 30 days post award. Prepare 20 copies of a CDW Preliminary Concept Design (Concept #1), a Basis of Design, and a statement that the concept provided is within the award amount for distribution at the Concept Design Workshop.
- d. Facilitator must conduct a meeting with NAVFAC MIDLANT representatives before the Concept Design Workshop to review preparations, relationships, and the status of work to be accomplished. Meeting may be conducted via telephone or other electronic means if mutually agreeable to all concerned.
- e. Resolve any outstanding issues regarding the CDW with the Contracting Officer.

##### 1.4.3.2 On-Site Workshop

The on-site workshop must last a minimum of three working days, minimizing breaks so as to maintain momentum. The Design Team should expect longer than normal workdays and must accomplish the following items during the on-site phase of the Concept Design Workshop.

- a. The Facilitator will describe the Concept Design Workshop process and review the workshop agenda. The user(s) may provide a functional presentation to reiterate to all participants the User(s) needs and desires. The intent is to make the design solution and issue resolution function-oriented.
- b. Present CDW Preliminary Concept Design Concept #1 and respond to questions.
- c. Participate in a comment/creative session to generate ideas to improve this project in the areas of function, quality and total life cycle cost, issue resolution, and sustainable design within the award amount. It is often helpful to request User comments in writing so they may be considered, responded to, and presented at subsequent presentations. This iterative workshop will invariably lead to revisions to the design build team's initial response to the RFP. This design input should be planned to be incorporated into the project, so long as it is within scope and RFP intent.
- d. Create a revised concept design(s). Design concepts must include drawings, sketches, and other graphics as necessary to fully describe the concept. Prepare at least 20 copies for distribution at all presentations.



- e. Repeat applicable steps as necessary. Usually several concepts are required. The final concept must be within the contract award amount and follow the intent of the RFP.
- f. The final concept must include the following:
  - 1. Site Plan: Show the layout of the proposed facility in relation to major landmarks. Show all buildings, access roads, parking, pedestrian walkways, roads, sidewalks, landscaping, and major utilities. Indicate major dimensions and orientation. Provide an analysis relating the proposed building site, size, and construction type to applicable codes and criteria.
  - 2. Building Floor Plans: Provide floor plans depicting functional utilization of spaces and furniture and equipment layout. Show room dimensions. Provide a Life Safety Code® analysis with the floor plan to identify required life safety and egress features.
  - 3. Perspective Sketches: Provide at least one sketch to show a perspective of major buildings. The sketch should not be elaborate but must show the proposed form and massing, colors to be used, and an indication of materials used
  - 4. Mechanical Plans: Provide plans as necessary to show the essential work and intent of the design. Suggestions include equipment layouts, zones, etc.
  - 5. Electrical Plans: Provide plans as necessary to show the essential work and intent of the design. Suggestions include special light fixture types, locations, switching, power outlets and panelboard location. Provide electrical distribution single line diagram.
  - 6. CDW Basis of Design with Cost Estimate: Describe, in layman's terms, the intent of the design by discipline. Address material quality, energy efficiency and life cycle costs. Provide a statement that the concept presented can be constructed within the award amount
  - 7. System Safety Engineering.
- g. Prepare 20 copies of the final concept (drawings, basis of design and statement that the concept is within the award amount) for distribution at the final presentation.
- h. Dependent upon the project, the Concept Design Workshop Report is provided by the Facilitator, includes all items included in the final concept design and the following:
  - 1. Endorsements: Include a copy of the signature/endorsement sheet.
  - 2. Comments: Include comments and resolutions concerning the final concept design.
  - 3. Executive Summary: Summarize the workshop, including how the various concepts differed and were improved during the workshop.
  - 4. Special Design Features: Identify and describe unique project needs and features, e.g., pile foundations, physical security, intrusion detection systems, access control, construction in humid

climates, pollution abatement, etc.

5. Architectural Compatibility Statement: Identify architectural style, materials, and color scheme; and indicate their compatibility with installation planning and design concepts established in the Base Exterior Architectural Plan (BEAP).
  6. Environmental Summary: Provide a summary of environmental issues, listing completed actions and items requiring further coordination, waivers or permits.
  7. Supporting Project Documentation: Include data to support the development of the concept design, layout, and special features. Items should include: project scope discussion, minutes of meetings, functional analysis work sheets, and economic and technical analyses of alternatives evaluated.
- i. Except for final comments, responses and endorsements, the final report should be completed (electronically) on site, before the final presentation. If requested by the PWD Project Manager be prepared to present up to 10 hard copies of the report at the conclusion of the workshop.
  - j. Conduct a "front-to-back" comprehensive presentation of the final concept. Obtain user signatures on a conceptual design endorsement sheet, signifying approval of the concept design, subject to the final comments and their resolutions agreed to at the final presentation meeting.

#### 1.4.3.3 Concept Design Workshop Report

Within 7 calendar days after completion of the on-site Concept Design Workshop, the Design Team must submit to the PWD Project Manager an electronic copy of the Concept Design Workshop Report as one file in \*.PDF format. This report must not be construed as meeting notes or a compendium of items discussed. The report must not repeat what can be found in the RFP. The report must reflect the findings and changes to the RFP. The report must include all the action items and associated responsible person.

#### 1.5 PERFORMANCE ASSESSMENT PLAN (PAP)

The Performance Assessment Plan (PAP) must be used to document design innovation and budget management, provide performance feedback to the Contractor, and as a basis for interim and final evaluations in the Construction Contractor Appraisal System (CCASS) on-line database.

It is the intent of the Government to establish the PAP based on tangible, measurable indicators of outstanding contractor performance, and on commitments made in the Contractor's proposal. The initial PAP may be found on the NAVFAC Design-Build Request for Proposal Website in RFP PART 6 Attachments. Review and finalize the initial PAP during the Partnering Session. During the initial Partnering Session, the Government, the Contractor, the Designer-of-Record, and the Client will establish the PAP. Following the establishment of the PAP, the Contractor will present it, with his input, for update and discussion at project meetings which discuss project performance. Submit an updated PAP on a monthly basis with the invoice for that period as a minimum. A copy of the initial PAP is attached.

## 1.6 PROJECT SCHEDULE

Provide in accordance with Section 01 32 17.05 20 NETWORK ANALYSIS SCHEDULES (NAS) FOR DESIGN-BUILD.

## 1.7 DESIGN QUALITY ASSURANCE MEETINGS

After Government Quality Assurance (QA) of each Design Submittal has been completed, meet with the Government to discuss review comments for the specific design submittal.

Provide consolidated copies of all Government comments with annotations of Contractor's action beside them. Notify the Contracting Officer in writing within five (5) days after receipt of Government's comments if the Contractor disagrees with comments technically or interprets comments to exceed the requirements of the contract.

### 1.7.1 Design QA Meeting Attendees

The following Contractor key personnel must attend the design QA meetings: Project Manager, QC Manager and Contractor's Design Staff (architect and engineering disciplines related to topics to be discussed).

### 1.7.2 Design QA Meeting Location

Meetings must be located at the office of the Contracting Officer's QA Team or may be conducted at other locations or by other electronic means if mutually acceptable to all parties.

### 1.7.3 Minimum Design QA Meeting Agenda

Address all Government comments that are unresolved and present clarification or supporting information requested by the Contracting Officer's QA team during the previous meeting.

## 1.8 PRECONSTRUCTION MEETING

Meet with the Contracting Officer to discuss construction items of concern to the Government and the Contractor such as outages, storage, trailer location, disposal of construction debris, and safety, at a location to be determined by the Contracting Officer. The Preconstruction meeting may take place with the PAK meeting or at any time prior to mobilization and before any construction work begins.

## 1.9 RECURRING MEETINGS

### 1.9.1 Quality Control and Production Meetings

Quality Control and Production Meetings in accordance with Section 01 45 00.05 20 DESIGN AND CONSTRUCTION QUALITY CONTROL.

### 1.9.2 Safety Meetings

Safety Meetings in accordance with Section 01 35 26.05 20 GOVERNMENT SAFETY REQUIREMENTS FOR DESIGN-BUILD.

### 1.9.3 eOMSI Meetings

Refer to Section 01 78 24.00 20 FACILITY ELECTRONIC OPERATIONS AND MAINTENANCE INFORMATION (eOMSI) for requirements.

### 1.10 FACILITY TURNOVER PLANNING MEETINGS (NAVFAC RED ZONE - NRZ)

Meet with the Government to identify strategies to ensure the project is carried to expeditious closure and turnover to the Client. Start the turnover process at the PAK meeting with a discussion of the NAVFAC Red Zone (NRZ) process and convene at regularly scheduled NRZ Meetings. Include the following in the facility Turnover effort:

#### 1.10.1 NRZ Checklist

- a. Contracting Officer's Technical Representative (COTR) will provide the Contractor a copy of the NRZ Checklist template prior to 75 percent completion.
- b. Prior to 75 percent completion add/delete critical activities to the NRZ Checklist template as necessary to match the project scope, and schedule critical activities and insert planned completion dates in the NRZ checklist for each critical activity. Present the NRZ Checklist to COTR and review during a regularly scheduled QC Meeting.

#### 1.10.2 Meetings

- a. Upon Government acceptance of the NRZ Checklist, the Project Superintendent is required to lead regular NRZ Meetings beginning at approximately 75 percent project completion, or three to six months prior to Beneficial Occupancy Date (BOD), whichever comes first.
- b. The Contracting Officer will determine the frequency of the meetings, which is expected to increase as the project completion draws nearer.
- c. Using the NRZ Checklist as a Plan of Action and Milestones (POAM) and basis for discussion, review upcoming critical activities and strategies to ensure work is completed on time.
- d. Coordinate with the COTR any upcoming activities that require Government involvement.
- e. Maintain the NRZ Checklist by documenting the actual completion dates as work is completed and update the NRZ Checklist with revised planned completion dates as necessary to match progress. Distribute copies of the current NRZ Checklist to attendees at each NRZ Meeting.
- f. Assign responsibility and schedule for the provision of all information necessary to complete the Final eOMSI Data and Documents Submittals for facility turnover.
- g. Assign responsibility and schedule for the provision of all documentation necessary to achieve Guiding Principle Validation and also Third Party Certification, if applicable.
- h. Schedule and coordinate the facility training of Government maintenance personnel in accordance with 01 78 23 OPERATION AND MAINTENANCE DATA.
- i. Discuss the requirements of creating the Interim and Final DD Form 1354

to provide asset management records to the Government. Refer to Section  
01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES for requirements.

1.10.3 Facility Turnover Meeting Attendees

The following key personnel must attend the Facility Turnover Meetings:  
Contractor QC Manager, Design Quality Control Manager, Superintendent,  
Major Subcontractors, Designer-of-Record, Contracting Officer's  
Representative, Representative(s) of NAVFAC MIDLANT, the Facility Owner /  
Real Property Accounting Officer, Public Works Facility Maintenance  
Specialist, and the Client.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

-- End of Section --

SECTION 01 31 23.13 20

ELECTRONIC CONSTRUCTION AND FACILITY SUPPORT CONTRACT MANAGEMENT SYSTEM  
05/17

PART 1 GENERAL

1.1 CONTRACT ADMINISTRATION

Utilize the Naval Facilities Engineering Command's (NAVFAC's) Electronic Construction and Facility Support Contract Management System (eCMS) for the transfer, sharing and management of electronic technical submittals and documents. The web-based eCMS is the designated means of transferring technical documents between the Contractor and the Government. Paper media or e-mail submission, including originals or copies, of the documents identified in Table 1 are not permitted, except where eCMS is unavailable, non-functional or specifically requested in addition to electronic submission. When specifically requested to provide documents outside of eCMS, upload all final project documentation (e.g. documents that are signed and/or adjudicated by the Government) mentioned in Table 1 into the subject eCMS document management folders that are associated with that document type. Include the identification number of the document, type of document; the name/subject or title; and for daily reports the date (day of work) with format YYYY/MM/DD in the filename. For example for RFI's 0011\_RFI\_Roof\_Leaking.doc; For submittals 0032a\_Submittals\_Light\_Fixture.pdf; For Daily Reports 0132\_Daily\_Report\_20190504.xls. Contact the Contracting Officer's Representative (COR) regarding availability of eCMS training and reference materials.

1.2 USER PRIVILEGES

The Contractor will be provided access to eCMS. All technical submittals and documents must be transmitted to the Government via the COR. Project roles and system roles will be established to control each user's menu, application, and software privileges, including the ability to create, edit, or delete objects.

1.3 SUBMITTALS

Government approval or acknowledgement is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

List of Contractor's Personnel; G

1.4 SYSTEM REQUIREMENTS AND CONNECTIVITY

1.4.1 General

The eCMS requires a web-browser (platform-neutral) and Internet connection. Obtain from an approved vendor an External Certification Authority (ECA), Primary Key Infrastructure (PKI) certificate, or other similar digital identification to support two-factor authentication and access to eCMS. Provide and maintain computer hardware and software for the eCMS access throughout the duration of the contract for all

Contractor-designated users. Provide connectivity, speed, bandwidth, and access to the Internet to ensure adequate functionality. Neither upgrading of the Contractor's computer system nor delays associated from the usage of the eCMS will be justification or grounds for a time extension or cost adjustment to the Contract.

#### 1.4.2 Contractor Personnel List

Within 20 calendar days of contract award, provide to the Contracting Officer a [list of Contractor's personnel](#) who will have the responsibility for the transfer, sharing and management of electronic [design](#), technical submittals and documents and will require access to the eCMS. Project personnel roles to be filled in the eCMS include the Contractor's Project Manager, [Designer of Record](#), Superintendent, Quality Control (QC) Manager, and Site Safety and Health Officer (SSHO). Personnel must be capable of electronic document management. Notify the COR immediately of any personnel changes to the project. The Contracting Officer reserves the right to perform a security check on all potential users. Provide the following information:

First Name  
Last Name  
E-mail Address  
Office Address  
Project Role (e.g. Project Manager, QC Manager, Superintendent)

#### 1.5 SECURITY CLASSIFICATION

In accordance with Department of Navy guidance, all military construction contract data are unclassified, unless specified otherwise by a properly designated Original Classification Authority (OCA) and in accordance with an established Security Classification Guide (SCG). Refer to the project's OCA when questions arise about the proper classification of information.

The eCMS and tablet computer must only be used for the transaction of unclassified information associated with construction projects. In conformance with the Freedom of Information Act (FOIA), Department of Defense Manual 5200.01-V4: DoD Information Security Program: Controlled Unclassified Information (CUI), and DoD requirements, any unclassified project documentation uploaded into the eCMS must be designated either "U - UNCLASSIFIED" (U) or "FOUO - UNCLASSIFIED-FOR OFFICIAL USE ONLY" (FOUO).

#### 1.6 ECMS UTILIZATION

Establish, maintain, and update data and documentation in the eCMS throughout the duration of the contract.

Personally Identifiable Information (PII) transmittal is not permitted in the eCMS.

##### 1.6.1 Information Security Classification/Identification

The eCMS must be used for the transmittal of the following documents. This requirement supersedes conflicting requirements in other sections, however, submittal review times in Section [01 33 00 SUBMITTAL PROCEDURES](#) remain applicable. Table 1 - Project Documentation Types provides the appropriate U and FOUO designations for various types of project documents. Construction documents requiring FOUO status must be marked accordingly. Apply the appropriate markings before any document is uploaded into eCMS.

Markings are not required on U documents.

Table 1 also identifies which eCMS application is to be used in the transmittal of data (these are subject to change based on the latest software configuration). If a designated application is not functional within 4 hours of initial attempt, defer to the Submittal application and submit the required data as an uploaded portable document (e.g. PDF), word processor, spreadsheet, drawing, or other appropriate format. Hard copy or e-mail submission of these items is acceptable only if eCMS is documented to be not available or not functional or specifically requested in addition to electronic submission. After uploading documents to the Submittal application, transmit the submittals and attachments to the COR via the Transmittal application. For Submittals, select the following:

Preparation by = Contractor personnel assigned to prepare the submittal  
Approval by = Contracting Officer Representative (COR)  
Returned by = Design Lead/Manager  
Forwarded to = Contractor project manager

Table 1 - Project Documentation Types

SUBJECT/NAME	CLASS	REMARKS	ECMS APPLICATION
As-Built Drawings	U	Locations of sensitive areas must be labeled as either "Controlled Area" or "Restricted Area" and may be shown on unclassified documents with the approval from Site Security Manager	Submittals and Transmittals
Building Information Modeling (BIM)	U	1. Locations of sensitive areas must be labeled as either "Controlled Area" or "Restricted Area" and may be shown on unclassified documents with the approval from Site Security Manager 2. Design reviews will be performed in existing "Dr Checks"	Submittals and Transmittals
Construction Permits	U	Refer to rules of the issuing activity, state or jurisdiction	Submittals and Transmittals
Construction Schedules (Activities and Milestones)	U	After the schedule submittal is approved by the COR, import the schedule file into the scheduling application, and select "Approve" to establish a new schedule baseline	Submittals, Transmittals and Scheduling App



SUBJECT/NAME	CLASS	REMARKS	ECMS APPLICATION
Construction Schedules (Cost-Loaded)	FOUO	After the schedule submittal is approved by the COR, import the schedule file into the scheduling application, and select "Approve" to establish a new schedule baseline	Submittals, Transmittals and Scheduling App
Construction Schedules (3-Week Lookahead)	U	Import the schedule file into the scheduling application, and select "Approve" to establish a new schedule baseline	Scheduling App
DD 1354 Transfer of Real Property	U		Submittals and Transmittals
Daily Production Reports	FOUO	Provide weather conditions, crew size, man-hours, equipment, and materials information	Daily Report
Daily Quality Control (QC) Reports	FOUO	Provide QC Phase, Definable Features of Work Identify visitors	Daily Report
Designs and Specifications	U	1. Locations of sensitive areas must be labeled as either "Controlled Area" or "Restricted Area" and may be shown on unclassified documents with the approval from Site Security Manager 2. Design reviews will be performed in existing "Dr Checks"	Submittals and Transmittals
Environmental Notice of Violation (NOV), Corrective Action Plan	U	Refer to rules of the issuing activity, state or jurisdiction	Submittals and Transmittals
Environmental Protection Plan (EPP)	FOUO		Submittals and Transmittals
Invoice (Supporting Documentation)	FOUO	Applies to supporting documentation only. Invoices are submitted in Wide-Area Workflow (WAWF)	Submittals and Transmittals

SUBJECT/NAME	CLASS	REMARKS	ECMS APPLICATION
Jobsite Documentation, Bulletin Board, Labor Laws, SDS	U		Submittals and Transmittals
Meeting Minutes	FOUO		Meeting Minutes
Modification Documents	FOUO	Provide final modification documents for the project. Upload into "Modifications - RFPs"	Document Management
Operations & Maintenance Support Information (OMSI/eOMSI), Facility Data Worksheet	U	1. Locations of sensitive areas must be labeled as either "Controlled Area" or "Restricted Area" and may be shown on unclassified documents with the approval from Site Security Manager 2. Design reviews will be performed in existing "Dr Checks"	Submittals and Transmittals
Photographs	U	Subject to base/installation restrictions	Submittals and Transmittals
QCM Initial Phase Checklists	FOUO		Checklists (Site Management)
QCM Preparatory Phase Checklists	FOUO		Checklists (Site Management)
Quality Control Plans	FOUO		Submittals and Transmittals
QC Certifications	U		Submittals and Transmittals
QC Punch List	U		Punch Lists (Testing Logs)
Red-Zone Checklist	U		Checklists (Site Management)
Rework Items List	FOUO		Punch Lists (Testing Logs)
Request for Information (RFI) Post-Award	FOUO		RFIs
Safety Plan	FOUO		Daily Report

SUBJECT/NAME	CLASS	REMARKS	ECMS APPLICATION
Safety - Activity Hazard Analyses (AHA)	FOUO		Daily Report
Safety - Mishap Reports	FOUO		Daily Report
SCIF/SAPF Accreditation Support Documents	FOUO	Note: Some Construction Security plans may be classified as Secret. Classified information must not be uploaded into eCMS. Refer to the Site Security Manager, as applicable.	Submittals and Transmittals
Shop Drawings	U	Locations of sensitive areas must be labeled as either "Controlled Area" or "Restricted Area" and may be shown on unclassified documents with the approval from Site Security Manager	Submittals and Transmittals
Storm Water Pollution Prevention (Notice of Intent - Notice of Termination)	U	Refer to rules of the issuing activity, state or jurisdiction	Submittals and Transmittals
Submittals and Submittal Log	U		Submittals and Transmittals
Testing Plans, Logs, and Reports	FOUO		Submittals and Transmittals
Training/Reference Materials	U		Submittals and Transmittals
Training Records (Personnel)	FOUO		Submittals and Transmittals
Utility Outage/Tie-In Request/Approval	FOUO		Submittals and Transmittals
Warranties/BOD Letter	FOUO		Submittals and Transmittals
Quality Assurance Reports	FOUO		Checklists (Government initiated)

SUBJECT/NAME	CLASS	REMARKS	ECMS APPLICATION
Non-Compliance Notices	FOUO		Non-Compliance Notices (Government initiated)
Other Government-prepared documents	FOUO		GOV ONLY
All Other Documents	FOUO	Refer to FOIA guidelines and contact the FOIA official to determine whether exemptions exist	As applicable

#### 1.6.2 Markings on FOUO documents

- a. Only FOUO documents being electronically uploaded into the eCMS (.docx, .xlsx, .pptx and others as appropriate), and associated paper documents described in the paragraph CONTRACT ADMINISTRATION require FOUO markings as indicated in the subparagraphs below.
- b. FOUO documents that are originally created within the eCMS application using the web-based forms (RFIs, Daily Reports, and others as appropriate) will be automatically watermarked by the eCMS software, and these do not require additional markings.
- c. FOUO documents must be marked "UNCLASSIFIED//FOR OFFICIAL USE ONLY" at the bottom of the outside of the front cover (if there is one), the title page, the first page, and the outside of the back cover (if there is one).
- d. FOUO documents must be marked on the internal pages of the document as "UNCLASSIFIED//FOR OFFICIAL USE ONLY" at top and bottom.
- e. Where Installations require digital photographs to be designated FOUO, place the markings on the face of the photograph.
- f. For visual documentation, other than photographs and audio documentation, mark with either visual or audio statements as appropriate at both the beginning and end of the file.

#### 1.7 QUALITY ASSURANCE

Requested Government response dates on Transmittals and Submittals must be in accordance with the terms and conditions of the Contract. Requesting response dates earlier than the required review and response time, without concurrence by the Government COR, may be cause for rejection.

Incomplete submittals will be rejected without further review and must be resubmitted. Required Government response dates for resubmittals must reflect the date of resubmittal, not the original submittal date.

Open Mess Hall Repair (2615)  
Marine Corps Base, Camp Lejeune

Project # 1604F

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

-- End of Section --

SECTION 01 31 50

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

01/07

PART 1 GENERAL

1.1 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00.05 20  
SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

Interim DD-1354, Transfer & Acceptance of Military Real Property

1.2 Interim DD-1354, Transfer & Acceptance of Military Real Property

Submit Interim DD-1354 thirty (30) days prior to beneficial occupancy date  
(draft copy attached if applicable).

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

-- End of Section --

SECTION 01 32 16

CONSTRUCTION PROGRESS DOCUMENTATION

04/12

PART 1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section 01 33 00.05 20, "Construction Submittal Procedures."

SD-01 Preconstruction Submittals

Construction schedule

Equipment delivery schedule

1.2 CONSTRUCTION SCHEDULE

Within 21 days after receipt of the Notice of Award, prepare and submit to the Contracting Officer for approval a Critical Path Method (CPM), Network Schedule in accordance with the terms in Contract Clause "FAR 52.236-15, Schedules for Construction Contracts," except as modified in this contract. Primavera P6 will be utilized to produce and update all progress schedules.

1.2.1 HVAC TAB Milestones

Requirements for the milestones related to HVAC TAB work, Section 23 05 93, "TESTING, ADJUSTING, AND BALANCING FOR HVAC, are specified in Section 01 20 00.05 20, "Price and Payment Procedures for Design-Build."

1.3 EQUIPMENT DELIVERY SCHEDULE

1.3.1 Initial Schedule

Within 30 calendar days after approval of the proposed construction schedule, submit for Contracting Officer approval a schedule showing procurement plans for materials, plant, and equipment. Submit in the format and content as prescribed by the Contracting Officer, and include as a minimum the following information:

- a. Description.
- b. Date of the purchase order.
- c. Promised shipping date.
- d. Name of the manufacturer or supplier.
- e. Date delivery is expected.

- f. Date the material or equipment is required, according to the current construction schedule.

#### 1.4 NETWORK ANALYSIS SYSTEM (NAS)

The Contractor shall use the critical path method (CPM) to schedule and control construction activities. The Network shall have a minimum of 50 activities. The schedule shall identify as a minimum:

- a. Construction time for all major systems and components;
- b. Major submittals and submittal processing time; and
- c. Major equipment lead time.

##### 1.4.1 CPM Submittals and Procedures

The Contractor shall use the critical path method (CPM) to schedule and control project activities. Project schedules shall be prepared and maintained using Primavera P6, Primavera SureTrak or current mandated scheduling program. Save files in Concentric P6 or current mandated scheduling program file format, compatible with the Governments version of the scheduling program. The network analysis system shall be kept current, with changes made to reflect the actual progress and status of the construction.

#### 1.5 UPDATED SCHEDULES

Update the construction schedule and equipment delivery schedule at monthly intervals or when schedule has been revised. Reflect any changes occurring since the last update. Submit copies of the purchase orders and confirmation of the delivery dates as directed.

#### PART 2 PRODUCTS

Not used.

#### PART 3 EXECUTION

Not used.

-- End of Section --



SECTION 01 32 17.00 20

COST-LOADED NETWORK ANALYSIS SCHEDULES (NAS)

05/18

PART 1 GENERAL

1.1 DEFINITIONS

The cost-loaded Network Analysis Schedule (NAS) is a tool to manage the project, both for Contractor and Government activities. The NAS is also used to report progress, evaluate time extensions, and provide the basis for progress payments.

For consistency, when scheduling software terminology is used in this section, the terms in Primavera's scheduling programs are used.

1.2 SCHEDULE REQUIREMENTS PRIOR TO THE START OF WORK

1.2.1 Preliminary Scheduling Meeting

Before preparation of the Project Baseline Schedule, and prior to the start of work, meet with the Contracting Officer to discuss the proposed schedule and the requirements of this section.

1.2.2 Project Baseline Schedule

1.2.2.1 Baseline NAS

Submit and present the **Baseline NAS** at the Post-Award Kickoff (PAK) Meeting. The Baseline NAS must include detailed design activities, general (summarized) approach for the construction phase(s) of the project and required milestone activities. If the project is being Fast-Track or allows Early Start of construction, the Baseline NAS must include all fast-tracked design construction phases, including the required or proposed critical path design submittals within each phase that will occur during the duration of the project. The most current updated design schedule must accompany each design submittal.

The acceptance of a Baseline NAS is a condition precedent to processing Contractor's pay request(s) for design activities/items of work. Government review comments on the Contractor's schedule(s) do not relieve the Contractor from compliance with requirements of the Contract Documents. Only bonds may be paid prior to acceptance of the Baseline NAS. The acceptance of a Baseline NAS is a condition precedent to:

- a. The Contractor starting work on the demolition or construction stage(s) of the contract.
- b. Processing Contractor's invoices(s) for construction activities/items of work.
- c. Review of any schedule updates.

1.2.2.2 Construction Baseline NAS

Develop the Construction Baseline Schedule, as design progresses, with detailed construction activities. If design must be completed and accepted

prior to construction, submit the complete design and construction network analysis schedule and obtain acceptance prior to starting construction work. If the project is Fast-Tracked, each construction stage must be detailed and built upon the previous Fast-Tracked Baseline Schedule (including any interim updates) and accepted prior to starting that stage of the construction work. Payment for completed work is dependent on an accepted, detailed schedule for that portion of work.

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

### 1.3 THREE-WEEK LOOK AHEAD SCHEDULE

#### 1.3.1 Weekly CQC Coordination and Production Meeting

Deliver three hard copies and one electronic file of the 3-Week Look Ahead Schedule to the Contracting Officer no later than 8 a.m. each Monday, for review during the weekly CQC Coordination or Production Meeting.

#### 1.3.2 Look Ahead Schedule Requirements

Prepare and issue a 3-Week Look Ahead schedule to provide a more detailed day-to-day plan of upcoming work identified on the Project Network Analysis Schedule. Requirements include:

- a. Key the work plans mapped to NAS activity numbers and updated each week to show the planned work for the current and following two-week period.
- b. Include upcoming outages, closures, field evaluation tests, preparatory meetings, and initial meetings.
- c. Identify critical path activities on the Three-Week Look Ahead Schedule.
- d. The detail work plans are to be bar chart type schedules, derived from but maintained separately from the Project NAS on an electronic spreadsheet program and printed on 8-1/2 by 11 inch sheets as directed by the Contracting Officer.
- e. Activities must not exceed 5 working days in duration and have sufficient level of detail to assign crews, tools and equipment required to complete the work.

### 1.4 MONTHLY NETWORK ANALYSIS

#### 1.4.1 Monthly Network Analysis Updates

Meet with Government representatives at monthly intervals to review and agree on the information presented in the updated project schedule. The submission of an acceptable, updated schedule to the Government is a condition precedent to the processing of the Contractor's invoice. Submit an acceptable, updated schedule to the Government regardless of whether a Contractor's invoice is submitted for the given period. The Contractor and Government must consent to agree on unit quantities of work completed equating to a percentage of payment for each activity progressed during the update period. Monthly update schedules must incorporate as-built events

as they occurred and provide ongoing status of anticipated finish dates. As-built events must correspond to contemporaneous records including but not limited to submittals, daily production reports and quality control reports.

Provide the following with each Schedule submittal:

- a. Time-Scaled Logic Diagram.
- b. Reports listed in paragraph REQUIRED TABULAR REPORTS.
- c. Data disks containing the project schedule. Include the back-up native .xer program files.

#### 1.4.2 As-Built Schedule

As a condition precedent to the release of retention and making final payment, submit an "As-Built Schedule," as the last schedule update showing all activities at 100 percent completion. This schedule must reflect the exact manner in which the project was actually constructed.

#### 1.5 CORRESPONDENCE AND TEST REPORTS

Reference Schedule activity IDs that are being addressed in each correspondence (e.g., letters, Requests for Information (RFIs), e-mails, meeting minute items, Production and QC Daily Reports, material delivery tickets, photographs) and test report (e.g., concrete, soil compaction, weld, pressure).

#### 1.6 ADDITIONAL SCHEDULING REQUIREMENTS

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

#### 1.7 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES:

##### SD-01 Preconstruction Submittals

Designated Project Scheduler; G

Baseline NAS; G

Construction Baseline NAS; G

##### SD-07 Certificates

Monthly Network Analysis Updates; G

##### SD-11 Closeout Submittals

As-Built Schedule; G

## 1.8 SOFTWARE

Prepare and maintain project schedules using Primavera P6 software in a version compatible with Government's current version. Importing data into P6 using data conversion techniques or third party software is cause for rejection of the submitted schedule.

## 1.9 DESIGNATED PROJECT SCHEDULER

Submit to the Contracting Officer for approval an individual who will serve as the Designated Project Scheduler. Include a copy of the candidate's resume with qualifications. The Contracting Officer may remove the Designated Project Scheduler, and require replacement, if the scheduler does not effectively fulfill their duties in accordance with the contract requirements. Payment request will not be processed without an approved Designated Project Scheduler.

### 1.9.1 Qualifications

The Designated Project Scheduler must have prepared and maintained at least three previous construction schedules, of similar size and complexity to this contract, using Primavera P6.

### 1.9.2 Duties

Duties of the Designated Project Scheduler:

- a. Prepare Baseline NAS.
- b. Prepare monthly schedule updates.
- c. Prepare tabular reports.
- d. Prepare Time Impact Analysis (TIA) as necessary.
- e. Provide certification that NAS and TIA submittals conform to the contract requirements.
- f. Participate with the Prime Contractor and Government Representative in a monthly meeting at the job site in-person, and scheduled with sufficient time to support the Monthly Network Analysis Updates process, to discuss project status, schedule updates, critical activities, potential delays, and contract modifications impacting the schedule.

## 1.10 NETWORK SYSTEM FORMAT

The system must include time-scaled logic diagrams and specified reports.

Prepare the schedule in accordance with the following Primavera P6 settings and parameters. Deviation from these settings and parameters, without prior consent of the Contracting Officer, is cause for rejection of schedule submission.

### 1.10.1 Diagrams

Provide 11 by 17 inch hard-copy of Time-scaled Logic Diagram in color and landscape-oriented. Clearly show activities on the longest path. Include the following information for each activity and include accompanying Gantt

chart:

- a. Activity ID
- b. Activity Name
- c. Original Duration in Work Days
- d. Remaining duration in Work Days
- e. Physical Percent Complete
- f. Start Date
- g. Finish Date
- h. Total Float

#### 1.10.2 Schedule Activity Properties and Level of Detail

##### 1.10.2.1 Design-Build Schedules

Logically incorporate design and construction for the entire project in a single schedule. Unless otherwise indicated, the Contractor may begin construction when design is signed, stamped and submitted to the Government via the Contractor's quality control organization. If Government approval is required for any portion of a final signed and sealed design package prior to construction, include that review time in the schedule.

##### 1.10.2.2 Activity Identification and Organization

- a. Identify **design and** construction activities planned for the project and other activities that could impact project completion if delayed in the NAS.
- b. Identify administrative type activity/milestones, including all pre-construction submittal and permit requirements prior to demolition or construction stage.
- c. Include times for procurement, Contractor quality control and construction, acceptance testing and training in the schedule.
- d. Include the Government approval time required for the submittals that require Government Approval prior to construction, as indicated in **Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES**.
- e. Create separate activities for each Phase, Area, Floor Level and Location the activity is occurring.
- f. Do not use construction category activity to represent non-work type reference (e.g. Serial Letter, Request for Information) in NAS. Place Non-work reference within the P6 activity details notebook.

Activity categories included in the schedule are specified below.

##### 1.10.2.3 Activity Logic

- a. With the exception of the Contract Award and Contract Completion Date (CCD) milestone activities, activity must not be open-ended; each

activity must have predecessor and successor ties.

- b. Activities must not have open start or open finish (dangling) logic.
- c. Do not use lead or lag logic without Contracting Officer prior approval.
- d. Minimize redundant logic ties.
- e. Once an activity exists on the schedule it must not be deleted or renamed to change the scope of the activity and must not be removed from the schedule logic without approval from the Contracting Officer.
  - (1) While an activity cannot be deleted, where said activity is no longer applicable to the schedule, but must remain within the logic stream for historical record, change the activity to a milestone and clearly label "NO LONGER REQUIRED" after the activity name. Redistribute accordingly any remaining budget associated with that activity.
  - (2) Document any such change in the milestone's "Notebook," including a date and explanation for the change.
  - (3) The ID number for a "NO LONGER REQUIRED" activity must not be re-used for another activity.

#### 1.10.2.4 Critical and Near Critical Activity Baseline Limitation

For P6 settings, critical activities are defined as being on the Longest Path. "Near Critical" is defined as having total float, of up to 14 days more, than the greatest float value found on the Longest Path. Longest Path (Critical) and Near Critical Activities must not make up more than 20 percent of all activity within the Baseline Schedule.

#### 1.10.2.5 Assigned Calendars

All NAS activity must be assigned calendars that reflect required and anticipated non-work days.

#### 1.10.2.6 Activity Categories

##### 1.10.2.6.1 Design Activities

Design activities must include design decision points and design submittal packages, including critical path submittals for Fast Tracked Phases. Review times for design development packages must be included in the schedule. Refer to Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES FOR DESIGN-BUILD, for specific requirements.

##### 1.10.2.6.2 Pre-construction Activities

Examples of pre-construction activities include, but are not limited to, bond approval, permits, pre-construction submittals and approvals. Include pre-construction activities that are required to be completed prior to the Contractor starting the demolition or construction stage of work.

##### 1.10.2.6.3 Procurement Activities

Examples of procurement activities include, but are not limited to: Material/equipment submittal preparation, submittal and approval of

material/equipment; material/equipment fabrication and delivery, and material/equipment on-site. As a minimum, separate procurement activities must be provided for critical items, long lead items, items requiring Government approval and material/equipment procurement for which payment will be requested in advance of installation. Show each delivery with relationship tie to the Construction Activity specifically for the delivery.

#### 1.10.2.6.4 Government Activities

Government and other agency activities that could impact progress must be clearly identified. Government activities include, but are not limited to; Government approved submittal reviews, Government conducted inspections/tests, environmental permit approvals by State regulators, utility outages, Design Start, Construction Start (including Design/Construction Start for each Fast-Track Phase, and delivery of Government Furnished Material/Equipment.

#### 1.10.2.6.5 Construction Quality Management (CQM) Activities

The Preparatory and Initial Phase meetings for each Definable Feature of Work identified in the Contractor's Quality Control Plan must be included in the Three-Week Look Ahead Schedule. Preparatory and Initial phase meetings are not required in the NAS, but can be represented by a start milestone linked to successor parent Construction Activity. The Follow-up Phase must be represented by the Construction Activities themselves in the NAS.

#### 1.10.2.6.6 Construction Activities

No on-site construction activity may have a duration in excess of 20 working days. Contractor activities must be driven by calendars that reflect Saturdays, Sundays and all Federal Holidays as non-work days, unless otherwise defined in this contract.

#### 1.10.2.6.7 Turnover and Closeout Activities

Include activities or milestones for items on the NAVFAC Red Zone Checklist/POAM that are applicable to this project. As a minimum, include required Contractor testing, required Government acceptance inspections on equipment, Pre-Final Inspection, Punch List Completion, Final Inspection and Acceptance. Add an unconstrained start milestone for the initial NAVFAC Red Zone - Facility Turnover Planning Meeting at approximately 75 percent construction contract completion or six months prior to Contract Completion Date (CCD), whichever is sooner.

#### 1.10.2.6.8 Testing of HVAC - DALT, TAB, and PVT Activities

Include in the baseline schedule, activities and milestones associated with Government acceptance of Duct Air Leakage Test (DALT), Testing, Adjusting, and Balancing (TAB) and Performance Verification Test (PVT) as required and in accordance with Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC and Section 23 09 23.13 BACnet DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC.

- a. Identify the general area or location(s) for Government Acceptance Testing of DALT, TAB and PVT.
- b. Incorporate into the baseline schedule, time periods required for advance notification of work, and Government submittal review in accordance with Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR

HVAC, paragraph DALT AND TAB SUBMITTAL AND WORK SCHEDULE.

c. Include the following as schedule activities or milestones:

- (1) Pre-DALT/TAB/PVT Meeting
- (2) TAB Design Review Report, Government review
- (3) TAB Pre-Field Engineering Report, Government review
- (4) DALT Field Work
- (5) DALT Field Acceptance Testing
- (6) Certified Final DALT Report, Government review
- (7) Control Contractors PVT Plan, Government review
- (8) Equipment Suppliers PVT Plan, Government review
- (9) Season I TAB Field Work
- (10) Season I Certified Final TAB Report, Government review
- (11) Endurance Testing, Government review
- (12) PVT Field Work
- (13) PVT Report, Government review
- (14) Season I TAB Field Acceptance Testing
- (15) Season II TAB Field Work
- (16) Season II Certified Final TAB Report, Government review
- (17) Season II TAB Field Acceptance Testing

#### 1.10.2.7 Contract Milestones and Constraints

##### 1.10.2.7.1 Project Start Date Milestones

Include as the first activity on the schedule a start milestone titled "Contract Award," which must have a Mandatory Start constraint equal to the Contract Award Date.

##### 1.10.2.7.2 NAVFAC Red Zone - Facility Turnover Planning Meeting Milestones

See paragraph TURNOVER AND CLOSEOUT ACTIVITIES above.

##### 1.10.2.7.3 Substantial Completion Milestone

Include an unconstrained finish milestone on the schedule titled "Substantial Completion." Substantial Completion is defined as the point in time the Government would consider the project ready for beneficial occupancy wherein by mutual agreement of the Government and Contractor, Government use of the facility is allowed while construction access continues in order to complete remaining items (e.g. punch list and other close out submittals). Include a separate Substantial Completion Milestone



for each phase if the contract requires construction to be completed in phases.

#### 1.10.2.7.4 DD-1354 Finish Milestone

Add unconstrained finish milestone, titled "DD-1354" and scheduled 30 calendar days prior to Substantial Completion, whenever a Form DD-1354 is required in accordance with Section 01 20 00.05 20 PRICE AND PAYMENT PROCEDURES FOR DESIGN-BUILD.

#### 1.10.2.7.5 Projected Completion Milestone

Include an unconstrained finish milestone on the schedule titled "Projected Completion." Projected Completion is defined as the point in time all contract requirements are complete and verified by the Government with a successful Final Inspection in accordance with Section 01 45 00.05 20 DESIGN AND CONSTRUCTION QUALITY CONTROL. This milestone must have the Contract Completion Date (CCD) milestone as its only successor.

#### 1.10.2.7.6 Contract Completion Date (CCD) Milestone

Last schedule entry must be an unconstrained finish milestone titled "Contract Completion (CCD: DD-MM-YY)." DD-MM-YYYY is the current contract completion date at data date, day-month-year corresponding to P6 Must Finish Date. NAS milestone updates of Project Completion finish date for longest path must reflect calculated float as positive or negative based on CCD. Calculation of schedule updates must be such that if the finish of the "Projected Completion" milestone falls after the contract completion date, then negative float is calculated on the longest path. If the finish of the "Projected Completion" milestone falls before the contract completion date, the float calculation must reflect positive float on the longest path.

#### 1.10.2.8 Work Breakdown Structure & Activity Code

At a minimum, establish a Work Breakdown Structure (WBS) and provide activity codes identified as follows:

##### 1.10.2.8.1 Work Breakdown Structure (WBS)

Group all activities and milestones within appropriate WBS categories including, at a minimum, the following:

##### a. Project Milestones:

- (1) Management Milestones
- (2) Project Administrative Meetings
- (3) Permits

##### b. Pre-Construction Phase:

- (1) Submittals and Reviews
- (2) Procurement
- (3) Mobilization

- c. Construction Phase: Create multiple sub-sections in accordance with project specific categories of work including in WBS descending order as follows:

- (1) General Area

- (a) Type of Work Item

- 1. Location

- d. Project Closeout: Include activity items such as Punchlist, Demobilization, O&M, As-built Drawings, Training, and As-built NAS.
        - e. Modifications: Create sub-category of Conformed and Non-Conformed under Modification WBS. Create multiple sub-sections as the project progresses identified by issue and Fragnet placed in Conformed for modifications issued prior data date, or Non-Conformed for issues not modified to contract prior data date.
        - f. Removed Activity: Activity "removed" by remaining within logic sequence and changing to Finish Milestone. Actualize finish date to date activity removed from schedule and provide reason(s) for removal explained in Activity Notebook.

#### 1.10.2.8.2 Responsibility Code

All activities in the project schedule must be identified with the party responsible for completing the task. Activities must not belong to more than one responsible party.

#### 1.10.2.8.3 Activity Category Code

Provide user defined "CAT" codes for Project Level activity codes. Use the following codes:

- a. Assign "Procure" to Procurement type activity
- b. Assign "Construct" Construction type activity
- c. Assign "Close Out" to dedicated Commissioning, Testing & Close Out type activity.
- d. Assign "Other" to other activity not otherwise designated.

#### 1.10.2.8.4 Construction Specification Institute (CSI) Masterformat Code

Identify all activities in the project schedule with its respective Specification Section number. Activities must not belong to more than one Section number. If an activity does not have an applicable CSI Code (e.g. Mobilize), the code must be "0000".

#### 1.10.2.8.5 Drawing Code

Identify all activities in the project schedule with its respective Drawing Code. The Drawing Code is the Sheet Number on the primary project drawing which indicates work to be performed. If an activity does not have an applicable Drawing Code (e.g. Mobilize), the code must be "0000".

#### 1.10.2.9 Anticipated Weather Lost Work Days

Use the National Oceanic and Atmospheric Administration's (NOAA) Summary of Monthly Normals report to obtain the historical average number of days each month with precipitation, using a nominal 30-year, greater than 0.10 inch precipitation amount parameter, as indicated on the Station Report for the NOAA location closest to the project site as the basis for establishing a "Weather Calendar" showing the number of anticipated non-workdays for each month due to adverse weather, in addition to Saturdays, Sundays and all Federal Holidays as non-work days.

Assign the Weather Calendar to any activity that could be impacted by adverse weather. The Contracting Officer will issue a modification in accordance with the contract clauses, giving the Contractor a time extension for the difference of days between the anticipated and actual adverse weather delay if the number of actual adverse weather delay days exceeds the number of days anticipated for the month in which the delay occurs and the adverse weather delayed activities are critical to contract completion. A lost workday due to weather conditions is defined as a day in which the Contractor cannot work at least 50 percent of the day on the impacted activity.

#### 1.10.2.10 Cost Loading

The Project Network Analysis Schedule (NAS) must be cost-loaded and will provide the basis for progress payments. Earned Value Reports must be derived from and correspond to cost loaded NAS. Use the Critical Path Method (CPM) and the Precedence Diagram Method (PDM) to satisfy time and cost applications.

##### 1.10.2.10.1 Cost Loading Activities

Assign Material and Equipment Costs, for which payment will be requested in advance of installation, to their respective procurement activity (i.e., the material/equipment on-site activity). Assign cost for material/equipment, paid for after installation; labor; and construction equipment to their respective Construction Activities. Provide breakdown of definable features of work for cost loaded activities comprising Mobilization and De-Mobilization (Lump sum not allowed). The value of commissioning, testing and closeout WBS section may not be less than 10 percent of the total costs for Procurement and Construction Activities. Evenly disperse overhead and profit to each activity over the duration of the project.

##### 1.10.2.10.2 Partial Payment

Breakdown unit of measure and cost must be defined within P6 Activity Detail Expenses for partial payment of any cost loaded activity. Lump sum cost loaded activity will not be partially paid.

#### 1.10.3 Schedule Software Settings and Restrictions

- a. Activity Constraints: Date/time constraint(s), other than those required by the contract, are not allowed unless accepted by the Contracting Officer. Identify any constraints proposed and provide an explanation for the purpose of the constraint in the Narrative Report as described in paragraph REQUIRED TABULAR REPORTS.
- b. Default Progress Data Disallowed: Actual Start and Actual Finish dates

on the CPM schedule must match the dates on the Contractor Quality Control and Production Reports.

- c. Software Settings: Handle schedule calculations and Out-of-Sequence progress (if applicable) through Retained Logic, not Progress Override. Show all activity durations and float values in days. Show activity progress using Remaining Duration. Set default activity type to "Task Dependent".
- d. At a minimum, include the following settings and parameters in P6 Schedule preparation:
  - (1) General: Define or establish Calendars and Activity Codes at the "Project" level, not the "Global" level.
  - (2) Admin Drop-Down Menu, Admin Preferences, Time Periods Tab:
    - (a) Set time periods for P6 to 8.0 Hours/Day, 40.0 Hours/Week, 172.0 Hours/Month and 2000.0 Hours/Year.
    - (b) Use assigned calendar to specify the number of work hours for each time period: Must be checked.
  - (3) Admin Drop-Down Menu, Admin Preferences, Earned Value Tab:
    - (a) Earned Value Calculation: Use "Budgeted values with current dates".
  - (4) Project Level, Dates Tab:
    - (a) Set "Must Finish By" date to "Contract Completion Date", and set "Must Finish By" time to 05:00pm.
  - (5) Project Level, Defaults Tab:
    - (a) Duration Type: Set to "Fixed Duration & Units".
    - (b) Percent Complete Type: Set to "Physical".
    - (c) Activity Type: Set to "Task Dependent".
    - (d) Calendar: Set to "Standard 5 Day Workweek". Calendar must reflect Saturday, Sunday and all Federal holidays as non-work days. Alternative calendars may be used with Contracting Officer approval.
  - (6) Project Level, Calculations Tab:
    - (a) Activity percent complete based on activity steps: Must be Checked.
    - (b) Reset Remaining Duration and Units to Original: Must be Checked.
    - (c) Subtract Actual from At Completion: Must be Checked.
    - (d) Recalculate Actual units and Cost when duration percent complete changes: Must be Checked.

(e) Link Actual to Date and Actual This Period Units and Cost:  
Must be Checked.

(f) Price/Unit: Set to "\$1/h".

(g) Update units when costs change on resource assignments: Must  
be Unchecked.

(7) Project Level, Settings Tab:

(a) Define Critical Activities: Check "Longest Path".

(8) Work Breakdown Structure Level, Earned Value Tab:

(a) Technique for Computing Performance Percent Complete:  
"Activity percent complete" is selected.

(b) Technique for Computing Estimate to Complete (ETC): "PF = 1"  
is selected.

#### 1.10.4 Required Tabular Reports

Include the following reports with the Baseline, Monthly Update and any  
other required schedule submittals:

a. Log Report: P6 Scheduling/Leveling Report.

b. Narrative Report: Identify and justify:

- (1) Progress made in each area of the project;
- (2) Longest Path;
- (3) Date/time constraint(s), other than those required by the contract
- (4) Listing of all changes made between the previous schedule and  
current updated schedule include: added or deleted activities,  
original and remaining durations for activities that have not  
started, logic (sequence constraint lag/lead), milestones, planned  
sequence of operations, longest path, calendars or calendar  
assignments, and cost loading;
- (5) Any decrease in previously reported activity Earned Amount;
- (6) Pending items and status thereof, including permits, changes  
orders, and time extensions;
- (7) Status of Contract Completion Date and interim milestones;
- (8) Current and anticipated delays (describe cause of delay and  
corrective actions(s) and mitigation measures to minimize);
- (9) Description of current and potential future schedule problem areas.

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

c. Earned Value Report: Derive from and correspond to P6 cost loaded

schedule. List all activities having a budget amount cost loaded. Compile total earnings on the project from notice to proceed to current progress payment request. Show current budget, previous physical percent complete, to-date physical percent complete, previous earned value, to-date earned value and cost to complete on the report for each activity.

- d. Schedule Variance Control (SVC) Diagram: With each schedule submission, provide a SVC diagram showing 1) Cash Flow S-Curves indicating planned project cost based on projected early and late activity finish dates and 2) Earned Value to-date. Revise Cash Flow S-Curves when the contract is modified, or as directed by the Contracting Officer.
- e. Daily Reported Production Activity: Submit on a monthly basis, in electronic spreadsheet (format provided by the Government), summary of daily reported production activity for the reporting month in the update schedule. Use the following columns for reporting:
  - (1) Date
  - (2) Activity ID
  - (3) Work Description
  - (4) Contractor
  - (5) Billable Hours

#### 1.11 CONTRACT MODIFICATION

##### 1.11.1 Time Impact Analysis (TIA)

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

- a. Each TIA must be in both narrative and schedule form. The narrative must define the scope and conditions of the change; provide start and finish dates of impact, successor and predecessor activity to impact period, responsible party; describe how it originated, and how it impacts the schedule. The schedule submission must consist of three native files:
  - (1) Fragnet used to define the scope of the changed condition
  - (2) Most recent accepted schedule update as of the time of the proposal or claim submission that has been updated to show all activity progress as of the time of the impact start date.
  - (3) The impacted schedule that has the fragnet inserted in the updated schedule and the schedule "run" so that the new completion date is determined.
- b. For claimed as-built project delay, the inserted fragnet TIA method must be modified to account for as-built events known to occur after

the data date of schedule update used.

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

- (1) Identify and classify types of delay defined as follows:

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

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

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

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

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

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

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

- (3) Pacing delay reacting to another delay (parent delay) equally or more critical than paced activity must be identified prior to pacing. Contracting Officer will notify Contractor prior to pacing. Contractor must notify Contracting Officer prior to pacing. Notification must include identification of parent delay issue, estimated parent delay time period, paced activity(s) identity, and pacing reason(s). Pacing Concurrency is defined as

follows:

- (a) Government-delay concurrent with contractor-pacing: excusable time extension, classified compensable event.
- (b) Contractor-delay concurrent with Government-pacing: inexcusable time extension, classified non-compensable event
- d. Submit Data disks containing the narrative and the source schedule files used in the time impact analysis.
- e. All as-built and known planned activity must be included in NAS. Add cost loading or change Contract Completion Date to NAS in accordance to conformed contract modifications issued prior to Data Date of NAS update.

#### 1.11.2 No Reservation of Rights

All direct costs, indirect cost, and time extensions will be negotiated and made full, equitable and final at the time of modification issuance.

#### 1.12 PROJECT FLOAT

Project Float is the length of time between the Contractor's Projected Completion Milestone and the Contract Completion Date Milestone. Project Float available in the schedule will not be for the exclusive use of either the Government or the Contractor.

The use of Resource Leveling or other techniques used for the purpose of artificially adjusting activity durations to consume float and influence critical path is prohibited.

#### PART 2 PRODUCTS

Not used.

#### PART 3 EXECUTION

Not used.

-- End of Section --



SECTION 01 33 00

SUBMITTAL PROCEDURES

08/18

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Submittal Information

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

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

1.1.2 Project Type

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

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

1.1.3 Submission of Submittals

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

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

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

#### SD-01 Preconstruction Submittals

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

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

Certificates Of Insurance

Surety Bonds

List Of Proposed Subcontractors

List Of Proposed Products

Baseline Network Analysis Schedule (NAS)

Submittal Register

Schedule Of Prices Or Earned Value Report

Accident Prevention Plan Health And Safety Plan

Work Plan

Quality Control (QC) plan

Environmental Protection Plan

#### SD-02 Shop Drawings

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

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

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

#### SD-03 Product Data

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

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

#### SD-05 Design Data

Design calculations, mix designs, analyses or other data pertaining to

a part of work.

Design submittals, design substantiation submittals and extensions of design submittals.

#### SD-06 Test Reports

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

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

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

Investigation reports

Daily logs and checklists

Final acceptance test and operational test procedure

#### SD-07 Certificates

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

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

Confined space entry permits

Text of posted operating instructions

#### SD-08 Manufacturer's Instructions

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

#### SD-10 Operation and Maintenance Data

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

Data required by operating and maintenance personnel for the safe and

efficient operation, maintenance and repair of the item.

Data incorporated in an operations and maintenance manual or control system.

#### SD-11 Closeout Submittals

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

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

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

#### 1.2.2 Approving Authority

Office or designated person authorized to approve the submittal.

#### 1.2.3 Work

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

#### 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor QC approval.] [for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with this section.

##### SD-01 Preconstruction Submittals

##### Submittal Register; G

#### 1.4 SUBMITTAL CLASSIFICATION

##### 1.4.1 Government Approved (G)

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

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

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

#### 1.4.2 Design-Build Submittal Classifications

##### 1.4.2.1 Designer of Record Approved (DA)

Designer of Record (DOR) approval is required for extensions of design; critical materials; any variations from the Solicitation, the Accepted Proposal, or the completed design; equipment whose compatibility with the entire system must be checked; and other items as designated by the Contracting Officer. Provide the Government with the number of copies designated hereinafter of all DOR approved submittals. The Government may review any or all Designer of Record approved submittals for conformance with the Solicitation, the Accepted Proposal, and the completed design. The Government will review all submittals designated as varying from the Solicitation or Accepted Proposal, as described below. Provide design submittals in accordance with Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD). Generally, list design submittals under SD-05 Design Data.

##### 1.4.2.2 Government Conformance Review of Design (CR)

The Government will review all intermediate and final design submittals for conformance with the technical requirements of the Solicitation. Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD) covers the design submittal and review process in detail. Review will be only for conformance with the applicable codes, standards, and contract requirements. Design data includes the design documents described in Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD).

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

###### 1.4.2.3.1 Variations from the Accepted Design

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

###### 1.4.2.3.2 Substitutions

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

Variations are discussed below in paragraphs: "DESIGNER OF RECORD APPROVED/GOVERNMENT APPROVED" and VARIATIONS.

#### 1.4.2.4 Designer of Record Approved/Government Approved (DA/GA)

In addition to the above-stated requirements for proposed variations to the accepted design, both DOR and Government Approval and, where applicable, a contract modification are required before the Contractor is authorized to proceed with material acquisition or installation for any proposed variation to the contract (the Solicitation or the Accepted Proposal), that constitutes a change to the contract terms. The Government reserves the right to accept or reject any such proposed variation.

#### 1.4.3 For Information Only

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

#### 1.4.4 Sustainability Reporting Submittals (S)

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

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

### 1.5 FORWARDING SUBMITTALS REQUIRING GOVERNMENT APPROVAL

As soon as practicable after award of contract, and before procurement or fabrication, forward to the [Commander, NAVFAC [\_\_\_\_], Code CI4[\_\_\_\_], [\_\_\_\_]] [Architect-Engineer: [\_\_\_\_],] submittals required in the technical sections of this specification, including shop drawings, product data and samples. In addition, forward a copy of the submittals to the Contracting Officer.

#### 1.5.1 O&M Data

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

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

#### [1.5.2 Submittals Reserved for NAVFAC [\_\_\_\_] Approval

As an exception to the standard submittal procedure for Government Approval, submit the following to the Commander, NAVFAC [\_\_\_\_], Code CI4[\_\_\_\_], [\_\_\_\_]:

[ a. Section [\_\_\_\_] [\_\_\_\_]: Pile driving records

] [b. Section [\_\_\_\_] [\_\_\_\_]: All fire protection system submittals

- ] [c. Section [\_\_\_\_] [\_\_\_\_]: All fire alarm system submittals
- ] [d. Section [\_\_\_\_] [\_\_\_\_]: All elevator submittals
- ] [e. Section 23 09 53.00 20 SPACE TEMPERATURE CONTROL SYSTEMS: SD-06 field test report submittals
- ] [f. Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC: All submittals
- ] [g. Section 23 08 01.00 20 TESTING INDUSTRIAL VENTILATION SYSTEMS: All submittals
- ] [h. Section 26 12 19.10 THREE-PHASE PAD-MOUNTED TRANSFORMERS: All submittals
- ] [i. Section 26 12 21 SINGLE-PHASE PAD-MOUNTED TRANSFORMERS: All submittals
- ] [j. Section 33 71 01 OVERHEAD TRANSMISSION AND DISTRIBUTION: Transformer submittals
- ] [k. Section 26 11 16 SECONDARY UNIT SUBSTATIONS: Transformer submittals
- ] [l. Section 26 11 13.00 20 PRIMARY UNIT SUBSTATION: Transformer submittals
- ]] 1.5.3 Overseas Shop Drawing Submittals

Send submittals via overnight express mail service. All costs associated with the overnight express mail service are borne by the Contractor. Costs associated with the overnight express mail of submittals related to proposed submittal variances of resubmittals necessary as a result of noncompliant or incomplete Contractor submittals are the responsibility of the Contractor.

## ] 1.6 PREPARATION

### 1.6.1 Transmittal Form

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

Use the ENG Form 4025-R transmittal form for submitting both Government-approved and information-only submittals. Submit in accordance with the instructions on the reverse side of the form. These forms [will be furnished to the Contractor] [are included in the RMS CM software that the Contractor is required to use for this contract]. Properly complete this form by filling out all the heading blank spaces and identifying each item submitted. Exercise special care to ensure proper listing of the specification paragraph and sheet number of the contract drawings pertinent to the data submitted for each item.

### 1.6.2 Identifying Submittals

The Contractor's [Quality Control Manager] [approving authority] must prepare, review and stamp submittals, including those provided by a

subcontractor, before submittal to the Government.

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

- a. Project title and location
- b. Construction contract number
- c. Dates of the drawings and revisions
- d. Name, address, and telephone number of Subcontractor, supplier, manufacturer, and any other Subcontractor associated with the submittal.
- e. Section number of the specification by which submittal is required
- f. Submittal description (SD) number of each component of submittal
- g. For a resubmission, add alphabetic suffix on submittal description, for example, submittal 18 would become 18A, to indicate resubmission
- h. Product identification and location in project.

#### 1.6.3 Submittal Format

##### 1.6.3.1 Format of SD-01 Preconstruction Submittals

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

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

##### 1.6.3.2 Format for SD-02 Shop Drawings

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

- a. Include the nameplate data, size, and capacity on drawings. Also include applicable federal, military, industry, and technical society publication references.
- b. Dimension drawings, except diagrams and schematic drawings. Prepare drawings demonstrating interface with other trades to scale. Use the same unit of measure for shop drawings as indicated on the contract drawings. Identify materials and products for work shown.

Present shop drawings sized 8 1/2 by 11 inches as part of the bound volume for submittals. Present larger drawings in sets. Submit an electronic copy of drawings in PDF format.



#### 1.6.3.2.1 Drawing Identification

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

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

Reserve a blank space, no smaller than [\_\_\_\_\_] inches on the right-hand side of each sheet for the Government disposition stamp.

#### 1.6.3.3 Format of SD-03 Product Data

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

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

##### 1.6.3.3.1 Product Information

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

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

##### 1.6.3.3.2 Standards

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

##### 1.6.3.3.3 Data Submission

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

Submit the manufacturer's instructions before installation.

#### 1.6.3.4 Format of SD-04 Samples

##### 1.6.3.4.1 Sample Characteristics

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

- a. Sample of Equipment or Device: Full size.
- b. Sample of Materials Less Than 2 by 3 inches: Built up to 8 1/2 by 11 inches.
- c. Sample of Materials Exceeding 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.
- d. Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.
- e. Sample Volume of Nonsolid Materials: Pint. Examples of nonsolid materials are sand and paint.
- f. Color Selection Samples: 2 by 4 inches. Where samples are specified for selection of color, finish, pattern, or texture, submit the full set of available choices for the material or product specified. Sizes and quantities of samples are to represent their respective standard unit.
- g. Sample Panel: 4 by 4 feet.
- h. Sample Installation: 100 square feet.

##### 1.6.3.4.2 Sample Incorporation

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

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

##### 1.6.3.4.3 Comparison Sample

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

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

1.6.3.5 Format of SD-05 Design Data

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

1.6.3.6 Format of SD-06 Test Reports

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

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

1.6.3.7 Format of SD-07 Certificates

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

1.6.3.8 Format of SD-08 Manufacturer's Instructions

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

Submit the manufacturer's instructions before installation.

1.6.3.8.1 Standards

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

1.6.3.9 Format of SD-09 Manufacturer's Field Reports

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

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

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

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

1.6.3.11 Format of SD-11 Closeout Submittals

When the submittal includes a document that is to be used in the project or is to become part of the project record, other than as a submittal, do not

apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

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

#### 1.6.4 Source Drawings for Shop Drawings

##### 1.6.4.1 Source Drawings

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

##### 1.6.4.2 Terms and Conditions

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

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

##### 1.6.5 Electronic File Format

Provide submittals in electronic format, with the exception of material samples required for SD-04 Samples items. [In addition to the electronic submittal, provide [three] [\_\_\_\_\_] hard copies of the submittals.] Compile the submittal file as a single, complete document, to include the Transmittal Form described within. Name the electronic submittal file specifically according to its contents, and coordinate the file naming convention with the Contracting Officer. Electronic files must be of sufficient quality that all information is legible. Use PDF as the electronic format, unless otherwise specified or directed by the Contracting Officer. Generate PDF files from original documents with

bookmarks so that the text included in the PDF file is searchable and can be copied. If documents are scanned, optical character resolution (OCR) routines are required. Index and bookmark files exceeding 30 pages to allow efficient navigation of the file. When required, the electronic file must include a valid electronic signature or a scan of a signature.

E-mail electronic submittal documents smaller than 10MB to an e-mail address as directed by the Contracting Officer. Provide electronic documents over 10 MB on an optical disc or through an electronic file sharing system such as the AMRDEC SAFE Web Application located at the following website: <https://safe.amrdec.army.mil/safe/>.

#### 1.7 QUANTITY OF SUBMITTALS

##### 1.7.1 Number of SD-01 Preconstruction Submittal Copies

Unless otherwise specified, submit [two][three] sets of administrative submittals.

##### 1.7.2 Number of SD-02 Shop Drawing Copies

Submit [six][\_\_\_\_\_] copies of submittals of shop drawings requiring review and approval by a QC organization. Submit [seven][\_\_\_\_\_] copies of shop drawings requiring review and approval by the Contracting Officer.

##### 1.7.3 Number of SD-03 Product Data Copies

Submit in compliance with quantity requirements specified for shop drawings.

##### 1.7.4 Number of SD-04 Samples

- a. Submit [two][\_\_\_\_\_] samples, or [two][\_\_\_\_\_] sets of samples showing the range of variation, of each required item. One approved sample or set of samples will be retained by the approving authority and one will be returned to the Contractor.
- b. Submit one sample panel or provide one sample installation where directed. Include components listed in the technical section or as directed.
- c. Submit one sample installation, where directed.
- d. Submit one sample of nonsolid materials.

##### 1.7.5 Number of SD-05 Design Data Copies

Submit in compliance with quantity requirements specified for shop drawings.

##### 1.7.6 Number of SD-06 Test Report Copies

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

##### 1.7.7 Number of SD-07 Certificate Copies

Submit in compliance with quantity requirements specified for shop drawings.

#### 1.7.8 Number of SD-08 Manufacturer's Instructions Copies

Submit in compliance with quantity requirements specified for shop drawings.

#### 1.7.9 Number of SD-09 Manufacturer's Field Report Copies

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

#### 1.7.10 Number of SD-10 Operation and Maintenance Data Copies

Submit [five][three][\_\_\_\_\_] copies of O&M data to the Contracting Officer for review and approval.

#### 1.7.11 Number of SD-11 Closeout Submittals Copies

Unless otherwise specified, submit [two][three] sets of administrative submittals.

### 1.8 INFORMATION ONLY SUBMITTALS

Submittals without a "G" designation must be certified by the QC manager and submitted to the Contracting Officer for information-only. Approval of the Contracting Officer is not required on information only submittals. The Contracting Officer will mark "receipt acknowledged" on submittals for information and will return only the transmittal cover sheet to the Contractor. Normally, submittals for information only will not be returned. However, the Government reserves the right to return unsatisfactory submittals and require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe. For Design-Build construction, the Government will retain [\_\_\_\_\_] copies of information-only submittals.

### 1.9 PROJECT SUBMITTAL REGISTER AND DATABASE

A sample Project Submittal Register showing items of equipment and materials for when submittals are required by the specifications is provided as "Appendix A - Submittal Register."

#### 1.9.1 Submittal Management

Prepare and maintain a submittal register, as the work progresses. Use an electronic submittal register program furnished by the Government. Do not change data that is output in columns (c), (d), (e), and (f) as delivered by Government; retain data that is output in columns (a), (g), (h), and (i) as approved. As an attachment, provide a submittal register showing items of equipment and materials for which submittals are required by the specifications. This list may not be all-inclusive and additional submittals may be required. Maintain a submittal register for the project in accordance with Section 01 45 00.15 10 RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE(RMS CM).[ The Government will provide the initial submittal register ][in electronic format][ with the following fields

completed, to the extent that will be required by the Government during subsequent usage.]

Column (c): Lists specification section in which submittal is required.

Column (d): Lists each submittal description (SD Number. and type, e.g., SD-02 Shop Drawings) required in each specification section.

Column (e): Lists one principal paragraph in each specification section where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting the project requirements.

Column (f): Lists the approving authority for each submittal.

The database and submittal management program will be furnished to the Contractor on a writable compact disk (CD-R), for operation on a Windows-based personal computer.

Thereafter, the Contractor is to track all submittals by maintaining a complete list, including completion of all data columns and all dates on which submittals are received by and returned by the Government.

#### 1.9.2 Design-Build Submittal Register

The Designer of Record develops a complete list of submittals during design and identify required submittals in the specifications, and use the list to prepare the Submittal Register. The list may not be all inclusive and additional submittals may be required by other parts of the contract. Complete the submittal register and submit it to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. Coordinate the submit dates and need dates with dates in the Contractor prepared progress schedule. Submit monthly or until all submittals have been satisfactorily completed, updates to the submittal register showing the Contractor action codes and actual dates with Government action codes. Revise the submittal register when the progress schedule is revised and submit both for approval.

#### 1.9.3 Preconstruction Use of Submittal Register

Submit the submittal register as an electronic database, using the submittal management program furnished to Contractor. Include the QC plan and the project schedule. Verify that all submittals required for the project are listed and add missing submittals. Coordinate and complete the following fields on the register database submitted with the QC plan and the project schedule:

Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for the approving authority to receive submittals.

Column (h) Contractor Approval Date: Date that Contractor needs

approval of submittal.

Column (i) Contractor Material: Date that Contractor needs material delivered to Contractor control.

#### 1.9.4 Contractor Use of Submittal Register

Update the following fields in the Government-furnished submittal register program or equivalent fields in the program used by the Contractor with each submittal throughout the contract.

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (j) Action Code (k): Date of action used to record Contractor's review when forwarding submittals to QC.

Column (l) Date submittal transmitted.

Column (q) Date approval was received.

#### 1.9.5 Approving Authority Use of Submittal Register

Update the following fields:

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (l) Date submittal was received.

Column (m) through (p) Dates of review actions.

Column (q) Date of return to Contractor.

#### 1.9.6 Action Codes

Entries for columns (j) and (o) are to be used as follows (others may be prescribed by the Transmittal Form):

##### 1.9.6.1 Government Review Action Codes

"A" - "Approved as submitted"; "Completed"

"B" - "Approved, except as noted on drawings"; "Completed"

"C" - "Approved, except as noted on drawings; resubmission required"; "Resubmit"

"D" - "Returned by separate correspondence"; "Completed"

"E" - "Disapproved (See attached)"; "Resubmit"

"F" - "Receipt acknowledged"; "Completed"

"G" - "Other (Specify)"; "Resubmit"

"X" - "Receipt acknowledged, does not comply with contract requirements"; "Resubmit"



1.9.6.2 Government Review Action Codes

"A" - "Approved as submitted"

"AN" - "Approved as noted"

"RR" - "Disapproved as submitted"; "Completed"

"NR" - "Not Reviewed"

"RA" - "Receipt Acknowledged"

1.9.6.3 Contractor Action Codes

DESIGN BID BUILD SUBMITTALS			
Submittal Classifications shown in UFGS Sections	Submittal Classification	Corresponding SpecsIntact Submittal Register Code which is populated in the SI Submittal Register. Software Limitations: (The software shows one character delineation in the SpecsIntact Submittal Register)	RMS - The following Submittal Classifications are populated in RMS when the SpecsIntact Submittal Data File is pulled into RMS)
G	Submittal requires Government	G	GA
BLANK	Submittal is For Information Only (FIO)	BLANK	FIO
S	Submittal is for documentation of Sustainable requirements	S	S/FIO

#### 1.9.6.4 Contractor Action Codes

DESIGN BUILD SUBMITTALS			
Submittal Classifications shown in UFGS Sections	Submittal Classification	Corresponding SpecsIntact Submittal Register Code which is populated in the SI Submittal Register. Software Limitations: (The software shows one character delineation in the SpecsIntact Submittal Register)	RMS - The following Submittal Classifications are populated in RMS when the SpecsIntact Submittal Data File is pulled into RMS)
G	Submittal requires	G	GA
BLANK	Submittal is For Information Only (FIO)	BLANK	FIO
DA	Submittal requires Designer of Record Approval	D	DA
CR	Submittal requires Government Conformance Review	C	CR
DA/CR	Submittal requires Designer of Record Approval and Government Conformance	R	DA/CR
DA/GA	Submittal requires Designer of Record Approval and Government	A	DA/GA

#### 1.9.7 Delivery of Copies

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

#### 1.10 VARIATIONS

Variations from contract requirements require Contracting Officer approval pursuant to contract Clause FAR 52.236-21 Specifications and Drawings for Construction, and will be considered where advantageous to the Government.

#### 1.10.1 Considering Variations

Discussion of variations with the Contracting Officer before submission will help ensure that functional and quality requirements are met and minimize rejections and resubmittals. When contemplating a variation that results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

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

#### 1.10.2 Proposing Variations

When proposing variation, deliver a written request to the Contracting Officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to Government. Include the DOR's written analysis and approval. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

Check the column "variation" of ENG Form 4025 for submittals that include variations proposed by the Contractor. Set forth in writing the reason for any variations and note such variations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted variations.

#### 1.10.3 Warranting that Variations are Compatible

When delivering a variation for approval, the Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

#### 1.10.4 Review Schedule Extension

In addition to the normal submittal review period, a period of [14] [\_\_\_\_\_] calendar working days will be allowed for the Government to consider submittals with variations.

### 1.11 SCHEDULING

Schedule and submit concurrently product data and shop drawings covering component items forming a system or items that are interrelated. Submit pertinent certifications at the same time. No delay damages or time extensions will be allowed for time lost in late submittals. [Allow an additional [\_\_\_\_\_] calendar working days for review and approval of submittals for [food service equipment] [and] [refrigeration and HVAC control systems]].

- a. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. The Contractor is responsible for additional time required for Government reviews resulting from required resubmittals. The review period for each resubmittal is the same as for the initial submittal.

- b. Submittals required by the contract documents are listed on the submittal register. If a submittal is listed in the submittal register but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but that have been omitted from the register or marked "N/A."
- c. Resubmit the submittal register and annotate it monthly with actual submission and approval dates. When all items on the register have been fully approved, no further resubmittal is required.

Contracting Officer review will be completed within [\_\_\_\_\_] calendar working days after the date of submission.

- d. Except as specified otherwise, allow a review period, beginning with receipt by the approving authority, that includes at least [15] [\_\_\_\_\_] working days for submittals for QC manager approval and [20] [\_\_\_\_\_] working days for submittals where the Contracting Officer is the approving authority. The period of review for submittals with Contracting Officer approval begins when the Government receives the submittal from the QC organization.
- e. For submittals requiring review by a Government fire protection engineer, allow a review period, beginning when the Government receives the submittal from the QC organization, of [30] [\_\_\_\_\_] working days for return of the submittal to the Contractor.

[Within [30] [15] calendar days of Notice To Proceed] [At the Preconstruction conference], provide the following schedule of submittals for approval by the Contracting Officer:

- d. A schedule of shop drawings and technical submittals required by the specifications and drawings. Indicate the specification or drawing reference requiring the submittal; the material, item, or process for which the submittal is required; the "SD" number and identifying title of the submittal; the anticipated submission date, and the approval need date.
- e. A separate schedule of other submittals required under the contract but not listed in the specifications or drawings. Indicate the contract requirement reference, the type or title of the submittal, the anticipated submission date, and the approval need date (if approval is required).

#### 1.11.1 Reviewing, Certifying, and Approving Authority

The QC Manager is responsible for reviewing all submittals and certifying that they are in compliance with contract requirements. The approving authority on submittals is the QC Manager unless otherwise specified. At each "Submittal" paragraph in individual specification sections, a notation "G" following a submittal item indicates that the Contracting Officer is the approving authority for that submittal item. Provide an additional copy of the submittal to the Government Approving authority

#### 1.11.2 Constraints

Conform to provisions of this section, unless explicitly stated otherwise for submittals listed or specified in this contract.

Submit complete submittals for each definable feature of the work. At the same time, submit components of definable features that are interrelated as a system.

When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, the submittal will be returned without review.

Approval of a separate material, product, or component does not imply approval of the assembly in which the item functions.

#### 1.11.3 QC Organization Responsibilities

- a. Review submittals for conformance with project design concepts and compliance with contract documents.
- b. Process submittals based on the approving authority indicated in the submittal register.
  - (1) When the QC manager is the approving authority, take appropriate action on the submittal from the possible actions defined in paragraph APPROVED SUBMITTALS.
  - (2) When the Contracting Officer is the approving authority or when variation has been proposed, forward the submittal to the Government, along with a certifying statement, or return the submittal marked "not reviewed" or "revise and resubmit" as appropriate. The QC organization's review of the submittal determines the appropriate action.
- c. Ensure that material is clearly legible.
- d. Stamp each sheet of each submittal with a QC certifying statement or an approving statement, 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.
  - (1) When the approving authority is the Contracting Officer, the QC organization will certify submittals forwarded to the Contracting Officer with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number [\_\_\_\_\_] is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for Government approval.

Certified by Submittal Reviewer \_\_\_\_\_, Date \_\_\_\_\_  
(Signature when applicable)

Certified by QC Manager \_\_\_\_\_, Date \_\_\_\_\_"  
(Signature)

- (2) When approving authority is the QC manager, the QC manager will use the following approval statement when returning submittals to the Contractor as "Approved" or "Approved as Noted."

"I hereby certify that the (material) (equipment) (article) shown and marked in this submittal and proposed to be incorporated with Contract

Number [\_\_\_\_\_] is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is approved for use.

Certified by Submittal Reviewer \_\_\_\_\_, Date \_\_\_\_\_  
(Signature when applicable)

Approved by QC Manager \_\_\_\_\_, Date \_\_\_\_\_"  
(Signature)

- e. Sign the certifying statement or approval statement. The QC organization member designated in the approved QC plan is the person signing certifying statements. The use of original ink for signatures is required. Stamped signatures are not acceptable.
- f. Update the submittal register as submittal actions occur, and maintain the submittal register at the project site until final acceptance of all work by the Contracting Officer.
- g. Retain a copy of approved submittals and approved samples at the project site.
- h. For "S" submittals, provide a copy of the approved submittal to the Government Approving authority.

#### 1.11.4 Government Reviewed Design

The Government will review design submittals for conformance with the technical requirements of the Solicitation. Section 01 33 16.00 10 DESIGN DATA (DESIGN AFTER AWARD) covers the design submittal and review process in detail. Government review is required for variations from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the DOR's design documents do not include enough detail to ascertain contract compliance. The Government may, but is not required to, review extensions of design such as structural steel or reinforcement shop drawings.

#### 1.12 GOVERNMENT APPROVING AUTHORITY

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

- a. Note the date on which the submittal was received from the QC manager.
- b. Review submittals for approval within the scheduling period specified and only for conformance with project design concepts and compliance with contract documents.
- c. Identify returned submittals with one of the actions defined in paragraph REVIEW NOTATIONS and with comments and markings appropriate for the action indicated.

Upon completion of review of submittals requiring Government approval, stamp and date submittals. [\_\_\_\_\_] copies of the submittal will be retained by the Contracting Officer and [\_\_\_\_\_] copies of the submittal will be returned to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be identified and returned, as described above.

#### 1.12.1 Review Notations

Submittals will be returned to the Contractor with the following notations:

- a. Submittals marked "approved" or "accepted" authorize proceeding with the work covered.
- b. Submittals marked "approved as noted" or "approved, except as noted, resubmittal not required," authorize proceeding with the work covered provided that the Contractor takes no exception to the corrections.
- c. Submittals marked "not approved," "disapproved," or "revise and resubmit" indicate incomplete submittal or noncompliance with the contract requirements or design concept. Resubmit with appropriate changes. Do not proceed with work for this item until the resubmittal is approved.
- d. Submittals marked "not reviewed" indicate that the submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.
- e. Submittals marked "receipt acknowledged" indicate that submittals have been received by the Government. This applies only to "information-only submittals" as previously defined.

#### 1.13 DISAPPROVED SUBMITTALS

Make corrections required by the Contracting Officer. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications, give notice to the Contracting Officer as required under the FAR clause titled CHANGES. The Contractor is responsible for the dimensions and design of connection details and the construction of work. Failure to point out variations may cause the Government to require rejection and removal of such work at the Contractor's expense.

If changes are necessary to submittals, make such revisions and resubmit in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

#### 1.14 APPROVED SUBMITTALS

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

Approval or acceptance by the Government for a submittal does not relieve the Contractor of the responsibility for meeting the contract requirements or for any error that may exist, because under the Quality Control (QC) requirements of this contract, the Contractor is responsible for ensuring information contained within each submittal accurately conforms with the

requirements of the contract documents.

After submittals have been approved or accepted by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

#### 1.15 APPROVED SAMPLES

Approval of a sample is only for the characteristics or use named in such approval and is not be construed to change or modify any contract requirements. Before submitting samples, provide assurance that the materials or equipment will be available in quantities required in the project. No change or substitution will be permitted after a sample has been approved.

Match the approved samples for materials and equipment incorporated in the work. If requested, approved samples, including those that may be damaged in testing, will be returned to the Contractor, at its expense, upon completion of the contract. Unapproved samples will also be returned to the Contractor at its expense, if so requested.

Failure of any materials to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make as that material. The Government reserves the right to disapprove any material or equipment that has previously proved unsatisfactory in service.

Samples of various materials or equipment delivered on the site or in place may be taken by the Contracting Officer for testing. Samples failing to meet contract requirements will automatically void previous approvals. Replace such materials or equipment to meet contract requirements.

#### 1.16 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained. No payment for materials incorporated in the work will be made unless all required DOR approvals or required Government approvals have been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information-only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

#### 1.17 STAMPS

Certify the submittal data as follows on Form ENG 4025: "I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

\_\_\_\_NAME OF CONTRACTOR\_\_\_\_SIGNATURE OF CONTRACTOR

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

Not Used



Open Mess Hall Repair (2615)  
Marine Corps Base, Camp Lejeune

Project # 1604F

-- End of Section --

SECTION 01 33 00.05 20

CONSTRUCTION SUBMITTAL PROCEDURES

05/14

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

This section covers construction submittals that are not included in the design submittals. Submit design submittals in accordance with 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES. When using Unified Facility Guide Specifications (UFGS) sections that reference Section 01 33 00 SUBMITTAL PROCEDURES, change reference to this section, Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES.

1.2 DEFINITIONS

1.2.1 SUBMITTAL

Shop drawings, product data, samples, and administrative submittals presented for review and approval. Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals." Submittals must follow a process of review and approval before they can be considered for the project (ie, actionable). Each submittal must also be recorded on the Submittal Register.

1.2.2 TYPES FOR 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.

SD-01 Preconstruction Submittals

Submittal Register; G

### 1.2.3 SUBMITTAL DESCRIPTIONS (SD)

Submittal requirements are specified in Unified Facilities Guide Specifications (UFGS) in Part 2, GENERAL REQUIREMENTS; in references in Part 4 PERFORMANCE TECHNICAL SPECIFICATIONS; and in UFGSs in Part 5, PRESCRIPTIVE SPECIFICATIONS. Submittals that are identified by SD numbers use descriptions of items included in submittal packages and titles as follow:

#### SD-01 Preconstruction Submittals

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction progress schedule.
- Network Analysis Schedule (NAS).
- Submittal register.
- Earned Value Report.
- Health and safety plan.
- Work plan.
- Quality control and commissioning 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 ensuing 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-10 Operation and Maintenance Data

Data that is furnished by the manufacturer, or the system provider, to the equipment operating and maintenance personnel. This data is needed by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

#### SD-11 Closeout Submittals

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

Special requirements necessary to properly close out a construction contract. For example, Record Drawings, As-built drawings, DD Form 1354, and Sustainable and Energy Data Record Card. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

As-built drawings

Special warranties

Posted operating instructions

Training plan

#### 1.2.4 APPROVING AUTHORITY

Person authorized to approve submittal.

#### 1.2.5 WORK

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

#### 1.3 SUBMITTALS

Submit the following in accordance with the requirements of this section.

##### SD-01 Preconstruction Submittals

Submittal register; G

#### 1.3.1 Submittal Register

The submittal register must be prepared during the initial design stages of the project and indicate each design and construction submittal. Maintain an electronic version of the submittal register as work progresses. The DOR must assist the QC Manager in preparing the submittal register by determining all project submittals that require Government approval. A template of the submittal register is included as Appendix A.

### 1.3.2 SUBMITTAL TYPES

Submit submittal register as a hard copy. Submit with quality control plan and project schedule required by Section 01 45 00.05 20, "Design and Construction Quality Control". Do not change data in columns (c), (d), (e), and (f) as delivered by the government. Verify that all submittals required for project are listed and add missing submittals. Complete the following on the register:

Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for approving authority to receive submittals.

Column (h) Contractor Approval Date: Date contractor needs approval of submittal.

Column (i) Contractor Material: Date that contractor needs material delivered to contractor control.

### 1.3.3 Contractor Use of Submittal Register

Update the following fields in the government-furnished submittal register.

Column (b) Transmittal Number: Contractor assigned list of consecutive numbers.

Column (j) Action Code (k): Date of action used to record contractor's review when forwarding submittals to QC.

Column (l) List date of submittal transmission.

Column (q) List date approval received.

### 1.3.4 Approving Authority Use of Submittal Register

Update the following fields in the government-furnished submittal register.

Column (b).

Column (l) List date of submittal receipt.

Column (m) through (p).

Column (q) List date returned to contractor.

### 1.3.5 Action Codes

The following Action Codes will be used by the Government when a submittal is received. All submittals must be received accompanied by a transmittal form (paragraph 1.5.2) and one of the following Action Codes will be entered by the Government on the transmittal form.

Entries used will be as follows:

A - Approved: Submittal is approved by the Government

D - Disapproved: Submittal is disapproved by the Government

AN - Approved as Noted: Indicates that the submittal is approved provided that it complies with the notations or corrections on the submittal and contract documents.

RA - Receipt Acknowledged: Confirmation that the submittal has been received by the Government. This is used only for Government Surveillance submittals.

C - Comments

R - Disapproved, Revise, and Resubmit

#### 1.4 CONSTRUCTION QUALITY CONTROL

##### 1.4.1 Submittal Classifications

There are two classifications of submittals which are distinguished by the approval authority required for the submittal to become actionable.

Government Surveillance. All submittals without a "G" classification are considered Government Surveillance submittals. These Surveillance submittals are approved by the Contractor but provide the Government the opportunity to oversee critical project issues.

Government Surveillance submittals must first be reviewed and approved by the DOR, QC Manager (two signatures) in that order, to become actionable - and forwarded to the Government for acknowledgement. If during the Government surveillance of construction submittals, items are brought to the Contractor's attention as non-compliant, the Contractor must correct the submittal and construction to comply with the requirements of the RFP.

Government Approval. The use of a "G" following a submittal indicates that government approval is required in addition to approval by the DOR and QC Manager (three signatures). Government Approval submittals must be approved first by the DOR and QC Manager and then by the Government before they are actionable.

##### 1.4.2 Contractor Reviewing, Certifying, Approving Authority

The QC organization is responsible for reviewing and certifying that submittals are in compliance with the contract requirements.

In RFP PART 4 PERFORMANCE TECHNICAL SPECIFICATIONS (PTS), there are UFGS specification sections required to be submitted as part of the design submittal.

All Submittals must follow the approval procedure described in paragraph 1.4.1 Submittal Classifications.

##### 1.4.3 Scheduling for Government Approved ("G") Submittals

Except as specified otherwise, allow review period, beginning when Government receives submittal from the QC organization, of 20 working days for return of submittal to the Contractor. Period of review for submittals requiring Government approval begins when Government receives submittal from QC organization. Period of review for each resubmittal is the same as for initial submittal.

- a. For submittals requiring review by fire protection engineer, allow review period, beginning when government receives submittal from QC organization, of 45 working days for return of submittal to the contractor. Period of review for each resubmittal is the same as for initial submittal.

#### 1.4.4 Submittals Reserved for Government Surveillance

Submit the following Government surveillance submittals, prior to starting work for construction submittal items, and after the completion of the work for reports submittals items.

- a. Submit fire protection related submittals pertaining to spray-applied fire proofing and fire stopping, exterior fire alarm reporting systems, interior fire alarm & detection systems, and fire suppression systems including fire pumps and standpipe systems.
- b. Submit geotechnical related submittals pertaining to the soils investigations (reports and soils analysis), foundations (shallow and deep), and pavements structure design, test pile and production pile testing and installation.
- c. Submit conveying related submittals pertaining to elevators, escalators, weight handling equipment, lifts, and conveyors.
- d. Submit roofing submittals pertaining to materials and systems used to make up the roof system.
- e. Submit HVAC Testing, Adjusting, and Balancing required submittals.
- f. Submit telecommunications shop drawings, as described in Part 4, D50 ELECTRICAL, for coordination with the MCW or NEXGEN Contractor.
- g. Submit Performance Verification and Acceptance Testing submittals listed in the PTS and referenced UFGS.
- h. Submit all Interim Special Inspection Reports on a bi-weekly basis until work requiring special inspections is complete. Submit all Structural Observation Reports and the Final Report of Special Inspections.
- i. Submit Final Certification Documentation for either US Green Building Council (USGBC) Certification LEED or Green Building Initiative (GBI) Green Globes.
- j. Submit building envelope testing results for air tightness and the Infrared Thermography results if air barrier deficiencies are identified. Actions taken to correct building envelope deficiencies at each location.

#### 1.4.5 Constraints

- a. Submittals must be complete for each definable feature of work; submit components of definable feature interrelated as a system at the same time.
- b. Submittals listed or specified in this contract shall conform to provisions of this section, unless explicitly stated otherwise.



- c. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, submittal will be returned without review.
- d. Approval of a separate material, product, or component does not imply approval of assembly in which item functions.

#### 1.4.6 Design Change and Variation

The Contractor must limit change and variation to items that will be advantageous to the Government. Submit proof that the change or variation is needed and provide the same or better level of quality as the design that the Government originally reviewed or approved. Design change is considered prior to Government approval of the final design and variation is considered after Government approval of final design.

Documentation provided to the Government shall include coordination measures proposed to incorporate the design change or variation into the construction.

##### 1.4.6.1 Design Changes

Design changes must meet the minimum requirements of the solicitation and the accepted proposal. Change from what was reviewed by the Government during design must be approved by the Designer of Record and brought to the attention of the Government before the design change is incorporated into the design documents.

##### 1.4.6.2 Variations

Variations from contract requirements including the solicitation, the accepted proposal, and the final design, require Government approval. Variations to the contract requirements must be approved by the Designer of Record prior to resubmitting the design to the Government for approval of the variation.

###### a. Considering Variations

Discussion with the Contracting Officer prior to submission, will help ensure functional and quality requirements are met and minimize rejections and re-submittals. When contemplating a variation which results in lower cost, consider submitting the variation as a Value Engineering Change Proposal (VECP).

###### b. Proposing Variations

When proposing variation, deliver written request to the Contracting Officer, with documentation of the nature and features of the variation and why the variation is desirable and beneficial to Government. If lower cost is a benefit, also include an estimate of the cost saving. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

###### c. Warranting Variations Are Compatible

When delivering a variation for approval, Contractor warrants that this contract has been reviewed to establish that the variation, if

incorporated, will be compatible with other elements of work.

d. Review Schedule Is Modified

In addition to normal submittal review period, a period of 10 working days will be allowed for consideration by the Government of submittals with variations.

1.4.7 Contractor's Responsibilities

Ensure no work has begun until submittals for that work have been "Approved", "Approved as Noted", or "Receipt Acknowledged."

1.4.8 QC Organization Responsibilities

Stamp each sheet of each submittal with QC certifying statement or approving statement, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.

- a. For all submittals, QC organization will certify submittals, assure proper signatures, and forward to Contracting Officer with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with contract Number (insert contract number here), is in compliance with the contract documents, can be installed in the allocated spaces, and is submitted for Government approval.

Certified by DOR \_\_\_\_\_, Date \_\_\_\_\_

Certified by QC Manager \_\_\_\_\_, Date \_\_\_\_\_"

- (1) Sign certifying statement or approval statement. The person signing certifying statements must be QC organization member designated in the approved QC plan. The signatures must be in original ink or digitally signed. Stamped signatures are not acceptable.
- (2) DOR certification must include: Name and Title of DOR, Function of the reviewer within contracting organization, Professional Seal must include information about: State of issuance, license number, professional organization and signature.
- (3) Update submittal register database as submittal actions occur and maintain the submittal register at project site until final acceptance of all work by Contracting Officer.
- (4) Upload approved submittals to the eCMS as indicated in  
01 31 23.13 20 ELECTRONIC CONSTRUCTION AND FACILITY SUPPORT  
CONTRACT MANAGEMENT SYSTEM
- (5) Retain a copy of approved submittals at project site, including Contractor's copy of approved samples.

1.4.9 Government's Responsibilities

When approving authority is the Government ("G"), the Government will:

- a. Note date on which submittal was received from QC Manager, on each submittal.
- b. Review submittals for compliance with contract documents.

#### 1.4.9.1 Government Actions

Submittals will be returned with one of the following notations:

- a. Submittals marked "approved" or "approved as submitted" authorize Contractor to proceed with work covered.
- b. Submittals marked "approved as noted" or "approval except as noted; resubmission not required" or "receipt acknowledged" unless noted otherwise, authorize Contractor to proceed with work as noted provided Contractor takes no exception to the notations.
- c. Submittals marked "revise and resubmit" or "disapproved" indicate submittal is incomplete or does not comply with design concept or requirements of the contract documents and must be resubmitted with appropriate changes. No work is allowed to proceed for this item until resubmittal is approved.
- d. Submittals required for surveillance will be returned only if corrective actions are required.

#### 1.5 FORMAT OF SUBMITTALS

##### 1.5.1 Complete Submittal Package

Contractor shall make electronic copies of all submittals, including the transmittal sheet, and provide a CD/DVD containing all submittals for project close out.

The CD/DVD shall be marked "Complete Submittal Package - Contract #\_\_\_\_\_"

##### 1.5.2 Transmittal Form

Transmit each submittal, except sample installations and sample panels, to office of approving authority. Transmit submittals with transmittal form prescribed by Contracting Officer and standard for the project. The transmittal form shall identify contractor, indicate date of submittal, and include information prescribed by transmittal form and required in paragraph entitled "Identifying Submittals." Process transmittal forms to record actions regarding sample panels and sample installations.

##### 1.5.3 Electronic Submittals

Construction Submittals for this project must be made electronically utilizing the eCMS system described in  
01 31 23.13 20 ELECTRONIC CONSTRUCTION AND FACILITY SUPPORT CONTRACT MANAGEMENT SYSTEM.  
Electronic Working and Record Drawings shall be submitted in accordance with specification Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES.

Provide eOMSI submittals in accordance with specification Section 01  
78 24.00 20 FACILITY ELECTRONIC OPERATION AND MAINTENANCE SUPPORT  
INFORMATION (eOMSI).

#### 1.5.3.1 Identification and Information

Identify and incorporate information in each electronic submittal file as follows:

- a. Assemble complete submittal package into a single indexed electronic file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
- b. Name file with the project identifier and Specification Section number, and submittal number, including revision identifier if required as follows:

File name shall use project number followed by a dash, the six or ten digit Specification Section number followed by a dash, and then a sequential number. Resubmittals shall include an alphabetic suffix after the sequential number.

#### 1.5.3.2 General Electronic Submittal Procedure Requests

Post electronic submittals as PDF electronic files directly to the eCMS.

- a. DOR will post electronic annotated files.
- b. Contractor shall annotate and retain one copy of file as an electronic Project record document file.
- c. Contractor shall maintain three (3) hard copies of all submittals: one copy to be maintained in the field during construction, one for the Construction Management Engineer (CME) office, and one for the contract files.
- d. Contractor shall provide upon completion of the project, CDs which have all reviewed and marked up submittals for the project.

#### 1.5.4 GOVERNMENT REVIEW OF SUBMITTALS

##### 1.5.4.1 Format for Product Data

- a. Present product data submittals for each section as a complete, bound volume. Include table of contents, listing page and catalog item numbers for product data.
- b. Indicate, by prominent notation, each product which is being submitted; indicate specification section number and paragraph number to which it pertains.
- c. Supplement product data with material prepared for project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for project.

##### 1.5.4.2 Format for Shop Drawings

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

entitled "IDENTIFYING SUBMITTALS".

- b. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Shop drawing dimensions shall be the same unit of measure as indicated on the contract drawings. Identify materials and products for work shown.

#### 1.5.4.3 Format of Samples

- a. Furnish samples in sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately same size as specified:
  - (1) Sample of Equipment or Device: Full size.
  - (2) Sample of Materials Less Than 2 by 3 inches: Built up to 8 1/2 by 11 inches.
  - (3) Sample of Materials Exceeding 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.
  - (4) Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.
  - (5) Sample of Non-Solid Materials: Pint. Examples of non-solid materials are sand and paint.
  - (6) Color Selection Samples: 2 by 4 inches.
  - (7) Sample Panel: 4 by 4 feet.
  - (8) Sample Installation: 100 square feet.
- b. Samples Showing Range of Variation: Where variations are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range.
- c. Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples shall be in undamaged condition at time of use.
- d. Recording of Sample Installation: Note and preserve the notation of area constituting sample installation but remove notation at final clean up of project.
- e. When color, texture or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

#### 1.5.4.4 Format of Administrative Submittals

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

- b. Operation and Maintenance Manual Data: Submit in accordance with Section 01 78 23, "Operation and Maintenance Data." Include components required in that section and the various technical sections.

#### 1.6 QUANTITY OF SUBMITTALS

##### 1.6.1 Quantity of Submittals

Submit one electronic copy of each submittal..

##### 1.6.2 Number of Samples

- a. Submit two samples, or two sets of samples showing range of variation, of each required item. One approved sample or set of samples will be retained by approving authority and one will be returned to contractor.
- b. Submit one sample panel. Include components listed in technical section or as directed.
- c. Submit one sample installation, where directed.
- d. Submit one sample of non-solid materials.

##### 1.6.3 Number of Copies of Administrative Submittals

- a. Unless otherwise specified, submit administrative submittals compliance with quantity requirements specified for product data.
- b. Submit administrative submittals required under "SD-19 Operation and Maintenance Manuals" to conform to Section 01 78 23, "Operation and Maintenance Data."

#### 1.7 FORWARDING SUBMITTALS

##### 1.7.1 Samples and Submittals

Except as otherwise noted, submit samples and submittals to:

ROICC/OICC  
Jacksonville, North Carolina Area  
1005 Michael Road  
Camp Lejeune, NC 28542-2521

- OR -

Architect-Engineer Firm  
Full Address

##### 1.7.2 Administrative Submittals

Submit administrative submittals for asbestos/lead removal and environmental protection plan to the Resident Officer in Charge of Construction (ROICC/OICC).

##### 1.7.3 Fire Protection and Fire Alarm System Submittals

Submit fire protection and fire alarm system submittals to DOR and Public Works Design Branch, 1005 Michael Road, Camp Lejeune, NC 28542-2521

1.7.4 TAB Submittals

Submit to ROICC/OICC for all projects.

1.7.5 Shop Drawings, Product Data, and O&M Data

As soon as practicable after award of the contract, and before procurement or fabrication, submit shop drawings, product data and O&M Data required in the technical sections of this specification.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 33 10.05 20

DESIGN SUBMITTAL PROCEDURES

10/2019

PART 1 GENERAL

1.1 SUMMARY

This section includes requirements for Contractor-originated design documents and design submittals.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only. The latest version of the publication at time of RFP issuance must be used.

MCB CAMP LEJEUNE

BEAP (2010) MCB Camp Lejeune Base Exterior  
Architectural Plan

GREEN BUILDING INITIATIVE (GBI)

GBI GP Compliance GBI Guiding Principles Compliance Program  
for New Construction

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-200-01 (2018) DoD Building Code (General Building  
Requirements)

UFC 1-200-02 (2018) High Performance and Sustainable  
Building Requirements

UFC 1-300-08 (2009, with Change 2) Criteria for  
Transfer and Acceptance of DoD Real  
Property

FC 1-300-09N (2014; with Change 2) Navy and Marine  
Corps Design Procedures

UFC 3-400-02 (2018) Design: Engineering Weather Data

UFC 3-401-01 (2013; with Change 1, 2015) Mechanical  
Engineering

UFC 3-410-01 (2013; with Change 4, 2017) Heating,  
Ventilating, and Air Conditioning Systems

UFC 3-420-01 (2004; with Change 10, 2015) Plumbing  
Systems

UFC 3-501-01 (2015;) Electrical Engineering

UFC 3-520-01 (2015;) Interior Electrical Systems



UFC 3-530-01	(2015; with Change 3, 2016) Interior and Exterior Lighting Systems and Controls
UFC 3-550-01	(2016; with Change 1, 2017) Exterior Electrical Power Distribution
UFC 3-560-01	(2017; with Change 1, 2018) Operations and Maintenance: Electrical Safety
UFC 3-580-01	(2016; with Change 1) Telecommunications Interior Infrastructure Planning and Design
UFC 3-600-10N	(2007; Final Draft) Fire Protection Engineering
UFC 3-810-10N	(2016; with Change 1, 2017) Navy and Marine Corps Environmental Engineering for Facility Construction
UFC 4-010-01	(2018) DoD Minimum Antiterrorism Standards for Buildings
UFC 4-021-01	(2008; with Change 1, 2010) Design and O&M: Mass Notification Systems

### 1.3 GENERAL DESIGN REQUIREMENTS

Contractor-originated design documents must provide a project design that complies with the Request For Proposal (RFP), [FC 1-300-09N](#), [UFC 1-200-01](#), the Core UFCs, and other UFC's listed above.

#### 1.3.1 UNIFIED FACILITIES CRITERIA (UFC) Notes

UFC 1-200-01 including the referenced DoD Tri-Service Core UFC Documents and the required building codes/standards comprise the general building requirements for the project. These Core UFC documents apply to all facilities, and unless noted below, are found on the Whole Building Design Guide UFC website.

UFC 1-200-01 is a hub document that provides general building requirements and references other critical UFCs.

A reference to UFC 1-200-01 or UFC 3-410-01 requires compliance with UFC 1-200-02, UFC 3-401-01, UFC 3-400-02, and UFC 3-420-01.

(A reference to UFC 1-200-01 or UFC 3-501-01 requires compliance with UFC 3-520-01, UFC 3-530-01, UFC 3-550-01, UFC 3-560-01, and UFC 3-580-01.)

(A reference to UFC 1-200-01 requires compliance with UFC 3-501-01.)

(A reference to UFC 1-200-01 or UFC 4-010-01 requires compliance with UFC 4-021-01.)

(UFC 3-600-10N is only available on the NAVFAC Design-Build Website under the Design Guidance link:

[https://www.wbdg.org/FFC/DOD/UFC/ufc\\_3\\_600\\_10n\\_draft.pdf](https://www.wbdg.org/FFC/DOD/UFC/ufc_3_600_10n_draft.pdf).

This Draft UFC is applicable as a Final document for Navy projects.)

(UFC 3-810-10N is only available on the NAVFAC Design-Build Website under the Design Guidance link: [http://www.wbdg.org/ndbm/design\\_guidance.php](http://www.wbdg.org/ndbm/design_guidance.php). This Draft UFC is applicable as a Final document for Navy projects.)

#### 1.4 SUBMITTALS

Submit design submittals, including shop drawings used as design drawings, to the Government for approval. The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with this section and Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES.

##### SD-01 Preconstruction Submittals

Submittal Register; G

Updated Draft DD Form 1354

##### SD-05 Design Data

Design Drawings; G

Specifications; G

Basis of Design; G

Design Submittals; G

##### SD-11 Closeout Submittals

Record Documents; G

Preliminary Interim DD Form 1354; G

Updated Interim DD Form 1354; G

Final DD Form 1354

#### 1.5 DESIGN QUALITY CONTROL

##### 1.5.1 Contractor Reviewing and Certifying Authority

The QC organization is responsible for reviewing and certifying that design submittals are in compliance with the contract requirements.

##### 1.5.2 Government Approving Authority

The Contracting Officer is the approving authority for design submittals.

##### 1.5.3 Designer of Record Certifying Authority

The Designer of Record (DOR), as registered and defined in FC 1-300-09N, is the design certifying authority. The DOR accepts responsibility for design of work in each respective design discipline, by stamping and approving final construction drawings submitted to the Government approval authority.

#### 1.5.4 Contractor Construction Actions

Upon submission of sealed and signed design documents certified by the DOR, and the Quality Control (QC) Manager, the Contractor may proceed at risk with material and equipment purchases, fabrication and construction of any elements covered by that submittal, except as specified in the following paragraph.

##### 1.5.4.1 Exception to Contractor Construction Actions

The Government will approve the following final submittals before the Contractor must be allowed to proceed with construction:

- a. Any design submittal that includes or will be impacted by a design change to the contract. Final Government approval of the design change is required before construction can begin on the work included in that design submittal.

#### 1.5.5 Contractor's Responsibilities

- a. Designate a lead licensed architect or engineer to be in responsible charge to coordinate the design effort of the entire project. This lead architect or engineer must coordinate all design segments of the project to assure consistency of design between design disciplines.
- b. With the Designer of Record, verify site information provided in the RFP. In addition, provide additional field investigations and verification of existing site conditions as may be required to support the development of design and construction of the project.
- c. Indicate on the transmittal form accompanying submittal which design submittals are being submitted as shop drawings.
- d. Advise Contracting Officer of variations, as required by paragraph DESIGN CHANGE AND VARIATIONS.
- e. Provide an updated, cumulative submittal register with each design package that identifies the design and construction submittals required by that design package and previous submittals.
- f. Refer to Section 01 78 24.00 20 FACILITY ELECTRONIC OPERATION AND MAINTENANCE SUPPORT INFORMATION (eOMSI) for Contractor's eOMSI responsibilities.

#### 1.5.6 QC Organization Responsibilities

- a. QC Manager must certify design submittals for compliance with the contract documents. The DOR stamp on drawings indicates approval from the DOR.
- b. QC organization must certify submittals forwarded by the Designer of Record (DOR) to the Contracting Officer with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number (insert contract number here), is in compliance with the contract documents, and is submitted for Government approval."

Certified by Designer of Record \_\_\_\_\_, Date \_\_\_\_\_

Certified by QC Manager \_\_\_\_\_, Date \_\_\_\_\_

- c. Sign certifying statement. The persons signing certifying statements must be the QC organization members designated in the approved QC plan. The signatures must be in original ink. Stamped signatures are not acceptable.
- d. Update submittal register as submittal actions occur and maintain the submittal register at project site until final approval of all work by Contracting Officer.
- e. Retain a copy of approved submittals at project site.

#### 1.5.7 Government Responsibilities

The Government will:

- a. Note date on which submittal was received from QC manager, on each submittal.
- b. Perform a quality assurance (QA) review of submittals. Government will notify Contractor when comments for that design package are posted and ready for Contractor evaluation and resolution.
- c. Upon submittal of final design package and resolution of comments by the Contractor, the Government will sign final design package, when approved, and return electronic copy of signed design documents to the Contractor.

##### 1.5.7.1 Actions Possible

Submittals will be returned with one of the following notations:

- a. Submittals may be marked "approved." Submittals marked "approved" indicate a quality assurance (QA) review has been performed. Government review or approval of any portion of the proposal or final design does not relieve the Contractor from responsibility for meeting the contract requirements or for any error that may exist, because under the Quality Control (QC) requirements of this contract, the Contractor is responsible for ensuring information contained within each submittal accurately conforms with the requirements of the contract documents. Furthermore, Government review or approval of a submittal is not to be construed as a complete check.
- b. Submittals marked "revise and resubmit" or "disapproved" indicate submittal is incomplete or does not comply with design concept or requirements of the contract documents and **must** be resubmitted with appropriate changes. If work has been started on the unacceptable portion of the design submittal, the Contractor **must** propose corrective action. No further work **must** proceed until the issue is resolved in a manner satisfactory to the Government.

#### 1.6 DESIGN DOCUMENTS

Provide design documents that include basis of design, design drawings, and design specifications, reports, and submittal register in accordance with

FC 1-300-09N, Navy and Marine Corps Design Procedures.

The Contractor is required to make product, material, and system selections during the project design and indicate these choices on the design documents. Accomplish this by submitting design drawings and specifications that include proprietary submittal information such as manufacturers name, product names, model numbers, product data, manufacturers information, provided optional features, appropriate connections, fabrication, layout, and product specific drawings. Adherence to RFP submittal requirements and provision of DOR approved construction submittal information on the design submittals eliminates the need for follow-on traditional construction submittals after the final design is approved.

The Contractor is required to submit proprietary information to describe the construction submittal information in the design documents for all products, materials, and systems submittals listed below:

- a. All building enclosure components.
- b. All roof components.
- c. Major mechanical and electrical equipment such as chillers , transformers, generators, and dedicated outside air systems.
- d. Interior finishes.

Refer to Section 01 33 00.05 20, CONSTRUCTION SUBMITTAL PROCEDURES for requirements pertaining to Contractor proposed design changes or variations.

## 1.7 DESIGN DRAWINGS

### 1.7.1 Drawing Standards

Prepare, organize, and present design drawings in accordance with the requirements of FC 1-300-09N.

Submit all CAD files for the final drawings on CD-ROM or DVD disks in AutoCAD 2016 format. Drawing files must be full files, uncompressed and unzipped.

### 1.7.2 Design Drawings Used as Shop Drawings

Design drawings may be prepared more like shop drawings to minimize construction submittals after final design is approved. If the Contractor chooses or is required to include the construction submittal information on the design documents, indicate proprietary information on the design drawings as necessary to describe the products, materials, or systems that are to be used on the project. Construction submittal information included directly in the design drawings must be approved by the DOR. All design documents must be professionally signed in accordance with FC 1-300-09N, Navy and Marine Corps Design Procedures.

### 1.7.3 Drawing Format For Design Drawings Used as Shop Drawings

The Contractor-originated drawings will be used as the basis for the record drawings. Shop drawings included as design documents must comply with the same drawing requirements such as drawing form, sheet size, layering, lettering, and title block used in design drawings.

#### 1.7.4 Identification of Design Drawings Used as Shop Drawings

The Contractor's transmittal letter and submittal register must indicate which design drawings are being submitted as shop drawings.

#### 1.7.5 Naval Facilities (NAVFAC) Engineering Command Drawing Numbers

Number the final Contractor-originated design drawings consecutively with NAVFAC drawing numbers. Determine the total number of sheets required for the complete set of drawings before requesting the NAVFAC drawing numbers from the Contracting Officer.

#### 1.7.6 Seals and Signatures on Documents

All final Contractor-originated design drawings must be signed, dated, and bear the seal of the registered architect or the registered engineer of the respective discipline in accordance with FC 1-300-09N. This seal must be the seal of the Designer of Record for that drawing, and who is professionally registered for work in that discipline. A principal or authorized licensed or certified employee must electronically sign and date final drawings and cover sheet, in accordance with FC 1-300-09N. The design drawing coversheets must be sealed and signed by the lead licensed architect or engineer of the project design team. Indicate the Contractor's company name and address on the drawing coversheets of each design submittal. Application of the electronic seal and signature accepts responsibility for the work shown thereon.

#### 1.7.7 Units of Measure

Utilize English Inch-Pound units of measure on the design documents

### 1.8 SPECIFICATIONS

Provide a Contractor-originated design specification that in conjunction with the drawings, demonstrates compliance with requirements of the RFP. The specified products, materials, systems, and equipment that are approved by the DOR; submitted to the Government by the Contractor; and reviewed by the Contracting Officer must be used to construct the project. UFGS sections contained in RFP Part 2 must become a part of the Contractor-originated Division 01 specification without modification. Specification Sections contained in RFP Part 5 must become a part of the Contractor-originated specification without modification. If there is a need to modify the specification sections, Contractor may modify with Government approval.

The specification coversheet must be prepared and signed by the lead licensed architect or engineer of the project design team. Indicate the Contractor's company name and address on the specification coversheet of each design submittal.

#### 1.8.1 Specifications Format

The use of UFGS sections are required. The Contractor must prepare design specifications that include a UFGS specification for each product, material, or system on the project. If the Contractor chooses or is required above to combine design and construction submittal information on the design documents, provide a UFGS specification and also proprietary information such as catalog cuts and manufacturers data that demonstrates

compliance with the RFP. Organize the specifications using Construction Specification Institute (CSI) Masterformat™. A prescriptive specification is required for all items. Provide project specifications to include the following:

- a. Provide the specification cover sheet with the professional seal and signature.
- b. SpecsIntact generated Table of Contents for entire specification.
- c. Individual UFGS specification sections for each product, material, and system required by the RFP. Edit UFGS sections in accordance with RFP requirements.
- d. SpecsIntact generated Coordinated Submittal Register for all products, materials and systems in the submittal.
- e. Coordinated submittal register for all products, materials and systems with each design submittal. Provide a cumulative register that identifies the design and construction submittals required by each design package along with previous design submittals. The DOR must assist in developing the submittal register by determining which submittal items are required to be approved by the DOR. Complete all fields in the final submittal register in order to obtain Government approval of the final design.

#### 1.8.2 Specifications Section Source Priority

Choose UFGS sections that describe the products, materials, and systems that are used on the project. Use current UFGS sections that are available on the Whole Building Design Guide website and give priority to the UFGS that are prepared by NAVFAC. Only use UFGS section prepared by other Agencies if an applicable NAVFAC prepared specification section does not exist. Whenever available and applicable to the project, UFGS specification sections created or edited to contain specific Marine Corps requirements must be used. PDF copies of these sections are contained in Part 6 Attachments. Source files for these sections will be provided upon request after contract award.

#### 1.8.3 Fire Protection Specifications

Specifications pertaining to spray-applied fire proofing and fire stopping, exterior fire alarm reporting systems, interior fire alarm and detection systems, and fire suppression systems, including fire pumps and standpipe systems must be either prepared by, or reviewed and approved by the Fire Protection Designer of Record (DOR).

#### 1.8.4 Submittal Register

Submit a current submittal register with each design submittal. Provide a cumulative register that identifies the design and construction submittals required by each design package along with previous submittals. The DOR must assist in developing the submittal register by determining which submittal items are required to be Government Approval ("G") submittals. To obtain Government approval of the final design package, complete all fields in the submittal register.

#### 1.8.5 Identification of Manufacturer's Product Data Used with Specifications

Provide complete and legible catalog cut sheets, product data, installation instructions, operation and maintenance instructions, warranty, and certifications for products and equipment for which final material and equipment choices have been made. Indicate, by prominent notation, each product that is being submitted including optional manufacturer's features, and indicate where the product data shows compliance with the RFP.

Coordinate with Section 01 78 24.00 20 FACILITY ELECTRONIC OPERATION AND MAINTENANCE SUPPORT INFORMATION (eOMSI) for Contractor's eOMSI responsibilities.

#### 1.8.6 Specification Software

Create the project specification using SpecsIntact and submit the final Specification source files in SpecsIntact format. The electronic PDF file of the specifications must be submitted in color.

### 1.9 BASIS OF DESIGN

Prepare, organize, and present the basis of design in accordance with the requirements of FC 1-300-09N. The basis of design must be a presentation of facts at the Concept Design Workshop to demonstrate the concept of the project is fully understood and the design is based on sound engineering principles. Provide design analyses for each discipline and include the following:

- a. Basis of design that includes:
  - (1) An introductory description of the project concepts that addresses the salient points of the design;
  - (2) An orderly and comprehensive documentation of criteria and rationale for system selection; and
  - (3) The identification of any necessary licenses and permits that are anticipated to be required as a part of the design and/or construction process. The "Permits Record of Decision" (PROD) form provided must be used for recording permits.
- b. Code and criteria search must identify all applicable codes and criteria and highlight specific requirements within these codes and criteria for critical issues in the facility design.
- c. Calculations as specified and as needed to support this design.
- d. Section titled "Antiterrorism" that documents the antiterrorism features
- e. Fall Protection Analysis
- f. Draft and Interim DD Form 1354 that document the real property assets of the project. Refer to RECORD DOCUMENTS paragraphs in this section for requirements.
- g. eOMSI Facility Data Workbook (FDW)



#### 1.9.1 Basis of Design Format

The basis of design for each design discipline must include a cover page indicating the project title and locations, contract number, table of contents, tabbed separations for quick reference, and bound in separate volumes for each design discipline.

#### 1.9.2 Design Calculations

Place the signature and seal of the designer responsible for the work on the cover page of the calculations for the respective design discipline.

#### 1.9.3 Fall Protection Analysis

Eliminate fall hazards in the facility or if not feasible provide control measures to protect personnel conducting maintenance work after completion of the project. Identify fall hazards in the Basis of Design with the Design Development and Preliminary submittals. The analysis must describe how fall hazards are considered, eliminated, prevented or controlled to prevent maintenance personnel from exposure to fall hazards while performing work at heights. Refer to RFP Part 2, Section 01 35 26.05 20, GOVERNMENT SAFETY REQUIREMENTS FOR DESIGN-BUILD for fall hazard protection requirements.

### 1.10 RECORD DOCUMENTS

#### 1.10.1 Record Drawings

The as-built modifications must be accomplished by electronic drafting methods on the Contractor-originated. \*.DWG design drawings to create a complete set of record drawings. In addition to the requirements of FAC 5252.236-9310, RECORD DRAWINGS, survey the horizontal and vertical location of all provided underground utilities to within 0.1 feet relative to the station datum. All pipe utilities must be surveyed at each fitting and every 100 LF of run length. Electrical and communication duct bank, direct buried conduit, and direct buried conductor must be surveyed every 100 LF and at each change of direction. Record locations and elevations on the Record Drawings.

- a. For each record drawing, provide CAD drawing identical to signed Contractor-originated PDF drawing, that incorporates modifications to the as-built conditions. In addition, copy initials and dates from the Contracting Officer approved .PDF documents to the title block of the record CAD.DWG drawings. The RFP reference or definitive drawings are not required for inclusion in the record set of drawings.
- b. After all as-built conditions are recorded on the CAD.DWG files, produce a PDF and .TIF file of each individual record drawing in conformance with FC 1-300-09N. Electronic signatures are not required on record drawings.
- c. Provide a searchable electronic copy of the photo documentation used in the QC Daily Reports. Refer to Section 01 45 00.05 20, DESIGN AND CONSTRUCTION QUALITY CONTROL.

#### 1.10.2 Source Documents

Provide the specifications, basis of design, reports, surveys, calculations, and any other contracted documents on the CD-ROM disk with the record drawings.

### 1.10.3 GEOSPATIAL INFORMATION SYSTEMS (GIS) DELIVERABLES

Provide geospatial data and documents for all features added, demolished or modified as part of this project in accordance with Section 01 78 30.00 22 DIGITAL DATA DELIVERABLES (GIS).

### 1.11 REAL PROPERTY RECORD

DD Form 1354 "Transfer and Acceptance of Military Real Property" is utilized to record and maintain the Base's real property inventory and to manage capital improvements costs.

A Draft DD Form 1354 is attached to this section. Note: The Draft DD Form 1354 will not contain cost or quantity information. The Contractor must provide this information based on "as constructed" conditions.

The DOR must provide an Updated Draft DD Form 1354 with each Prefinal and final design submittal. Each Updated Draft DD Form 1354 must incorporate revisions as required based on review comments and the project design.

Projected "as constructed" Contractor data including units of measure, quantities, costs, etc. should be added as it becomes available. Data must be revised to reflect "as constructed" conditions as the project proceeds to completion.

The DD Form 1354 must be prepared in accordance with UFC 1-300-08, available at [http://www.wbdg.org/ccb/browse\\_cat.php?o=29&c=4](http://www.wbdg.org/ccb/browse_cat.php?o=29&c=4).

Near the completion of the project, but a minimum of 60 days prior to the projected Beneficial Occupancy Date (BOD), update the Draft DD Form 1354 and submit a Preliminary Interim DD Form 1354, accounting for all installed property. Required data will include costs, quantities, units of measure, etc. as indicated on the DD Form 1354. Include any additional assets/improvements/alterations from the Draft DD Form 1354. An Excel version of this document can be provided by the Government for use in providing this data. Contact the Contracting Officer for any project specific information necessary to complete the DD Form 1354.

Submit an Updated Interim DD Form 1354 for approval with the Final Invoice. The Updated Interim DD Form 1354 must address all requested revisions to the Preliminary Interim DD Form 1354 and must be updated to contain Contractor's "Final" quantity and cost information.

The Final DD Form 1354 will be prepared by the Activity Real Property Accountability Officer (RPAO) at final project closeout after all outstanding issues have been resolved. The Final DD Form 1354 will be prepared using the Contractor provided project data.

## PART 2 PRODUCTS

### 2.1 DESIGN SUBMITTALS

Complete the Contractor-originated design submittals as defined by this contract, and coordinate with the approved design network analysis schedule.

### 2.1.1 Design Submittal Packages

The Government prefers to review for Quality Assurance (QA) as few submittal packages as possible. Site and Building Design Submittal Packages are required, however Early Start Design Submittals are acceptable if they are substantiated as having an impact to the critical path in the Government approved Network Analysis Schedule. An Early Start submittal must include all design analyses, drawings, specifications and product data required to fully describe the project element for Government review.

Upon acceptable resolution of Government QA comments for Final Early Start submittals, the Early Start Design will be released to the Contractor for construction. Release of Early Start submittals does not imply final government approval of the design. Upon acceptable resolution of Government QA comments for all Final Design submittals, the entire design package will be released to the Contractor for construction. The Contractor is responsible for coordinating all design submittals, and is responsible for any changes that may occur between the Final Early Start acceptance and Final Design.

The Site Design may be submitted as an Early Design Submittal Package and must include the following components:

- a. Master Site Plan
- b. Demolition Plan
- c. Geotechnical
- d. Site Work including Environmental, water, sewer, storm drainage, erosion and sediment control, and electrical and mechanical utilities.

The remaining elements, including foundations, structural systems, building enclosures, interior electrical and mechanical systems, remaining work and furniture/equipment (as applicable) must be provided in the Building Design Submittal Package.

### 2.1.2 Required Design Submittals

Provide the following Design Submittal packages. Provide comprehensive, multi-discipline design packages that include design documentation for project elements, fully developed to the design stage indicated, and in accordance with **FC 1-300-09N**, except where specified otherwise.

- a. Minor renovation of Buildings require a submittal and shop drawing for review and approval before construction. Refer to PART 3 for buildings that can be submitted as shop drawings.
- b. Trailer layouts and utility connections require a submittal and shop drawings for review and approval before construction.
- c. Design Submittals: Refer to Appendix A found at the end of this spec section.
- d. For Demolition, Site work and Utilities: Early Start Design (Approximately 70% to 90% design, provide red-lined specifications)

#### 2.1.3 Critical Path Design Submittals

Provide Critical Path Design Submittals that include design documents for the project elements involved. Include and provide full documentation that would normally have been provided in earlier submittal stages, such as Design Development Phase.

- a. 100 percent (Prefinal) Design - Government Progress QA. See Appendix A for calendar days Government review time.
- b. Final Design - Government QA. See Appendix A for calendar days Government review time for submittals requiring Government approval prior to construction.

#### 2.1.4 Design Submittal Review Schedule

Use the time frames for Government submittal review identified in the RFP. For construction scheduling purposes add additional time to the identified minimum review time periods to allow for the following scheduling conditions;

- a. Submittals received after noon will be logged in on the following business day.
- b. Federal holidays will be considered non-working days for Government personnel in reviewing design submittals.
- c. The time period between December 21 and January 4 will be considered non-working time for Government personnel in reviewing design submittals.
- d. Postponement of delivery due to unavailability of personnel to receive the submittal or heightened security at Base. Coordinate delivery in advance of the submission.

#### 2.1.5 Review Copies of Design Submittal Packages

- a. Provide 12 bound copies and 1 CD/electronic version of the CDW design submittal package for review to Government Project Manager. Paper copies of the design drawings must be half size (11" X 17"). Addresses for mailing will be furnished at the PAK meeting.
- b. Provide 3 bound copies and 1 CD/electronic version of the design submittal package for each of the subsequent design submittals and for any resubmittal

#### 2.1.6 Distribution of Approved Final Design Drawings and Specification to Government Representatives

Submit within 14 calendar days of receiving the Government Approved Final Design Documents, which includes any Critical Path Final Design Document Packages, electronic and hardcopy(s) of these final documents to Government representatives for use during the construction of the project. If Critical Path Submittal Packages are used, provide coversheets and index to identify each sheet and how this Critical Path Submittal Package fits into the overall project. Provide the number and type of copies of the final design documents to the following Government representative:

- a. One electronic and two hard copy(s) to the Project Manager
- b. One electronic and two hard copy(s) to the Construction Manager
- c. One electronic and one hard copy(s) to the Contracting Officer
- d. One electronic copy(s) to CBHF Engineers.

## 2.2 IDENTIFICATION OF DESIGN SUBMITTALS

Provide a title sheet to clearly identify each submittal, the completion status, and the date. The title sheet must use the standard format indicated in the FC 1-300-09N for title sheets. The title sheet must be unique to a particular design submittal. Submit the project title sheet with design status and date for the design submittals.

### 2.2.1 Critical Path Submittal Title Sheet

Identify Critical Path submittals as such and include a title sheet indicating the type of critical path submittal, the level of completion of the individual drawings, and which drawings are approved for construction.

### 2.2.2 Construction Document Validation

All CAD design documents used to construct the facility must bear a visible and legible AutoCAD generated plotstamp in the lower right-hand margin of each drawing. The plotstamp information on the jobsite construction documents must match the plotstamp information contained on the following development stages of the design documents:

- a. The Final Critical Path Submittal or the Final Design Submittal professionally signed by the DOR and submitted for Government approval.
- b. The Final Critical Path Submittal or the Final Design Submittal drawings that have been approved by the Government. This development stage may be combined with "c." below, if issued at the same time.
- c. The Final Critical Path or Final Design drawings that have been included in the contract by modification.
- d. The Final Critical Path or Final Design drawings which include subsequent revisions to the design documents that have been included in the contract by modifications.

Issue new drawings for construction which bear the current plotstamp once a new development stage of the design documents has been accomplished. Design documents which do not bear a plotstamp that matches the corresponding plotstamp exhibited on the design documents described above, are not allowed to be used for the construction of the project. The plotstamp must bear the date and time of the plot, at a minimum. Maintain a plotstamp record at the jobsite that lists the applicable plotstamp information for each drawing through each stage of development described above.

## PART 3 EXECUTION

### 3.1 MCB CAMP LEJEUNE ARCHITECTURAL REVIEW BOARD

In conjunction with the Concept Design presented at Concept Design Workshop, the Contractor must schedule and meet with the MCB Camp Lejeune Architectural Review Board in compliance with Section 6.0 of the MCBCL BEAP.

### 3.2 CONTRACTOR'S RESOLUTION OF COMMENTS

Provide written responses to all written comments by the Government. Resubmittal of an unacceptable design submittal must be a complete package that includes all the required, specified components of that design submittal. Government required resubmittal due to nonconformance to the contract is not a delay in the contract.

### 3.3 DESIGN CHANGE AND VARIATIONS

A design change is when the design is revised from what was reviewed by the Government during any phase of the design process prior to Government approval of the Final Design. A variation is any portion of the design that differs from the requirements of the solicitation, accepted proposal, or final design after Government approval of the Final Design. Design changes and variations require Government approval and only variations that are advantageous to the Government will be considered. Refer to Section 01 33 00.05 20, CONSTRUCTION SUBMITTAL PROCEDURES for further explanation and requirements of design change and variation. Design changes that the Contractor considers to be beyond the requirements of the contract must be identified as a design change during the early stages of the facilities design development. All design changes that will lead to an extra cost or schedule extension must be identified prior to the first design submittal that includes the design change. Design changes that lead to extra cost or schedule extension identified after the first design submittal review will not be considered.

The Contractor must immediately notify the Government of all potential design changes and variations via a Request for Information (RFI) to the Contracting Officer. Design changes or variations that the Contractor asserts will require a contract modification to adjust the cost/price or schedule are not allowed to be incorporated in the design during any phase of the design process without prior documented approval from the Contracting Officer. Contractors will not receive compensation for any unauthorized design changes or variations which have been included in the Government approved Final Design. Include the following information in the design change and variation RFIs:

- a. Indicate the RFP Parts, sections, and paragraphs affected by this design change or variation,
- b. The scope of work of the design change or variation,
- c. The reason for the proposed change,
- d. Explanations of how the variation is advantageous to the Government.
- d. Indicate which upcoming design submittal will be affected by the subject design change,

- e. Explanation of contract cost/price and schedule impacts or provide an affirmative statement indicating that the design change or variation will not have an impact on the contract cost/price or schedule.
- f. Coordination measures proposed to incorporate the design change or variation into the construction.
- g. Upon request by the Contracting Officer, submit a cost proposal prepared using the Uniformat Work Breakdown Structure for all design changes and variations that have cost or schedule impacts. Submit a proposal that provides cost breakdown of each Uniformat system or subsystem that is applicable to the design change or variation. Utilize the units of measure indicated in the Uniformat Structure at the NAVFAC DB RFP website, <http://www.wbdg.org/ndbm/uniformat.php>.

### 3.4 THE CONTRACT AND ORDER OF PRECEDENCE

#### 3.4.1 Contract Components

The contract consists of the solicitation, the approved proposal, and the final design.

#### 3.4.2 Order of Precedence

NFAS Clause 5252.236-9312. In the event of conflict or inconsistency between any of the below described portions of the conformed contract, precedence must be given in the following order:

- a. Any portions of the proposal or final design that exceed the requirements of the solicitation.
  - (1) Any portion of the proposal that exceeds the final design.
  - (2) Any portion of the final design that exceeds the proposal.
  - (3) Where portions within either the proposal or the final design conflict, the portion that most exceeds the requirements of the solicitation has precedence.
- b. The requirements of the solicitation, in descending order of precedence:
  - (1) Standard Form 1442, Price Schedule, and Davis Bacon Wage Rates.
  - (2) Part 1 - Contract Clauses.
  - (3) Part 2 - General Requirements.
  - (4) Part 3 - Project Program Requirements.
  - (5) Part 6 - Attachments (excluding Concept Drawings)
  - (6) Part 5 - Prescriptive Specifications exclusive of performance specifications.
  - (7) Part 4 - Performance Specifications exclusive of prescriptive specifications.
  - (8) Part 6 - Attachments (Concept Drawings).

### 3.4.2.1 Government Review or Approval

Government review or approval of any portion of the proposal or final design does not relieve the Contractor from responsibility for errors or omissions with respect thereto.

#### APPENDIX A

#### DESIGN SUBMITTAL SCHEDULE:

PHASE	%	CAL. DAYS PER	CAL. DAYS (CUMULATIVE)	FC 1-300-09N & NOTES	DRAWINGS	SPECS
CDW MEETING	5%	1	45	REFER TO CHAPTER	YES	OUTLINE SPEC
CDW REPORT DEVELOPMENT		7	52		YES	OUTLINE SPEC
GOV'T REVIEW OF CDW REPORT		3	59			
SCHEMATIC DESIGN (SD) DEVELOPMENT	20%	14	69	REFER TO CHAPTER 14	YES	YES + RED LINED SPECS
GOVERNMENT REVIEW OF SD		7	76			
SCHEMATIC DESIGN MEETING		1	77			
DESIGN DEVELOPMENT (DD) DEVELOPMENT	65%	21	98	REFER TO CHAPTER 15	YES	YES + RED LINED SPECS
GOVERNMENT REVIEW OF DD		7	105		YES	YES + RED LINED SPECS
DESIGN DEVELOPMENT/OVER THE SHOULDER MEETING		1	106			
PRE-FINAL DEVELOPMENT (CONSTRUCTION DOCUMENTS & SITE DESIGN)	100%	21	127	REFER TO CHAPTER 17	YES	YES + RED LINED SPECS



PHASE	%	CAL. DAYS PER	CAL. DAYS (CUMULATIVE)	FC 1-300-09N & NOTES	DRAWINGS	SPECS
GOV. REVIEW OF PRE-FINAL		14	141			
FINAL DESIGN DEVELOPMENT	100%	14	155	REFER TO CHAPTER 17	YES	YES + RED LINED
GOV. REVIEW OF FINAL		7	162			
CONSTRUCTION DOCUMENTS (FOR CONSTRUCTION) DEVELOPMENT	100%	14	176	REFER TO CHAPTER 17	FINAL, SEALED	FINAL, SEALED

a. Meeting attendees: Same as 1.4.1 in Spec Section 01 31 19.5 20 POST AWARD MEETINGS

b. GC Reports: Same as 1.4.2.4 in Spec Section 01 31 19.5 20 POST AWARD MEETINGS

-- End of Section --

SECTION 01 35 26.05 20

GOVERNMENT SAFETY REQUIREMENTS FOR DESIGN-BUILD

12/15

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI/HFES 100 (2007) Human Factors Engineering of  
Computer Workstations

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

ASSE/SAFE A10.34 (2001; R 2012) Protection of the Public on  
or Adjacent to Construction Sites

ASSE/SAFE A10.44 (2014) Control of Energy Sources  
(Lockout/Tagout) for Construction and  
Demolition Operations

ASSE/SAFE A1264.1 (2017) Safety Requirements for Workplace  
Walking/Working Surfaces and Their Access;  
Workplace, Floor, Wall and Roof Openings;  
Stairs and Guardrail/Handrail Systems

ASSE/SAFE Z359.0 (2012) Definitions and Nomenclature Used  
for Fall Protection and Fall Arrest

ASSE/SAFE Z359.1 (2016) The Fall Protection Code

ASSE/SAFE Z359.2 (2017) Minimum Requirements for a  
Comprehensive Managed Fall Protection  
Program

ASSE/SAFE Z359.3 (2017) Safety Requirements for Lanyards  
and Positioning Lanyards

ASSE/SAFE Z359.4 (2013) Safety Requirements for  
Assisted-Rescue and Self-Rescue Systems,  
Subsystems and Components

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.44 (2014) Control of Energy Sources  
(Lockout/Tagout) for Construction and  
Demolition Operations

ASSP Z244.1 (2016) The Control of Hazardous Energy  
Lockout, Tagout and Alternative Methods

ASSP Z359.6 (2016) Specifications and Design

Requirements for Active Fall Protection  
Systems

ASSP Z359.7	(2011) Qualification and Verification Testing of Fall Protection Products
ASSP Z359.11	(2014) Safety Requirements for Full Body Harnesses
ASSP Z359.12	(2009) Connecting Components for Personal Fall Arrest Systems
ASSP Z359.13	(2013) Personal Energy Absorbers and Energy Absorbing Lanyards
ASSP Z359.14	(2014) Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems
ASSP Z359.15	(2014) Safety Requirements for Single Anchor Lifelines and Fall Arresters for Personal Fall Arrest Systems

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B30.9	(2014; INT Feb 2011 - Nov 2013) Slings
ASME B30.20	(2013; INT Oct 2010 - May 2012) Below-the-Hook Lifting Devices
ASME B30.22	(2016) Articulating Boom Cranes
ASME B30.3	(2016) Tower Cranes
ASME B30.5	(2014) Mobile and Locomotive Cranes
ASME B30.8	(2015) Floating Cranes and Floating Derricks
ASME B30.26	(2015; INT Jun 2010 - Jun 2014) Rigging Hardware

ASTM INTERNATIONAL (ASTM)

ASTM F855	(2015) Standard Specifications for Temporary Protective Grounds to Be Used on De-energized Electric Power Lines and Equipment
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INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 1048	(2003) Guide for Protective Grounding of Power Lines
IEEE C2	(2017; Errata 1-2 2017; INT 1 2017) National Electrical Safety Code

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

ANSI/ISEA Z87.1 (2015) Occupational and Educational  
Personal Eye and Face Protection Devices

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA Z535.2 (2011) Environmental and Facility Safety  
Signs

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 1 (2018) Fire Code

NFPA 10 (2018; TIA 18-1) Standard for Portable  
Fire Extinguishers

NFPA 241 (2013; Errata 2015) Standard for  
Safeguarding Construction, Alteration, and  
Demolition Operations

NFPA 51B (2014) Standard for Fire Prevention During  
Welding, Cutting, and Other Hot Work

NFPA 70 (2017; ERTA 1-2 2017; TIA 17-1; TIA 17-2;  
TIA 17-3; TIA 17-4; TIA 17-5; TIA 17-6;  
TIA 17-7; TIA 17-8; TIA 17-9; TIA 17-10;  
TIA 17-11; TIA 17-12; TIA 17-13; TIA  
17-14; TIA 17-15; TIA 17-16; TIA 17-17 )  
National Electrical Code

NFPA 70E (2018; TIA 18-1; TIA 81-2) Standard for  
Electrical Safety in the Workplace

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

U.S. DEPARTMENT OF DEFENSE (DOD)

DOD HDBK 743A (1991) Anthropometry of US Military  
Personnel

MIL-STD-1472 (2012; Rev G) Human Engineering

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD (2015) Manual on Uniform Traffic Control  
Devices

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

29 CFR 1910 Occupational Safety and Health Standards

29 CFR 1910.146 Permit-required Confined Spaces

29 CFR 1910.147 The Control of Hazardous Energy (Lock  
Out/Tag Out)

29 CFR 1910.333	Selection and Use of Work Practices
29 CFR 1915	Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
29 CFR 1915.89	Control of Hazardous Energy (Lockout/Tags-Plus)
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.1400	Cranes and Derricks in Construction
29 CFR 1926.16	Rules of Construction
29 CFR 1926.500	Fall Protection
CPL 2.100	(1995) Application of the Permit-Required Confined Spaces (PRCS) Standards, 29 CFR 1910.146

U.S. NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)

NAVFAC P-307	(2016) Management of Weight Handling Equipment
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1.2 DEFINITIONS

1.2.1 Competent Person (CP)

The CP is a person designated in writing, who, through training, knowledge and experience, is capable of identifying, evaluating, and addressing existing and predictable hazards in the working environment or working conditions that are dangerous to personnel, and who has authorization to take prompt corrective measures with regards to such hazards.

1.2.2 Competent Person, Confined Space

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

1.2.3 Competent Person, Cranes and Rigging

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

#### 1.2.4 Competent Person, Excavation/Trenching

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

#### 1.2.5 Competent Person, Fall Protection

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

#### 1.2.6 Competent Person, Scaffolding

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

#### 1.2.7 Competent Person (CP) Trainer

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

#### 1.2.8 High Risk Activities

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

#### 1.2.9 High Visibility Accident

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

#### 1.2.10 Load Handling Equipment (LHE)

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

#### 1.2.11 Medical Treatment

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

#### 1.2.12 Near Miss

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

#### 1.2.13 Operating Envelope

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

#### 1.2.14 Qualified Person (QP)

The QP is a person designated in writing, who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problems related to the subject matter, the work, or the project.

#### 1.2.15 Qualified Person, Fall Protection (QP for FP)

A QP for FP is a person meeting the requirements of EM 385-1-1 Appendix Q, and ASSE/SAFE Z359.0, with a recognized degree or professional certificate and with extensive knowledge, training and experience in the fall protection and rescue field who is capable of designing, analyzing, and evaluating and specifying fall protection and rescue systems.

#### 1.2.16 Recordable Injuries or Illnesses

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

- a. Death, regardless of the time between the injury and death, or the length of the illness;
- b. Days away from work (any time lost after day of injury/illness)

onset);

c. Restricted work;

d. Transfer to another job;

e. Medical treatment beyond first aid;

f. Loss of consciousness; or

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

#### 1.2.17 USACE Property and Equipment

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

#### 1.2.18 Traffic Control Plan (ITCP)

Strategies to control the flow of construction workers, vehicles and equipment inside the work zone.

#### 1.2.19 Load Handling Equipment (LHE) Accident or Load Handling Equipment Mishap

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

#### 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES:

Government acceptance is required for submittals with a "G" designation.

##### SD-01 Preconstruction Submittals

APP - Pre-Design Submittal; G

Accident Prevention Plan (APP); G



APP - Pre-Construction Submittal; G

Activity Hazard Analysis (AHA); G

Proof of Qualification for Crane Operators; G

Traffic Control Plan; G

Standard Hand Signals; G

#### SD-06 Test Reports

Monthly Exposure Reports

Notifications and Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Notifications and Reports."

Accident Reports; G

Crane Reports

Arc Flash Risk/Hazard Analysis; G

#### SD-07 Certificates

Crane Operators/Riggers

Standard Lift Plan; G

Critical Lift Plan ; G

Naval Architecture Analysis; G

Confined Space Entry Permit

Hot Work Permit

Arc Flash Risk/Hazard Analysis; G

Contractor Electrical Energized Work Permit; G

Contractor Safety Self-Evaluation Checklist; G

Certificate of Compliance (Crane)

Submit one copy of each permit/certificate attached to each Daily Quality Control Report.

#### 1.4 MONTHLY EXPOSURE REPORTS

Provide a Monthly Exposure Report and attach to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both Prime and subcontractor. Failure to submit the report may result in retention of up to 10 percent of the voucher.

## 1.5 CONTRACTOR SAFETY SELF-EVALUATION CHECKLIST

Contracting Officer will provide a "Contractor Safety Self-Evaluation checklist" to the Contractor at the pre-construction conference. Complete the checklist monthly and submit with each request for payment voucher. An acceptable score of 90 or greater is required. Failure to submit the completed safety self-evaluation checklist or achieve a score of at least 90 may result in retention of up to 10 percent of the voucher.

## 1.6 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this contract, comply with the most recent edition of USACE EM 385-1-1, NFPA 70E, IEEE C2 and federal, state, and local laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements govern.

### 1.6.1 Subcontractor Safety Requirements

For this contract, neither Contractor nor any subcontractor may enter into contract with any subcontractor that fails to meet the following requirements. The term subcontractor in this and the following paragraphs means any entity holding a contract with the Contractor or with a subcontractor at any tier.

#### 1.6.1.1 Experience Modification Rate (EMR)

Subcontractors on this contract must have an effective EMR less than or equal to 1.10, as computed by the National Council on Compensation Insurance (NCCI) or if not available, as computed by the state agency's rating bureau in the state where the subcontractor is registered, when entering into a subcontract agreement with the Prime Contractor or a subcontractor at any tier. The Prime Contractor may submit a written request for additional consideration to the Contracting Officer where the specified acceptable EMR range cannot be achieved. Relaxation of the EMR range will only be considered for approval on a case-by-case basis for special conditions and must not be anticipated as tacit approval. Contractor's Site Safety and Health Officer (SSHO) must collect and maintain the certified EMR ratings for all subcontractors on the project and make them available to the Government at the Government's request.

#### 1.6.1.2 OSHA Days Away from Work, Restricted Duty, or Job Transfer (DART) Rate

Subcontractors on this contract must have a DART rate, calculated from the most recent, complete calendar year, less than or equal to 3.4 when entering into a subcontract agreement with the Prime Contractor or a subcontractor at any tier. The OSHA Dart Rate is calculated using the following formula:

$$(N/EH) \times 200,000$$

where:

N = number of injuries and illnesses with days away, restricted work, or job transfer

EH = total hours worked by all employees during most recent, complete calendar year

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year)

The Prime Contractor may submit a written request for additional consideration to the Contracting Officer where the specified acceptable OSHA Dart rate range cannot be achieved for a particular subcontractor. Relaxation of the OSHA DART rate range will only be considered for approval on a case-by-case basis for special conditions and must not be anticipated as tacit approval. Contractor's Site Safety and Health Officer (SSHO) must collect and maintain self-certified OSHA DART rates for all subcontractors on the project and make them available to the Government at the Government's request.

## 1.7 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

### 1.7.1 Personnel Qualifications

#### 1.7.1.1 Site Safety and Health Officer (SSHO)

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

A Competent Person shall be provided for all of the hazards identified in the Contractor's Safety and Health Program in accordance with the accepted Accident Prevention Plan, and shall be on-site at all times when the work that presents the hazards associated with their professional expertise is being performed. Provide the credentials of the Competent Persons(s) to the the Contracting Officer for acceptance in consultation with the Safety Office. If the SSHO is off-site for a period longer than 24 hours, an equally-qualified alternate SSHO must be provided and must fulfill the same roles and responsibilities as the primary SSHO. When the SSHO is temporarily (up to 24 hours) off-site, a Designated Representative (DR), as identified in the AHA may be used in lieu of an Alternate SSHO, and must be on the project site at all times when work is being performed. Note that the DR is a collateral duty safety position, with safety duties in addition to their full time occupation.

#### 1.7.1.2 Contractor Quality Control (QC) Manager:

The Contractor Quality Control Manager cannot be the SSHO on this project, even though the QC has safety inspection responsibilities as part of the QC duties.

#### 1.7.1.3 Competent Person Qualifications

Provide Competent Persons in accordance with EM 385-1-1, Appendix Q and herein. Competent Persons for high risk activities include confined space,

cranes and rigging, excavation/trenching, fall protection, and electrical work. The CP for these activities must be designated in writing, and meet the requirements for the specific activity (i.e. competent person, fall protection).

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

#### 1.7.1.3.1 Competent Person for Confined Space Entry

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

#### 1.7.1.3.2 Competent Person for Scaffolding

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

#### 1.7.1.3.3 Competent Person for Fall Protection

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

#### 1.7.1.4 Crane Operators/Riggers

Provide Operators meeting the requirements in EM 385-1-1, Section 15.B for Riggers and Section 16.B for Crane Operators. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacities of 50,000 pounds or greater, designate crane operators qualified by a source that qualifies crane operators (i.e., union, a government agency, or an organization that tests and qualifies crane operators). Provide proof of current qualification. In addition, the Contractor shall comply with Contractor Operated Crane Requirements included in the latest revision of document NAVFAC P-307 Section 1.7.2 "Contractor Operated Cranes," and Appendix P, Figure P-1 and with 29 CFR 1926, Subpart CC. Submit Proof of Qualification for Crane Operators.

### 1.7.2 Personnel Duties

#### 1.7.2.1 Duties of the Site Safety and Health Officer (SSHO)

The SSHO must:

- a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the Contractors' daily production report.
- b. Conduct mishap investigations and complete required accident reports. Report mishaps and near misses.
- c. Use OSHA's Form 300 to log work-related injuries and illnesses occurring on the project site for Prime Contractors and

subcontractors. Post and maintain the Form 300 on the site Safety Bulletin Board.

- d. Maintain applicable safety reference material on the job site.
- e. Attend the pre-construction conference, pre-work meetings including preparatory meetings, and periodic in-progress meetings.
- f. Review the APP and AHAs for compliance with EM 385-1-1, and approve, sign, implement and enforce them.
- g. Establish a Safety and Occupational Health (SOH) Deficiency Tracking System that lists and monitors outstanding deficiencies until resolution.
- h. Ensure subcontractor compliance with safety and health requirements.
- i. Ensure an approved "Contractor Electrical Energized Work Permit" prior to starting any activity on energized electrical systems.
- j. Maintain a list of hazardous chemicals on site and their material Safety Data Sheets (SDS).
- k. Maintain a weekly list of high hazard activities involving energy, equipment, excavation, entry into confined space, and elevation, and be prepared to discuss details during QC Meetings.
- l. Provide and keep a record of site safety orientation and indoctrination for Contractor employees, subcontractor employees, and site visitors.

Superintendent, QC Manager, and SSO are subject to dismissal if the above duties are not being effectively carried out. If Superintendent, QC Manager, or SSO are dismissed, project work will be stopped and will not be allowed to resume until a suitable replacement is approved and the above duties are again being effectively carried out.

### 1.7.3 Meetings

#### 1.7.3.1 Preconstruction Conference

- a. Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the Pre construction Conference. This includes the project superintendent, Site Safety and Occupational Health officer, quality control manager, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
- b. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal review, and acceptance of AHAs to preclude project delays.
- c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor

shall revise the plan to correct deficiencies and re-submit it for acceptance. Do not begin work until there is an accepted APP.

- d. The functions of a Preconstruction conference may take place at the Post-Award Kickoff meeting for Design Build Contracts.

#### 1.7.3.2 Safety Meetings

Conduct safety meetings to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade), establish safe working procedures for anticipated hazards, and provide pertinent Safety and Occupational Health (SOH) training and motivation. Conduct meetings at least once a month for all supervisors on the project location. The SSHO, supervisors, foremen, or CDSOs must conduct meetings at least once a week for the trade workers. Document meeting minutes to include the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Maintain documentation on-site and furnish copies to the Contracting Officer on request. Notify the Contracting Officer of all scheduled meetings 7 calendar days in advance document meetings as required by EM 385-1-1. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the Contractors' daily quality control report.

### 1.8 ACCIDENT PREVENTION PLAN (APP)

#### 1.8.1 Plans and Submissions

##### 1.8.1.1 APP - Pre-Design Submittal

Provide a site-specific Accident Prevention Plan (APP), including Activity Hazard Analyses (AHA), in accordance with the US Army Corps of Engineers Safety and Health Manual EM 385-1-1 Appendix A, paragraph 3.k for the design team to follow during site visits and investigations. For subsequent visits, update the form if there are changes in the personnel who will be attending, or the tasks to be performed. Submit the APP for review and acceptance by the Government at least 15 calendar days prior to the start of the design field work. Field work may not begin until the pre-design APP is accepted by the Contracting Officer.

If the design scope includes borings or other subsurface investigations, as part of the APP identify the type of field investigation and verification techniques, such as visual, local utility locating service scanning and third party/subcontractor scanning, potholing, or hand digging within two feet of a known utility. Mark underground utilities before starting any ground-disturbing actions. Notify the Contracting Officer 15 days prior to the start of soil borings or sub-surface investigations.

Prior to the start of construction incorporate the Pre-Design APP into the Pre-Construction APP so that one site specific APP exists for the project and submit to the Contracting Officer for acceptance

##### 1.8.1.2 APP - Pre-Construction Submittal

A qualified person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1, Appendix A, and as supplemented herein. Cover all paragraph and subparagraph elements in EM 385-1-1, Appendix A. The APP must be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP must interface with the Contractor's overall safety

and health program referenced in the APP in the applicable APP element, and made site-specific. Describe the methods to evaluate past safety performance of potential subcontractors in the selection process. Also, describe innovative methods used to ensure and monitor safe work practices of subcontractors. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP must be signed by an officer of the firm (Prime Contractor senior person), the individual preparing the APP, the on-site superintendent, the designated SSHO, the Contractor Quality Control Manager, and any designated Certified Safety Professional (CSP) or Certified Health Physicist (CHP). The SSHO must provide and maintain the APP and a log of signatures by each subcontractor foreman, attesting that they have read and understand the APP, and make the APP and log available on-site to the Contracting Officer. If English is not the foreman's primary language, the Prime Contractor must provide an interpreter.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. Once reviewed and accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP is cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Continuously review and amend the APP, as necessary, throughout the life of the contract. Changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and Quality Control Manager. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered. Should any severe hazard exposure (i.e. imminent danger) become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate and remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ASSE/SAFE A10.34), and the environment.

#### 1.8.2 Names and Qualifications

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

- a. Names and qualifications (resumes including education, training, experience and certifications) of site safety and health personnel designated to perform work on this project to include the designated Site Safety and Health Officer and other competent and qualified personnel to be used such as CSPs, CIHs, STSSs, CHSTs. Specify the duties of each position.
- b. Qualifications of competent and of qualified persons. As a minimum, designate and submit qualifications of competent persons for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal

protective equipment and clothing to include selection, use and maintenance.

### 1.8.3 Plans

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

#### 1.8.3.1 Confined Space Entry Plan

Develop a confined or enclosed space entry plan in accordance with EM 385-1-1, applicable OSHA standards 29 CFR 1910, 29 CFR 1915, and 29 CFR 1926, OSHA Directive CPL 2.100, and any other federal, state and local regulatory requirements identified in this contract. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)

#### 1.8.3.2 Standard Lift Plan (SLP)

Plan lifts to avoid situations where the operator cannot maintain safe control of the lift. Prepare a written SLP in accordance with EM 385-1-1, Section 16.A.03, using Form 16-2 for every lift or series of lifts (if duty cycle or routine lifts are being performed). The SLP must be developed, reviewed and accepted by all personnel involved in the lift in conjunction with the associated AHA. Signature on the AHA constitutes acceptance of the plan. Maintain the SLP on the LHE for the current lift(s) being made. Maintain historical SLPs for a minimum of 3 months.

#### 1.8.3.3 Critical Lift Plan - Crane or Load Handling Equipment

Provide a Critical Lift Plan as required by EM 385-1-1, Section 16.H.01, using Form 16-3. Critical lifts require detailed planning and additional or unusual safety precautions. Develop and submit a critical lift plan to the Contracting Officer 30 calendar days prior to critical lift. Comply with load testing requirements in accordance with EM 385-1-1, Section 16.F.03.

In addition to the requirements of EM 385-1-1, Section 16.H.02, the critical lift plan must include the following:

- a. For lifts of personnel, demonstrate compliance with the requirements of 29 CFR 1926.1400 and EM 385-1-1, Section 16.T.
- b. For barge mounted mobile cranes, provide a Naval Architecture Analysis and include an LHE Manufacturer's Floating Service Load Chart in accordance with the criteria from the selected standard in EM 385-1-1, Section 16.L.02. The Floating Service Load Chart must provide a table of rated load versus boom angle and radius. The Floating Service Load Chart must also provide the maximum allowable machine list and trim associated with the tabular loads and radii provided. If the Manufacturer's Floating Service Load Chart is not available, a floating service load chart may be developed and provided by a qualified Registered Professional Engineer (RPE), competent in the field of floating cranes. The Load Chart must be in accordance with the criteria from the selected standard in EM 385-1-1, Section 16.L; provide a table of rated load versus boom angle and radius; provide the



maximum allowable machine list and machine trim associated with the tabular loads and radii provided; and be stamped by a RPE qualified and competent in the field of floating cranes. The RPE, competent in the field of floating cranes must stamp and certify (sign) that the Naval Architectural Analysis (NAA) meets the requirements of EM 385-1-1, Section 16.L.03.

- c. Multi-purpose machines, material handling equipment, and construction equipment used to lift loads that are suspended by rigging gear, require proof of authorization from the machine OEM that the machine is capable of making lifts of loads suspended by rigging equipment. Demonstrate that the operator is properly trained and that the equipment is properly configured to make such lifts and is equipped with a load chart.

#### 1.8.3.4 Fall Protection and Prevention (FP&P) Plan

The plan must comply with the requirements of EM 385-1-1, Section 21.D and ASSE/SAFE Z359.2, be site specific, and address all fall hazards in the work place and during different phases of construction. Address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A competent person or qualified person for fall protection must prepare and sign the plan documentation. Include fall protection and prevention systems, equipment and methods employed for every phase of work, roles and responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Review and revise, as necessary, the Fall Protection and Prevention Plan documentation as conditions change, but at a minimum every six months, for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. Keep and maintain the accepted Fall Protection and Prevention Plan documentation at the job site for the duration of the project. Include the Fall Protection and Prevention Plan documentation in the Accident Prevention Plan (APP).

#### 1.8.3.5 Rescue and Evacuation Plan

Provide a Rescue and Evacuation Plan in accordance with EM 385-1-1 Section 21.N and ASSE/SAFE Z359.2, and include in the FP&P Plan and as part of the APP. Include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility.

#### 1.8.3.6 Hazardous Energy Control Program (HECP)

Develop a HECP in accordance with EM 385-1-1 Section 12, 29 CFR 1910.147, 29 CFR 1910.333, 29 CFR 1915.89, ASSP Z244.1, and ASSP A10.44. Submit this HECP as part of the Accident Prevention Plan (APP). Conduct a preparatory meeting and inspection with all effected personnel to coordinate all HECP activities. Document this meeting and inspection in accordance with EM 385-1-1, Section 12.A.02. Ensure that each employee is familiar with and complies with these procedures.

#### 1.8.3.7 Excavation Plan

Identify the safety and health aspects of excavation, and provide and prepare the plan in accordance with EM 385-1-1 and Section 25.A.

#### 1.8.3.8 Occupant Protection Plan

Identify the safety and health aspects of lead-based paint removal, prepared in accordance with Section 02 82 33.13 REMOVAL AND DISPOSAL OF MATERIALS COATED WITH LEAD-CONTAINING PAINT.

#### 1.8.3.9 Lead Compliance Plan

Identify the safety and health aspects of lead work, and prepare in accordance with Section 02 82 33.13 REMOVAL AND DISPOSAL OF MATERIALS COATED WITH LEAD-CONTAINING PAINT.

#### 1.8.3.10 Asbestos Hazard Abatement Plan

Identify the safety and health aspects of asbestos work, and prepare in accordance with Section 02 82 16 REMOVAL AND DISPOSAL OF ASBESTOS MATERIALS.

#### 1.8.3.11 Site Demolition Plan

Identify the safety and health aspects, and prepare in accordance with Section 02 41 00 DEMOLITION and referenced sources. Include engineering survey as applicable.

### 1.9 ACTIVITY HAZARD ANALYSIS (AHA)

Before beginning each activity, task or Definable Feature of Work (DFOW) involving a type of work presenting hazards not experienced in previous project operations, or where a new work crew or subcontractor is to perform the work, the Contractor(s) performing that work activity must prepare an AHA. AHAs must be developed by the Prime Contractor, subcontractor, or supplier performing the work, and provided for Prime Contractor review and approval before submitting to the Contracting Officer. AHAs must be signed by the SSHO, Superintendent, QC Manager and the subcontractor Foreman performing the work. Format the AHA in accordance with EM 385-1-1, Section 1 or as directed by the Contracting Officer. Submit the AHA for review at least 15 working days prior to the start of each activity task, or DFOW. The Government reserves the right to require the Contractor to revise and resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

AHAs must identify competent persons required for phases involving high risk activities, including confined entry, crane and rigging, excavations, trenching, electrical work, fall protection, and scaffolding.

#### 1.9.1 AHA Management

Review the AHA list periodically (at least monthly) at the Contractor supervisory safety meeting, and update as necessary when procedures, scheduling, or hazards change. Use the AHA during daily inspections by the SSHO to ensure the implementation and effectiveness of the required safety and health controls for that work activity.

#### 1.9.2 AHA Signature Log

Each employee performing work as part of an activity, task or DFOW must review the AHA for that work and sign a signature log specifically maintained for that AHA prior to starting work on that activity. The SSHO must maintain a signature log on site for every AHA. Provide employees

whose primary language is other than English, with an interpreter to ensure a clear understanding of the AHA and its contents.

#### 1.10 DISPLAY OF SAFETY INFORMATION

##### 1.10.1 Safety Bulletin Board

Within one calendar day(s) after commencement of work, erect a safety bulletin board at the job site. Where size, duration, or logistics of project do not facilitate a bulletin board, an alternative method, acceptable to the Contracting Officer, that is accessible and includes all mandatory information for employee and visitor review, may be deemed as meeting the requirement for a bulletin board. Include and maintain information on safety bulletin board as required by EM 385-1-1, Section 01.A.06. Additional items required to be posted include:

- a. Confined space entry permit.
- b. Hot work permit.

##### 1.10.2 Safety and Occupational Health (SOH) Deficiency Tracking System

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

- a. Date deficiency identified;
- b. Description of deficiency;
- c. Name of person responsible for correcting deficiency;
- d. Projected resolution date;
- e. Date actually resolved.

#### 1.11 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "REFERENCES." Maintain applicable equipment manufacturer's manuals.

#### 1.12 EMERGENCY MEDICAL TREATMENT

Contractors must arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

#### 1.13 NOTIFICATIONS and REPORTS

##### 1.13.1 Mishap Notification

Notify the Contracting Officer as soon as practical, but no more than twenty-four hours, after any mishaps, including recordable accidents, incidents, and near misses, as defined in EM 385-1-1 Appendix Q, any report of injury, illness, load handling equipment (LHE) or rigging mishaps, or any property damage. The Contractor is responsible for

obtaining appropriate medical and emergency assistance and for notifying fire, law enforcement, and regulatory agencies. Immediate reporting is required for electrical mishaps, to include Arc Flash; shock; uncontrolled release of hazardous energy (includes electrical and non-electrical); load handling equipment or rigging; fall from height (any level other than same surface); and underwater diving. These mishaps must be investigated in depth to identify all causes and to recommend hazard control measures.

Within notification include Contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (for example, type of construction equipment used and PPE used). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted. Assist and cooperate fully with the Government's investigation(s) of any mishap.

#### 1.13.2 Accident Reports

- a. Conduct an accident investigation for recordable injuries and illnesses, property damage, and near misses as defined in EM 385-1-1, to establish the root cause(s) of the accident. Complete the applicable NAVFAC Contractor Incident Reporting System (CIRS), and electronically submit via the NAVFAC Enterprise Safety Applications Management System file the report in ESAMS within 5 calendar days(s) of the accident.
- b. Near Misses: Complete the applicable documentation in NAVFAC Contractor Incident Reporting System (CIRS), and electronically submit via the NAVFAC Enterprise Safety Applications Management System (ESAMS).
- c. Conduct an accident investigation for any weight handling equipment accident (including rigging gear accidents) to establish the root cause(s) of the accident, complete the WHE Accident Report (Crane and Rigging Gear) form and provide the report to the Contracting Officer within 30 calendar days of the accident. Do not proceed with crane operations until cause is determined and corrective actions have been implemented to the satisfaction of the Contracting Officer. The Contracting Officer will provide a blank copy of the accident report form.

#### 1.13.3 Crane Reports

Submit crane inspection reports required in accordance with EM 385-1-1, Appendix I and as specified herein with Daily Reports of Inspections.

#### 1.13.4 Certificate of Compliance

Provide a Certificate of Compliance for each crane entering an activity under this contract (see Contracting Officer for a blank certificate). State within the certificate that the crane and rigging gear meet applicable OSHA regulations (with the Contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance comply with 29 CFR 1926 and USACE EM 385-1-1 Section 16 and Appendix I. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. Also certify that all of its crane operators working on the DOD activity have been trained in the proper use of all safety devices (e.g.,

anti-two block devices). Post certifications on the crane.

Provide a FORM 16-1 Certificate of Compliance for LHE entering an activity under this contract and in accordance with EM 385-1-1. Post certifications on the crane.

Develop a Standard Lift Plan (SLP) in accordance with EM 385-1-1, Section 16.H.03 using Form 16-2 Standard Pre-Lift Crane Plan/Checklist for each lift planned. Submit SLP to the Contracting Officer for approval within 15 calendar days in advance of planned lift.

#### 1.14 HOT WORK (Welding And Cutting, Etc.)

Hot work permits will only be issued to the Prime Contractor. Prime Contractor shall notify FEAD/ROICC office of issuance of hot work permits and all renewals of hot work permits. Copies of all hot work permits and renewals shall be attached to daily quality control reports.

Submit and obtain a written permit prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, from the Fire Division. A permit is required from the Explosives Safety Office for work in and around where explosives are processed, stored, or handled. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. Provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit.

When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE RESPONSIBLE FIRE DIVISION IMMEDIATELY.

##### 1.14.1 Work Around Flammable Materials

Obtain services from a NFPA Certified Marine Chemist for "HOT WORK" within or around flammable materials (such as fuel systems or welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, or vaults) that have the potential for flammable or explosive atmospheres.

Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to within acceptable limits must be used and maintained in accordance with manufacturer's instruction and supplemented by exceptions noted in EM 385-1-1, Section 06.H

#### 1.15 FACILITY OCCUPANCY CLOSURE

Streets, walks, and other facilities occupied and used by the Government shall not be closed or obstructed without written permission from the Contracting Officer.

#### 1.16 SEVERE STORM PLAN

In the event of a severe storm warning, the Contractor must:

- a. Secure outside equipment and materials and place materials that could be damaged in protected areas.
- b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
- c. Ensure that temporary erosion controls are adequate.

#### 1.17 CONFINED SPACE ENTRY REQUIREMENTS.

Confined space entry must comply with Section 34 of EM 385-1-1, OSHA 29 CFR 1926, OSHA 29 CFR 1910, OSHA 29 CFR 1910.146, and OSHA Directive CPL 2.100. Any potential for a hazard in the confined space requires a permit system to be used. Contractors entering and working in confined spaces while performing shipyard industry work are required to follow the requirements of OSHA 29 CFR 1915 Subpart B.

##### 1.17.1 Entry Procedures

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

##### 1.17.2 Forced Air Ventilation

Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its action level.

##### 1.17.3 Sewer Wet Wells

Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

##### 1.17.4 Rescue Procedures and Coordination with Local Emergency Responders

Develop and implement an on-site rescue and recovery plan and procedures. The rescue plan must not rely on local emergency responders for rescue from a confined space.

#### 1.18 TRAFFIC CONTROL

The requirements contained in this paragraph are in addition to the requirements contained in EM 385-1-1. In case of a conflict, the more stringent requirement applies. Traffic Control shall be accomplished in accordance with MUTCD.

##### 1.18.1 Traffic Control Plan

Prior to the commencement of contract operations, the Contractor shall submit for acceptance the complete details of the proposed traffic control plan for the maintenance of traffic and access through the contract work area.

Include traffic control and traffic control signal systems in each Activity Hazard Analysis as applicable.

#### 1.18.2 Signal Systems, Personnel And Procedures

Signal systems, personnel and procedures shall comply with EM 385-1-1 Section 08.B SIGNAL SYSTEMS, PERSONNEL AND PROCEDURES.

##### 1.18.2.1 Standard Hand Signals

Standard hand signals shall be submitted for acceptance and shall be posted at the operator's position, signal control points and other points as necessary to inform those concerned.

#### 1.18.3 Road Closings

Traffic control is extremely important on highways, in residential areas, and at construction sites. When traffic may pose a hazard to operations, public roads will be closed. Road closings shall be coordinated in writing with appropriate local agencies. Traffic controls and signage shall comply with MUTCD.

#### 1.18.4 Operating Precautions

When a road cannot be closed, the following precautions shall be taken:

- a. "FLAGGER" (MUTCD W-20-7) or "WORKERS AHEAD: (W21-1) or similar appropriate signs shall be placed along the roadway, 1,000 ft (304.8m) and 500 ft (30.5 m) before the work zone, on both sides of the work zone".
- b. Sufficient number of flag persons shall be used to control traffic within the work area.
- c. Flag persons shall be used and shall receive instruction in flagging operations before being placed in traffic (training and certification by the National Safety Council (NSC) is recommended).
- d. All flag persons shall wear high-visibility apparel in accordance with EM 385-1-1, paragraph 05.F, safety-toed footwear and hard hats.
- e. "STOP/SLOW" paddles, preferably mounted on a 6 ft staff, will be used for traffic control.
- f. Flag persons shall be able to communicate with each other and with the foreman, and effectively signal/direct the affected public.
- g. Two-way radios shall be used whenever visual contact between flaggers is not maintained.

#### 1.18.5 Construction Vehicles

All construction vehicles and all vehicles exceeding 1-1/2 tons (1360.8 kg) shall have a signal person to assist in backing and maneuvering in residential and construction areas.

#### 1.18.6 Internal Traffic Control Plans (ITCP)

Internal traffic control plans (ITCP) (written plans which address separation and safety of personnel and moving equipment) will be attached to all AHA's when interaction between personnel and moving equipment will occur or physical changes occur onsite which could affect personnel or moving equipment.

### PART 2 PRODUCTS

#### 2.1 CONFINED SPACE SIGNAGE

Provide permanent signs integral to or securely attached to access covers for new permit-required confined spaces. Signs for confined spaces must comply with NEMA Z535.2. Signs wording: "DANGER--PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" in bold letters a minimum of one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" must be red and readable from 5 feet.

### PART 3 EXECUTION

#### 3.1 CONSTRUCTION AND OTHER WORK

Comply with EM 385-1-1, NFPA 70, NFPA 70E, NFPA 241, IEEE C2, the APP, the AHA, Federal and/or State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

PPE is required at all times, in accordance with EM 385-1-1, for all personnel who enters a construction site area. In addition to the requirements of EM 385-1-1, Safety Glasses ANSI/ISEA Z87.1 will be worn at all times on construction sites, unless the competent person identifies in the Contractor's accepted activity hazard analysis that an equal or greater hazard is presented in the mandatory wearing of safety glasses. Use personal hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks.

Mandatory PPE on all construction sites includes:

- a. Hard Hat
- b. Safety Glasses
- c. Safety-Toed Shoes or Boots
- d. Hearing protection
- d. Long Pants
- d. Appropriate Class Reflective Vest

##### 3.1.1 Worksite Communication

Employees working alone in a remote location or away from other workers must be provided an effective means of emergency communications (i.e., cellular phone, two-way radios, land-line telephones or other acceptable means). The selected communication must be readily available (easily within the immediate reach) of the employee and must be tested prior to the start of work to verify that it effectively operates in the



area/environment. An employee check-in/check-out communication procedure must be developed to ensure employee safety.

### 3.1.2 Hazardous Material Use

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

### 3.1.3 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint, and hexavalent chromium, are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials. Low mercury lamps used within fluorescent lighting fixtures are allowed as an exception without further Contracting Officer approval. Notify the Radiation Safety Officer (RSO) prior to excepted items of radioactive material and devices being brought on base.

### 3.1.4 Unforeseen Hazardous Material

Contract documents identify materials such as lead paint, and friable and non-friable asbestos and other OSHA regulated chemicals (i.e. 29 CFR Part 1910.1000). If additional material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered,, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to FAR 52.243-4, "Changes" and FAR 52.236-2, "Differing Site Conditions."

## 3.2 PRE-OUTAGE COORDINATION MEETING

Apply for utility outages at least 15 days in advance. At a minimum, the written request should include the location of the outage, utilities being affected, duration of outage, any necessary sketches, and a description of the means to fulfill energy isolation requirements in accordance with EM 385-1-1, Section 11.A.02 (Isolation). Some examples of energy isolation devices and procedures are highlighted in EM 385-1-1, Section 12.D. In accordance with EM 385-1-1, Section 12.A.01, where outages involve Government or Utility personnel, coordinate with the Government on all activities involving the control of hazardous energy. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, attend a pre-outage coordination meeting with the Contracting Officer to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits must not be performed without prior government authorization. Government permission is considered

through the permit process and submission of a detailed AHA. Energized work permits are considered only when de-energizing introduces additional or increased hazard or when de-energizing is infeasible. For electrical work positive cable/circuit identification must be made prior to submitting any outage request. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Following the application of lockout/tag out devices to all hazardous energy sources, applicable AHA should outline equipment restart methods to ensure "zero energy" state has been accomplished.

### 3.3 OUTAGE COORDINATION MEETING

After the utility outage request is approved and prior to beginning work on the utility system requiring shut-down, conduct a pre-outage coordination meeting in accordance with EM 385-1-1, Section 12.A. This meeting must include the Prime Contractor, the Prime and subcontractors performing the work, the Contracting Officer, and the Installation Representative. All parties must fully coordinate HEC activities with one another. During the coordination meeting, all parties must discuss and coordinate on the scope of work, HEC procedures (specifically, the lock-out/tag-out procedures for worker and utility protection), the AHA, assurance of trade personnel qualifications, identification of competent persons, and compliance with HEC training in accordance with EM 385-1-1, Section 12.C. Clarify when personal protective equipment is required during switching operations, inspection, and verification.

### 3.4 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1 Section 12, 29 CFR 1910.333, 29 CFR 1915.89, ASSE/SAFE A10.44, NFPA 70E, and paragraph HAZARDOUS ENERGY CONTROL PROGRAM (HECP).

#### 3.4.1 Safety Preparatory Inspection Coordination Meeting with the Government or Utility

For electrical distribution equipment that is to be operated by Government or Utility personnel, the Prime Contractor and the subcontractor performing the work must attend the safety preparatory inspection coordination meeting, which will also be attended by the Contracting Officer's Representative, and required by EM 385-1-1, Section 12.A.02. The meeting will occur immediately preceding the start of work and following the completion of the outage coordination meeting. Both the safety preparatory inspection coordination meeting and the outage coordination meeting must occur prior to conducting the outage and commencing with lockout/tagout procedures.

#### 3.4.2 Lockout/Tagout Isolation

Where the Government or Utility performs equipment isolation and lockout/tagout, the Contractor must place their own locks and tags on each energy-isolating device and proceed in accordance with the HECP. Before any work begins, both the Contractor and the Government or Utility must perform energy isolation verification testing while wearing required PPE detailed in the Contractor's AHA and required by EM 385-1-1, Sections 05.I and 11.B. Install personal protective grounds, with tags, to eliminate the potential for induced voltage in accordance with EM 385-1-1, Section

12.E.06.

3.4.3 Lockout/Tagout Removal

Upon completion of work, conduct lockout/tagout removal procedure in accordance with the HECF. In accordance with EM 385-1-1, Section 12.E.08, each lock and tag must be removed from each energy isolating device by the authorized individual or systems operator who applied the device. Provide formal notification to the Government (by completing the Government form if provided by Contracting Officer's Representative), confirming that steps of de-energization and lockout/tagout removal procedure have been conducted and certified through inspection and verification. Government or Utility locks and tags used to support the Contractor's work will not be removed until the authorized Government employee receives the formal notification.

3.5 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

Establish a fall protection program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures in accordance with ASSE/SAFE Z359.2 and EM 385-1-1, Sections 21.A and 21.D.

3.5.1 Training

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

3.5.2 Fall Protection Equipment and Systems

Enforce use of personal fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1, Section 21.

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

3.5.2.1 Additional Personal Fall Protection

In addition to the required fall protection systems, other protection such as safety skiffs, personal floatation devices, and life rings, are required when working above or next to water in accordance with EM 385-1-1, Sections 21.0 through 21.0.06. Personal fall protection systems and equipment are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall protection systems are required when operating other equipment such as scissor lifts. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, travel, or while performing work.

### 3.5.2.2 Personal Fall Protection Harnesses

Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. The use of body belts is not acceptable. Harnesses must have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Snap hooks and carabiners must be self-closing and self-locking, capable of being opened only by at least two consecutive deliberate actions and have a minimum gate strength of 3,600 lbs in all directions. Use webbing, straps, and ropes made of synthetic fiber. The maximum free fall distance when using fall arrest equipment must not exceed 6 feet, unless the proper energy absorbing lanyard is used. Always take into consideration the total fall distance and any swinging of the worker (pendulum-like motion), that can occur during a fall, when attaching a person to a fall arrest system. All full body harnesses must be equipped with Suspension Trauma Preventers such as stirrups, relief steps, or similar in order to provide short-term relief from the effects of orthostatic intolerance in accordance with EM 385-1-1, Section 21.I.06.

### 3.5.3 Fall Protection for Roofing Work

Implement fall protection controls based on the type of roof being constructed and work being performed. Evaluate the roof area to be accessed for its structural integrity including weight-bearing capabilities for the projected loading.

#### a. Low Sloped Roofs:

- (1) For work within 6 feet of an edge, on a roof having a low slope less than or equal to 4:12 (vertical to horizontal) roofs, protect personnel from falling by use of personal fall arrest/restraint systems, guardrails, or safety nets. A safety monitoring system used by itself as the only form of fall protection system is not adequate fall protection and is not authorized. Provide in accordance with 29 CFR 1926.500.
- (2) For work greater than 6 feet from an edge, erect and install warning lines in accordance with 29 CFR 1926.500 and USACE EM 385-1-1, Section L.

#### b. Steep-Sloped Roofs: Work on a steep-sloped roofs having a slope greater than 4:1 (vertical to horizontal) requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also applies to residential or housing type construction.

### 3.5.4 Horizontal Lifelines (HLL)

Provide HLL in accordance with EM 385-1-1, Section 21.I.08.d.2. Commercially manufactured horizontal lifelines (HLL) must be designed, installed, certified and used, under the supervision of a qualified person, for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500). The competent person for fall protection may (if deemed appropriate by the qualified person) supervise the assembly, disassembly, use and inspection of the HLL system under the direction of the qualified person. Locally manufactured HLLs are not acceptable unless they are custom designed for limited or site specific applications by a Registered Professional Engineer who is qualified in

designing HLL systems.

### 3.5.5 Guardrails and Safety Nets

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

### 3.5.6 Rescue and Evacuation Plan and Procedures

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

### 3.5.7 Fall Prevention During Design Phase

During design phase the Contractor must consider and eliminate fall hazards anticipated during the operation and maintenance evolutions of the facility. If it is not feasible to eliminate or prevent the need to work at heights with the subsequent exposure to fall hazards, control measures must be included in the design to protect personnel conducting maintenance work after completion of the project. In addition to the detailed requirements included in the provisions of this contract, the design work must incorporate the requirements of 29 CFR 1910 and ASSE/SAFE Z359.0, ASSE/SAFE Z359.1, ASSE/SAFE Z359.2, ASSE/SAFE Z359.3, ASSE/SAFE Z359.4, ASSE/SAFE A1264.1, and NFPA 1.

## 3.6 WORK PLATFORMS

### 3.6.1 Scaffolding

Provide employees with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Comply with the following requirements:

- a. Scaffold platforms greater than 20 feet in height must be accessed by use of a scaffold stair system.
- b. Ladders commonly provided by scaffold system manufacturers are prohibited for accessing scaffold platforms greater than 20 feet maximum in height.
- c. An adequate gate is required.
- d. Employees performing scaffold erection and dismantling must be qualified.
- e. Scaffold must be capable of supporting at least four times the maximum intended load, and provide appropriate fall protection as delineated in the accepted fall protection and prevention plan.
- f. Stationary scaffolds must be attached to structural building components

to safeguard against tipping forward or backward.

- g. Special care must be given to ensure scaffold systems are not overloaded.
- h. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material are prohibited. The first tie-in must be at the height equal to 4 times the width of the smallest dimension of the scaffold base.
- i. Scaffolding other than suspended types must bear on base plates upon wood mudsills (2 in x 10 in x 8 in minimum) or other adequate firm foundation.
- j. Scaffold or work platform erectors must have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet.
- k. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

### 3.6.2 Elevated Aerial Work Platforms (AWPs)

Workers must be anchored to the basket or bucket in accordance with manufacturer's specifications and instructions (anchoring to the boom may only be used when allowed by the manufacturer and permitted by the CP). Lanyards used must be sufficiently short to prohibit worker from climbing out of basket. The climbing of rails is prohibited. Lanyards with built-in shock absorbers are acceptable. Self-retracting devices are not acceptable. Tying off to an adjacent pole or structure is not permitted unless a safe device for 100 percent tie-off is used for the transfer.

Use of AWPs must be operated, inspected, and maintained as specified in the operating manual for the equipment and delineated in the AHA. Operators of AWPs must be designated as qualified operators by the Prime Contractor. Maintain proof of qualifications on site for review and include in the AHA.

## 3.7 EQUIPMENT

### 3.7.1 Material Handling Equipment (MHE)

- a. Material handling equipment such as forklifts must not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions. Material handling equipment fitted with personnel work platform attachments are prohibited from traveling or positioning while personnel are working on the platform.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions. Material Handling Equipment Operators must be trained in accordance with OSHA 29 CFR 1910, Subpart N. Additionally, when material handling equipment is used as a crane it must meet NAVFAC P-307 requirements in Sections 1.7.2, "Contractor Operated Cranes," and 12, "Investigation and Reporting of Crane and Rigging Gear Accidents."
- c. Operators of forklifts or power industrial trucks must be licensed in accordance with OSHA. Proof of qualifications for operator shall be

kept on the project site and addressed as part of the AHA.

### 3.7.2 Weight Handling Equipment

- a. Equip cranes and derricks as specified in EM 385-1-1, Section 16.
- b. Notify the Contracting Officer 15 working days in advance of any LHE cranes entering the activity, in accordance with EM 385-1-1, Section 16.A.02, so that necessary quality assurance spot checks can be coordinated. Prior to cranes entering federal activities, a Crane Access Permit must be obtained from the Contracting Officer. A copy of the permitting process will be provided at the Preconstruction Conference. Contractor's operator must remain with the crane during the spot check. Rigging gear must comply with OSHA, ASME B30.9 Standards safety standards.
- c. Comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in ASME B30.5). Perform all testing in accordance with the manufacturer's recommended procedures.
- d. Comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, ASME B30.8 for floating cranes and floating derricks, ASME B30.9 for slings, ASME B30.20 for below the hook lifting devices and ASME B30.26 for rigging hardware.
- e. Under no circumstance must a Contractor make a lift at or above 90 percent of the cranes rated capacity in any configuration.
- f. When operating in the vicinity of overhead transmission lines, operators and riggers must be alert to this special hazard and follow the requirements of EM 385-1-1 Section 11, NAVFAC P-307 Figure 10-3 and ASME B30.5 or ASME B30.22 as applicable.
- g. Do not use crane suspended personnel work platforms (baskets) unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Do not lift personnel with a line hoist or friction crane. Additionally, submit a specific AHA for this work to the Contracting Officer. Ensure the activity and AHA are thoroughly reviewed by all involved personnel.
- h. Inspect, maintain, and recharge portable fire extinguishers as specified in NFPA 10, Standard for Portable Fire Extinguishers.
- i. All employees must keep clear of loads about to be lifted and of suspended loads.
- j. Use cribbing when performing lifts on outriggers.
- k. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
- l. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.
- m. Maintain inspection records in accordance by EM 385-1-1, Section 16.D, including shift, monthly, and annual inspections, the signature of the

person performing the inspection, and the serial number or other identifier of the LHE that was inspected. Records must be available for review by the Contracting Officer.

- n. Maintain written reports of operational and load testing in accordance with EM 385-1-1, Section 16.F, listing the load test procedures used along with any repairs or alterations performed on the LHE. Reports must be available for review by the Contracting Officer.
  - o. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).
  - p. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. At wind speeds greater than 20 mph, the operator, rigger and lift supervisor must cease all crane operations, evaluate conditions and determine if the lift may proceed. Base the determination to proceed or not on wind calculations per the manufacturer and a reduction in LHE rated capacity if applicable. Include this maximum wind speed determination as part of the activity hazard analysis plan for that operation.
- 3.7.3 Machinery and Mechanized Equipment

- a. Proof of qualifications for operator shall be kept on the project site for review.
- b. Manufacture specifications or owner's manual for the equipment shall be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.

#### 3.7.4 USE OF EXPLOSIVES

Explosives must not be used or brought to the project site without prior written approval from the Contracting Officer. Such approval does not relieve the Contractor of responsibility for injury to persons or for damage to property due to blasting operations.

Storage of explosives, when permitted on Government property, must be only where directed and in approved storage facilities. These facilities must be kept locked at all times except for inspection, delivery, and withdrawal of explosives.

#### 3.8 EXCAVATIONS

Soil classification must be performed by a competent person in accordance with 29 CFR 1926 and EM 385-1-1. A competent person for excavation must be on site during all excavation work.

##### 3.8.1 Utility Locations

All underground utilities in the work area must be positively identified by a third party, independent, private utility locating company to positively identify underground utilities in the work area in addition to any station locating service and coordinated with the station utility department. Any markings made during the utility investigation must be maintained throughout the contract.



### 3.8.2 Utility Location Verification

Physically verify underground utility locations, including utility depth, by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system.

### 3.8.3 Utilities Within and Under Concrete, Bituminous Asphalt, and Other Impervious Surfaces

Utilities located within and under concrete slabs or pier structures, bridges, parking areas, and the like, are extremely difficult to identify. Whenever contract work involves chipping, saw cutting, or core drilling through concrete, bituminous asphalt or other impervious surfaces, the existing utility location must be coordinated with station utility departments in addition to location and depth verification by a third party, independent, private locating company. The third party, independent, private locating company must locate utility depth by use of Ground Penetrating Radar (GPR), X-ray, bore scope, or ultrasound prior to the start of demolition and construction. Outages to isolate utility systems must be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the Contractor from meeting this requirement.

### 3.8.4 Location of Underground Utilities

Location and Protection of underground utilities shall be the responsibility of the Contractor. Where existing-to-remain piping, utilities, and underground obstructions of any type are indicated in locations to be traversed by new piping, ducts, and other evacuations, the elevations of the existing utilities and obstructions shall be determined before the new work is completed.

- a. In addition, the Contractor shall be responsible for obtaining the services of a professional utility locator prior to digging. Contractor shall provide documentation that the site has been surveyed and checked for underground utilities. All utilities shall be located, including but not limited to power, water, sewer, storm drains, fiber optics, T.V. cable, telephone, and intrusion detection wiring. A set of known utility drawings will be available in the OICC office for review to assist the locator.
- b. It is mandatory that the Contractor also contact the Base Telephone Office at (910) 451-2531 prior to accomplishing any digging at Camp Lejeune. A telephone office representative will assist in locating telephone lines.
- c. It is mandatory that the Contractor also contact Charter Communications, cable TV service prior to accomplishing any digging at Camp Lejeune, to ensure that all buried cable lines are identified. Contact Mr. Olin Criswell at (910) 353-8677 for assistance.
- d. It is mandatory that the Contractor also contact the North Carolina One-Call Center to coordinate the location of underground natural gas infrastructure. North Carolina 811, Inc. can be reached at 811 on a touch-tone phone in the state of North Carolina or toll-free at 1-800-632-4949 if calling from out of state. Work request may also be submitted online at [www.nc811.org](http://www.nc811.org).

#### 3.8.4.1 The Locations of Underground Utilities

The locations of underground utilities shown are only approximate and the information provided may be incomplete. Contractor shall attempt to ascertain locations of existing underground utilities prior to and during digging operations.

#### 3.8.4.2 Damage to Underground Utilities

Immediate notice shall be delivered to the Contracting Officer of any damage. The Contractor shall make temporary repairs immediately and shall provide permanent repairs as soon as practicable.

### 3.9 ELECTRICAL

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

#### 3.9.1 Conduct of Electrical Work

As delineated in EM 385-1-1, electrical work is to be conducted in a de-energized state unless there is no alternative method for accomplishing the work. In those cases obtain an energized work permit must be obtained from the Contracting Officer. The energized work permit application must be accompanied by the AHA and a summary of why the equipment/circuit needs to be worked energized. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Attachment of temporary grounds must be in accordance with ASTM F855 and IEEE 1048. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method.

When working in energized substations, only qualified electrical workers are permitted to enter. When work requires Contractor to work near energized circuits as defined by NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves and electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA. Contractor shall ensure that each employee is familiar with and complies with these procedures and 29 CFR 1910.147.

#### 3.9.2 Arc Flash Risk/Hazard Analysis

Contractor shall provide an Arc Flash Risk/Hazard Analysis in accordance with NFPA 70E for all locations where workers may be exposed to arc flash hazard (work on energized electrical equipment). The Arc Flash Risk/Hazard Analysis shall be sealed and signed by a qualified professional engineer.

In addition to Arc Flash Risk/Hazard Analysis required for safety during construction, provide an Arc Flash Risk/Hazard Analysis for the entire electrical distribution system as constructed. Provide equipment labels as required by NFPA 70E.

### 3.9.3 Arc Flash Risk/Hazard Analysis Qualifications

Contractor shall engage the services of a qualified organization to provide Arc Flash Risk/Hazard Analysis of the electrical distribution system. Organization shall be independent of the supplier, manufacturer, and installer of the equipment. The organization shall be a first tier subcontractor. This work shall not be performed by a second tier subcontractor.

- a. Submit name and qualifications of organization. Organization shall have been regularly engaged in providing Arc Flash Risk/Hazard Analysis for a minimum of 5 years.
- b. Submit name and qualifications of the professional engineer performing the analysis. Include a list of three comparable jobs performed by the engineer with specific names and telephone numbers for reference.

### 3.9.4 Contractor Electrical Energized Work Permit

All work on energized electrical systems must have an approved/signed Contractor Electrical Energized Work Permit. The results of the Arc Flash Risk/Hazard Analysis shall be included in the "Contractor Electrical Energized Work Permit" request. Flame-resistant (FR) clothing and personal protective equipment (PPE) shall be rated for a minimum of 8 calories per square centimeter even if the flash hazard analysis indicates a lower value. A blank copy of the permit request is appended to this Section. An editable version may be obtained from the Contracting Officer.

### 3.9.5 Portable Extension Cords

Size portable extension cords in accordance with manufacturer ratings for the tool to be powered and protected from damage. Immediately remove from service all damaged extension cords. Portable extension cords shall meet the requirements of EM 385-1-1, NFPA 70E and OSHA electrical standards.

### 3.9.6 Qualifications

Electrical work must be performed by QP personnel with verifiable credentials who are familiar with applicable code requirements. Verifiable credentials consist of State, National and Local Certifications or Licenses that a Master or Journeyman Electrician may hold, depending on work being performed, and must be identified in the appropriate AHA. Journeyman/Apprentice ratio must be in accordance with State, Local requirements applicable to where work is being performed.

### 3.9.7 Arc Flash

Conduct a hazard analysis/arc flash hazard analysis whenever work on or near energized parts greater than 50 volts is necessary, in accordance with NFPA 70E.

All personnel entering the identified arc flash protection boundary must be QPs and properly trained in NFPA 70E requirements and procedures. Unless permitted by NFPA 70E, no Unqualified Person is permitted to approach nearer than the Limited Approach Boundary of energized conductors and circuit parts. Training must be administered by an electrically qualified source and documented.

### 3.9.8 Grounding

Ground electrical circuits, equipment and enclosures in accordance with NFPA 70 and IEEE C2 to provide a permanent, continuous and effective path to ground unless otherwise noted by EM 385-1-1.

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

### 3.9.9 Testing

Temporary electrical distribution systems and devices must be inspected, tested and found acceptable for Ground-Fault Circuit Interrupter (GFCI) protection, polarity, ground continuity, and ground resistance before initial use, before use after modification and at least monthly. Monthly inspections and tests must be maintained for each temporary electrical distribution system and signed by the electrical CP or QP.

## 3.10 ERGONOMICS CONSIDERATIONS DURING DESIGN PHASE

Facilities, processes, job tasks, tools and materials shall be designed to reduce or eliminate work-related musculoskeletal (WMSD) injuries and risk factors in the workplace. Designs shall ensure facility maintenance access is designed to reduce WMSD risk factors to the lowest level possible. In addition to the detailed requirements included in the provisions of this contract, the design work shall incorporate the requirements of MIL-STD-1472, DOD HDBK 743A and ANSI/HFES 100.

-- End of Section --

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS

02/19

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization (e.g. ASTM B564 Standard Specification for Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)  
1899 L Street, NW, 11th Floor  
Washington, DC 20036  
Ph: 202-293-8020  
Fax: 202-293-9287  
E-mail: [storemanager@ansi.org](mailto:storemanager@ansi.org)  
Internet: <https://www.ansi.org/>

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)  
1791 Tullie Circle, NE  
Atlanta, GA 30329  
Ph: 404-636-8400 or 800-527-4723  
Fax: 404-321-5478  
E-mail: [ashrae@ashrae.org](mailto:ashrae@ashrae.org)  
Internet: <https://www.ashrae.org/>

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)  
Two Park Avenue  
New York, NY 10016-5990  
Ph: 800-843-2763  
Fax: 973-882-1717  
E-mail: [customercare@asme.org](mailto:customercare@asme.org)  
Internet: <https://www.asme.org/>

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

AMERICAN WATER WORKS ASSOCIATION (AWWA)  
6666 W. Quincy Avenue  
Denver, CO 80235 USA  
Ph: 303-794-7711 or 800-926-7337  
Fax: 303-347-0804  
Internet: <https://www.awwa.org/>

AMERICAN WOOD PROTECTION ASSOCIATION (AWPA)  
P.O. Box 361784  
Birmingham, AL 35236-1784  
Ph: 205-733-4077  
Fax: 205-733-4075  
Internet: <http://www.awpa.com>

ASSOCIATED AIR BALANCE COUNCIL (AABC)  
1220 19th St NW, Suite 410  
Washington, DC 20036  
Ph: 202-737-0202  
Fax: 202-315-0285  
E-mail: [info@aabc.com](mailto:info@aabc.com)  
Internet: <https://www.aabc.com/>

ASTM INTERNATIONAL (ASTM)  
100 Barr Harbor Drive, P.O. Box C700  
West Conshohocken, PA 19428-2959  
Ph: 610-832-9500  
Fax: 610-832-9555  
E-mail: [service@astm.org](mailto:service@astm.org)  
Internet: <https://www.astm.org/>

FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH  
(FCCCHR)  
USC Foundation Office  
Research Annex 219  
Los Angeles, CA 90089-7700  
Ph: 866-545-6340  
Fax: 213-740-8399  
E-mail: [fccchr@usc.edu](mailto:fccchr@usc.edu)  
Internet: <https://fccchr.usc.edu/>

GREEN SEAL (GS)  
1001 Connecticut Avenue, NW  
Suite 827  
Washington, DC 20036-5525  
Ph: 202-872-6400  
Fax: 202-872-4324  
E-mail: [green seal@green seal.org](mailto:green seal@green seal.org)  
Internet: <https://www.green seal.org/>

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)  
445 and 501 Hoes Lane  
Piscataway, NJ 08854-4141  
Ph: 732-981-0060 or 800-701-4333  
Fax: 732-981-9667  
E-mail: [onlinesupport@ieee.org](mailto:onlinesupport@ieee.org)  
Internet: <https://www.ieee.org/>

INTERNATIONAL CODE COUNCIL (ICC)  
500 New Jersey Avenue, NW  
6th Floor, Washington, DC 20001  
Ph: 800-786-4452 or 888-422-7233  
Fax: 202-783-2348  
E-mail: [order@iccsafe.org](mailto:order@iccsafe.org)  
Internet: <https://www.iccsafe.org/>

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)  
1901 North Moore Street  
Arlington, VA 22209-1762  
Ph: 703-525-1695  
Fax: 703-528-2148  
Internet: <https://safetyequipment.org/>

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)  
1300 North 17th Street, Suite 900  
Arlington, VA 22209  
Ph: 703-841-3200  
Internet: <https://www.nema.org>

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)  
8575 Grovemont Circle  
Gaithersburg, MD 20877  
Ph: 301-977-3698  
Fax: 301-977-9589  
Internet: <http://www.nebb.org>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)  
1 Batterymarch Park  
Quincy, MA 02169-7471  
Ph: 800-344-3555  
Fax: 800-593-6372  
Internet: <https://www.nfpa.org>

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION  
(SMACNA)  
4201 Lafayette Center Drive  
Chantilly, VA 20151-1219  
Ph: 703-803-2980  
Fax: 703-803-3732  
Internet: <https://www.smacna.org/>

U.S. ARMY CORPS OF ENGINEERS (USACE)  
CRD-C DOCUMENTS available on Internet:  
<http://www.wbdg.org/ffc/army-coe/standards>  
Order Other Documents from:  
Official Publications of the Headquarters, USACE  
E-mail: [hqpublications@usace.army.mil](mailto:hqpublications@usace.army.mil)  
Internet: <http://www.publications.usace.army.mil/>  
or  
<https://www.hnc.usace.army.mil/Missions/Engineering-Directorate/TECHINFO/>

U.S. DEPARTMENT OF DEFENSE (DOD)  
Order DOD Documents from:  
Room 3A750-The Pentagon  
1400 Defense Pentagon  
Washington, DC 20301-1400

Ph: 703-571-3343  
Fax: 215-697-1462  
E-mail: [customerservice@ntis.gov](mailto:customerservice@ntis.gov)  
Internet: <https://www.ntis.gov/>  
Obtain Military Specifications, Standards and Related Publications  
from:  
Acquisition Streamlining and Standardization Information System  
(ASSIST)  
Department of Defense Single Stock Point (DODSSP)  
Document Automation and Production Service (DAPS)  
Building 4/D  
700 Robbins Avenue  
Philadelphia, PA 19111-5094  
Ph: 215-697-6396 - for account/password issues  
Internet: <https://assist.dla.mil/online/start/>; account  
registration required  
Obtain Unified Facilities Criteria (UFC) from:  
Whole Building Design Guide (WBDG)  
National Institute of Building Sciences (NIBS)  
1090 Vermont Avenue NW, Suite 700  
Washington, DC 20005  
Ph: 202-289-7800  
Fax: 202-289-1092  
Internet:  
<https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc>

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)  
1200 New Jersey Ave., SE  
Washington, DC 20590  
Ph: 202-366-4000  
E-mail: [ExecSecretariat.FHWA@dot.gov](mailto:ExecSecretariat.FHWA@dot.gov)  
Internet: <https://www.fhwa.dot.gov/>  
Order from:  
Superintendent of Documents  
U.S. Government Publishing Office (GPO)  
732 N. Capitol Street, NW  
Washington, DC 20401  
Ph: 202-512-1800 or 866-512-1800  
Bookstore: 202-512-0132  
Internet: <https://www.gpo.gov/>

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)  
8601 Adelphi Road  
College Park, MD 20740-6001  
Ph: 866-272-6272  
Internet: <https://www.archives.gov/>  
Order documents from:  
Superintendent of Documents  
U.S. Government Publishing Office (GPO)  
732 N. Capitol Street, NW  
Washington, DC 20401  
Ph: 202-512-1800 or 866-512-1800  
Bookstore: 202-512-0132  
Internet: <https://www.gpo.gov/>

U.S. NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)  
1322 Patterson Ave. SE, Suite 1000  
Washington Navy Yard, DC 20374-5065  
Ph: 202-685-9387



Open Mess Hall Repair (2615)  
Marine Corps Base, Camp Lejeune

Project # 1604F

Internet: <http://www.navfac.navy.mil>

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

-- End of Section --

SECTION 01 45 00.05 20

DESIGN AND CONSTRUCTION QUALITY CONTROL

06/15

PART 1 GENERAL

1.1 REFERENCES

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

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

ASHRAE 52.2 (2012) Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

ASTM INTERNATIONAL (ASTM)

ASTM D6245 (2012) Using Indoor Carbon Dioxide Concentrations to Evaluate Indoor Air Quality and Ventilation

ASTM D6345 (2010) Selection of Methods for Active, Integrative Sampling of Volatile Organic Compounds in Air

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

ANSI/SMACNA 008 (2007) IAQ Guidelines for Occupied Buildings Under Construction, 2nd Edition

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

U.S. DEPARTMENT OF DEFENSE (DOD)

FC 1-300-09N (2014; with Change 2) Navy and Marine Corps Design Procedures

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

ASHRAE 52.2 (2012) Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20

CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL  
PROCEDURES:

SD-01 Preconstruction Submittals

Design Quality Control (DQC) Plan; G

Submit a DQC Plan prior to the Post Award Kickoff Meeting.

Construction Quality Control (CQC) Plan; G

Submit a Construction QC Plan prior to start of construction.

Indoor Air Quality (IAQ) Management Plan; G

Commissioning Plan; G

Submit a Commissioning Plan within 60 days of approval of Cx  
Authority.

SD-05 Design Data

Design Quality Control Documentation; G

SD-07 Certificates

Preliminary Inspections and Final Acceptance Testing; G

Final Life Safety/Fire Protection Certification; G

ICC IBC Special Inspections Certification; G

SD-11 Closeout Submittals

Summary Commissioning Report; G

1.3 INFORMATION FOR THE CONTRACTING OFFICER

Prior to commencing work on construction, the Contractor can obtain a single copy set of the current report forms from the Contracting Officer. The report forms will consist of the Contractor Production Report, Contractor Production Report (Continuation Sheet), Contractor Quality Control (CQC) Report, (CQC) Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Rework Items List, and Testing Plan and Log.

Deliver the following to the Contracting Officer during Construction:

- a. CQC Report: Mail or hand-carry the original (wet signatures) and one copy by 10:00 AM the next working day after each day that work is performed and for every seven consecutive calendar days of no-work.
- b. Contractor Production Report: Mail or hand-carry the original (wet signatures) and one copy by 10:00 AM the next working day after each day that work is performed and for every seven consecutive calendar days of no-work, attached to the CQC Report.
- c. Preparatory Phase Checklist: Original attached to the original CQC Report and one copy attached to each QC Report copy.

- d. Initial Phase Checklist: Original attached to the original CQC Report and one copy attached to each QC Report copy.
- e. Field Test Reports: Mail or hand-carry the original within two working days after the test is performed, attached to the original CQC Report and one copy attached to each QC Report copy.
- f. Monthly Summary Report of Tests: Mail or hand-carry the original attached to the last QC Report of the month.
- g. Testing Plan and Log: Mail or hand-carry the original attached to the last CQC Report of each month and one copy attached to each CQC Report copy. A copy of the final Testing Plan and Log shall be provided to the OMSI preparer for inclusion into the OMSI documentation.
- h. Rework Items List: Mail or hand-carry the original attached to the last CQC Report of each month and one copy attached to each CQC Report copy.
- i. CQC Meeting Minutes: Mail or hand-carry the original within two workdays after the meeting is held, attached to the original CQC Report and one copy attached to each CQC Report copy.
- j. QC Certifications: As required by the paragraph entitled "QC Certifications."

#### 1.4 QC PROGRAM REQUIREMENTS

Establish and maintain a QC program that is administered by a Design and Construction Quality Control organization, using Quality Control (Design and Construction) Plans, Commissioning Plans and Reports, meetings, a Coordination and Mutual Understanding Meeting, three phases of control, submittal review and approval, testing, completion inspections, and QC certifications, and documentation necessary to provide design, materials, equipment, workmanship, fabrication, construction and operations which comply with the requirements of this Contract. The QC program must cover on-site and off-site work. No construction work or testing may be performed unless the QC Manager is on the work site.

##### 1.4.1 QC Plan Meeting

Prior to submission of the QC Plan, the QC Manager may request a meeting with the Contracting Officer to discuss the QC Plan requirements of this Contract.

The purpose of this meeting is to develop a mutual understanding of the QC Plan requirements prior to plan development and submission and to agree on the Contractor's list of Definable Features of Work (DFOWs).

##### 1.4.2 Mutual Understanding Meeting

The purpose of this meeting is to develop a mutual understanding of the QC Plans, including documentation, administration, requirements and procedures, coordination of activities to be performed, and the coordination of the contractor's management, production and QC personnel. At the meeting, the contractor will explain in detail how the three phases of quality control will be implemented for each DFOW.

- a. Coordination of Activities included in various sections to assure efficient and orderly installation of each component. Coordinate

operations included under different sections that are dependent on each other for proper installation and operation. Schedule construction operations with consideration for indoor air quality as specified in the IAQ Management Plan. Coordinate prefunctional tests and startup testing with PVT team.

- b. As a minimum, the Contractor's personnel required to attend include an officer of the firm, the Project Manager, Project Superintendent, QC Manager, CA, Environmental Manager, and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities shall have a principal of the firm at the meeting. Minutes of the meeting will be prepared by the QC Manager and signed by the Contractor and the Contracting Officer. Provide a copy of the signed minutes to all attendees and shall be included in the QC Plan.

#### 1.4.3 Design and Construction Quality Control Plans

The contractor must provide a project specific Design Quality Control (DQC) Plan and Construction Quality Control (CQC) Plan, for review and approval by the Contracting Officer. The Contractor must perform no design until the DQC Plan is approved and no construction until the CQC Plan is approved. The Contractor's plans must include the following:

- a. QC ORGANIZATION: A chart showing the QC organizational structure. The QC organization for this contract, including member resumes.
- b. NAMES AND QUALIFICATIONS: Names and qualifications, in resume format, for each person in the QC organization, QC and DQC. Include the CQM for Contractors course certifications for the QC Manager and Alternate QC Manager as required by the paragraphs entitled "Construction Quality Management Training" and "Alternate QC Manager Duties and Qualifications". A letter from an officer of the company designating the QC Manager, Alternate QC Manager, DQC Manager, and their authority.
- c. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL: Duties, responsibilities, and authorities of each person in the QC organization.
- d. OUTSIDE ORGANIZATIONS: A listing of outside organizations, such as architectural and consulting engineering firms, that will be employed by the Contractor and a description of the services these firms will provide.
- e. APPOINTMENT LETTERS: Letters signed by an officer of the firm appointing the QC Manager and Alternate QC Manager and stating that they are responsible for implementing and managing the QC program as described in this Contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of control, and their authority to stop work which is not in compliance with the Contract.
- f. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER: Procedures for reviewing, approving, and managing submittals. Provide the name(s) of the person(s) in the QC organization authorized to review and certify submittals prior to approval. Provide the initial submittal of the Submittal Register as specified in Section 01 33 00 SUBMITTAL PROCEDURES.
- g. List of Definable Features of Work DFOW including list of design submittal packaging. DFOW is a task that is separate and distinct from

other tasks and has control requirements and work crews unique to the task.

- h. For the CQC Plan, a plan to implement the "Three Phases of Control" for each DFOV.
- i. TESTING LABORATORY INFORMATION: Testing laboratory information required by the paragraphs entitled "Accreditation Requirements", as applicable. For the CQC Plan, a testing Plan, log and list of personnel and accredited laboratories that will perform tests. Construction materials testing laboratories must be accredited by a laboratory accreditation authority and will be required to submit a copy of the Certificate of Accreditation and Scope of Accreditation with the testing plan. Coordinate this testing Plan with the Commissioning Plan verification testing requirements to avoid duplication of effort.
- j. TESTING PLAN AND LOG: A Testing Plan and Log that includes the tests required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test. Use Government forms to log and track tests.
- k. PROCEDURES TO COMPLETE REWORK ITEMS: Procedures to identify, record, track, and complete rework items. Use Government forms to record and track rework items.
- l. Submittal Register including design submittals, listing personnel who will review submittals and noting submittals for Contracting Officer review.
- m. Procedures for submitting and reviewing variations prior to submission to the Contracting Officer.
- n. As a part of the Contractor's CQC plan, a statement of Special Inspections shall be prepared by the Designer of Record (DOR) describing a complete list of materials and work requiring special inspections, the inspections to be performed and any applicable quality assurance plans and structural observations. The Contractor's plan shall implement the applicable requirements of the UFC 1-200-01, Section 2-17 "Structural Inspections and Test". The plan shall include a listing of the individuals, approved agencies or firms that will be retained for conducting the required special inspections accompanied by a description of individual inspector's experience and a copy of all required certifications. Structural tests and special inspections, as outlined in Chapter 17 of the ICC IBC shall be conducted by individuals and agents that are under the direct supervision of a Registered Design Professional (RDP) and meet the requirements of ASTM E329.
- o. As part of the Contractor's DQC plan, a statement of Life Safety and Fire Protection Features Inspections and Testing shall be prepared by the Fire Protection Designer of Record (DOR). Examples of life safety and fire protection features include, but are not limited to, water distribution systems including fire pumps and fire hydrants, fire resistive assemblies such as fire rated walls/partitions, through-penetration firestop systems, spray-applied fire proofing of structural components, fire alarm and detection systems, fire suppression and standpipe systems, means of egress components, emergency and exit lighting fixtures. The plan will include a listing of the individuals, approved agencies or firms that will be retained

for conducting the required inspections and tests accompanied by a description of individual inspector's experience and a copy of all required certifications. Additional copies of this plan shall be submitted to the MCB Camp Lejeune Public Works Design Fire Protection Engineer and the Installation Fire Chief.

This plan shall include the following:

1. Comprehensive list of systems, components or features to be inspected and tested.
  2. Description of performance verification testing activities for each system or component.
  3. Procedures and schedules for functional performance tests of all systems requiring functional testing.
- p. For the DQC plan, submit a formal Communication Plan that indicates the frequency of design meetings and what information is covered in those meetings, key design decision points tied to the Network Analysis Schedule and how the DOR plans to include the Government in those decisions, peer review procedures, interdisciplinary coordination, design review procedures, comment resolution, etc.

The Communication Plan will emphasize key decisions and possible problems the Contractor and Government may encounter during the design phase of the project. Provide a plan to discuss design alternatives and design coordination with the stakeholders at the key decision points as they arise on the project. Identify individual stakeholders and suggested communication methods that will be employed to expedite and facilitate each anticipated critical decision. Communication methods may include: Concept Design Workshop, over-the-shoulder review meetings, presentation at client's office, lifecycle cost analysis presentation, technical phone conversation, and formal review meeting. The design portion of the Communication Plan must to be written by the DQC Manager and confirmed during the Post Award Kick off Partnering. Update the Communication Plan at every Partnering meeting.

- q. For the DQC Plan, procedures for insuring the design documents are submitted in accordance with FC 1-300-09N, Navy and Marine Corps Design Procedures and other procedures to ensure disciplines have been properly coordinated to eliminate conflicts.
- r. For the DQC Plan, provide Quality Control Documentation procedures such as QC review sets and QC comments to demonstrate that cross checking of all engineering discipline's design drawings and specifications has taken place. The QC review documentation shall exhibit a checking process of the design documents for completeness, accuracy, and constructability.
- s. For the DQC Plan, a list of design subcontractors and the scope of the work which each firm will accomplish.
- t. PROCEDURES FOR COMPLETION INSPECTION: Procedures for identifying and documenting the completion inspection process. Include in these procedures the responsible party for punch out inspection, pre-final inspection, and final acceptance inspection.
- u. TRAINING PROCEDURES AND TRAINING LOG: Procedures for coordinating

and documenting the training of personnel required by the Contract.

- v. ORGANIZATION AND PERSONNEL CERTIFICATIONS LOG: Procedures for coordinating, tracking and documenting all certifications on subcontractors, testing laboratories, suppliers, personnel, etc. QC Manager will ensure that certifications are current, appropriate for the work being performed, and will not lapse during any period of the contract that the work is being performed.

#### 1.4.4 Commissioning Plan

The Contractor must provide a project specific Commissioning Plan for review and acceptance by the Contracting Officer. The intent of the commissioning plan is to expose all critical issues and resolve them with input from the construction team at early stages of planning. Develop and submit the Commissioning Plan to define the on-site activities and roles and responsibilities for commissioning all building systems required by the Project Program paragraph BUILDING COMMISSIONING. The Commissioning Plan must be updated as information changes during the project. The Plan must include all items required by the Third Party Certifier (TPC) and must include the following:

- a. Commissioning Authority qualifications and experience.
- b. A description of the Commissioning Team's roles and responsibilities as well as organizational relationships with the Contractor's QC Manager, DQC Manager, and verification and testing personnel.
- c. A listing of all systems required to be commissioned, include a list of required instruments and components for measurements, verifications, and full commissioning of mechanical systems.
- d. A description of the testing and acceptance method used for each system. Describe all commissioning process activities. Include the sequence and schedule for starting and balancing air distribution systems to ensure construction materials, such as architectural finishes, are installed under the appropriate environmental conditions. Also address the procedure that will be used to "dry out" the structure.
- e. A procedures and schedule for functional performance tests of all systems to be commissioned. The Commissioning Authority must present for all functional performance tests. Coordinate this schedule with the QC Plan testing requirements to avoid duplication of effort.
- f. Coordinate with eOMSI Preparer to approve the training plan, content of the facility maintenance and operational training, and training schedule for Government personnel. Provide training sessions on performance of the systems that were commissioned.

#### 1.4.5 Summary Commissioning Report

The Commissioning Authority must provide a Summary Commissioning Report upon completion of the performance verification items. The Summary Commissioning Report must include all items required by the TPC and must include the following:

- a. Executive Summary of the commissioning process including results and observations of the commissioning program.



- b. A history of deficiencies identified and their resolution. Indicate outstanding issues to be resolved.
- c. Commissioned systems performance test results and evaluations. Provide a 72 hour data trend utilizing the building automation system. Verify that the trend data reflects proper operation of the system.

#### 1.4.6 Special Inspections

Perform all required Special Inspections per Section 01 45 35.05 20 SPECIAL INSPECTIONS FOR DESGN-BUILD, the Statement of Special Inspections and the Schedule of Special Inspections.

#### 1.5 QC ORGANIZATION

The QC Manager must manage the QC organization and must report to an officer of the firm and must not be subordinate to the Project Superintendent or the Project Manager.

##### 1.5.1 QC and Alternate QC Manager

###### QC and Alternate QC Manager qualifications:

- a. Complete the course entitled "Construction Quality Management (CQM) for Contractors" and maintain a current certificate. The QC Manager that does not have a current certification must obtain the CQM for Contractors course certification within 90 days of award. This course is periodically offered by the Naval Facilities Engineering Command and the Army Corps of Engineers. Contact the Contracting Officer for class schedule information.
- b. Familiar with requirements of USACE EM 385-1-1, and experience in the areas of hazard identification and safety compliance.
- c. Five years of combined experience as a Superintendent, QC Manager, Project Manager, or Project Engineer on similar size and type construction contracts, and at least two years' experience as a QC Manager.
- d. A graduate of a four year accredited college or university program in one of the following disciplines: Engineering, Architecture, Construction Management, Engineering Technology, Building Construction, or Building Science. The QC must have experience on similar size projects and the type of construction contracts which include the major trades that are part of this Contract.

###### QC and Alternate QC Manager responsibilities:

- a. Participate in the Post Award Kick-off, Partnering, Preconstruction, Design Development, and Coordination and Mutual Understanding Meetings.
- b. Implement the "Three Phase of Control" plan for each DFOW and notify the Contracting Officer at least 3 business days in advance of each Preparatory and Initial Phase meeting. Submit respective checklists to the Contracting Officer the next business day.
- c. Ensure that no construction begins before the DOR has finalized the design for that segment of work, and construction submittals are approved as required.

- d. Inspect all work and rework, using International Conference of Building Officials certified QC specialists as applicable, to ensure its compliance with contract requirements. Maintain a rework log.
- e. Immediately stop any segment of work, which does not comply with the contract requirements and direct the removal and replacement of any defective work.
- f. Remove any individual from the site who fails to perform their work in a skillful, safe and workmanlike manner or whose work does not comply with the contract plans and specifications.
- g. Prepare daily QC Reports.
- h. Ensure that Contractor Production Reports are prepared daily.
- i. Hold bi-weekly QC meetings with the DQC Manager, Commissioning Authority, DOR (or representative), Superintendent and the Contracting Officer; participation **shall** be suitable for the phase of work. Distribute minutes of these meetings.
- j. Ensure that design and construction submittals are reviewed and approved, as required by the contract, prior to allowing material on site and work to proceed with these items. Maintain a submittal register.
- k. Update As-built drawings daily, maintaining up-to-date set on site.
- l. Maintain a testing plan and log. Ensure that all testing is performed in accordance with the contract. Review all test reports and notify the Contracting Officer of all deficiencies, along with a proposal for corrective action.
- m. Maintain rework log on site, noting dates deficiency identified, and date corrected.
- n. Certify and sign statement on each invoice that all work to be paid under the invoice has been completed in accordance with contract requirements.
- o. Perform Punch-out and participate in Pre-final and Final acceptance Inspections. Submit list of deficiencies to the Contracting Officer for each inspection. Correct all deficiencies prior to the Final inspection. Notify Contracting Officer prior to final inspection to establish a schedule date acceptable by the Contracting Officer.
- p. Ensure that all required keys, operation and maintenance manuals, warranty certificates, and the As-built drawings are correct and complete, in accordance with the contract, and submitted to the Contracting Officer.
- q. Assure that all applicable tests, **special inspections**, and observations required by the contract are performed.
- r. Coordinate all factory and on-site testing, Testing Laboratory personnel, QC Specialists, and any other inspection and testing personnel required by this Contract.

- s. Notify the Contracting Officer of any proposed changes to the QC plan.
- t. Retain a copy of approved submittals at project site, including Contractor's copy of approved samples.
- u. Update the Performance Assessment Plan as described in Section 01 31 19.05 20 POST AWARD MEETINGS and discuss monthly at a QC meeting.
- w. Coordinate training of Government maintenance personnel with the eOMSI Preparer to assure training materials and training classes are accurate and provide instruction and documentation on critical elements of the products, materials, and systems in the constructed facility. Verify that the Government's operating personnel were trained.
- x. Coordinate scheduled work with Special Inspections required by Section 01 45 35.05 20 SPECIAL INSPECTIONS FOR DESIGN-BUILD, the Statement of Special Inspections and the Schedule of Special Inspections.
- y. Supervise all Special Inspectors required by the contract documents and the IBC.
- z. Verify the qualifications of all of the Special Inspectors.
- aa. Verify the qualifications of fabricators.
- bb. Maintain a 3- ring binder for the Special Inspector's daily and biweekly reports. This file must be located in a conspicuous place in the project trailer/office to allow review by the Contracting Officer and the DOR.

#### 1.5.2 DQC Manager

The DQC Manager must be a member of the QC organization, must coordinate actions with the QC Manager, and shall not be subordinate to the Project Superintendent or the Project Manager.

##### DQC Manager qualifications:

- a. A minimum of 5 years' experience as a design Architect or Engineer on similar size and type designs / or design-build contracts. Provide education, experience, and management capabilities on similar size and type contracts.
- b. Be a registered professional engineer or architect with an active registration. Provide proof of registration as part of the resume submittal package.
- c. Complete the US Army Corps of Engineers (USACE) course entitled "Construction Quality Management (CQM) for Contractors."

##### DQC Manager responsibilities:

- a. Be responsible for the design integrity, professional design standards, and all design services required.
- b. Be a member of the Designer of Record's (DOR) firm, but may not be the DOR or the person stamping and approving final construction drawings or approving submittals.
- c. Be responsible for development of the design portion of the QC Plan,

incorporation and maintenance of the approved Design Schedule, and the preparation of DQC Reports and minutes of all design meetings.

- d. Participate in the Post Award Kick-Off, all design planning meetings, design presentations, partnering, and QC meetings.
- e. Implement the DQC plan and must remain on staff involved with the project until completion of the project.
- f. Be cognizant of and assure that all design documents on the project have been developed in accordance with the Contract.
- g. Provide [Design Quality Control Documentation](#) (DQCD) which indicates design coordination of the engineering disciplines. Submit DQCD with the pre-final and final design submittals as required in Section [01 33 10.05 20](#), DESIGN SUBMITTAL PROCEDURES.
- h. Develop the submittal register. Coordinate with each DOR to determine what items need to be submitted, and who needs to approve.
- i. Provide QC certification for design compliance.
- j. Certify and sign statement on each invoice that all work to be paid to the DOR under the invoice has been completed in accordance with the contract requirements.
- k. Prepare weekly DQC Reports that document the work the design team accomplished that week.
- l. Coordinate all training requirements with the QC and in accordance with [01 78 23 OPERATION AND MAINTENANCE DATA](#).

#### 1.5.3 Designer of Record (DOR) Qualifications

The DOR must be a registered design professional, retained by the prime contractor, responsible for the overall design and review of submittal documents prepared by others. The DOR is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws in the state in which the design professional works. The DOR cannot serve as the DQC.

#### 1.5.4 Commissioning Authority (CA)

Commissioning Authority qualifications:

The Commissioning Authority (CA) must be a member of the QC organization, must coordinate actions with the QC Manager, must not be subordinate to the Project Superintendent or the Project Manager, and must report findings directly to the Contracting Officer. The Commissioning Authority may also act as the DQC Manager if all DQC Manager qualifications are met. The Commissioning Authority selected must meet the requirements of the Third Party Certifier (TPC) with the following additional qualifications:

- a. Be a certified Building System Commissioning (Cx) Contractor recognized by a Building Commissioning Organization. Acceptable minimum certifications are "Certified Cx Agent" from the Associated Air Balance Council (AABC); "NEBB Building Systems Cx Certified Professional" from National Environmental Balancing Bureau (NEBB); "Certified Building Cx Professional" from the Association of Energy Engineers (AEE);

"Certified Cx Professional (CxP)" from the Building Commissioning Association (BCA); or "Commissioning Process Authority Professional" or "Commissioning Process Manager" from the University of Wisconsin College of Engineering.

- b. Have documented Commissioning Authority experience in at least two building projects. Provide proof of commissioning experience as part of the Commissioning Plan.

Commissioning Authority Responsibilities:

- a. Be responsible for development of the Commissioning Plan, the Summary Commissioning Report, and minutes of all commissioning meetings.
- b. Participate in the Post Award Kick-Off, all design planning meetings, design presentations, partnering, and QC meetings.
- c. Review the Request for Proposal (RFP) for energy and sustainability goals, system expectations, O&M requirements, training expectations, and construction quality expectations.
- d. Review the Basis of Design and ensure the RFP requirements are met.
- e. Ensure commissioning requirements are incorporated into the construction documents.
- f. Assure the electrical requirements of the actual equipment supplied by the mechanical contractor are verified, reviewed and coordinated with the electrical and other trades.
- g. Be responsible for implementation and updating of the Commissioning Plan.
- h. Be responsible for development of systems functional testing procedures.
- i. Ensure pre-functional installation inspections are performed on all systems indicated to be commissioned in accordance with the Commissioning Plan and Contract documents.
- j. Verify systems performance of all systems indicated to be commissioned in accordance with the Commissioning Plan and Contract documents.
- k. Report any deficiencies in installation, general performance, operation, and functional performance of all systems indicated to be commissioned.
- l. Participate in the eOMSI Field Validation to assure the accuracy of the eOMSI Data and eOMSI Document information prior to the submission of the Final eOMSI submittal.
- m. Coordinate training of Government maintenance personnel with the eOMSI Preparer to assure training materials and training classes are accurate and provide instruction and documentation on critical elements of the products, materials, and systems in the constructed facility. Verify that the Government's operating personnel were trained on the information necessary to operate the facility.

#### 1.5.5 QC Specialists

QC Specialists must assist and report to the QC Manager and may perform production related duties but must be allowed sufficient time to perform their assigned quality control duties. QC Specialists are required to attend the Coordination and Mutual Understanding Meeting, QC meetings and be physically present at the construction site to perform the three phases of control and prepare documentation for each definable feature of work in their area of responsibility at the frequency specified below.

##### 1.5.5.1 Fire Protection QC Specialist

The Fire Protection QC Specialist (FPQC) must be a U.S. registered Professional Engineer and must be an integral part of the Prime Contractor's Quality Control Organization. This FPQC must have no business relationships (owner, partner, operating officer, distributor, salesman, or technical representative) with any fire protection equipment device manufacturers, suppliers or installers for any such equipment provided as part of this project. The Fire Protection Designer of Record may serve as the lead Fire Protection QC Specialist, provided the following qualifications are met.

- a. **Qualifications/Experience:** The FPQC must have obtained their professional registration by successfully completing the Fire Protection Engineering discipline examination. This FPQC must have a minimum of 5 years full time and exclusive experience in every aspect of facility design and construction as it relates to fire protection, which includes, but is not limited to, building code analysis, life safety code analysis, design of automatic detection and suppression systems, passive fire protection design, water supply analysis, and a multi-discipline coordination reviews, and construction surveillance.
- b. **Area of Responsibility:** The FPQC is responsible for assuring the proper construction and installation of life safety and fire protection features across all disciplines and trades. The FPQC must be responsible for assuring that life safety and fire protection features are provided in accordance with the design documents, approved construction submittals, and manufacturer's requirements. Examples include, but are not limited to, water distribution systems including fire pumps and fire hydrants, fire resistive assemblies such as spray-applied fire proofing of structural components and fire rated walls/partitions, fire alarm and detection systems, fire suppression and standpipe systems, emergency and exit lighting fixtures, etc.
- c. **Construction Surveillance:** The FPQC is responsible for reviewing and implementing the QC Plan developed by the Fire Protection DOR. The FPQC must visit the construction site as necessary to ensure life safety and fire protection systems are being constructed, applied, and installed in accordance with the approved design documents, approved construction submittals, and manufacturer's requirements. Frequency and duration of the field visits are dependent upon particular system components, system complexity, and phase of construction. At a minimum, field visits must occur just prior to installation of suspended ceiling systems to inspect the integrity of passive fire protection features and fire suppression system piping, and required performance verification testing of all life safety and fire protection systems identified below and in Part 4.

- (1) **Preliminary Inspections and Final Acceptance Testing:** FPQC must

personally witness all preliminary inspections of fire alarm/detection and suppression systems. Once preliminary inspections have been successfully completed, the FPQC must submit a signed certificate to the QC Manager that systems are ready for final inspection and testing. The Naval Facilities Engineering Command Fire Protection Engineer will witness formal tests and approve all systems before they are accepted. The QC Manager must submit the request for formal inspection at least 15 days prior to the date the inspection is to take place. The QC Manager must provide 10 days advance notice to the Contracting Officer and the activity Fire Inspection Office of scheduled final inspections.

d. QC Documentation and Certifications: The following documentation and certification must **shall** be prepared by the FPQC. Additional copies must **shall** be submitted to the NAVFAC Fire Protection Engineer and the Installation Fire Chief.

- (1) Field visit reports. Submit reports documenting all field visits and summarizing all findings.
- (2) Inspection and Test reports and certificates. Submit in accordance with the applicable codes, standards, and this RFP.
- (3) **Final Life Safety/Fire Protection Certification**. Provide FPQC certification that all life safety and fire protection systems have been inspected and in the FPQC's professional judgment, have been installed in accordance with the contract documents, approved submittals, and manufacturer's requirements. This certification must summarize all life safety and fire protection features, and must bear the professional seal of the fire protection engineer.

#### 1.5.5.2 Soils Testing/Pile Installation and Testing QC Specialists

Provide ICC IBC Special Inspections Certification from the following specialist(s):

Qualification / Experience in Area of Responsibility	Area of Responsibility	Frequency
Registered Engineer (PE) or under the supervision of a (PE)	Soil testing, Pile Installation and Testing	As required in ICC IBC Chapter

#### 1.5.5.3 Structural QC Specialists

Provide ICC IBC Special Inspections Certification from the following specialist(s):

Qualification / Experience in Area of Responsibility	Area of Responsibility	Frequency
Registered Engineer (PE) or under the supervision of a (PE)	As required by UFC 1-200-01 Section 2-17 Structural Inspections and Tests	As required by UFC 1-200-01 Section 2-17 Structural Inspections and Tests

#### 1.5.5.4 Electrical and Telecommunications Systems QC Specialists

Provide ICC IBC Special Inspections Certification from the  
following specialist(s):

Qualification / Experience in Area of Responsibility	Area of Responsibility	Frequency
Telecommunications Systems Installation Specialist systems 10 years minimum and experience in telecommunications systems installation	Telecommunications Systems, All Division 27, 28 Sections and Division 33 Outside Plant (OSP) work	Full time during installation testing

#### 1.5.5.5 QC MEETINGS

After the start of construction, conduct QC meetings once every two weeks by the QC Manager at the work site with the Project Superintendent, the CA, and the foremen who are performing the work of the DFOWs. The QC Manager, is to prepare the minutes of the meeting and provide a copy to the Contracting Officer within two working days after the meeting. The Contracting Officer may attend these meetings. As a minimum, accomplish the following at each meeting:

- a. Review the minutes of the previous meeting.
- b. Review the schedule and the status of work and rework.
- c. Review the status of submittals.
- d. Review the work to be accomplished in the next two weeks and documentation required.
- e. Resolve QC and production problems (RFI, etc.)
- f. Address items that may require revising the QC Plan.
- g. Review Accident Prevention Plan (APP).
- h. Review environmental requirements and procedures.
- i. Review Waste Management Plan.
- j. Review IAQ Management Plan.



- k. Review Environmental Management Plan.
- l. Review the status of training completion.

#### 1.5.5.6 Special Inspector Special Inspector of Record

The Special Inspector (SI) Special Inspector of Record (SIOR) must be an independent third party hired directly by the Prime Contractor. The SI SIOR must have not be a company employee of the Contractor or any Sub-Contractor performing the work to be inspected. The qualifications of the SI SIOR are defined in Section 01 45 35.05 20 SPECIAL INSPECTIONS FOR DESIGN-BUILD.

#### 1.6 THREE PHASES OF CONTROL

The Three Phases of Control shall adequately cover both on-site and off-site work and shall include the following for each DFW.

##### 1.6.1 Preparatory Phase

Notify the Contracting Officer at least two work days in advance of each preparatory phase meeting. The meeting shall be conducted by the QC Manager and attended by the Project Superintendent, QC Specialists, and the foreman responsible for the DFW. The DQC Manager shall also attend if required by structural tests and Special Inspections, as outlined in Chapter 17 of the ICC IBC and the DQC Plan. When the DFW will be accomplished by a subcontractor, that subcontractor's foreman shall attend the preparatory phase meeting. Document the results of the preparatory phase actions in the daily Contractor Quality Control Report and in the Preparatory Phase Checklist. Perform the following prior to beginning work on each DFW:

- a. Review each paragraph of the applicable specification sections;
- b. Review the Contract drawings;
- c. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required;
- d. Review the testing plan and ensure that provisions have been made to provide the required QC testing;
- e. Review Special Inspections required by Section 01 45 35.05 20 SPECIAL INSPECTIONS FOR DESIGN-BUILD, the Statement of Special Inspections and the Schedule of Special Inspections.
- e. Examine the work area to ensure that the required preliminary work has been completed;
- f. Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data;
- g. Discuss the specific controls used in construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFW; and

- h. Review the APP and appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted.

#### 1.6.2 Initial Phase

Notify the Contracting Officer at least two work days in advance of each initial phase. When construction crews are ready to start work on a DFW, conduct the initial phase with the Project Superintendent, QC Specialists, and the foreman responsible for that DFW. The DQC Manager shall also attend if required by structural tests and Special Inspections, as outlined in the Statement of Special Inspections and Schedule of Special Inspections, Chapter 17 of the ICC IBC and the DQC Plan. Observe the initial segment of the DFW to ensure that the work complies with Contract requirements. Document the results of the initial phase in the daily CQC Report and in Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site, or when acceptable levels of specified quality are not being met. Perform the following for each DFW:

- a. Establish the quality of workmanship required;
- b. Resolve conflicts;
- c. Ensure that testing is performed by the approved laboratory, and
- d. Check work procedures for compliance with the APP and the appropriate AHA to ensure that applicable safety requirements are met.
- e. Ensure manufacturer's representative has performed necessary inspections, if required.
- f. Coordinate scheduled work with Special Inspections required by the Section 01 45 35.05 20 SPECIAL INSPECTIONS FOR DESIGN-BUILD, the Statement of Special Inspections and the Schedule of Special Inspections.

#### 1.6.3 Follow-Up Phase

Perform the following for on-going work daily, or more frequently as necessary, until the completion of each DFW and document in the daily CQC Report:

- a. Ensure the work is in compliance with Contract requirements;
- b. Maintain the quality of workmanship required;
- c. Ensure that testing is performed by the approved laboratory; and
- d. Ensure that rework items are being corrected.
- e. Coordinate scheduled work with Special Inspections required by the Section 01 45 35.05 20 SPECIAL INSPECTIONS FOR DESIGN-BUILD, the Statement of Special Inspections and the Schedule of Special Inspections.

#### 1.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases must be conducted on the same DFOW if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a DFOW is resumed after substantial period of inactivity, or if other problems develop.

#### 1.6.5 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least two weeks prior to the start of the preparatory and initial phases.

### 1.7 COMPLETION INSPECTIONS

The Contractor must perform the necessary punch-out, pre-final, and final inspections, compile punch lists, and correct deficiencies.

#### 1.7.1 Punch-Out Inspection

Near the completion of all work or any increment thereof, established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager and the CA must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings, specifications and Contract. Include in the punch list any remaining items on the "Rework Items List", which were not corrected prior to the Punch-Out Inspection. Include within the punch list the estimated date by which the deficiencies will be corrected. Provide a copy of the punch list to the Contracting Officer. The QC Manager, or staff, must make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished, notify the Contracting Officer that the facility is ready for the Government "Pre-Final Inspection".

#### 1.7.2 Pre-Final Inspection

Near the completion of all work or any increment thereof, established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager and the CA must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings, specifications and Contract. Include in the punch list any remaining items on the "Rework Items List", which were not corrected prior to the Pre-Final Inspection. Include within the punch list the estimated date by which the deficiencies will be corrected. Provide a copy of the punch list to the Contracting Officer. The QC Manager, or staff, must make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished, notify the Contracting Officer that the facility is ready for the Government "Final Acceptance Inspection".

#### 1.7.3 Final Acceptance Inspection

Notify the Contracting Officer at least 14 calendar days prior to the date a final acceptance inspection can be held. State within the notice that all items previously identified on the pre-final punch list will be corrected and acceptable, along with any other unfinished Contract work, by the date of the Final Acceptance Inspection. The Contractor must be represented by the QC Manager, the Project Superintendent, the CA, and others deemed

necessary. Attendees for the Government will include the Contracting Officer, other OICC/ROICC personnel, and personnel representing the Client. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause entitled "Inspection of Construction."

#### 1.8 TESTING

Except as stated otherwise in the specification sections, perform sampling and testing required under this Contract.

##### 1.8.1 Accreditation Requirements

Construction materials testing laboratories must be accredited by a laboratory accreditation authority and will be required to submit a copy of the Certificate of Accreditation and Scope of Accreditation. The laboratory's scope of accreditation must include the appropriate ASTM standards (E 329, C 1077, D 3666, D 3740, A 880, E 543) listed in the technical sections of the specifications. Laboratories engaged in Hazardous Materials Testing shall meet the requirements of OSHA and EPA. The policy applies to the specific laboratory performing the actual testing, not just the Corporate Office.

##### 1.8.2 Laboratory Accreditation Authorities

Laboratory Accreditation Authorities include the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology at <https://www.nist.gov/nvlap>, the American Association of State Highway and Transportation Officials (AASHTO) Accreditation Program at <http://www.aashtoresource.org/aap/overview>, International Accreditation Services, Inc. (IAS) at <http://www.iasonline.org>, U.S. Army Corps of Engineers Materials Testing Center (MTC) at <http://www.erdc.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/9254/Article/476661/materials-testing-center.aspx>, the American Association for Laboratory Accreditation (A2LA) program at <http://www.a2la.org/>, the Washington Association of Building Officials (WABO) at <http://www.wabo.org/> (Approval authority for WABO is limited to projects within Washington State), and the Washington Area Council of Engineering Laboratories (WACEL) at <https://www.wacel.org/lab-accreditation-and-inspection-agency-auditprograms/laboratory-a> (Approval authority by WACEL is limited to projects within Facilities Engineering Command (FEC) Washington geographical area).

##### 1.8.3 Capability Check

The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract.

##### 1.8.4 Test Results

Cite applicable Contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify the Contracting Officer immediately. Conspicuously stamp the cover sheet for each report in large red letters

"CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results must be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager. Furnish a summary report of field tests at the end of each month, per the paragraph entitled "INFORMATION FOR THE CONTRACTING OFFICER".

#### 1.8.5 Test Reports and Monthly Summary Report of Tests

Furnish the signed reports, certifications, and a summary report of field tests at the end of each month to the Contracting Officer. Provide a copy of the signed test reports and certifications to the OMSI preparer for inclusion into the OMSI documentation.

### 1.9 QC CERTIFICATIONS

#### 1.9.1 CQC Report Certification

Contain the following statement within the CQC Report: "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract RFP, drawings and specifications to the best of my knowledge, except as noted in this report."

#### 1.9.2 Invoice Certification

Furnish a certificate to the Contracting Officer with each payment request, signed by the QC Manager, attesting that as-built drawings are current, coordinated and attesting that the work for which payment is requested, including stored material, is in compliance with Contract requirements.

#### 1.9.3 Completion Certification

Upon completion of work under this Contract, the QC Manager shall furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract." Provide a copy of this final QC Certification for completion to the OMSI preparer for inclusion into the OMSI documentation.

### 1.10 DOCUMENTATION

Maintain current and complete records of on-site and off-site QC program operations and activities.

#### 1.10.1 Contractor Production Report

Reports are required for each day that work is performed and shall be attached to the Contractor Quality Control Report prepared for the same day. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Production Reports are to be prepared, signed and dated by the project superintendent and shall contain the following information:

- a. Date of report, report number, name of contractor, contract number, title and location of Contract and superintendent present.

- b. Weather conditions in the morning and in the afternoon including maximum and minimum temperatures.
- c. A list of Contractor and subcontractor personnel on the work site, their trades, employer, work location, description of work performed and hours worked.
- d. A list of job safety actions taken and safety inspections conducted. Indicate that safety requirements have been met including the results on the following:
  - (1) Was a job safety meeting held this date? (If YES, attach a copy of the meeting minutes.)
  - (2) Were there any lost time accidents this date? (If YES, attach a copy of the completed OSHA report.)
  - (3) Was crane/manlift/trenching/scaffold/hv electrical/high work/hazmat work done? (If YES, attach a statement or checklist showing inspection performed.)
  - (4) Was hazardous material/waste released into the environment? (If YES, attach a description of incident and proposed action.)
- e. A list of safety actions taken today and safety inspections conducted.
- f. A list of equipment/material received each day that is incorporated into the job.
- g. A list of construction and plant equipment on the work site including the number of hours used, idle and down for repair.
- h. Include a "remarks" section in this report which will contain pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered and a record of visitors to the work site.

#### 1.10.2 Contractor Quality Control Report

Reports are required for each day that work is performed and for every seven consecutive calendar days of no-work and on the last day of a no-work period. Account for each calendar day throughout the life of the Contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Quality Control Reports are to be prepared, signed and dated by the QC Manager and shall contain the following information:

- a. Identify the control phase and the definable feature of work.
- b. Results of the Preparatory Phase meetings held including the location of the definable feature of work and a list of personnel present at the meeting. Indicate in the report that for this definable feature of work, the drawings and specifications have been reviewed, submittals have been approved, materials comply with approved submittals, materials are stored properly, preliminary work was done correctly, the testing plan has been reviewed, and work methods and schedule have been discussed.

- c. Results of the Initial Phase meetings held including the location of the definable feature of work and a list of personnel present at the meeting. Indicate in the report that for this definable feature of work the preliminary work was done correctly, samples have been prepared and approved, the workmanship is satisfactory, test results are acceptable, work is in compliance with the Contract, and the required testing has been performed and include a list of who performed the tests.
- d. Results of the Follow-up Phase inspections held including the location of the definable feature of work. Indicate in the report for this definable feature of work that the work complies with the Contract as approved in the Initial Phase, and that required testing has been performed and include a list of who performed the tests.
- e. Results of the three phases of control for off-site work, if applicable, including actions taken.
- f. List the rework items identified, but not corrected by close of business.
- g. List the rework items corrected from the rework items list along with the corrective action taken.
- h. Include a "remarks" section in this report which will contain pertinent information including directions received, quality control problem areas, deviations from the QC plan, construction deficiencies encountered, QC meetings held, acknowledgement that as-built drawings have been updated, corrective direction given by the QC Organization and corrective action taken by the Contractor.
- i. Contractor Quality Control Report certification.

#### 1.10.3 Testing Plan and Log

As tests are performed, the QC Manager shall record on the "Testing Plan and Log" the date the test was conducted, the date the test results were forwarded to the Contracting Officer, remarks and acknowledgement that an accredited or Contracting Officer approved testing laboratory was used.

Attach a copy of the updated "Testing Plan and Log" to the last daily Contractor Quality Control Report of each month.

#### 1.10.4 Rework Items List

The QC Manager shall maintain a list of work that does not comply with the Contract, identifying what items need to be reworked, the date the item was originally discovered, and the date the item was corrected. There is no requirement to report a rework item that is corrected the same day it is discovered. Attach a copy of the "Contractor Rework Items List" to the last daily Contractor Quality Control Report of each month. The Contractor shall be responsible for including on this list items needing rework including those identified by the Contracting Officer.

#### 1.10.5 As-Built Drawings

The QC Manager is required to review the as-built drawings required by

Section 01 78 00, "Closeout Procedures", to ensure that as-built drawings are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. The QC Manager shall initial each deviation and each revision. Upon completion of work, the QC Manager shall furnish a certificate attesting to the accuracy of the as-built drawings prior to submission to the Contracting Officer.

#### 1.10.6 Report Forms

The following forms, which are attached at the end of this section, are acceptable for providing the information required by the paragraph entitled "Documentation". While use of these specific formats are not required, any other format used shall contain the same information:

- a. Combined Contractor Production Report and Contractor Quality Control Report (1 sheet), with separate continuation sheet
- b. Testing Plan and Log
- c. Rework Items List

#### 1.11 CONSTRUCTION INDOOR AIR QUALITY (IAQ) MANAGEMENT PLAN

Submit an IAQ Management Plan within 15 days after notice to proceed and not less than 10 days before the preconstruction meeting. Revise and resubmit Plan as required by the Contracting Officer. Make copies of the final plan available to all workers on site. Include provisions in the Plan to meet the requirements specified below and to ensure safe, healthy air for construction workers and building occupants.

##### 1.11.1 Requirements During Construction

Provide for evaluation of indoor Carbon Dioxide concentrations in accordance with [ASTM D6245](#). Provide for evaluation of volatile organic compounds (VOCs) in indoor air in accordance with [ASTM D6345](#). Use filters with a Minimum Efficiency Reporting Value (MERV) of 8 in permanently installed air handlers during construction.

##### 1.11.1.1 Control Measures

Meet or exceed the requirements of [ANSI/SMACNA 008](#), Chapter 3, to help minimize contamination of the building from construction activities. The five requirements of this manual which must be adhered to are described below:

- a. HVAC protection: Isolate return side of HVAC system from surrounding environment to prevent construction dust and debris from entering the duct work and spaces.
- b. Source control: Use low emitting paints and other finishes, sealants, adhesives, and other materials as specified. When available, cleaning products must have a low VOC content and be non-toxic to minimize building contamination. Utilize cleaning techniques that minimize dust generation. Cycle equipment off when not needed. Prohibit idling motor vehicles where emissions could be drawn into building. Designate receiving/storage areas for incoming material that minimize IAQ impacts.
- c. Pathway interruption: When pollutants are generated use strategies



such as 100 percent outside air ventilation or erection of physical barriers between work and non-work areas to prevent contamination.

- d. Housekeeping: Clean frequently to remove construction dust and debris. Promptly clean up spills. Remove accumulated water and keep work areas dry to discourage the growth of mold and bacteria. Take extra measures when hazardous materials are involved.
- e. Scheduling: Control the sequence of construction to minimize the absorption of VOCs by other building materials.

#### 1.11.1.2 Moisture Contamination

- a. Remove accumulated water and keep work dry.
- b. Use dehumidification to remove moist, humid air from a work area.
- c. Do not use combustion heaters or generators inside the building.
- d. Protect porous materials from exposure to moisture.
- e. Remove and replace items which remain damp for more than a few hours.

#### 1.11.2 Requirements after Construction

After construction ends and prior to occupancy, conduct a building flush-out or test the indoor air contaminant levels. Flush-out must be a minimum two-weeks with MERV-13 filtration media as determined by ASHRAE 52.2 at 100 percent outside air. Air contamination testing must be consistent with EPA's current Compendium of Methods for the Determination of Air Pollutants in Indoor Air. After building flush-out or testing and prior to occupancy, replace filtration media. Filtration media must have a MERV of 13 as determined by ASHRAE 52.2.

### PART 2 PRODUCTS

Not used.

### PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 45 35.05 20

SPECIAL INSPECTIONS FOR DESIGN-BUILD

09/15

PART 1 GENERAL

1.1 REFERENCES

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

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2018) International Building Code

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-301-01 (2013; with Change 3) Structural Engineering

1.2 GENERAL REQUIREMENTS

Perform Special Inspections in accordance with the Statement of Special Inspections, Schedule of Special Inspections and Chapter 17 of ICC IBC.

Special Inspections are to be performed by an independent third party and are intended to ensure that the work of the prime contractor is in accordance with the Contract Documents and applicable building codes. Special inspections do not take the place of the three phases of control inspections performed by the Contractor's QC Manager or any testing and inspections required by other sections of the specifications.

1.2.1 Fabricator Special Inspections

Special Inspections of fabricator's work performed in the fabricator's shop is required to be inspected in accordance with the Statement of Special Inspections and the Schedule of Special Inspections unless the fabricator is certified by the approved agency to perform such work without Special Inspections. Submit the following certifications to the Contracting Officer for information to allow work performed in the fabricator's shop to not be subjected to Special Inspections.

American Institute of Steel Construction (AISC) Certified Fabrication Plant, Category STD.

Truss Plate Institute (TPI) steel truss plant quality assurance program certification.

Steel Joist Institute Membership

At the completion of fabrication, submit a certificate of compliance, to be included with the final report of Special Inspections, stating that the materials supplied and work performed by the fabricator are in accordance the construction documents.

### 1.2.2 Defective Work

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

## 1.3 DEFINITIONS

### 1.3.1 Continuous Special Inspections

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

### 1.3.2 Periodic Special Inspections

Periodic Special Inspections are Special Inspections by the special inspector who is intermittently present where the work to be inspected has been or is being performed.

### 1.3.3 Perform

Perform these Special Inspections tasks for each welded joint or member.

### 1.3.4 Observe

Observe these Special Inspections items on a random daily basis. Operations need not be delayed pending these inspections.

### 1.3.5 **Special Inspector** (SI)

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

### 1.3.6 Associate Special Inspector (ASI)

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

### 1.3.7 Third Party

A third party inspector must not be company employee of the Contractor or any Sub-Contractor performing the work to be inspected.

### 1.3.8 **Special Inspector of Record** (SIOR)

A licensed engineer in responsible charge of supervision of all special inspectors for the project and approved by the Contracting officer. The SIOR must be an independent third party hired directly by the Prime Contractor.

### 1.3.9 Contracting Officer

The Government official having overall authority for administrative contracting actions. Certain contracting actions may be delegated to the

Contracting Officer's Representative (COR).

#### 1.3.10 Contractor's Quality Control (QC) Manager

An individual retained by the prime contractor and qualified in accordance with the requirements of UFGS 01 45 00.05 20 CONSTRUCTION QUALITY CONTROL having the overall responsibility for the contractor's QC organization.

#### 1.3.11 Designer of Record (DOR)

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

#### 1.3.12 Statement of Special Inspections (SSI)

A document developed by the DOR identifying the material, systems, components and work required to have Special Inspections.

#### 1.3.13 Schedule of Special Inspections

A schedule which lists each of the required Special Inspections, the extent to which each special inspection is to be performed, and the required frequency (periodic or continuous) for each in accordance with ICC IBC Chapter 17.

#### 1.3.14 Structural Observations

Specific structural observations performed by the DOR for high wind loading.

### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES:

#### SD-01 Preconstruction Submittals

Statement of Special Inspections; G

Structural Observations; G

SIOR Letter of Acceptance; G

Special Inspections Project Manual; G

#### SD-06 Test Reports

Special Inspections Daily Reports

Special Inspections Biweekly Reports

#### SD-07 Certificates

AISC Certified Fabrication Plant

TPI Steel Truss Plant Quality Assurance

Steel Joist Institute Membership

Special Inspector of Record Qualifications; G

Special Inspector Qualifications; G

SD-11 Closeout Submittal

Interim Final Report of Special Inspections

Comprehensive Final Report of Special Inspections; G

Final Report of Structural Observations; G

#### 1.5 SPECIAL INSPECTOR QUALIFICATIONS

Submit qualifications for each special inspector and the special inspector of record.

##### Certifying Associations

Certifying Associations	
AABC	Associated Air Balance Council
ACI	American Concrete Institute
AWCI	Association of the Wall and Ceiling Industry
AWS	American Welding Society
FM	Factory Mutual
ICC	International Code Council
NDT	Nondestructive Testing
NICET	National Institute for Certification in Engineering Technologies
PCI	Precast/Prestressed Concrete Institute
PTI	Post-Tensioning Institute
UL	Underwriters Laboratories

#### 1.5.1 Steel Construction and High Strength Bolting

##### 1.5.1.1 Special Inspector

- a. ICC Structural Steel and Bolting Special Inspector certificate with one year of related experience, or
- b. Registered Professional Engineer with related experience

1.5.1.2 Associate Special Inspector

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

1.5.2 Welding Structural Steel

1.5.2.1 Special Inspector

- a. ICC Structural Welding Special Inspector certificate with one year of related experience, or
- b. AWS Certified Welding Inspector

1.5.2.2 Associate Special Inspector

- a. AWS Certified Associate Welding Inspector

1.5.3 Nondestructive Testing of Welds

1.5.3.1 Special Inspector

- a. NDT Level III Certificate

1.5.3.2 Associate Special Inspector

- a. NDT Level II Certificate plus one year of related experience

1.5.4 Cold Formed Steel Framing

1.5.4.1 Special Inspector

- a. ICC Structural Steel and Bolting Special Inspector certificate with one year of related experience, or
- b. ICC Commercial Building Inspector with one year of experience, or
- c. ICC Residential Building Inspector with one year of experience, or
- d. Registered Professional Engineer with related experience

1.5.4.2 Associate Special Inspector

Engineer-In-Training with one year of related experience

1.5.5 Concrete Construction

1.5.5.1 Special Inspector

- a. ICC Reinforced Concrete Special Inspector Certificate with one year of related experience, or
- b. ACI Concrete Construction Special Inspector, or
- c. NICET Concrete Technician Level III Certificate in Construction Materials Testing, or
- d. Registered Professional Engineer with related experience

1.5.5.2 Associate Special Inspector

- a. ACI Concrete Construction Special Inspector in Training, or
- b. Engineer-In-Training with one year of related experience

1.5.6 Prestressed Concrete Construction

1.5.6.1 Special Inspector

- a. ICC Pre-stressed Special Inspector Certificate with one year of related experience, or
- b. PCI Quality Control Technician/ Inspector Level II Certificate with one year of related experience, or
- c. Registered Professional Engineer with related experience

1.5.6.2 Associate Special Inspector

- a. PCI Quality Control Technician/ Inspector Level I Certificate with one year of related experience, or
- b. Engineer-In-Training with one year of related experience

1.5.7 Post-tensioned Concrete Construction

1.5.7.1 Special Inspector

- a. PTI Level 2 Unbonded PT Inspector Certificate, or
- b. Registered Professional Engineer with related experience

1.5.7.2 Associate Special Inspector

- a. PTI Level 1 Unbonded PT Inspector Certificate with one year of related experience, or
- b. Engineer-In-Training with one year of related experience

1.5.8 Masonry Construction

1.5.8.1 Special Inspector

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

1.5.8.2 Associate Special Inspector

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

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

1.5.9.1 Special Inspector

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

- b. NICET Soils Technician Level II Certificate in Construction Material Testing, or
- c. NICET Geotechnical Engineering Technician Level II Construction or Generalist Certificate, or

1.5.9.2 Associate Special Inspector

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

1.5.10 Deep Foundations

1.5.10.1 Special Inspector

- a. NICET Soils Technician Level II Certificate in Construction Material Testing, or
- b. NICET Geotechnical Engineering Technician Level II Construction or Generalist Certificate.

1.5.10.2 Associate Special Inspector

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

1.5.11 Sprayed Fire Resistant Material

1.5.11.1 Special Inspector

- a. ICC Spray-applied Fireproofing Special Inspector Certificate, or
- b. ICC Fire Inspector I Certificate with one year of related experience, or
- c. Registered Professional Engineer with related experience

1.5.11.2 Associate Special Inspector

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

1.5.12 Mastic and Intumescent Fire Resistant Coatings

1.5.12.1 Special Inspector

- a. ICC Spray-applied Fireproofing Special Inspector Certificate, or
- b. ICC Fire Inspector I Certificate with one year of related experience, or
- c. Registered Professional Engineer with related experience



1.5.12.2 Associate Special Inspector

Engineer-In-Training with one year of related experience

1.5.13 Exterior Insulation and Finish System (EIFS)

1.5.13.1 Special Inspector

- a. AWCI EIFS Inspector Certificate, or
- b. Exterior Design Institute Certificate, or
- c. Registered Professional Engineer with related experience

1.5.13.2 Associate Special Inspector

Engineer-In-Training with one year of related experience

1.5.14 Fire-Resistant Penetrations and Joints

1.5.14.1 Special Inspector

- a. Passed the UL Firestop Exam with one year of related experience, or
- b. Passed the FM Firestop Exam with one year of related experience, or
- c. Registered Professional Engineer with related experience

1.5.14.2 Associate Special Inspector

Engineer-In-Training with one year of related experience

1.5.15 Smoke Control

1.5.15.1 Primary Inspector

- a. AABC Technician Certification with one year of related experience, or
- b. Registered Professional Engineer with related experience

1.5.15.2 Associate Special Inspector

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

1.5.16 Special Inspector of Record (SIOR)

Registered Professional Engineer.

1.6 RESPONSIBILITIES

1.6.1 Special Inspector of Record (SIOR)

- a. Supervise all Special Inspectors required by the contract documents and the ICC IBC.
- b. Submit a letter to the Contracting Officer attesting to acceptance of the duties of SIOR, signed and sealed by the SIOR.
- c. Verify the qualifications of all of the Special Inspectors.

- d. Verify the qualifications of fabricators.
- h. Prepare a [Special Inspections Project Manual](#), which will cover the following:
  - (1) Roles and responsibilities of the following individuals during Special Inspections: SIOR, SI, General Contractor, Subcontractors, QC Manager, and DOR.
  - (2) Organizational chart and/or communication plan, indicating lines of communication.
  - (3) Contractor's internal plan for scheduling inspections. Address items such as timeliness of inspection requests, who to contact for inspection requests, and availability of alternate inspectors.
  - (4) Indicate the government reporting procedures.
  - (5) Propose forms or templates to be used by SI and SIOR to document inspections.
  - (6) Indicate procedures for tracking nonconforming work and verification that corrective work is complete.
  - (7) Indicate how the SIOR and/or SI will participate in weekly QC meetings.
  - (8) Indicate how Special Inspections of shop fabricated items will be handled when the fabricator's shop is not certified per paragraph FABRICATOR SPECIAL INSPECTIONS.
  - (9) Include a section in the manual that covers each specific item requiring Special Inspections that is indicated on the Schedule of Special Inspections. Provide names and qualifications of each special inspector who will be performing the Special Inspections for each specific item. Provide detail on how the Special Inspections are to be carried out for each item so that the expectations are clear for the General Contractor and the Subcontractor performing the work.

Make a copy of the Special Inspections Project Manual available on the job site during construction. Submit a copy of the Special Inspections Project Manual for approval.

- i. Attend coordination and mutual understanding meeting where the information in the Special Inspections Project Manual will be reviewed to verify that all parties have a clear understanding of the Special Inspections provisions and the individual duties and responsibilities of each party.
- j. Maintain a 3- ring binder for the Special Inspector's daily and [biweekly reports](#) and the SI Project Manual. This file must be located in a conspicuous place in the project trailer/office to allow review by the Contracting Officer and the DOR.
- k. Submit a copy of the Special Inspector's [daily reports](#) to the QC Manager.

- l. Discrepancies that are observed during Special Inspections must be reported to the QC Manager for correction. If discrepancies are not corrected before the special inspector leaves the site the observed discrepancies must be documented in the daily report.
  - m. Submit a biweekly Special Inspections report to the Contracting Officer until all work requiring Special Inspections is complete. A report is required for each biweekly period in which Special Inspections activity occurs, and must include the following:
    - (1) A brief summary of the work performed during the reporting time frame.
    - (2) Changes and/or discrepancies with the drawings, specifications that were observed during the reporting period.
    - (3) Discrepancies which were resolved or corrected.
    - (4) A list of nonconforming items requiring resolution.
    - (5) All applicable test results including nondestructive testing reports.
  - n. At the completion of each Definable Feature of Work (DFOW) requiring Special Inspections, submit an [interim final report of Special Inspections](#) to the Contracting Officer that documents the Special Inspections completed for that DFOW and corrections of all discrepancies noted in the daily reports. The interim final report of Special Inspections must be signed, dated and bear the seal of the SIOR.
  - o. At the completion of the project submit a [comprehensive final report of Special Inspections](#) that documents the Special Inspections completed for the project and corrections of all discrepancies noted in the daily reports. The comprehensive final report of Special Inspections must be signed, dated and bear the seal of the SIOR.
- 1.6.2 Quality Control Manager
- a. Maintain a rework items list that includes discrepancies noted on the Special Inspectors daily report.
- 1.6.3 Special Inspectors
- a. Inspect all elements of the project for which the special inspector is qualified to inspect and are identified in the Schedule of Special Inspections.
  - b. Attend preparatory phase meetings related to the Definable Feature of Work (DFOW) for which the special inspector is qualified to inspect.
  - c. Submit a copy of the daily reports to the QC Manager.
  - d. Discrepancies that are observed during Special Inspections must be reported to the QC Manager for correction. If discrepancies are not corrected before the special inspector leaves the site the observed discrepancies must be documented in the daily report.
  - e. Submit a biweekly Special Inspection Report until all inspections are complete. A report is required for each biweekly period in which

Special Inspections activity occurs, and must include the following:

- (1) A brief summary of the work performed during the reporting time frame.
  - (2) Changes and/or discrepancies with the drawings, specifications that were observed during the reporting period.
  - (3) Discrepancies which were resolved or corrected.
  - (4) A list of nonconforming items requiring resolution.
  - (5) All applicable test result including nondestructive testing reports.
- f. At the completion of each Definable Feature of Work (DFOW) requiring Special Inspections, submit an interim final report of Special Inspections to the Contracting Officer that documents the Special Inspections completed for that DFOW. Identify the inspector responsible for each item inspected and corrections of all discrepancies noted in the daily reports. The interim final report of Special Inspections must be signed, dated and indicate the certification of the special inspector qualifying them to conduct the inspection.
- g. At the completion of the project submit a comprehensive final report of Special Inspections that documents the Special Inspections completed for the project and corrections of all discrepancies noted in the daily reports. The comprehensive final report of Special Inspections must be signed, dated and indicate the certification of the special inspector qualifying them to conduct the inspection
- h. Submit daily reports to the SIOR.

#### 1.6.4 Designer of Record

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

The Statement of Special Inspection must include the following information:

- (1) List of Architectural Designated Seismic Systems.
- (2) List of Mechanical Designated Seismic Systems.
- (3) List of the Electrical Designated Seismic Systems.
- (4) Define the periodic walk-down inspections required by UFC 3-301-01.
- (5) List of elements that are part of the progressive collapse resistance system.

Develop Schedule of Special Inspection using the template located on the Whole Building Design Guide website at:  
<http://wbdg.org/ccb/NAVGRAPH/graphtoc.pdf>.

- b. Prior to the start of structural observations submit a written statement identifying the frequency and delineation wind/seismic force resisting system requiring structural observations.
- c. At the conclusion of the structural observations submit a [final report of structural observations](#) indicating that the structural observation site visits have been made and identify any reported deficiencies which, to the best of the structural observer's knowledge, have not been resolved.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 50 00.05 20

TEMPORARY FACILITIES AND CONTROLS FOR DESIGN-BUILD

11/07

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C511 (2017) Reduced-Pressure Principle Backflow Prevention Assembly

FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH (FCCCHR)

FCCCHR List (continuously updated) List of Approved Backflow Prevention Assemblies

FCCCHR Manual (10th Edition) Manual of Cross-Connection Control

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 241 (2013; Errata 2015) Standard for Safeguarding Construction, Alteration, and Demolition Operations

NFPA 70 (2017; ERTA 1-2 2017; TIA 17-1; TIA 17-2; TIA 17-3; TIA 17-4; TIA 17-5; TIA 17-6; TIA 17-7; TIA 17-8; TIA 17-9; TIA 17-10; TIA 17-11; TIA 17-12; TIA 17-13; TIA 17-14; TIA 17-15; TIA 17-16; TIA 17-17 ) National Electrical Code

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD (2015) Manual on Uniform Traffic Control Devices

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

40 CFR 247 Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Traffic Control Plan; G

Backflow Preventers

SD-06 Test Reports

Backflow Preventer Tests; G

SD-07 Certificates

Backflow Tester Certification; G

Backflow Preventers Certificate of Full Approval

1.3 EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

There are many products listed in 40 CFR 247 which have been designated or proposed by EPA to include recycled or recovered materials that may be used by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. These non-construction products contain the highest practicable percentage of recycled or recovered materials and can be recycled when no longer needed.

1.4 BACKFLOW PREVENTERS CERTIFICATE

Certificate of Full Approval from FCCCHR List, University of Southern California, attesting that the design, size and make of each backflow preventer has satisfactorily passed the complete sequence of performance testing and evaluation for the respective level of approval. Certificate of Provisional Approval is not acceptable.

1.4.1 Backflow Prevention Training Certificate

The Contractor shall submit a certificate recognized by the State or local authority that states the Contractor has completed at least 10 hours of training in backflow preventer installations. The certificate must be current.

1.5 TEMPORARY UTILITIES

1.5.1 Contractor Utilities

The Contractor shall provide his own utilities.

1.5.2 Utilities at Special Locations

Reasonable amounts of utilities will be made available to the Contractor at the prevailing Government rates. These rates may be obtained upon application to the Commanding Officer. The Contractor is responsible for making connections, providing transformers and meters, and making disconnections; and for providing backflow preventer devices on connections to domestic water lines.

Reasonable amounts of utilities will be made available to the Contractor at the prevailing Government rates and may be obtained upon application to the

Base Maintenance Officer, Bldg. 1202, Marine Corps Base, Camp Lejeune. A refundable security deposit to the Resident Officer in Charge of Construction must be made prior to application for services. The Contractor is responsible for providing transformers, meter bases, electrical service poles and drops for electrical services, and backflow preventer devices on connections to domestic water lines. Final taps and tie-ins to the Government utility grid will be made by Base Maintenance who will also provide and seal a 120 or 208 volt, three-wire kWh meter. Tap-in cost, if any, is the responsibility of the Contractor. Tampering or movement of a sealed meter without notification to base maintenance is grounds for discontinuance of electrical service. The Contractor is responsible for providing larger meters required if not available from the Government. The Contractor is responsible for the cost of utility services required until the date of Government acceptance. Under no circumstances will taps to base fire hydrants be allowed for obtaining domestic water.

### 1.5.3 Location of Underground Utilities

See specification section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS paragraph "Location of Underground Utilities".

Location and Protection of underground utilities shall be the responsibility of the Contractor. Where existing-to-remain piping, utilities, and underground obstructions of any type are indicated in locations to be traversed by new piping, ducts, and other excavations the elevations of the existing utilities and obstructions shall be determined before the new work is completed.

- a. In addition, the Contractor will be responsible for obtaining the services of a professional utility locator prior to digging. Contractor will provide documentation that the site has been surveyed and checked for underground utilities. All utilities must be located, including but not limited to power, water, sewer, storm drains, fiber optics, T.V. cable, telephone, and intrusion detection wiring. A set of known utility drawings will be available in the ROICC office for review to assist the locator.
- b. It is mandatory that the Contractor also contact the Base Telephone Office (451-2531) prior to accomplishing any digging at Camp Lejeune. A telephone office representative will assist in locating telephone lines.
- c. It is mandatory that the Contractor also contact Charter Communications, cable TV service prior to accomplishing any digging at Camp Lejeune, to ensure that all buried cable lines are identified. Contact Mr. Olin Criswell at 353-8677 for assistance.
- d. It is mandatory that the contractor also contact the North Carolina One-Call Center to coordinate the location of underground natural gas infrastructure. North Carolina 811, Inc. can be reached at 811 on a touch-tone phone in the state of North Carolina or toll-free at 1.800.632.4949 if calling from out of state. Work requests may also be submitted online at [www.nc811.org](http://www.nc811.org).

### 1.6 Damage to Underground Utilities

Immediate notice shall be delivered to the Contracting Officer of any damage. The Contractor shall make temporary repairs immediately, and shall provide permanent repairs as soon as practicable. For any additional work required by reason of conflict between the new and existing work, an



adjustment in contract price will be made in accordance with Contract clause entitled "Differing Site Conditions", if appropriate.

#### 1.7 BACKFLOW TESTER CERTIFICATION

Prior to testing, submit to the Contracting Officer certification issued by the State or local regulatory agency attesting that the backflow tester has successfully completed a certification course sponsored by the regulatory agency. Tester shall not be affiliated with any company participating in any other phase of this Contract.

#### 1.8 Backflow Preventers Certificate

The Contractor shall submit a certificate recognized by the State or local authority that states the Contractor has completed at least 10 hours of training in backflow preventer installations. The certificate must be current.

#### 1.9 WEATHER PROTECTION

Take necessary precautions to ensure that roof openings and other critical openings in the building are monitored carefully. Take immediate actions required to seal off such openings when rain or other detrimental weather is imminent, and at the end of each workday.

##### 1.9.1 Building and Site Storm Protection

When a warning of gale force winds is issued, take precautions to minimize danger to persons, and protect the work and nearby Government property. Precautions include, but are not limited to, closing openings; removing loose materials, tools and equipment from exposed locations; and removing or securing scaffolding and other temporary work. Close openings in the work when storms of lesser intensity pose a threat to the work or any nearby Government property.

##### 1.9.1.1 Hurricane Condition of Readiness

Unless directed otherwise, comply with:

- a. Condition FOUR (Sustained winds of 58 mph or greater expected within 72 hours): Normal daily jobsite cleanup and good housekeeping practices. Collect and store in piles or containers all scrap lumber, waste material, and rubbish for removal and disposal at the close of each work day. Maintain the construction site including storage areas, free of accumulation of debris. Stack form lumber in neat piles less than 3.3 feet high. Remove all debris, trash, or objects that could become missile hazards. Review requirements pertaining to "Condition THREE" and continue action as necessary to attain "Condition FOUR" readiness. Contact Contracting Officer for Condition of Readiness (COR) updates and completion of required actions.
- b. Condition THREE (Sustained winds of 58 mph or greater expected within 48 hours): Maintain "Condition FOUR" requirements and commence securing operations necessary for "Condition TWO" readiness. Cease all routine activities which might interfere with securing operations. Commence securing and stow all gear and portable equipment. Make preparations for securing buildings. Reinforce or remove formwork and scaffolding. Secure machinery, tools, equipment, materials, or remove

from the jobsite. Expend every effort to clear all missile hazards and loose equipment from general base areas. Contact Contracting Officer for weather and COR updates and completion of required actions.

- c. Condition TWO (Sustained winds of 58 mph or greater expected within 24 hours): Secure the jobsite, and leave Government premises.
- d. Condition ONE (Sustained winds of 58 mph or greater expected within 12 hours): Contractor access to the jobsite and Government premises is prohibited.

#### 1.10 STATION OPERATION AFFECT ON CONTRACTOR OPERATIONS

##### 1.10.1 Special Restrictions Regarding Access of Vehicles and Parking

###### 1.10.1.1 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 calendar days prior to the proposed modification date, and provide a Traffic Control Plan detailing the proposed controls to traffic movement for approval. The plan must be in accordance with State and local regulations and the MUTCD. Make all notifications and obtain any permits required for modification to traffic movements outside Station's jurisdiction. Provide cones, signs, barricades, lights, or other traffic control devices and personnel required to control traffic. Do not use foil-backed material for temporary pavement marking because of its potential to conduct electricity during accidents involving downed power lines.

#### 1.11 STORAGE AREAS

The Contract Clause entitled "FAR 52.236-10, Operations and Storage Areas" and the following apply:

##### 1.11.1 Storage in Existing Buildings

The Contractor will be working in and around existing buildings; the storage of material will not be allowed in the buildings. Provide 8 foot high security fence with a lockable gate around the storage area. Remove at the completion of work.

#### 1.12 TEMPORARY SANITARY FACILITIES

Provide adequate sanitary conveniences of a type approved for the use of persons employed on the work, properly secluded from public observation, and maintained in such a manner as required and approved by the Contracting Officer. Maintain these conveniences at all times without nuisance. Upon completion of the work, remove the conveniences from the premises, leaving the premises clean and free from nuisance. Dispose of sewage through connection to a municipal, district, or station sanitary sewage system. Where such systems are not available, use chemical toilets or comparably effective units, and periodically empty wastes into a municipal, district, or station sanitary sewage system, or remove waste to a commercial facility. Include provisions for pest control and elimination of odors.

Provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer and periodically empty wastes into a municipal, district, or station sanitary sewage system,

or remove waste to a commercial facility. The contractor MUST dump off base or the contractor MUST dump at 590 lift station after checking in with 440. Obtain approval from the system owner prior to discharge into any municipal, district, or commercial sanitary sewer system. Any penalties and / or fines associated with improper discharge will be the responsibility of the Contractor. Coordinate with the Contracting Officer and follow station regulations and procedures when discharging into the station sanitary sewer system. Maintain these conveniences at all times without nuisance. Include provisions for pest control and elimination of odors. Government toilet facilities will not be available to Contractor's personnel.

#### 1.13 TEMPORARY BUILDINGS

Temporary facilities (including trailers) shall be in like new condition and shall be maintained throughout the project. Locate these facilities where directed and within the indicated operations area. Failure to maintain storage trailers or buildings to these standards shall result in the removal of non-complying units at the Contractor's expense. A sign not smaller than 24 by 24 inches shall be conspicuously placed on the trailer depicting the company name, business phone number, and emergency phone number. Trailers shall be anchored to resist high winds and must meet applicable state of local standards for anchoring mobile trailers.

##### 1.13.1 Maintenance of Temporary Facilities

Upon completion of the project remove the bulletin board, signs, barricades, haul roads, and any other temporary products from the site. After removal of trailers, materials, and equipment from within the fenced area, remove the fence that will become the property of the Contractor.

All temporary water and sewer lines must be capped off at the main and piping removed after all temporary trailers are moved. Restore to the original or better condition, areas used by the Contractor for the storage of equipment or material, or other use. Gravel used to traverse grassed areas must be removed and the area restored to its original condition, including top soil and seeding as necessary.

##### 1.13.2 Quality Control Manager Records and Field Office

Provide on the jobsite an office with approximately 200 square feet of useful floor area for the exclusive use of the QC Manager. Provide a weathertight structure with adequate heating and cooling, toilet facilities, lighting, ventilation, a 4 by 8 foot plan table, a standard size office desk and chair, computer station, and working communications facilities. Provide either a 1,500 watt radiant heater and a window-mounted air conditioner rated at 9,000 Btus minimum or a window-mounted heat pump of the same minimum heating and cooling ratings. Provide a door with a cylinder lock and windows with locking hardware. Make utility connections. Locate where indicated. File quality control records in the office and make available at all times to the Government. After completion of the work, remove the entire structure from the site.

## PART 2 PRODUCTS

### 2.1 BACKFLOW PREVENTERS

Reduced pressure principle type conforming to the applicable requirements AWWA C511. Provide backflow preventers complete with bronze gate valve and

strainer. The particular make, model/design, and size of backflow preventers to be installed shall be included in the latest edition of the List of Approved Backflow Prevention Assemblies issued by the [FCCCHR List](#) and shall be accompanied by a Certificate of Full Approval from [FCCCHR List](#).

### PART 3 EXECUTION

#### 3.1 TEMPORARY PHYSICAL CONTROLS

##### 3.1.1 Access Controls

##### 3.1.1.1 Temporary Barricades

Contractor shall provide for barricading around all work areas to prevent public access.

##### 3.1.1.2 Fencing

Provide fencing along the construction site at all open excavations and tunnels to control access by unauthorized people. Fencing must be installed to be able to restrain a force of at least [250 pounds](#) against it.

In addition, prior to the start of work, enclose the construction site with a temporary safety fence. The safety fence shall be bright orange, shall be made of high density polyethylene grid or approved equal or plastic fence from recovered materials containing 60-100 percent recovered content level plastic, a minimum of [42 inches](#) high, supported and tightly secured to steel posts located on minimum [10 foot](#) centers. Remove the fence from the work site upon completion of the contract.

##### 3.1.1.3 Signs

Place warning signs at the construction area perimeter designating the presence of construction hazards requiring unauthorized persons to keep out. Signs must be placed on all sides of the project, with at least one sign every [300 feet](#). All points of entry shall have signs designating the construction site as a hard hat area.

##### 3.1.1.4 Traffic Work

All work around/involving roadways, to include roadway excavations and utility crossings, will be conducted in accordance with Manual of Traffic Control Devices. Contractors shall provide and ensure appropriate road closure and detour signs are established as necessary for motor traffic management. All road closures shall be coordinated with the Contracting Officer in advance. Self-illuminated (lighted) barricades shall be provided during hours of darkness. Brightly-colored (orange) vests are required for all personnel working in roadways. Road closures require a road closure plan showing the location of signage.

#### 3.2 TEMPORARY WIRING

Provide temporary wiring in accordance with [NFPA 241](#) and [NFPA 70](#), Assured Equipment Grounding Conductor Program. Program shall include frequent inspection of all equipment and apparatus.

#### 3.3 REDUCED PRESSURE BACKFLOW PREVENTERS

Provide an approved reduced pressure backflow prevention assembly at each

location where the Contractor taps into the Government potable water supply.

A certified tester(s) shall perform testing of backflow preventer(s) for proper installation and operation and provide subsequent tagging. Backflow preventer tests shall be performed using test equipment, procedures, and certification forms conforming to those outlined in the latest edition of the Manual of Cross-Connection Control published by the FCCCHR Manual. Test and tag each reduced pressure backflow preventer upon initial installation (prior to continued water use) and quarterly thereafter. Tag shall contain the following information: make, model, serial number, dates of tests, results, maintenance performed, and signature of tester. Record test results on certification forms conforming to requirements cited earlier in this paragraph.

-- End of Section --

SECTION 01 57 19

TEMPORARY ENVIRONMENTAL CONTROLS

11/15

PART 1 GENERAL

1.1 REFERENCES

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

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

29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
40 CFR 112	Oil Pollution Prevention
40 CFR 122.26	Storm Water Discharges (Applicable to State NPDES Programs, see section 123.25)
40 CFR 241	Guidelines for Disposal of Solid Waste
40 CFR 243	Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
40 CFR 258	Subtitle D Landfill Requirements
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 261.7	Residues of Hazardous Waste in Empty Containers
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 262.31	Standards Applicable to Generators of Hazardous Waste-Labeling
40 CFR 262.34	Standards Applicable to Generators of Hazardous Waste-Accumulation Time
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 273	Standards for Universal Waste Management
40 CFR 273.2	Standards for Universal Waste Management - Batteries
40 CFR 273.4	Standards for Universal Waste Management - Mercury Containing Equipment
40 CFR 273.5	Standards for Universal Waste Management - Lamps
40 CFR 279	Standards for the Management of Used Oil
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 300.125	National Oil and Hazardous Substances Pollution Contingency Plan - Notification and Communications
40 CFR 355	Emergency Planning and Notification
40 CFR 403	General Pretreatment Regulations for Existing and New Sources of Pollution
40 CFR 50	National Primary and Secondary Ambient Air Quality Standards
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 63	National Emission Standards for Hazardous Air Pollutants for Source Categories
40 CFR 64	Compliance Assurance Monitoring
40 CFR 745	Lead-Based Paint Poisoning Prevention in Certain Residential Structures
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response

## Information, and Training Requirements

### 49 CFR 173

Shippers - General Requirements for  
Shipments and Packagings

### 49 CFR 178

Specifications for Packagings

## 1.2 DEFINITIONS

### 1.2.1 Class I and II Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act. A list of Class I ODS can be found on the EPA website at the following weblink.  
<https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>.

Class II ODS is defined in Section 602(s) of The Clean Air Act. A list of Class II ODS can be found on the EPA website at the following weblink.  
<https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>.

### 1.2.2 Contractor Generated Hazardous Waste

Contractor generated hazardous waste is materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene), waste thinners, excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

### 1.2.3 Electronics Waste

Electronics waste is discarded electronic devices intended for salvage, recycling, or disposal.

### 1.2.4 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally or historically.

### 1.2.5 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

### 1.2.6 Hazardous Debris

As defined in paragraph SOLID WASTE, debris that contains listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) in accordance with 40 CFR 261. Hazardous debris also includes debris that exhibits a characteristic of hazardous waste in accordance with



40 CFR 261.

#### 1.2.7 Hazardous Materials

Hazardous materials as defined in 49 CFR 171 and listed in 49 CFR 172.

Hazardous material is any material that: Is regulated as a hazardous material in accordance with 49 CFR 173; or requires a Safety Data Sheet (SDS) in accordance with 29 CFR 1910.120; or during end use, treatment, handling, packaging, storage, transportation, or disposal meets or has components that meet or have potential to meet the definition of a hazardous waste as defined by 40 CFR 261 Subparts A, B, C, or D. Designation of a material by this definition, when separately regulated or controlled by other sections or directives, does not eliminate the need for adherence to that hazard-specific guidance which takes precedence over this section for "control" purposes. Such material includes ammunition, weapons, explosive actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical supplies, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos, mercury, and polychlorinated biphenyls (PCBs).

#### 1.2.8 Hazardous Waste

Hazardous Waste is any material that meets the definition of a solid waste and exhibit a hazardous characteristic (ignitability, corrosivity, reactivity, or toxicity) as specified in 40 CFR 261, Subpart C, or contains a listed hazardous waste as identified in 40 CFR 261, Subpart D.

#### 1.2.9 Land Application

Land Application means spreading or spraying discharge water at a rate that allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" must occur. Comply with federal, state, and local laws and regulations.

#### 1.2.10 Municipal Separate Storm Sewer System (MS4) Permit

MS4 permits are those held by installations to obtain NPDES permit coverage for their stormwater discharges.

#### 1.2.11 National Pollutant Discharge Elimination System (NPDES)

The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

#### 1.2.12 Oily Waste

Oily waste are those materials that are, or were, mixed with Petroleum, Oils, and Lubricants (POLs) and have become separated from that POLs. Oily wastes also means materials, including wastewaters, centrifuge solids, filter residues or sludges, bottom sediments, tank bottoms, and sorbents which have come into contact with and have been contaminated by, POLs and may be appropriately tested and discarded in a manner which is in compliance with other state and local requirements.

This definition includes materials such as oily rags, "kitty litter" sorbent clay and organic sorbent material. These materials may be land

filled provided that: It is not prohibited in other state regulations or local ordinances; the amount generated is "de minimus" (a small amount); it is the result of minor leaks or spills resulting from normal process operations; and free-flowing oil has been removed to the practicable extent possible. Large quantities of this material, generated as a result of a major spill or in lieu of proper maintenance of the processing equipment, are a solid waste. As a solid waste, perform a hazardous waste determination prior to disposal. As this can be an expensive process, it is recommended that this type of waste be minimized through good housekeeping practices and employee education.

#### 1.2.13 Regulated Waste

Regulated waste are solid wastes that have specific additional federal, state, or local controls for handling, storage, or disposal.

#### 1.2.14 Sediment

Sediment is soil and other debris that have eroded and have been transported by runoff water or wind.

#### 1.2.15 Solid Waste

Solid waste is a solid, liquid, semi-solid or contained gaseous waste. A solid waste can be a hazardous waste, non-hazardous waste, or non-Resource Conservation and Recovery Act (RCRA) regulated waste. Types of solid waste typically generated at construction sites may include:

##### 1.2.15.1 Debris

Debris is non-hazardous solid material generated during the construction, demolition, or renovation of a structure that exceeds 2.5-inch particle size that is: a manufactured object; plant or animal matter; or natural geologic material (for example, cobbles and boulders), broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and shingles. Inert materials may be reinforced with or contain ferrous wire, rods, accessories and weldments. A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

##### 1.2.15.2 Green Waste

Green waste is the vegetative matter from landscaping, land clearing and grubbing, including, but not limited to, grass, bushes, scrubs, small trees and saplings, tree stumps and plant roots. Marketable trees, grasses and plants that are indicated to remain, be re-located, or be re-used are not included.

##### 1.2.15.3 Material not regulated as solid waste

Material not regulated as solid waste is nuclear source or byproduct materials regulated under the Federal Atomic Energy Act of 1954 as amended; suspended or dissolved materials in domestic sewage effluent or irrigation return flows, or other regulated point source discharges; regulated air emissions; and fluids or wastes associated with natural gas or crude oil exploration or production.

#### 1.2.15.4 Non-Hazardous Waste

Non-hazardous waste is waste that is excluded from, or does not meet, hazardous waste criteria in accordance with 40 CFR 263.

#### 1.2.15.5 Recyclables

Recyclables are materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors that are recovered and sold as recyclable, wiring, insulated/non-insulated copper wire cable, wire rope, and structural components. It also includes commercial-grade refrigeration equipment with Freon removed, household appliances where the basic material content is metal, clean polyethylene terephthalate bottles, cooking oil, used fuel oil, textiles, high-grade paper products and corrugated cardboard, stackable pallets in good condition, clean crating material, and clean rubber/vehicle tires. Metal meeting the definition of lead contaminated or lead based paint contaminated may be included as recyclable if sold to a scrap metal company. Paint cans that meet the definition of empty containers in accordance with 40 CFR 261.7 may be included as recyclable if sold to a scrap metal company.

#### 1.2.15.6 Surplus Soil

Surplus soil is existing soil that is in excess of what is required for this work, including aggregates intended, but not used, for on-site mixing of concrete, mortars, and paving. Contaminated soil meeting the definition of hazardous material or hazardous waste is not included and must be managed in accordance with paragraph HAZARDOUS MATERIAL MANAGEMENT.

#### 1.2.15.7 Scrap Metal

This includes scrap and excess ferrous and non-ferrous metals such as reinforcing steel, structural shapes, pipe, and wire that are recovered or collected and disposed of as scrap. Scrap metal meeting the definition of hazardous material or hazardous waste is not included.

#### 1.2.15.8 Wood

Wood is dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included. Treated wood includes, but is not limited to, lumber, utility poles, crossties, and other wood products with chemical treatment.

#### 1.2.16 Surface Discharge

Surface discharge means discharge of water into drainage ditches, storm sewers, creeks or "waters of the United States". Surface discharges are discrete, identifiable sources and require a permit from the governing agency. Comply with federal, state, and local laws and regulations.

#### 1.2.17 Wastewater

Wastewater is the used water and solids from a community that flow to a treatment plant.

#### 1.2.17.1 Stormwater

Stormwater is any precipitation in an urban or suburban area that does not evaporate or soak into the ground, but instead collects and flows into storm drains, rivers, and streams.

#### 1.2.18 Waters of the United States

Waters of the United States means Federally jurisdictional waters, including wetlands, that are subject to regulation under Section 404 of the Clean Water Act or navigable waters, as defined under the Rivers and Harbors Act.

#### 1.2.19 Wetlands

Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

#### 1.2.20 Universal Waste

The universal waste regulations streamline collection requirements for certain hazardous wastes in the following categories: Aerosol Cans, batteries, pesticides, mercury-containing equipment (for example, thermostats), and lamps (for example, fluorescent bulbs). The rule is designed to reduce hazardous waste in the municipal solid waste (MSW) stream by making it easier for universal waste handlers to collect these items and send them for recycling or proper disposal. These regulations can be found at [40 CFR 273](#).

### 1.3 SUBMITTALS

Government approval is required for all submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section [01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES](#):

#### SD-01 Preconstruction Submittals

- Preconstruction Survey
- Solid Waste Management Permit; G
- Regulatory Notifications; G
- Environmental Protection Plan; G
- Stormwater Notice of Intent (for NPDES coverage under the general permit for construction activities) G
- Dirt and Dust Control Plan; G
- Employee Training Records; G
- Environmental Manager Qualifications; G

#### SD-06 Test Reports

- Inspection Reports
- Solid Waste Management Report; G

#### SD-07 Certificates

- Employee Training Records; G
- ECATTS Certificate Of Completion; G

## Erosion and Sediment Control Inspector Qualifications

### SD-11 Closeout Submittals

Stormwater Pollution Prevention Plan Compliance Notebook; G  
Stormwater Notice of Termination (for NPDES coverage under the  
general permit for construction activities; G  
Waste Determination Documentation; G  
Disposal Documentation for Hazardous and Regulated Waste; G  
Assembled Employee Training Records; G  
Solid Waste Management Permit; G  
Solid Waste Management Report; G  
Contractor Hazardous Material Inventory Log; G  
Hazardous Waste/Debris Management; G  
Regulatory Notifications; G  
Sales Documentation; G  
Contractor Certification  
As-Built Topographic Survey

## 1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this Contract. Comply with federal, state, and local regulations pertaining to the environment, including water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

Tests and procedures assessing whether construction operations comply with Applicable Environmental Laws may be required. Project-specific environmental constraints have been identified and should be incorporated into all design aspects and appropriate deliverables. Refer to supplemental documents in Part 6, specifically the Decision Memorandum(s) and Contractors Environmental Guide (available online at [http://www.lejeune.marines.mil/Portals/27/Documents/EMD/Contractor\\_Environmental\\_Guide.pdf](http://www.lejeune.marines.mil/Portals/27/Documents/EMD/Contractor_Environmental_Guide.pdf)). Analytical work must be performed by qualified laboratories; and where required by law, the laboratories must be certified.

### 1.4.1 Training in Environmental Compliance Assessment Training and Tracking System (ECATTS) ECATTS Certificate Of Completion

#### 1.4.1.1 Personnel Requirements

The Environmental Manager is responsible for environmental compliance on projects. The Environmental Manager must complete applicable ECATTS training modules (installation specific or general) prior to starting respective portions of on-site work under this Contract. If personnel changes occur for any of these positions after starting work, replacement personnel must complete applicable ECATTS training within 14 days of assignment to the project.

#### 1.4.1.2 Certification

Refer to Marine Corps Order 5090.2 for record keeping requirements (<https://www.marines.mil/News/Publications/MCPPEL/Electronic-Library-Display/Article/1552941/mco-50902>). All records should be kept with Environmental Planning and Environmental Manager assigned to the contract.

Register for NAVFAC ECATTS by logging on to <https://environmentaltraining.ecatts.com/>. Obtain the password for registration from the Contracting Officer.

#### 1.4.1.3 Refresher Training

This training has been structured to allow contractor personnel to receive credit under this contract and to carry forward credit to future contracts. Ensure the Environmental Manager review their training plans for new modules or updated training requirements prior to beginning work. Some training modules are tailored for specific state regulatory requirements; therefore, Contractors working in multiple states will be required to retake modules tailored to the state where the contract work is being performed.

#### 1.4.2 Conformance with the Environmental Management System

Perform work under this contract consistent with the policy and objectives identified in the installation's Environmental Management System (EMS). Perform work in a manner that conforms to objectives and targets of the environmental programs and operational controls identified by the EMS. Support Government personnel when environmental compliance and EMS audits are conducted by escorting auditors at the Project site, answering questions, and providing proof of records being maintained. Provide monitoring and measurement information as necessary to address environmental performance relative to environmental, energy, and transportation management goals. In the event an EMS nonconformance or environmental noncompliance associated with the contracted services, tasks, or actions occurs, take corrective and preventative actions. In addition, employees must be aware of their roles and responsibilities under the installation EMS and of how these EMS roles and responsibilities affect work performed under the contract.

Coordinate with the installation's EMS coordinator to identify training needs associated with environmental aspects and the EMS, and arrange training or take other action to meet these needs. Provide training documentation to the Contracting Officer. The Installation Environmental Office will retain associated environmental compliance records. Make EMS Awareness training completion certificates available to Government auditors during EMS audits and include the certificates in the Employee Training Records. See paragraph EMPLOYEE TRAINING RECORDS.

#### 1.5 SPECIAL ENVIRONMENTAL REQUIREMENTS

Comply with the special environmental requirements listed here and attached at the end of this section.

#### 1.6 QUALITY ASSURANCE

##### 1.6.1 Preconstruction Survey and Protection of Features

This paragraph supplements the Contract Clause PROTECTION OF EXISTING

VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, perform a [Preconstruction Survey](#) of the project site with the Contracting Officer, and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record. Include in the report a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. The Contractor and the Contracting Officer will sign this survey report upon mutual agreement regarding its accuracy and completeness. Protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference that their preservation may cause to the work under the Contract.

#### 1.6.2 [Regulatory Notifications](#)

Provide regulatory notification requirements in accordance with federal, state and local regulations. In cases where the Government will also provide public notification (such as stormwater permitting), coordinate with the Contracting Officer. Submit copies of regulatory notifications to the Contracting Officer at least 15 days prior to commencement of work activities. Typically, regulatory notifications must be provided for the following (this listing is not all-inclusive): demolition, renovation, NPDES defined site work, construction, removal or use of a permitted air emissions source, and remediation of controlled substances (asbestos, hazardous waste, lead paint), and construction within an environmental land use controlled (LUC) or land use restricted (LUR) area. Note: construction within a LUC or LUR area requires a minimum 60 day notification to regulators.

#### 1.6.3 [Environmental Brief](#)

Attend an environmental brief to be included in the preconstruction meeting. Provide the following information: types, quantities, and use of hazardous materials that will be brought onto the installation; and types and quantities of wastes/wastewater that may be generated during the Contract. Discuss the results of the Preconstruction Survey at this time.

Prior to initiating any work on site, meet with the Contracting Officer and installation Environmental Office to discuss the proposed Environmental Protection Plan (EPP). Develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural and cultural resources, required reports, required permits, permit requirements (such as mitigation measures), and other measures to be taken.

#### 1.6.4 [Environmental Manager](#)

Appoint in writing an Environmental Manager for each project site. The Environmental Manager is directly responsible for coordinating contractor compliance with federal, state, local, and installation requirements. The Environmental Manager must ensure compliance with Hazardous Waste Program requirements (including hazardous waste handling, storage, manifesting, and disposal); implement the EPP; ensure environmental permits are obtained, maintained, and closed out; ensure compliance with Stormwater Program requirements; ensure compliance with Hazardous Materials (storage, handling, and reporting) requirements; ensure appropriate documentation for new air emission sources that need to be added to the Installation's Title

V Air Quality Permit is provided to the Installation's Air Quality Program Manager in a timely manner; ensure POL containing storage tank installations and/or removals are coordinated with the Installation's POL program manager; and coordinate any remediation of regulated substances (lead, asbestos, PCB transformers). This can be a collateral position; however, the person in this position must be trained to adequately accomplish the following duties: ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure Contractor personnel are trained in 40 CFR requirements in accordance with their position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out. Submit [Environmental Manager Qualifications](#) to the Contracting Officer.

#### 1.6.5 Employee Training Records

Prepare and maintain [Employee Training Records](#) throughout the term of the contract meeting applicable 40 CFR requirements. Provide Employee Training Records in the Environmental Records Binder. Ensure every employee completes a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with federal, state and local regulatory requirements for RCRA Large Quantity Generator. Provide a Position Description for each employee, by subcontractor, based on the Davis-Bacon Wage Rate designation or other equivalent method, evaluating the employee's association with hazardous and regulated wastes. This Position Description will include training requirements as defined in [40 CFR 265](#) for a Large Quantity Generator facility. Submit these [Assembled Employee Training Records](#) to the Contracting Officer at the conclusion of the project, unless otherwise directed.

Train personnel to meet EPA and state requirements. Conduct environmental protection/pollution control meetings for personnel prior to commencing construction activities. Contact additional meetings for new personnel and when site conditions change. Include in the training and meeting agenda: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, waters of the United States, and endangered species and their habitat that are known to be in the area. Provide copy of the [Erosion and Sediment Control Inspector](#) Certification as required by the state of North Carolina.

#### 1.6.6 Non-Compliance Notifications

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with federal, state or local environmental laws or regulations, permits, and other elements of the Contractor's EPP. After receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. FAR 52.242-14 Suspension of Work provides that a suspension, delay, or interruption of work due to the fault or negligence of the Contractor allows for no adjustments to the contract for time extensions or equitable



adjustments. In addition to a suspension of work, the Contracting Officer may use additional authorities under the contract or law..

#### 1.7 ENVIRONMENTAL PROTECTION PLAN

The purpose of the EPP is to present an overview of known or potential environmental issues that must be considered and addressed during construction. Incorporate construction related objectives and targets from the installation's EMS into the EPP. Include in the EPP measures for protecting natural and cultural resources, required reports, and other measures to be taken. Meet with the Contracting Officer or Contracting Officer Representative to discuss the EPP and develop a mutual understanding relative to the details for environmental protection including measures for protecting natural resources, required reports, and other measures to be taken. Project Specific environmental constraints have been identified and should be incorporated into all design aspects and appropriate deliverables. Refer to supplemental documents in Part 6, specifically the Decision Memorandum(s) and Contractors Environmental Guide (available online at

[http://www.lejeune.marines.mil/Portals/27/Documents/EMD/Contractor\\_Environmental\\_Guide.pdf](http://www.lejeune.marines.mil/Portals/27/Documents/EMD/Contractor_Environmental_Guide.pdf)).

Submit the EPP within 15 days after notice to proceed and not less than 10 days before the preconstruction meeting. Revise the EPP throughout the project to include any reporting requirements, changes in site conditions, or contract modifications that change the project scope of work in a way that could have an environmental impact. No requirement in this section will relieve the Contractor of any applicable federal, state, and local environmental protection laws and regulations. During Construction, identify, implement, and submit for approval any additional requirements to be included in the EPP. Maintain the current version onsite.

The EPP includes, but is not limited to, the following elements:

##### 1.7.1 General Overview and Purpose

###### 1.7.1.1 Descriptions

A brief description of each specific plan required by environmental permit or elsewhere in this Contract such as stormwater pollution prevention plan, spill control plan, solid waste management plan, wastewater management plan, air pollution control plan, contaminant prevention plan, a historical, archaeological, cultural resources, biological resources and wetlands plan, traffic control plan Hazardous, Toxic and Radioactive Waste (HTRW) Plan Non-Hazardous Solid Waste Disposal Plan borrowing material plan, Explosive safety (3R Training), chemical soil vapor mitigation, and management of contaminated soil/groundwater..

###### 1.7.1.2 Duties

The duties and level of authority assigned to the person(s) on the job site who oversee environmental compliance, such as who is responsible for adherence to the EPP, who is responsible for spill cleanup and training personnel on spill response procedures, who is responsible for manifesting hazardous waste to be removed from the site (if applicable), and who is responsible for training the Contractor's environmental protection personnel.

1.7.1.3 Procedures

A copy of any standard or project-specific operating procedures that will be used to effectively manage and protect the environment on the project site.

1.7.1.4 Communications

Communication and training procedures that will be used to convey environmental management requirements to Contractor employees and subcontractors.

1.7.1.5 Contact Information

Emergency contact information contact information (office phone number, cell phone number, and e-mail address).

1.7.2 General Site Information

1.7.2.1 Drawings

Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, jurisdictional wetlands, material storage areas, structures, sanitary facilities, storm drains and conveyances, and stockpiles of excess soil.

1.7.2.2 Work Area

Work area plan showing the proposed activity in each portion of the area and identify the areas of limited use or nonuse. Include measures for marking the limits of use areas, including methods for protection of features to be preserved within authorized work areas and methods to control runoff and to contain materials on site, and a traffic control plan.

1.7.2.3 Documentation

A letter signed by an officer of the firm appointing the Environmental Manager and stating that person is responsible for managing and implementing the Environmental Program as described in this contract. Include in this letter the Environmental Manager's authority to direct the removal and replacement of non-conforming work.

1.7.3 Management of Natural Resources

- a. Land resources
- b. Tree protection
- c. Replacement of damaged landscape features
- d. Temporary construction
- e. Stream crossings
- f. Fish and wildlife resources (including known threatened and endangered species)
- g. Wetland areas

1.7.4 Protection of Historical and Archaeological Resources

- a. Objectives
- b. Methods

1.7.5 Stormwater Management and Control

- a. Ground cover
- b. Erodible soils
- c. Temporary measures
  - (1) Structural Practices
  - (2) Temporary and permanent stabilization
- d. Effective selection, implementation and maintenance of Stormwater Control Measures (SCMs).

1.7.6 Protection of the Environment from Waste Derived from Contractor Operations

Control and disposal of solid and sanitary waste. Control and disposal of hazardous waste.

This item consists of the management procedures for hazardous waste to be generated. The elements of those procedures will coincide with the Installation Hazardous Waste Management Plan. The Contracting Officer will provide a copy of the Installation Hazardous Waste Management Plan. As a minimum, include the following:

- a. List of the types of hazardous wastes expected to be generated
- b. Procedures to ensure a written waste determination is made for appropriate wastes that are to be generated
- c. Sampling/analysis plan, including laboratory method(s) that will be used for waste determinations and copies of relevant laboratory certifications
- d. Methods and proposed locations for hazardous waste accumulation/storage (that is, in tanks or containers)
- e. Management procedures for storage, labeling, transportation, and disposal of waste (treatment of waste is not allowed unless specifically noted)
- f. Management procedures and regulatory documentation ensuring disposal of hazardous waste complies with Land Disposal Restrictions (40 CFR 268)
- g. Management procedures for recyclable hazardous materials such as lead-acid batteries, used oil, and similar
- h. Used oil management procedures in accordance with 40 CFR 279; Hazardous waste minimization procedures
- i. Plans for the disposal of hazardous waste by permitted facilities; and Procedures to be employed to ensure required employee training records are maintained.

1.7.7 Prevention of Releases to the Environment

- a. Procedures to prevent releases to the environment
- b. Notifications in the event of a release to the environment
- c. Controls for managing existing contamination from known Environmental

Restoration and petroleum remediation sites.

#### 1.7.8 Regulatory Notification and Permits

List what notifications and permit applications must be made. Some permits require up to 180 days to obtain. Demonstrate that those permits have been obtained or applied for by including copies of applicable environmental permits including monitoring well installation and abandonment records. The EPP will not be approved until the permits have been obtained.

#### 1.7.9 Clean Air Act Compliance

##### 1.7.9.1 Haul Route

Submit truck and material haul routes along with a [Dirt and Dust Control Plan](#) for controlling dirt, debris, and dust on Installation roadways. As a minimum, identify in the plan the subcontractor and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.

##### 1.7.9.2 Pollution Generating Equipment

Identify air pollution generating equipment or processes that may require federal, state, or local permits under the Clean Air Act. Determine requirements based on any current installation permits and the impacts of the project. Provide a list of all fixed or mobile equipment, machinery or operations that could generate air emissions during the project to the Installation Environmental Office (Air Program Manager).

##### 1.7.9.3 Stationary Internal Combustion Engines

Identify portable and stationary internal combustion engines that will be supplied, used or serviced. Comply with [40 CFR 60 Subpart IIII](#), [40 CFR 60 Subpart JJJJ](#), [40 CFR 63 Subpart ZZZZ](#), and local regulations as applicable. At minimum, include the make, model, serial number, manufacture date, size (engine brake horsepower), and EPA emission certification status of each engine. Maintain applicable records and log hours of operation and fuel use. Logs must include reasons for operation and delineate between emergency and non-emergency operation.

##### 1.7.9.4 Refrigerants

Identify management practices to ensure that heating, ventilation, and air conditioning (HVAC) work involving refrigerants complies with [40 CFR 82](#) requirements. Technicians must be certified, maintain copies of certification on site, use certified equipment and log work that requires the addition or removal of refrigerant. Any refrigerant reclaimed is the property of the Government, coordinate with the Installation Environmental Office to determine the appropriate turn in location.

##### 1.7.9.5 Air Pollution-engineering Processes

Identify planned air pollution-generating processes and management control measures (including, but not limited to, spray painting, abrasive blasting, demolition, material handling, fugitive dust, and fugitive emissions). Log hours of operations and track quantities of materials used.

#### 1.7.9.6 Compliant Materials

Provide the Government a list of and SDSs for all hazardous materials proposed for use on site. Materials must be compliant with all Clean Air Act regulations for emissions including solvent and volatile organic compound contents, and applicable National Emission Standards for Hazardous Air Pollutants requirements. The Government may alter or limit use of specific materials as needed to meet installation permit requirements for emissions.

#### 1.7.10 Controls for Handling Existing Contamination, Including Munitions, if Applicable.

- a. Known site conditions, including types of contaminants and media impacted.
- b. Personnel Training Requirements
- c. Disposal procedures
- d. Notification requirements and procedures, particularly if working in an area with Land Use Controls mandated under CERCLA or RCRA regulations.

#### 1.8 LICENSES AND PERMITS

Obtain licenses and permits required for the construction of the project and in accordance with FAR 52.236-7 Permits and Responsibilities. Notify the Government of all general use permitted equipment the Contractor plans to use on site. This paragraph supplements the Contractor's responsibility under FAR 52.236-7 Permits and Responsibilities.

#### 1.9 ENVIRONMENTAL RECORDS BINDER

Maintain on-site a separate three-ring Environmental Records Binder and submit at the completion of the project. Make separate parts within the binder that correspond to each submittal listed under paragraph CLOSEOUT SUBMITTALS in this section.

#### 1.10 SOLID WASTE MANAGEMENT PERMIT

Provide the Contracting Officer with written notification of the quantity of anticipated solid waste or debris that is anticipated or estimated to be generated by construction. Include in the report the locations where various types of waste will be disposed or recycled. Include letters of acceptance from the receiving location or as applicable; submit one copy of the receiving location state and local Solid Waste Management Permit or license showing such agency's approval of the disposal plan before transporting wastes off Government property.

##### 1.10.1 Solid Waste Management Report

Monthly, submit a solid waste disposal report to the Contracting Officer. For each waste, the report will state the classification (using the definitions provided in this section), amount, location, and name of the business receiving the solid waste.

#### 1.11 FACILITY HAZARDOUS WASTE GENERATOR STATUS

MCB Camp Lejeune is designated as a Large Quantity Generator. Meet the regulatory requirements of this generator designation for any work conducted within the boundaries of this Installation. Comply with provisions of federal, state, and local regulatory requirements applicable to this generator status regarding training and storage, handling, and disposal of construction derived wastes.

#### PART 2 PRODUCTS

Not Used

#### PART 3 EXECUTION

##### 3.1 PROTECTION OF NATURAL RESOURCES

Minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitats. Prior to the commencement of activities, consult with the Installation Environmental Office regarding rare species or sensitive habitats that need to be protected. The protection of rare, threatened, and endangered animal and plant species identified, including their habitats, is the Contractor's responsibility.

Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work that is consistent with the requirements of the Installation Environmental Office or as otherwise specified. Confine construction activities to within the limits of the work indicated or specified.

###### 3.1.1 Flow Ways

Do not alter water flows or otherwise significantly disturb the native habitat adjacent to the project and critical to the survival of fish and wildlife, except as specified and permitted.

###### 3.1.2 Vegetation

Except in areas to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without the Contracting Officer's permission. Do not fasten or attach ropes, cables, or guys to existing nearby trees for anchorages unless authorized by the Contracting Officer. Where such use of attached ropes, cables, or guys is authorized, the Contractor is responsible for any resultant damage.

Protect existing trees that are to remain to ensure they are not injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. Coordinate with the Contracting Officer and Installation Environmental Office to determine appropriate action for trees and other landscape features scarred or damaged by equipment operations.

###### 3.1.3 Streams

Stream crossings must allow movement of materials or equipment without violating water pollution control standards of the federal, state, and local governments. Construction of stream crossing structures must be in compliance with any required permits including, but not limited to, Clean

Water Act Section 404, and Section 401 Water Quality.

The Contracting Officer's approval and appropriate permits are required before any equipment will be permitted to ford live streams. In areas where frequent crossings are required, install temporary culverts or bridges. Obtain Contracting Officer's approval prior to installation. Remove temporary culverts or bridges upon completion of work, and repair the area to its original condition unless otherwise required by the Contracting Officer.

### 3.2 STORMWATER

Do not discharge stormwater from construction sites to the sanitary sewer. If the water is noted or suspected of being contaminated, it may only be released to the storm drain system if the discharge is specifically permitted. Obtain authorization in advance from the Installation Environmental Office for any release of contaminated water.

#### 3.2.1 Construction General Permit

Provide a Construction General Permit as required by 40 CFR 122.26 or the State of North Carolina General Permit. Under the terms and conditions of the permit, install, inspect, maintain BMPs, prepare stormwater erosion and sediment control inspection reports, and submit SWPPP inspection reports. Maintain construction operations and management in compliance with the terms and conditions of the general permit for stormwater discharges from construction activities.

##### 3.2.1.1 Stormwater Pollution Prevention Plan

Submit a project-specific Stormwater Pollution Prevention Plan (SWPPP) to the Contracting Officer for approval, prior to the commencement of work. The SWPPP must meet the requirements of 40 CFR 122.26 and the North Carolina State General Permit for stormwater discharges from construction sites.

Include the following:

- a. Comply with terms of the state general permit for stormwater discharges from construction activities. Prepare SWPPP in accordance with state requirements. Use EPA guide Developing your Stormwater Pollution Prevention Plan located at <https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp> to prepare the SWPPP.
- b. Select applicable BMPs from EPA Fact Sheets located at <https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#co> or in accordance with applicable state or local requirements.
- c. Include a completed copy of the Notice of Intent, BMP Inspection Report Template, and Stormwater Notice of Termination, except for the effective date.
- d. Comply with additional requirements provided in Section 01 57 19.01 20 SUPPLEMENTAL TEMPORARY ENVIRONMENTAL CONTROLS

##### 3.2.1.2 Stormwater Notice of Intent for Construction Activities

Prepare and submit the Notice of Intent for NPDES coverage under the

general permit for construction activities to the Contracting Officer for review and approval.

Submit the approved NOI and appropriate permit fees onto the appropriate federal or state agency for approval. No land disturbing activities may commence without permit coverage. Maintain an approved copy of the SWPPP at the onsite construction office, and continually update as regulations require, reflecting current site conditions.

Comply with the additional requirements in Section 01 57 19.01 20 SUPPLEMENTAL TEMPORARY ENVIRONMENTAL CONTROLS.

#### 3.2.1.3 Inspection Reports

Submit "Inspection Reports" to the Contracting Officer in accordance with the State of North Carolina Construction General Permit. Provide Inspection Reports in accordance with 01 57 19.01 20 SUPPLEMENTAL TEMPORARY ENVIRONMENTAL CONTROLS.

#### 3.2.1.4 Stormwater Pollution Prevention Plan Compliance Notebook

Create and maintain a three ring binder of documents that demonstrate compliance with the Construction General Permit. Include a copy of the permit Notice of Intent, proof of permit fee payment, SWPPP and SWPPP update amendments, inspection reports and related corrective action records, copies of correspondence with the North Carolina State Permitting Agency, and a copy of the permit Notice of Termination in the binder. At project completion, the notebook becomes property of the Government. Provide the compliance notebook to the Contracting Officer.

#### 3.2.1.5 Stormwater Notice of Termination for Construction Activities

Submit a Notice of Termination to the Contracting Officer for approval once construction is complete and final stabilization has been achieved on all portions of the site for which the permittee is responsible. Once approved, submit the Notice of Termination to the appropriate state or federal agency. Prepare as-built topographic survey information required by the permitting agency for certification of the stormwater management system, and provide to the Contracting Officer.

#### 3.2.2 Erosion and Sediment Control Measures

Provide erosion and sediment control measures in accordance with state and local laws and regulations. Preserve vegetation to the maximum extent practicable.

Erosion control inspection reports may be compiled as part of a stormwater pollution prevention plan inspection reports.

##### 3.2.2.1 Erosion Control

Prevent erosion by mulching, Compost Blankets, Geotextiles, temporary slope drains,. Stabilize slopes by chemical stabilization, sodding, or such combination of these methods necessary for effective erosion control. Use of hay bales is prohibited.

##### 3.2.2.2 Sediment Control Practices

Implement sediment control practices to divert flows from exposed soils,



temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Implement sediment control practices prior to soil disturbance and prior to creating areas with concentrated flow, during the construction process to minimize erosion and sediment laden runoff. Include the following devices: silt fence, temporary diversion dikes, storm drain inlet protection, Location and details of installation and construction are indicated on the drawings.

### 3.2.3 Work Area Limits

Mark the areas that need not be disturbed under this Contract prior to commencing construction activities. Mark or fence isolated areas within the general work area that are not to be disturbed. Protect monuments and markers before construction operations commence. Where construction operations are to be conducted during darkness, any markers must be visible in the dark. Personnel must be knowledgeable of the purpose for marking and protecting particular objects.

### 3.2.4 Contractor Facilities and Work Areas

Place field offices, staging areas, stockpile storage, and temporary buildings in areas designated on the drawings or as directed by the Contracting Officer. Move or relocate the Contractor facilities only when approved by the Government. Provide erosion and sediment controls for onsite borrow and spoil areas to prevent sediment from entering nearby waters. Control temporary excavation and embankments for plant or work areas to protect adjacent areas.

### 3.2.5 Municipal Separate Storm Sewer System (MS4) Management

Comply with the Installation's MS4 permit requirements. [Comply with requirements of Section 01 57 19.01 20 SUPPLEMENTAL TEMPORARY ENVIRONMENTAL CONTROLS.](#)

## 3.3 SURFACE AND GROUNDWATER

### 3.3.1 Cofferdams, Diversions, and Dewatering

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure must be constantly controlled to maintain compliance with existing state water quality standards and designated uses of the surface water body. Comply with the State of North Carolina water quality standards and anti-degradation provisions and the Clean Water Act Section 404. Do not discharge excavation ground water to the sanitary sewer, storm drains, or to surface waters without prior specific authorization in writing from the Installation Environmental Office. Discharge of hazardous substances will not be permitted under any circumstances. Use sediment control BMPs to prevent construction site runoff from directly entering any storm drain or surface waters.

If the construction dewatering is noted or suspected of being contaminated, it may only be released to the storm drain system if the discharge is specifically permitted. Obtain authorization for any contaminated groundwater release in advance from the Installation Environmental Officer and the federal or state authority, as applicable. Discharge of hazardous substances will not be permitted under any circumstances.

### 3.3.2 Waters of the United States

Do not enter, disturb, destroy, or allow discharge of contaminants into waters of the United States. The protection of waters of the United States shown on the drawings in accordance with paragraph LICENSES AND PERMITS is the Contractor's responsibility. Authorization to enter specific waters of the United States identified does not relieve the Contractor from any obligation to protect other waters of the United States within, adjacent to, or in the vicinity of the construction site and associated boundaries.

### 3.4 PROTECTION OF CULTURAL RESOURCES

#### 3.4.1 Archaeological Resources

If, during excavation or other construction activities, any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, activities that may damage or alter such resources will be suspended. Resources covered by this paragraph include, but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. Cease all activities that may result in impact to or the destruction of these resources. Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources. The Government retains ownership and control over archaeological resources.

### 3.5 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with 40 CFR 64 and state air emission and performance laws and standards.

#### 3.5.1 Preconstruction Air Permits

Notify the Air Program Manager, through the Contracting Officer, at least 6 months prior to bringing equipment, assembled or unassembled, onto the Installation, so that air permits can be secured. Necessary permitting time must be considered in regard to construction activities. Clean Air Act (CAA) permits must be obtained prior to bringing equipment, assembled or unassembled, onto the Installation.

Confirm that these permits have been obtained.

#### 3.5.2 Oil or Dual-fuel Boilers and Furnaces

Provide product data and details for new, replacement, or relocated fuel fired boilers, heaters, or furnaces to the Installation Environmental Office (Air Program Manager) through the Contracting Officer. Data to be reported include: equipment purpose (water heater, building heat, process), manufacturer, model number, serial number, fuel type (oil type, gas type) size (MMBTU heat input). Provide in accordance with paragraph PRECONSTRUCTION AIR PERMITS.

#### 3.5.3 Burning

Burning is prohibited on the Government premises.

#### 3.5.4 Class I and II ODS Prohibition

Class I and II ODS are Government property and must be returned to the Government for appropriate management. Coordinate with the Installation Environmental Office to determine the appropriate location for turn in of all reclaimed refrigerant.

#### 3.5.5 Accidental Venting of Refrigerant

Accidental venting of a refrigerant is a release and must be reported immediately to the Contracting Officer.

#### 3.5.6 EPA Certification Requirements

Heating and air conditioning technicians must be certified through an EPA-approved program. Maintain copies of certifications at the employees' places of business; technicians must carry certification wallet cards, as provided by environmental law.

#### 3.5.7 Dust Control

Keep dust down at all times, including during nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning nonparticulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not unnecessarily shake bags of cement, concrete mortar, or plaster.

##### 3.5.7.1 Particulates

Dust particles, aerosols and gaseous by-products from construction activities, and processing and preparation of materials (such as from asphaltic batch plants) must be controlled at all times, including weekends, holidays, and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates that would exceed 40 CFR 50, state, and local air pollution standards or that would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators, or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with state and local visibility regulations.

##### 3.5.7.2 Abrasive Blasting

Blasting operations cannot be performed without prior approval of the Installation Air Program Manager. The use of silica sand is prohibited in sandblasting.

Provide tarpaulin drop cloths and windscreens to enclose abrasive blasting operations to confine and collect dust, abrasive agent, paint chips, and other debris. Perform work involving removal of hazardous material in

accordance with 29 CFR 1910.

### 3.5.8 Odors

Control odors from construction activities. The odors must be in compliance with state regulations and local ordinances and may not constitute a health hazard.

## 3.6 WASTE MINIMIZATION

Minimize the use of hazardous materials and the generation of waste. Include procedures for pollution prevention/hazardous waste minimization in the Hazardous Waste Management Section of the EPP. Obtain a copy of the installation's Pollution Prevention/Hazardous Waste Minimization Plan for reference material when preparing this part of the EPP. If no written plan exists, obtain information by contacting the Contracting Officer. Describe the anticipated types of the hazardous materials to be used in the construction when requesting information.

### 3.6.1 Salvage, Reuse and Recycle

Identify anticipated materials and waste for salvage, reuse, and recycling. Describe actions to promote material reuse, resale or recycling. To the extent practicable, all scrap metal must be sent for reuse or recycling and will not be disposed of in a landfill.

Include the name, physical address, and telephone number of the hauler, if transported by a franchised solid waste hauler. Include the destination and, unless exempted, provide a copy of the state or local permit (cover) or license for recycling.

### 3.6.2 Nonhazardous Solid Waste Diversion Report

Maintain an inventory of nonhazardous solid waste diversion and disposal of construction and demolition debris. Submit a report to the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that nonhazardous solid waste has been generated. Include the following in the report:

Construction and Demolition (C&D) Debris Disposed	(____) cubic yards or tons, as appropriate
C&D Debris Recycled	(____) cubic yards or tons, as appropriate
Total C&D Debris Generated	(____) cubic yards or tons, as appropriate
Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount)	(____) cubic yards or tons, as appropriate

### 3.7 WASTE MANAGEMENT AND DISPOSAL

#### 3.7.1 Waste Determination Documentation

Complete a Waste Determination form (provided at the pre-construction conference) for Contractor-derived wastes to be generated. All potentially hazardous solid waste streams that are not subject to a specific exclusion or exemption from the hazardous waste regulations (e.g. scrap metal, domestic sewage) or subject to special rules (lead-acid batteries and precious metals) must be characterized in accordance with the requirements of 40 CFR 261 or corresponding applicable state or local regulations. Base waste determination on user knowledge of the processes and materials used, and analytical data when necessary. Consult with the Installation environmental staff for guidance on specific requirements. Attach support documentation to the Waste Determination form. As a minimum, provide a Waste Determination form for the following waste (this listing is not inclusive): oil- and latex -based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and containers of the original materials.

#### 3.7.2 Solid Waste Management

##### 3.7.2.1 Solid Waste Management Report

Provide copies of the waste handling facilities' weight tickets, receipts, bills of sale, and other sales documentation. In lieu of sales documentation, a statement indicating the disposal location for the solid waste that is signed by an employee authorized to legally obligate or bind the firm may be submitted. The sales documentation Contractor certification must include the receiver's tax identification number and business, EPA or state registration number, along with the receiver's delivery and business addresses and telephone numbers. For each solid waste retained for the Contractor's own use, submit the information previously described in this paragraph on the solid waste disposal report. Prices paid or received do not have to be reported to the Contracting Officer unless required by other provisions or specifications of this Contract or public law.

##### 3.7.2.2 Control and Management of Solid Wastes

Pick up solid wastes, and place in covered containers that are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with non-hazardous solid waste. Transport solid waste off Government property and dispose of it in compliance with 40 CFR 260, state, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill is the minimum acceptable offsite solid waste disposal option. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Solid waste disposal offsite must comply with most stringent local, state, and federal requirements, including 40 CFR 241, 40 CFR 243, and 40 CFR 258.

Manage hazardous material used in construction, including but not limited to, aerosol cans, waste paint, cleaning solvents, contaminated brushes, and used rags, in accordance with 49 CFR 173.

### 3.7.3 Control and Management of Hazardous Waste

Do not dispose of hazardous waste on Government property. Do not discharge any waste to a sanitary sewer, storm drain, or to surface waters or conduct waste treatment or disposal on Government property without written approval of the Contracting Officer.

#### 3.7.3.1 Hazardous Waste/Debris Management

Identify construction activities that will generate hazardous waste or debris. Provide a documented waste determination for resultant waste streams. Identify, label, handle, store, and dispose of hazardous waste or debris in accordance with federal, state, and local regulations, including 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, and 40 CFR 268.

Manage hazardous waste in accordance with the approved Hazardous Waste Management Section of the EPP. Store hazardous wastes in approved containers in accordance with 49 CFR 173 and 49 CFR 178. Hazardous waste generated within the confines of Government facilities is identified as being generated by the Government. Prior to removal of any hazardous waste from Government property, hazardous waste manifests must be signed by personnel from the Installation Environmental Office. Do not bring hazardous waste onto Government property. Provide the Contracting Officer with a copy of waste determination documentation for any solid waste streams that have any potential to be hazardous waste or contain any chemical constituents listed in 40 CFR 372-SUBPART D.

#### 3.7.3.2 Waste Storage/Satellite Accumulation/90 Day Storage Areas

Accumulate hazardous waste at satellite accumulation points and in compliance with 40 CFR 262.34 and applicable state or local regulations. Individual waste streams will be limited to 55 gallons of accumulation (or 1 quart for acutely hazardous wastes). If the Contractor expects to generate hazardous waste at a rate and quantity that makes satellite accumulation impractical, the Contractor may request a temporary 90 day accumulation point be established. Submit a request in writing to the Contracting Officer and provide the following information (Attach Site Plan to the Request):

Contract Number	(_____)
Contractor	(_____)
Haz/Waste or Regulated Waste POC	(_____)
Phone Number	(_____)
Type of Waste	(_____)
Source of Waste	(_____)
Emergency POC	(_____)
Phone Number	(_____)
Location of the Site	(_____)

Attach a Waste Determination form for the expected waste streams. Allow 10 working days for processing this request. Additional compliance

requirements (e.g. training and contingency planning) that may be required are the responsibility of the Contractor. Barricade the designated area where waste is being stored and post a sign identifying as follows:

"DANGER - UNAUTHORIZED PERSONNEL KEEP OUT"

### 3.7.3.3 Hazardous Waste Disposal

#### 3.7.3.3.1 Responsibilities for Contractor's Disposal

Provide hazardous waste manifest to the Installations Environmental Office for review, approval, and signature prior to shipping waste off Government property.

##### 3.7.3.3.1.1 Services

Provide service necessary for the final treatment or disposal of the hazardous material or waste in accordance with 40 CFR 260, local, and state, laws and regulations, and the terms and conditions of the Contract within 60 days after the materials have been generated. These services include necessary personnel, labor, transportation, packaging, detailed analysis (if required for disposal or transportation, include manifesting or complete waste profile sheets, equipment, and compile documentation).

##### 3.7.3.3.1.2 Samples

Obtain a representative sample of the material generated for each job done to provide waste stream determination.

##### 3.7.3.3.1.3 Analysis

Analyze each sample taken and provide analytical results to the Contracting Officer. See paragraph WASTE DETERMINATION DOCUMENTATION.

##### 3.7.3.3.1.4 Labeling

Determine the Department of Transportation's (DOT's) proper shipping names for waste (each container requiring disposal) and demonstrate to the Contracting Officer how this determination is developed and supported by the sampling and analysis requirements contained herein. Label all containers of hazardous waste with the words "Hazardous Waste" or other words to describe the contents of the container in accordance with 40 CFR 262.31 and applicable state or local regulations.

### 3.7.3.4 Universal Waste Management

Manage the following categories of universal waste in accordance with federal, state, and local requirements and installation instructions:

- a. Batteries as described in 40 CFR 273.2
- b. Lamps as described in 40 CFR 273.5
- c. Mercury-containing equipment as described in 40 CFR 273.4
- d. Section 01 57 19.01 20 SUPPLEMENTAL TEMPORARY ENVIRONMENTAL CONTROLS
- e. Aerosol Cans

Mercury is prohibited in the construction of this facility, unless specified otherwise, and with the exception of mercury vapor lamps and fluorescent lamps. Dumping of mercury-containing materials and devices such as mercury vapor lamps, fluorescent lamps, and mercury switches, in

rubbish containers is prohibited. Remove without breaking, pack to prevent breakage, and transport out of the activity in an unbroken condition for disposal as directed.

#### 3.7.3.5 Electronics End-of-Life Management

Recycle or dispose of electronics waste, including, but not limited to, used electronic devices such computers, monitors, hard-copy devices, televisions, mobile devices, in accordance with 40 CFR 260-262, state, and local requirements, and installation instructions.

#### 3.7.3.6 Disposal Documentation for Hazardous and Regulated Waste

Contact the Contracting Officer for the facility RCRA identification number that is to be used on each manifest.

Submit a copy of the applicable EPA and or state permit(s), manifest(s), or license(s) for transportation, treatment, storage, and disposal of hazardous and regulated waste by permitted facilities. Hazardous or toxic waste manifests must be reviewed, signed, and approved by the Contracting Officer before the Contractor may ship waste. To obtain specific disposal instructions, coordinate with the Installation Environmental Office. Refer to Section 01 57 19.01 20 SUPPLEMENTAL TEMPORARY ENVIRONMENTAL CONTROLS for the Installation Point of Contact information.

#### 3.7.4 Releases/Spills of Oil and Hazardous Substances

##### 3.7.4.1 Response and Notifications

Exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, sewage, regulated gas, petroleum, lubrication oil, and other substances regulated in accordance with 40 CFR 300. Maintain spill cleanup equipment and materials at the work site. In the event of a spill, take prompt, effective action to stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Installation Fire Department, the Installation Command Duty Officer, the Installation Environmental Office, the Contracting Officer and the state or local authority.

Submit verbal and written notifications as required by the federal (40 CFR 300.125 and 40 CFR 355), state, local regulations and instructions. Provide copies of the written notification and documentation that a verbal notification was made within 20 days. Spill response must be in accordance with 40 CFR 300 and applicable state and local regulations. Contain and clean up these spills without cost to the Government.

##### 3.7.4.2 Clean Up

Clean up hazardous and non-hazardous waste spills. Reimburse the Government for costs incurred including sample analysis materials, clothing, equipment, and labor if the Government will initiate its own spill cleanup procedures, for Contractor- responsible spills, when: Spill cleanup procedures have not begun within one hour of spill discovery/occurrence; or, in the Government's judgment, spill cleanup is inadequate and the spill remains a threat to human health or the environment.



### 3.7.5 Mercury Materials

Immediately report to the Environmental Office and the Contracting Officer instances of breakage or mercury spillage. Clean mercury spill area to the satisfaction of the Contracting Officer.

Do not recycle a mercury spill cleanup; manage it as a hazardous waste for disposal.

### 3.7.6 Wastewater

#### 3.7.6.1 Disposal of wastewater must be as specified below.

##### 3.7.6.1.1 Treatment

Do not allow wastewater from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, and forms to enter water ways or to be discharged prior to being treated to remove pollutants. Dispose of the construction- related waste water off-Government property in accordance with 40 CFR 403, state, regional, and local laws and regulations.

##### 3.7.6.1.2 Surface Discharge

For discharge of ground water, Surface discharge in accordance with federal, state, and local laws and regulations. Surface discharge in accordance with the requirements of the NPDES or state STORMWATER DISCHARGES FROM CONSTRUCTION SITES permit.

##### 3.7.6.1.3 Land Application

Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing must be land- applied in accordance with federal, state, and local laws and regulations for land application.

### 3.8 HAZARDOUS MATERIAL MANAGEMENT

Include hazardous material control procedures in the Safety Plan, in accordance with Section 01 35 26.05 20 GOVERNMENTAL SAFETY REQUIREMENTS FOR DESIGN-BUILD. Address procedures and proper handling of hazardous materials, including the appropriate transportation requirements. Do not bring hazardous material onto Government property that does not directly relate to requirements for the performance of this contract. Submit an SDS and estimated quantities to be used for each hazardous material to the Contracting Officer prior to bringing the material on the installation. Typical materials requiring SDS and quantity reporting include, but are not limited to, oil and latex based painting and caulking products, solvents, adhesives, aerosol, and petroleum products. Use hazardous materials in a manner that minimizes the amount of hazardous waste generated. Containers of hazardous materials must have National Fire Protection Association labels or their equivalent. Certify that hazardous materials removed from the site are hazardous materials and do not meet the definition of hazardous waste, in accordance with 40 CFR 261.

#### 3.8.1 Contractor Hazardous Material Inventory Log

Submit the "Contractor Hazardous Material Inventory Log"(found at: <http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/>

orms-graphics-tables), which provides information required by (EPCRA Sections 312 and 313) along with corresponding SDS, to the Contracting Officer at the start and at the end of construction (30 days from final acceptance), and update no later than January 31 of each calendar year during the life of the contract. Keep copies of the SDSs for hazardous materials onsite. At the end of the project, provide the Contracting Officer with copies of the SDSs, and the maximum quantity of each material that was present at the site at any one time, the dates the material was present, the amount of each material that was used during the project, and how the material was used.

The Contracting Officer may request documentation for any spills or releases, environmental reports, or off-site transfers.

### 3.9 PREVIOUSLY USED EQUIPMENT

Clean previously used construction equipment prior to bringing it onto the project site. Equipment must be free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. Consult with the U.S. Department of Agriculture jurisdictional office for additional cleaning requirements.

### 3.10 CONTROL AND MANAGEMENT OF ASBESTOS-CONTAINING MATERIAL (ACM)

Manage and dispose of asbestos- containing waste in accordance with 40 CFR 61. Refer to Section 02 82 16 REMOVAL AND DISPOSAL OF ASBESTOS MATERIALS. Manifest asbestos-containing waste and provide the manifest to the Contracting Officer. Notifications to the state and Installation Asbestos Program Manager are required before starting any asbestos work.

### 3.11 CONTROL AND MANAGEMENT OF LEAD-BASED PAINT (LBP)

Manage and dispose of lead-contaminated waste in accordance with 40 CFR 745 and Section 02 82 33.13 REMOVAL AND DISPOSAL OF MATERIALS COATED WITH LEAD-CONTAINING PAINT. Manifest any lead-contaminated waste and provide the manifest to the Contracting Officer.

### 3.12 CONTROL AND MANAGEMENT OF POLYCHLORINATED BIPHENYLS (PCBS)

Manage and dispose of PCB-contaminated waste in accordance with 40 CFR 761 .

### 3.13 CONTROL AND MANAGEMENT OF LIGHTING BALLAST AND LAMPS CONTAINING PCBS

Manage and dispose of contaminated waste in accordance with 40 CFR 761.

### 3.14 MILITARY MUNITIONS

In the event military munitions, as defined in 40 CFR 260, are discovered or uncovered, immediately stop work in that area and immediately inform the Contracting Officer.

#### 3.14.1 Emergency Unexploded Ordinance (UXO) Response

In the event UXOs, as defined in 40 CFR 260, are encountered during construction activities, stop work immediately and have all personnel clear the immediate area. Immediately report the situation to the ROICC or Contracting Representative, who will then report the item to Range Control and Explosive Ordnance Disposal (EOD).

### 3.14.2 UXO Safety Awareness Training

Complete 3R (Recognize, Retreat, Report) UXO Safety Awareness Training prior to working in known contaminated areas at MCB Camp Lejeune. Refer to the website <http://www.lejeune.marines.mil/OfficesStaff/EnvironmentalMgmt/TrainingVideo.aspx> for the training and the latest edition of the Camp Lejeune Contractor Environmental Guide for guidance and information.

### 3.15 PETROLEUM, OIL, LUBRICANT (POL) STORAGE AND FUELING

POL products include flammable or combustible liquids, such as gasoline, diesel, lubricating oil, used engine oil, hydraulic oil, mineral oil, and cooking oil. Store POL products and fuel equipment and motor vehicles in a manner that affords the maximum protection against spills into the environment. Manage and store POL products in accordance with EPA 40 CFR 112, and other federal, state, regional, and local laws and regulations. Use secondary containments, dikes, curbs, and other barriers, to prevent POL products from spilling and entering the ground, storm or sewer drains, stormwater ditches or canals, or navigable waters of the United States. Describe in the EPP (see paragraph ENVIRONMENTAL PROTECTION PLAN) how POL tanks and containers must be stored, managed, and inspected and what protections must be provided. Storage of oil, including fuel, on the project site is not allowed. Fuel must be brought to the project site each day that work is performed.

#### 3.15.1 Used Oil Management

Manage used oil generated on site in accordance with 40 CFR 279. Determine if any used oil generated while onsite exhibits a characteristic of hazardous waste. Used oil containing 1,000 parts per million of solvents is considered a hazardous waste and disposed of at the Contractor's expense. Used oil mixed with a hazardous waste is also considered a hazardous waste. Dispose in accordance with paragraph HAZARDOUS WASTE DISPOSAL.

### 3.16 INADVERTENT DISCOVERY OF PETROLEUM-CONTAMINATED SOIL OR HAZARDOUS WASTES

If petroleum-contaminated soil, or suspected hazardous waste is found during construction that was not identified in the Contract documents, immediately notify the Contracting Officer and notify base FESD by calling 911 or (910) 451-3333.. Do not disturb this material until authorized by the Contracting Officer.

### 3.17 CHLORDANE

Evaluate excess soils and concrete foundation debris generated during the demolition of housing units or other wooden structures for the presence of chlordane or other pesticides prior to reuse or final disposal.

### 3.18 SOUND INTRUSION

Make the maximum use of low-noise emission products, as certified by the EPA. Blasting or use of explosives are not permitted without written permission from the Contracting Officer, and then only during the designated times. Confine pile-driving operations to the period between 8 a.m. and 6 p.m., Monday through Friday, exclusive of holidays, unless otherwise specified.

Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the State of North Carolina rules.

### 3.19 POST CONSTRUCTION CLEANUP

Clean up areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing by the Contracting Officer, remove traces of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade parking area and similar temporarily used areas to conform with surrounding contours.

-- End of Section --

SECTION 01 57 19.01 20

SUPPLEMENTAL TEMPORARY ENVIRONMENTAL CONTROLS

05/16

PART 1 GENERAL

1.1 MID-ATLANTIC

Comply with the following state, regional, and local requirements which supplement Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

1.1.1 North Carolina

1.1.1.1 MCB Camp Lejeune

1.1.1.1.1 Removal of Waste

Remove and dispose of rubbish and debris from Government property. Provide 24-hour advance written notice to the Contracting Office of Contractor's intention to dispose rubbish and debris off base. Disposal at sites or landfills not holding a valid state of North Carolina permit is specifically prohibited. The prohibition also applies to sites where a permit may have been applied for but not yet obtained. If construction debris has been disposed off-base outside the parameter of this paragraph at a site without state permits or not in accordance with regulatory requirements, remove, transport, and relocate the debris to a state-approved site at Contractor expense. Pay any required fines, penalties, or fees related to the illegal disposal of construction debris. Metal will not be accepted at the Base Sanitary Landfill. Materials that may be deposited in the landfill include the following:

1. Contractors may ONLY use the Camp Lejeune Sanitary Landfill for the disposal of asbestos containing materials, building products with tightly adhered lead containing paint, non-contaminated clean dirt and clean gravel. The hours of operation are 0730-1530.
2. Delivery of acceptable materials (identified above) shall be by appointment only. Appointments made by phone at 910-451-5011 or 910-451-2946. ALL other contractor generated material shall be weighed through the Base Landfill scales before being removed from the Base. Contractors utilizing the base scales will require Contracting Officer assisted pre-registration with the Landfill Manager.
3. The Contracting Officer will register the contract via E-mail, with the Base Landfill. All haul vehicles will maintain a secure vehicle placard as a condition to utilize the scale. E-mail the contract information to the Landfill Clerk, including the name on the Prime Contractor, contract number, job name/description, completion date and whether or not any of the above materials will be delivered to the Landfill.
4. As of May 01 2014 the above supersedes any other statements/specifications pertaining to the delivery of materials to the Base Landfill.

1.1.1.1.2 Surplus Soils Disposal for Camp Lejeune

No soil from construction sites shall leave Marine Corps Base Camp Lejeune or Marine Corps Air Station property, with the exception of environmental remedial activities. Any surplus soil that cannot be reused on its originating site shall be transported to one of the following locations:

- a. Areas managed by G-3/5 for reuse on training areas for various maintenance activities:

- 3.1 acre storage east of OP-4 on Sneads Ferry Road.

- 3.5 acre storage within TLZ Condor off Verona Loop Road.

- b. Prior to delivering soil to these stockpile locations, the following must be conducted:

Coordinate with G-3/5, Mr. Dave Lynch or Mr. Bill VanPelt, MCI EAST-MCB CAMLEJ at (910) 451-5772/8799, to determine capacity available at the storage locations.

All soils will be clear of deleterious organic material such as roots and timber, and construction debris.

Contact POCs listed above 7 to 10 days in advance to coordinate delivery of material at the storage locations.

NOTE: Soil contaminated with debris or chemicals cannot be disposed at the stockpile locations. If contaminated soils are suspected or confirmed through presence of UXO, odors, or visual staining, affected soils must be properly tested, manifested, and disposed of in accordance with RCRA regulations. Contact Base EMD, ER Program Manager, for more information.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 01 58 00

PROJECT IDENTIFICATION

08/18

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN WOOD PROTECTION ASSOCIATION (AWPA)

AWPA C1 (2003) All Timber Products - Preservative Treatment by Pressure Processes

AWPA C2 (2003) Lumber, Timber, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTIONSUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Preliminary Drawing Indicating Layout And Text Content; G

1.3 QUALITY ASSURANCE

1.4 PROJECT SIGN

Prior to initiating any work on site, provide one project identification sign at the location designated. Construct the sign in accordance with project sign detail, which can be downloaded at: <https://www.wbdg.org/FFC/NAVGRAPH/graphdoc.pdf>. Maintain sign throughout the life of the project. Upon completion of the project, remove the sign from the site.

1.4.1 Project Identification Signboard (Navy)

A project identification signboard shall be provided in accordance with attached Plates 1, 3, and 4. Provide preliminary drawing indicating layout and text content. The signboard shall be provided at a conspicuous location on the job site where directed by the Contracting Officer.

- a. The field of the sign shall consist of a 4 by 8 foot sheet of grade B-B medium density overlaid exterior plywood.
- b. Lumber shall be B or better Southern pine, pressure-preservative treated in accordance with AWPA C1 and AWPA C2. Nails shall be aluminum or galvanized steel.

- c. The entire signboard and supports shall be given one coat of exterior alkyd primer and two coats of exterior alkyd enamel paint. The lettering and sign work shall be performed by a skilled sign painter using paint known in the trade as bulletin colors. The colors, lettering sizes, and lettering styles shall be as indicated. Where preservative-treated lumber is required, utilize only cured pressure-treated wood which has had the chemicals leached from the surface of the wood prior to painting.
- d. Use spray applied automotive quality high gloss acrylic white enamel paint as background for the NAVFAC logo. NAVFAC logo shall be an applied 2 mil film sticker/decal with either transparent or white background or paint the logo by stencil onto the sign. The weather resistant sticker/decal film shall be rated for a minimum of 2-year exterior vertical exposure. The self-adhering sticker shall be mounted to the sign with pressure sensitive, permanent acrylic adhesive. Shop cut sticker/decal to rectangular shape and provide pull-off backing sheet on adhesive side of design sticker for shipping.
- e. Sign paint colors (manufacturer's numbers/types listed below for color identification only)
  - (1) Blue = To match dark blue color in the NAVFAC logo.
  - (2) White = To match Brilliant White color in the NAVFAC logo.
- f. NAVFAC logo must retain proportions and design integrity. NAVFAC logos in electronic format may be obtained from the NAVFAC web portal via the following link:  
[https://www.navfac.navy.mil/about\\_us/logos\\_and\\_seals.html](https://www.navfac.navy.mil/about_us/logos_and_seals.html) . Use the following to choose color values for the paint to be used:
  - (1) Dark Blue = equivalent to CMYK values 100, 72, 0, 8 .
  - (2) Light Blue = equivalent to CMYK values 69, 34, 0, 0.
  - (3) Cyan = equivalent to CMYK values 100, 9, 0, 6.
  - (4) Yellow = equivalent to CMYK values 0.9,94, 0.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --



SECTION 01 59 00

TEMPORARY TRAILERS FOR DISPLACED TENANTS

01/07

PART 1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section 01 33 00.05 20,  
"Construction Submittal Procedures."

SD-03 Product Data

Trailer Manufacturer's Literature

1.2 SCHEDULING THE WORK

The Contractor shall provide and install office trailer(s) as specified herein complete and ready for occupancy, 4 days before actual start of construction inside the Building(s) included in this RFP.

1.2.1 Upon Request or After Completion

Contractor must provide at least 30 days or longer if duration indicated in PART 3 after building BOD for tenant movement from temporary trailers to newly renovated facilities.

Upon request by the Contracting Officer or after completion of all work, the Contractor shall have three weeks to remove the trailer(s), including all utility services, steps, foundations, and other associated materials. The grounds shall be restored to the original condition. Repair to original condition any damage to grassed area caused by mobile building or by anchoring.

PART 2 PRODUCTS

2.1 TRAILER

Trailer shall conform to the following minimum requirements:

- a. Size: double wide trailer(s) of minimum size 24 feet by 60 feet each and quadruple wide trailer(s) of minimum size 48 feet by 60 feet.
- b. Floor Covering: Floor shall be carpeted or vinyl composition tile.
- c. Restrooms: 2 restrooms with vinyl floors, per trailer complex.

2.1.1 Construction Requirements

Each trailer shall be structurally sound, weathertight enclosures for residential use. Conform to the minimum requirements.

- a. 2 inch X 4 inch wall construction
- b. 2 inch X 6 inch floor joists with 5/8-inch plywood decking
- c. R-11 insulation in floor and walls
- d. R-14 insulation in ceiling
- e. Two entry doors with locks and three keys per lock.
- f. Windows with operable sash
- g. Interior materials shall be sheet type materials, pre-finished or painted; exterior material shall be weather resistant.
- h. Provide consistent color scheme on interior and exterior as approved by the Contracting Officer.
- i. Steps and Landing: Durable nonslip materials such as checkered plate metal, treated wood or concrete stairs and landing. Landing at trailer level of size adequate for person to stand on landing and open the door. Railing on both sides of steps and two sides of landing.

#### 2.1.2 Mechanical and Electrical Minimum Requirements

- a. HVAC as required to maintain interior conditions between 72 - 78 degrees F DB and 40 - 60% RH. With exterior conditions between 23 degrees F DB (winter) and 90 degrees F DB and 79 degrees F WB (summer). Outside air shall be introduced at the rate of 0.125 CMB/SF of conditioned space.
- b. Toilet Exhaust Air System: Provide 25 CPM exhaust for each toilet room. Switch with the toilet light.
- c. 150 amp - 8 circuit panel
- d. 120 volt lighting, ceiling mounted
- e. 120 volt duplex wall receptacles spaced 6 feet o.c. on interior walls and special purpose receptacles as indicated.
- f. Exterior light at entrance doors
- g. The Government will supply and install telephones.

#### 2.2 FIRE EXTINGUISHER

Provide appropriate type and wall mount on interior adjacent to exterior door.

### PART 3 EXECUTION

#### 3.1 PREPARATION

##### 3.1.1 Foundation

Provide foundation for trailer(s); conform to applicable codes.

### 3.2 INSTALLATION

Install trailer(s); provide full skirting and anchoring for 115 mph wind zone; conform to applicable codes. Connect indicated utilities.

#### 3.2.1 Steps and Landing

Provide two sets of steps and landing for each mobile building.

#### 3.2.2 Plumbing and Electrical Hook-Up

Provide complete plumbing and electrical hookup to mobile buildings. Supply all necessary parts and connections and conform to all applicable codes.

#### 3.2.3 Damages

Government will not be responsible for damage to trailers from installation of phones, moving furniture, minor modification and normal wear and tear.

-- End of Section --

SECTION 01 60 00

REQUIREMENTS FOR PESTICIDE AND HERBICIDE COORDINATION

02/12

PART 1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section 01 33 00.05 20,  
"Construction Submittal Procedures.":

SD-07 Certificates

Certificate of North Carolina Licensed Applicator

SD-11 Closeout Submittals

Completed Field Pesticide/Herbicide Management Record Form

1.2 QUALITY ASSURANCE

1.2.1 Certificate of North Carolina Licensed Applicator

A North Carolina licensed applicator is required. Submit a copy of the certificate(s) to the Base Pest Management Coordinator (PMC) through the Contracting Officer.

PART 2 PRODUCTS

2.1 PESTICIDE/HERBICIDE LIST FOR CAMP LEJEUNE

The Contractor shall comply with Base Regulations and use only approved pesticides listed on the current "Approved Pesticide List for Camp Lejeune, NC". The attached document is current as of the date indicated but may be revised at any time. The approved list that is current at the time of application must be utilized. Contact the Contract Officer to obtain the current approved list.

PART 3 EXECUTION

3.1 COORDINATION WITH BASE PEST MANAGEMENT COORDINATOR (PMC)

Contractor shall coordinate with the PMC before proceeding with any pesticide/herbicide application.

3.2 FIELD PESTICIDE/HERBICIDE MANAGEMENT RECORD FORM

Following the pesticide/herbicide application, the Contractor shall complete the attached Field Pesticide/Herbicide Management Record Form and submit to the Base Pest Management Coordinator (PMC) through the Contracting Officer. The completed form(s) shall be submitted within 15 days after application.

Open Mess Hall Repair (2615)  
Marine Corps Base, Camp Lejeune

Project # 1604F

-- End of Section --

SECTION 01 74 19.05 20

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT FOR DESIGN-BUILD  
03/15

PART 1 GENERAL

1.1 GOVERNMENT POLICY

Government policy is to apply sound environmental principles in the design, construction and use of facilities. As part of the implementation of that policy the Contractor shall: (1) practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction and demolition waste from landfills and incinerators and to facilitate their recycling or reuse.

1.2 PLAN

A waste management plan shall be submitted within 15 days after notice to proceed and prior to initiating any site preparation work. The plan shall include the following:

- a. Name of individuals on the Contractor's staff responsible for waste prevention and management.
- b. Actions that will be taken to reduce solid waste generation.
- c. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas and equipment to be used for processing, sorting, and temporary storage of wastes.
- d. Characterization, including estimated types and quantities, of the waste to be generated.
- e. Actions that will be taken to divert at least 50% of the non-hazardous solid wastes (including waste from construction and demolition operations) from the waste stream. Report actual diversion rates during construction and demolition.
- f. Name of landfill and/or incinerator to be used and the estimated costs for use, assuming that there would be no salvage or recycling on the project.
- g. Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and organizations that accept used materials such as materials exchange networks and Habitat for Humanity.
- h. List of specific waste materials that will be salvaged for resale, salvaged and reused, or recycled. Recycling facilities that will be used shall be identified. Provide percentage of non-hazardous construction and demolition waste materials that have been diverted from the waste stream.
- i. Identification of materials that cannot be recycled/reused with an explanation or justification.
- j. Anticipated net cost savings determined by subtracting Contractor

program management costs and the cost of disposal from the revenue generated by sale of the materials and the incineration and/or landfill cost avoidance.

### 1.3 RECORDS

Records shall be maintained to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed by landfill or incineration. Report with monthly invoicing the tons diverted, the tons sent to the landfill, cost for each, and the monthly diversion rate. The records shall be made available to the Contracting Officer during construction, and a copy of the records shall be delivered to the Contracting Officer upon completion of the construction.

### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES:

#### SD-01 Preconstruction Submittals

Waste Management Plan; G

#### SD-11 Closeout Submittals

Records; S

### 1.5 DISPOSAL

Except as otherwise specified in other sections of the specifications, disposal must be in accordance with the following:

#### 1.5.1 Reuse

Give first consideration to salvage for reuse since little or no re-processing is necessary for this method, and less pollution is created when items are reused in their original form. Sale or donation of waste suitable for reuse shall be considered. Salvaged materials, other than those specified in other sections to be salvaged and reinstalled, shall not be used in this project.

#### 1.5.2 Recycle

Waste materials not suitable for reuse, but having value as being recyclable, shall be made available for recycling whenever economically feasible.

#### 1.5.3 Waste

Materials with no practical use or economic benefit shall be disposed at an off-base landfill or incinerator.

#### 1.5.4 Return

Set aside and protect mis-delivered and substandard products and materials

and return to supplier for credit.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.1 WASTE MANAGEMENT PLAN

Submit a waste management plan within 15 days after contract award and not less than 10 days before the pre-demolition meeting and prior to initiating any site preparation work. The plan must demonstrate how the project waste diversion goal is met and plan must include the following:

- a. Name of individuals on the Contractor's staff responsible for waste prevention and management.
- b. Actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.
- c. Description of the regular meetings to be held to address waste management.
- d. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas on site and equipment to be used for processing, sorting, and temporary storage of wastes.
- e. Characterization, including estimate types and quantities, of the waste to be generated.
- f. Name of landfill and/or incinerator to be used and the estimated costs for use, assuming that there would be no salvage or recycling on the project.
- g. Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and organizations that accept used materials such as materials exchange networks and Habitat for Humanity. Include the name, location, and phone number for each reuse facility to be used, and provide a copy of the permit or license for each facility.
- h. List of specific waste materials that will be salvaged for resale, salvaged and reused, or recycled. Identify recycling facilities that will be used. Provide percentage of non-hazardous construction and demolition waste materials that have been diverted from the waste stream.
- i. Identification of materials that cannot be recycled/reused with an explanation or justification.
- j. Description of the means by which any waste materials identified in item (h) above will be protected from contamination.
- k. Description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site).



- l. Anticipated net cost savings determined by subtracting Contractor program management costs and the cost of disposal from the revenue generated by sale of the materials and the incineration or landfill cost avoidance.
- m. Actions that will be taken to divert at least the required amount of non-hazardous solid wastes (including waste from construction and demolition operations) from the waste stream. Report actual diversion rates during construction and demolition.

### 3.2 RECORDS

Maintained records to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed by landfill or incineration. Report with monthly invoicing the tons diverted, the tons sent to the landfill, cost for each, and the monthly diversion rate. Make the records available to the Contracting Officer during construction, and a copy of the records must be delivered to the Contracting Officer upon completion of the construction included in the Sustainability Notebook.

-- End of Section --

SECTION 01 78 00

CLOSEOUT SUBMITTALS

08/11

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM E1971 (2005; R 2011) Standard Guide for Stewardship for the Cleaning of Commercial and Institutional Buildings

GREEN SEAL (GS)

GS-37 (2017) Cleaning Products for Industrial and Institutional Use

U.S. DEPARTMENT OF DEFENSE (DOD)

FC 1-300-09N (2014; with Change 2) Navy and Marine Corps Design Procedures

UFC 1-300-08 (2009, with Change 2) Criteria for Transfer and Acceptance of DoD Real Property

1.2 DEFINITIONS

1.2.1 As-Built Drawings

As-built drawings are developed and maintained by the Contractor and depict actual conditions, including deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to Contractor submitted Requests for Information; direction from the Contracting Officer; designs which are the responsibility of the Contractor, and differing site conditions. Maintain the as-builts throughout construction as red-lined hard copies on site. These files serve as the basis for the creation of the record drawings.

1.2.2 Record Drawings

The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

1.3 SOURCE DRAWING FILES

Request the full set of electronic drawings, in the source format, for Record Drawing preparation, after award and at least 30 days prior to required use.

#### 1.3.1 Terms and Conditions

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

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

#### 1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20, "Construction Submittal Procedures.":

##### SD-03 Product Data

Warranty Management Plan

Warranty Tags

Final Cleaning

Spare Parts Data

##### SD-08 Manufacturer's Instructions

Posted Instructions

##### SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals; G

##### SD-11 Closeout Submittals

As-Built Drawings; G

Record Drawings; G

As-Built Record of Equipment and Materials

Interim DD FORM 1354; G

Checklist for DD FORM 1354; G

#### 1.5 SPARE PARTS DATA

Submit two copies of the Spare Parts Data list.

- a. Indicate manufacturer's name, part number, nomenclature, and stock level required for maintenance and repair. List those items that may be standard to the normal maintenance of the system.

#### 1.6 WARRANTY MANAGEMENT

##### 1.6.1 Warranty Management Plan

Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction. At least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan must be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Warranty information made available during the construction phase must be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period will begin on the date of project acceptance and continue for the full product warranty period. A joint 4 month and 9 month warranty inspection will be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative. Include within the warranty management plan, but not limited to, the following:

- a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.
- b. Furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.
- c. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.
- d. As-Built Record of Equipment and Materials list for each warranted equipment, item, feature of construction or system indicating:

- (1) Name of item.
- (2) Model and serial numbers.
- (3) Location where installed.
- (4) Name and phone numbers of manufacturers or suppliers.
- (5) Names, addresses and telephone numbers of sources of spare parts.
- (6) Warranties and terms of warranty. Include one-year overall warranty of construction, including the starting date of warranty of construction. Items which have extended warranties must be indicated with separate warranty expiration dates.
- (7) Cross-reference to warranty certificates as applicable.
- (8) Starting point and duration of warranty period.
- (9) Summary of maintenance procedures required to continue the warranty in force.
- (10) Cross-reference to specific pertinent Operation and Maintenance manuals.
- (11) Organization, names and phone numbers of persons to call for warranty service.
- (12) Typical response time and repair time expected for various warranted equipment.

- e. The plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.
- f. Procedure and status of tagging of all equipment covered by extended warranties.
- g. Copies of [instructions](#) to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

#### 1.6.2 Performance Bond

[The Performance Bond must remain effective throughout the construction period .](#)

- a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.
- b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.
- c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Contracting Officer to proceed against the Contractor.

#### 1.6.3 Pre-Warranty Conference

[Prior to contract completion, and at a time designated by the Contracting Officer, meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable](#)

time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty will be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, be continuously available, and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

#### 1.6.4 Warranty Tags

At the time of installation, tag each warranted item with a durable, oil and water resistant tag approved by the Contracting Officer. Attach each tag with a copper wire and spray with a silicone waterproof coating. Also, submit two record copies of the warranty tags showing the layout and design. The date of acceptance and the QC signature must remain blank until the project is accepted for beneficial occupancy.

Furnish with each warranty the name, address, and telephone number of the guarantor's representative nearest to the location where the equipment and appliances are installed. The guarantor's representative, upon request of the station representative, shall honor the warranty during the warranty period, and shall provide the services prescribed by the terms of the warranty.

Show the following information on the tag.

Type of product/material	
Model number	
Serial number	
Contract number	
Warranty period from/to	
Inspector's signature	
Construction Contractor	
Address	
Telephone number	
Warranty contact	
Address	

Telephone number	
Warranty response time priority code	
WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.	

PART 2 PRODUCTS

PART 3 EXECUTION

3.1 AS-BUILT DRAWINGS

Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings. At a minimum of 30 days prior to Beneficial Occupancy Date (BOD), certify both sets of as-built drawings as correct, sign, and submit the As-Built Drawings for Contracting Officer approval.

3.1.1 Markup Guidelines

Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the As-Built drawing. Show what was changed, how it was changed, where item(s) were relocated and change related details. These working as-built markup prints must be neat, legible and accurate as follows:

- a. Use base colors of red, green, and blue. Color code for changes as follows:
  - (1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.
  - (2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.
  - (3) Additions (Green) - Added items, lettering in notes and leaders.
- b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.
- c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.
- d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.
- e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.
- f. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules, notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.

- g. For deletions, cross out all features, data and captions that relate to that revision.
- h. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with leaders to the applicable location.
- i. Indicate one of the following when attaching a print or sketch to a markup print:
  - 1) Add an entire drawing to contract drawings
  - 2) Change the contract drawing to show
  - 3) Provided for reference only to further detail the initial design.
- j. Incorporate all shop and fabrication drawings into the markup drawings.

### 3.1.2 As-Built Drawings Content

Show on the as-built drawings, but not limited to, the following information:

- a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.
- b. The location and dimensions of any changes within the building structure.
- c. Layout and schematic drawings of electrical circuits and piping.
- d. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.
- e. Changes in details of design or additional information obtained from working drawings specified to be prepared or furnished by the Contractor; including but not limited to shop drawings, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment, and foundations.
- f. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.
- g. Changes or Revisions which result from the final inspection.
- h. Where contract drawings or specifications present options, show only the option selected for construction on the working as-built markup drawings.
- i. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, furnish a



contour map of the final borrow pit/spoil area elevations.

- j. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.
- k. Changes in location of equipment and architectural features.
- j. Modifications (include within change order price the cost to change working as-built markup drawings to reflect modifications) and compliance with FC 1-300-09N procedures.
- l. Actual location of anchors, construction and control joints, etc., in concrete.
- m. Unusual or uncharted obstructions that are encountered in the contract work area during construction.
- n. Location, extent, thickness, and size of stone protection particularly where it will be normally submerged by water.

### 3.2 RECORD DRAWINGS

Prepare and provide Record Drawings in accordance with FC 1-300-09N. Provide 2 copies of Record Drawings on two separate CDs or DVDs 30 days after BOD.

### 3.3 OPERATION AND MAINTENANCE MANUALS

Provide project operation and maintenance manuals as specified in Section 01 78 23 OPERATION AND MAINTENANCE MANUALS DATA. Provide four electronic copies of the Operation and Maintenance Manual files. Submit to the Contracting Officer for approval within 60 calendar days of the Beneficial Occupancy Date (BOD). Update and resubmit files for final approval at BOD.

### 3.4 CLEANUP

Provide final cleaning in accordance with ASTM E1971 and submit two copies of the listing of completed final clean-up items. Leave premises "broom clean." Comply with GS-37 for general purpose cleaning and bathroom cleaning. Use only nonhazardous cleaning materials, including natural cleaning materials, in the final cleanup. Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Replace filters of operating equipment and comply with the Indoor Air Quality (IAQ) Management Plan. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site. Recycle, salvage, and return construction and demolition waste from project in accordance with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, and 01 74 19.05 20 CONSTRUCTION WASTE MANAGEMENT FOR DESIGN-BUILD.

### 3.5 REAL PROPERTY RECORD

Near the completion of Project, but a minimum of 60 days prior to final acceptance of the work, complete, update draft DD FORM 1354 attached to this section, and submit an accounting of all installed property with

Interim DD FORM 1354. Include any additional assets, improvements, and alterations from the Draft DD FORM 1354. Contact the Contracting Officer for any project specific information necessary to complete the DD FORM 1354. Refer to UFC 1-300-08 for instruction on completing the DD FORM 1354. For convenience, a blank fillable PDF DD FORM 1354 may be obtained at the following link:

[www.esd.whs.mil/Portals/54/Documents/DD/forms/dd/dd1354.pdf](http://www.esd.whs.mil/Portals/54/Documents/DD/forms/dd/dd1354.pdf)

Submit the completed Checklist for DD FORM 1354 of Installed Building Equipment items. Attach this list to the updated DD FORM 1354.

-- End of Section --

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

08/15

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM E1971 (2005; R 2011) Standard Guide for Stewardship for the Cleaning of Commercial and Institutional Buildings

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES:

SD-10 Operation and Maintenance Data

Training Plan ; G

Training Outline ; G

Training Content ; G

SD-11 Closeout Submittals

Training Video Recording ; G

Validation of Training Completion ; G

1.3 OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data for the provided equipment, product, or system, defining the importance of system interactions, troubleshooting, and long-term preventive operation and maintenance. Compile, prepare, and aggregate O&M data to include clarifying and updating the original sequences of operation to as-built conditions. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01 33 00.05 20, "Construction Submittal Procedures."

1.3.1 Package Quality

Documents must be fully legible. Operation and Maintenance data must be consistent with the manufacturer's standard brochures, schematics, printed instructions, general operating procedures, and safety precautions.

### 1.3.2 Package Content

Provide data package content in accordance with paragraph SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES. Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission, except as follows. Use Data Package 3 for commissioned items without a specified data package requirement in the individual technical sections. Provide a Data Package 3 instead of Data Package 1 or 2, as specified in the individual technical section, for items that are commissioned.

### 1.3.3 Changes to Submittals

Provide manufacturer-originated changes or revisions to submitted data if a component of an item is so affected subsequent to acceptance of the O&M Data. Submit changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data within 30 calendar days of the notification of this change requirement.

## 1.4 OPERATION AND MAINTENANCE MANUAL FILE FORMAT

Assemble data packages into electronic Operation and Maintenance Manuals. Assemble each manual into a composite electronically indexed file using the most current version of Adobe Acrobat or similar software capable of producing PDF file format. Provide compact disks (CD) or data digital versatile disk (DVD) as appropriate, so that each one contains operation, maintenance and record files, project record documents, and training videos. Include a complete electronically linked operation and maintenance directory.

### 1.4.1 Organization

Bookmark Product and Drawing Information documents using the current version of CSI Masterformat numbering system, and arrange submittals using the specification sections as a structure. Use CSI Masterformat and UFGS numbers along with descriptive bookmarked titles that explain the content of the information that is being bookmarked.

### 1.4.2 CD or DVD Label and Disk Holder or Case

Provide the following information on the disk label and disk holder or case:

- a. Building Number
- b. Project Title
- c. Activity and Location
- d. Construction Contract Number
- e. Prepared For: (Contracting Agency)
- f. Prepared By: (Name, title, phone number and email address)
- g. Include the disk content on the disk label
- h. Date

- i. Virus scanning program used

## 1.5 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

The following are a detailed description of the data package items listed in paragraph SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES.

### 1.5.1 Operating Instructions

Provide specific instructions, procedures, and illustrations for the following phases of operation for the installed model and features of each system:

#### 1.5.1.1 Safety Precautions and Hazards

List personnel hazards and equipment or product safety precautions for operating conditions. List all residual hazards identified in the Activity Hazard Analysis provided under Section 01 35 26.05 20 GOVERNMENT SAFETY REQUIREMENTS FOR DESIGN-BUILD. Provide recommended safeguards for each identified hazard.

#### 1.5.1.2 Operator Prestart

Provide procedures required to install, set up, and prepare each system for use.

#### 1.5.1.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

#### 1.5.1.4 Normal Operations

Provide Control Diagrams with data to explain operation and control of systems and specific equipment. Provide narrative description of Normal Operating Procedures.

#### 1.5.1.5 Emergency Operations

Provide Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Provide Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of utility systems including required valve positions, valve locations and zones or portions of systems controlled.

#### 1.5.1.6 Operator Service Requirements

Provide instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gauge readings.

#### 1.5.1.7 Environmental Conditions

Provide a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

1.5.1.8 Operating Log

Provide forms, sample logs, and instructions for maintaining necessary operating records.

1.5.1.9 Additional Requirements for HVAC Control Systems

Provide Data Package 5 and the following for control systems:

- a. Narrative description on how to perform and apply functions, features, modes, and other operations, including unoccupied operation, seasonal changeover, manual operation, and alarms. Include detailed technical manual for programming and customizing control loops and algorithms.
- b. Full as-built sequence of operations.
- c. Copies of checkout tests and calibrations performed by the Contractor (not Cx tests).
- d. Full points list. Provide a listing of rooms with the following information for each room:
  - (1) Floor
  - (2) Room number
  - (3) Room name
  - (4) Air handler unit ID
  - (5) Reference drawing number
  - (6) Air terminal unit tag ID
  - (7) Heating or cooling valve tag ID
  - (8) Minimum cfm
  - (9) Maximum cfm
- e. Full print out of all schedules and set points after testing and acceptance of the system.
- f. Full as-built print out of software program.
- g. Marking of system sensors and thermostats on the as-built floor plan and mechanical drawings with their control system designations.

1.5.2 Preventive Maintenance

Provide the following information for preventive and scheduled maintenance to minimize repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials.

1.5.2.1 Lubrication Data

Include the following preventive maintenance lubrication data, in addition to instructions for lubrication required under paragraph OPERATOR SERVICE

REQUIREMENTS:

- a. A table showing recommended lubricants for specific temperature ranges and applications.
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.
- c. A Lubrication Schedule showing service interval frequency.

1.5.2.2 Preventive Maintenance Plan, Schedule, and Procedures

Provide manufacturer's schedule for routine preventive maintenance, inspections, condition monitoring (predictive tests) and adjustments required to ensure proper and economical operation and to minimize repairs. Provide instructions stating when the systems should be retested. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

- a. Define the anticipated time required to perform each of each test (work-hours), test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements within the schedule. Provide a remarks column for the testing validation procedure referencing operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Delineate procedures for preventive maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize repairs.
- b. Repair requirements must inform operators how to check out, troubleshoot, repair, and replace components of the system. Include electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and troubleshooting of the system after acceptance.

1.5.2.3 Cleaning Recommendations

Provide environmentally preferable cleaning recommendations in accordance with ASTM E1971.

1.5.3 Repair

Provide manufacturer's recommended procedures and instructions for correcting problems and making repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials.

1.5.3.1 Troubleshooting Guides and Diagnostic Techniques

Provide step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

#### 1.5.3.2 Wiring Diagrams and Control Diagrams

Provide point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

#### 1.5.3.3 Repair Procedures

Provide instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.

#### 1.5.3.4 Removal and Replacement Instructions

Provide step-by-step procedures and a list of required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Use a combination of text and illustrations.

#### 1.5.3.5 Spare Parts and Supply Lists

Provide lists of spare parts and supplies required for repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

#### 1.5.3.6 Repair Work-Hours

Provide manufacturer's projection of repair work-hours including requirements by type of craft. Identify, and tabulate separately, repair that requires the equipment manufacturer to complete or to participate.

#### 1.5.4 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

##### 1.5.4.1 Product Submittal Data

Provide a copy of SD-03 Product Data submittals documented with the required approval.

##### 1.5.4.2 Manufacturer's Instructions

Provide a copy of SD-08 Manufacturer's Instructions submittals documented with the required approval.

##### 1.5.4.3 O&M Submittal Data

Provide a copy of SD-10 Operation and Maintenance Data submittals documented with the required approval.

##### 1.5.4.4 Parts Identification

Provide identification and coverage for the parts of each component,



assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing must show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Group the parts shown in the listings by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog.

#### 1.5.4.5 Warranty Information

List and explain the various warranties and clearly identify the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components of the system. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

#### 1.5.4.6 Extended Warranty Information

List all warranties for products, equipment, components, and sub-components whose duration exceeds one year. For each warranty listed, indicate the applicable specification section, duration, start date, end date, and the point of contact for warranty fulfillment. Also, list or reference the specific operation and maintenance procedures that must be performed to keep the warranty valid. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

#### 1.5.4.7 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

#### 1.5.4.8 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components. Provide final set points.

#### 1.5.4.9 Testing and Performance Data

Include completed prefunctional checklists, functional performance test forms, and monitoring reports. Include recommended schedule for retesting and blank test forms. Provide final set points.

#### 1.5.4.10 Field Test Reports

Provide a copy of Field Test Reports (SD-06) submittals documented with the required approval.

#### 1.5.4.11 Contractor Information

Provide a list that includes the name, address, and telephone number of the

General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization that can provide replacements most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

#### 1.6 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Provide the O&M data packages specified in individual technical sections. The information required in each type of data package follows:

##### 1.6.1 Data Package 1

- a. Safety precautions and hazards
- b. Cleaning recommendations
- c. Maintenance and repair procedures
- d. Warranty information
- e. Extended warranty information
- f. Contractor information
- g. Spare parts and supply list

##### 1.6.2 Data Package 2

- a. Safety precautions and hazards
- b. Normal operations
- c. Environmental conditions
- d. Lubrication data
- e. Preventive maintenance plan, schedule, and procedures
- f. Cleaning recommendations
- g. Maintenance and repair procedures
- h. Removal and replacement instructions
- i. Spare parts and supply list
- j. Parts identification
- k. Warranty information
- l. Extended warranty information
- m. Contractor information

##### 1.6.3 Data Package 3

- a. Safety precautions and hazards

- b. Operator prestart
  - c. Startup, shutdown, and post-shutdown procedures
  - d. Normal operations
  - e. Emergency operations
  - f. Environmental conditions
  - g. Operating log
  - h. Lubrication data
  - i. Preventive maintenance plan, schedule, and procedures
  - j. Cleaning recommendations
  - k. Troubleshooting guides and diagnostic techniques
  - l. Wiring diagrams and control diagrams
  - m. Maintenance and repair procedures
  - n. Removal and replacement instructions
  - o. Spare parts and supply list
  - p. Product submittal data
  - q. O&M submittal data
  - r. Parts identification
  - s. Warranty information
  - t. Extended warranty information
  - u. Testing equipment and special tool information
  - v. Testing and performance data
  - w. Contractor information
  - x. Field test reports
- 1.6.4 Data Package 4
- a. Safety precautions and hazards
  - b. Operator prestart
  - c. Startup, shutdown, and post-shutdown procedures
  - d. Normal operations
  - e. Emergency operations

- f. Operator service requirements
- g. Environmental conditions
- h. Operating log
- i. Lubrication data
- j. Preventive maintenance plan, schedule, and procedures
- k. Cleaning recommendations
- l. Troubleshooting guides and diagnostic techniques
- m. Wiring diagrams and control diagrams
- n. Repair procedures
- o. Removal and replacement instructions
- p. Spare parts and supply list
- q. Repair work-hours
- r. Product submittal data
- s. O&M submittal data
- t. Parts identification
- u. Warranty information
- v. Extended warranty information
- w. Personnel training requirements
- x. Testing equipment and special tool information
- y. Testing and performance data
- z. Contractor information
- aa. Field test reports

1.6.5 Data Package 5

- a. Safety precautions and hazards
- b. Operator prestart
- c. Start-up, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Environmental conditions
- f. Preventive maintenance plan, schedule, and procedures
- g. Troubleshooting guides and diagnostic techniques

- h. Wiring and control diagrams
- i. Maintenance and repair procedures
- j. Removal and replacement instructions
- k. Spare parts and supply list
- l. Product submittal data
- m. Manufacturer's instructions
- n. O&M submittal data
- o. Parts identification
- p. Testing equipment and special tool information
- q. Warranty information
- r. Extended warranty information
- s. Testing and performance data
- t. Contractor information
- u. Field test reports
- v. Additional requirements for HVAC control systems

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

### 3.1 TRAINING

Prior to acceptance of the facility by the Contracting Officer for Beneficial Occupancy, provide comprehensive training for the systems and equipment specified in the technical specifications. The training must be targeted for the Facilities Management Specialist, building maintenance personnel, and applicable building occupants. Instructors must be well-versed in the particular systems that they are presenting. Address aspects of the eOMSI Manual, as submitted in Section 01 78 24.00 20 FACILITY ELECTRONIC OPERATION AND MAINTENANCE SUPPORT INFORMATION (eOMSI). Training must include classroom or field lectures based on the system operating requirements. The location of classroom training requires approval by the Contracting Officer.

#### 3.1.1 Training Plan

Submit a written training plan to the Contracting Officer for approval at least 60 calendar days prior to the scheduled training. Training plan must be approved by the Quality Control Manager (QC) prior to forwarding to the Contracting Officer. Also, coordinate the training schedule with the Contracting Officer and QC. Include within the plan the following elements:

- a. Equipment included in training
- b. Intended audience
- c. Location of training
- d. Dates of training
- e. Objectives
- f. Outline of the information to be presented and subjects covered including description
- g. Start and finish times and duration of training on each subject
- h. Methods (e.g. classroom lecture, video, site walk-through, actual operational demonstrations, written handouts)
- i. Instructor names and instructor qualifications for each subject
- j. List of texts and other materials to be furnished by the Contractor that are required to support training
- k. Description of proposed software to be used for video recording of training sessions.

### 3.1.2 Training Content

The core of this training must be based on manufacturer's recommendations and the operation and maintenance information. The QC is responsible for overseeing and approving the content and adequacy of the training. Provide a brief summary of the FACILITY INFORMATION manual, and a more detailed presentation of the PRODUCT AND DRAWING MANUAL, specified in Section 01 78 24.00 20 FACILITY ELECTRONIC OPERATION AND MAINTENANCE SUPPORT INFORMATION (eOMSI). Spend 95 percent of the instruction time during the presentation on the OPERATION AND MAINTENANCE DATA. Include the following for each system training presentation:

- a. Start-up, normal operation, shutdown, unoccupied operation, seasonal changeover, manual operation, controls set-up and programming, troubleshooting, and alarms.
- b. Relevant health and safety issues.
- c. Discussion of how the feature or system is environmentally responsive. Advise adjustments and optimizing methods for energy conservation.
- d. Design intent.
- e. Use of O&M Manual Files.
- f. Review of control drawings and schematics.
- g. Interactions with other systems.
- h. Special maintenance and replacement sources.
- i. Tenant interaction issues.

### 3.1.3 Training Outline

Provide the eOMSI Manual files as specified in Section 01 78 24.00 20, FACILITY ELECTRONIC OPERATION AND MAINTENANCE SUPPORT INFORMATION (eOMSI), and a written course outline listing the major and minor topics to be discussed by the instructor on each day of the course to each trainee in the course. Provide the course outline 14 calendar days prior to the training.

### 3.1.4 Training Video Recording

Record classroom training session(s) on video. Provide to the Contracting Officer two copies of the training session(s) in DVD video recording format. Capture within the recording, in video and audio, the instructors' training presentations including question and answer periods with the attendees. The recording camera(s) must be attended by a person during the recording sessions to assure proper size of exhibits and projections during the recording are visible and readable when viewed as training.

### 3.1.5 Unresolved Questions from Attendees

If, at the end of the training course, there are questions from attendees that remain unresolved, the instructor must send the answers, in writing, to the Contracting Officer for transmittal to the attendees, and the training video must be modified to include the appropriate clarifications.

### 3.1.6 Validation of Training Completion

Ensure that each attendee at each training session signs a class roster daily to confirm Government participation in the training. At the completion of training, submit a signed validation letter that includes a sample record of training for reporting what systems were included in the training, who provided the training, when and where the training was performed, and copies of the signed class rosters. Provide two copies of the validation to the Contracting Officer, and one copy to the Operation and Maintenance Manual Preparer for inclusion into the Manual's documentation.

### 3.1.7 Quality Control Coordination

Coordinate this training with the QC in accordance with Section 01 45 00.05 20 DESIGN AND CONSTRUCTION QUALITY CONTROL FOR DESIGN-BUILD.

-- End of Section --

SECTION 01 78 24.00 20

FACILITY ELECTRONIC OPERATION AND MAINTENANCE SUPPORT INFORMATION (eOMSI)  
02/15

PART 1 GENERAL

1.1 REFERENCES

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

U.S. DEPARTMENT OF DEFENSE (DOD)

FC 1-300-09N

(2014; with Change 2) Navy and Marine  
Corps Design Procedures

1.2 DEFINITIONS AND ABBREVIATIONS

1.2.1 eOMSI Manual

Manual (PDF file) provided by the Contractor that includes, but is not limited to, product information, a facility description with photos, and a list of primary facility systems.

1.2.2 eOMSI Facility Data Workbook (FDW)

A Microsoft Excel file containing required facility information populated by the Contractor.

1.2.3 Systems

The words "system", "systems", and "equipment", when used in this document refer to as-built systems and equipment.

1.2.4 Computer Assisted Design and Drafting (CADD)

Electronic Computer Assisted Design and Drafting graphic software program that is used to create facility design contract documents and Record Drawings.

1.2.5 KTR

An abbreviation for "Contractor."

1.3 EOMSI MEETINGS

1.3.1

Be prepared to discuss the following during this meeting:

- a. eOMSI Manual and eOMSI Facility Data Workbook Development Meetings
- b. Processes and methods of gathering eOMSI Manual and eOMSI Facility Data Workbook information during construction.
- c. The eOMSI Submittals schedule. Include the eOMSI submittal schedule on



the Baseline Construction Schedule in accordance with Section  
01 32 17.00 20 COST-LOADED NETWORK ANALYSIS SCHEDULE (NAS).

- d. Electronic eOMSI Facility Data Workbook file for Contractor's use and completion.

#### 1.3.2 eOMSI Manual and Facility Data Workbook Coordination Meeting

Facilitate a meeting after the Post-Award Kickoff Meeting prior to the submission of the eOMSI Progress Submittal. Meeting attendance must include the Contractor's eOMSI Manual and Facility Data Workbook Preparer, Designer of Record (DOR), and Quality Control Manager, and the Government's Design Manager (DM), Contracting Officer's Representative, and NAVFAC Public Works (PW) Facilities Management Division (FMD). Include any Mechanical, Electrical, and Fire Protection Sub-Contractors.

The purpose of this meeting is to reach a mutual understanding of the scope of work concerning the contract requirements for eOMSI and coordinate the efforts necessary by both the Government and Contractor to ensure an accurate collection, preparation and timely Government review of eOMSI.

#### 1.3.3 Facility Turnover Meeting

Include eOMSI in NAVFAC Red Zone (NRZ) facility turnover meetings as specified in Section 01 31 19.05 20, POST AWARD MEETINGS.

### 1.4 SUBMITTAL SCHEDULING

#### 1.4.1 eOMSI, Progress Submittal

Submit the Progress submittal when construction is approximately 50 percent complete, to the Contracting Officer for approval. Provide eOMSI Manual Files (Bookmarked PDF) and eOMSI Facility Data Workbook (Excel). Include the elements and portions of system construction completed up to this point.

The purpose of this submittal is to verify progress is in accordance with contract requirements as discussed during the eOMSI Coordination Meeting. Field verify a portion of the eOMSI information in accordance with paragraph FIELD VERIFICATION.

#### 1.4.2 eOMSI, Prefinal Submittal

Submit the 100 percent submittal of the eOMSI Prefinal Submittal to the Contracting Officer for approval within 60 calendar days of the Beneficial Occupancy Date (BOD). This submittal must provide a complete, working document that can be used to operate and maintain the facility. Any portion of the submittal that is incomplete or inaccurate requires the entire submittal to be returned for correction. Any discrepancies discovered during the Government's review of eOMSI Progress submittal must be corrected prior to the Prefinal submission.

The eOMSI Prefinal Submittal must include eOMSI Manual Files (Bookmarked PDF) and eOMSI Facility Data Workbook (Excel).

#### 1.4.3 eOMSI, Final Submittal

Submit completed eOMSI Manual Files (Bookmarked PDF) and eOMSI Facility Data Workbook (Excel). The Final submittal is due at BOD. Any discrepancies discovered during the Government's review of the Prefinal

eOMSI submittal, including the Field Verification, must be corrected prior to the Final eOMSI submission.

#### 1.5 UNITS OF MEASURE

Provide eOMSI utilizing the units of measure required by the RFP for the facility. Refer to Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES.

#### 1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES:

##### SD-11 Closeout Submittals

eOMSI, Progress Submittal; G

eOMSI, Prefinal Submittal; G

eOMSI, Final Submittal; G

#### PART 2 PRODUCTS

##### 2.1 eOMSI FILES FORMAT

Format eOMSI manuals and files in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA. Include a complete electronically linked operation and maintenance directory. Provide four electronic copies of the eOMSI Manuals to the Contracting Officer for approval.

Provide eOMSI Facility Data Workbook on compact disks (CD) or data digital versatile disk (DVD) disks in (EXCEL) format. Scan eOMSI Manual Files and eOMSI Facility Data Workbook for viruses, malware, and spyware using a commercially available scanning program that is routinely updated to identify and remove current virus threats.

##### 2.1.1 eOMSI Manual Organization

Organize the eOMSI Manuals into two parts: 1) Product and Drawing Information, and 2) Facility Information. Bookmark the PDF files for easy access to the information.

- a. Bookmark Product and Drawing Information documents in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.
- b. Bookmark Facility Information to at least one level lower than the major system.

##### 2.1.2 eOMSI Manual CD or DVD Disk Label and Disk Holder or Case

Provide disks in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

## 2.2 eOMSI MANUAL

### 2.2.1 Product and Drawing Information

Provide an organized record of the facility products, materials, equipment, and minimum information necessary to operate the facility. Provide Product and Drawing Information for the systems in the final constructed facility.

#### 2.2.1.1 O&M Data

As a minimum, provide the approved O&M Data, submitted in the technical specification sections, in accordance with paragraph TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES in Section 01 78 23 OPERATION AND MAINTENANCE DATA.

#### 2.2.1.2 Record Drawings

Provide an electronic, PDF copy of the Record Drawings, prepared in accordance with FC 1-300-09N and 01 78 00 CLOSEOUT SUBMITTALS. Bookmark drawings using the sheet title and sheet number.

Include Record Drawings as part of the Red-Zone specified in Section 01 30 00.05 20 ADMINISTRATIVE REQUIREMENTS FOR DESIGN-BUILD.

#### 2.2.1.3 Utility Record Drawings

Using Record Source Drawings, show and document details of the actual installation of the utility systems; annotate and highlight the eOMSI information. Provide Utility Record Drawings in PDF format. Provide the following drawings at a large enough scale to differentiate designated isolation units from surrounding valves and switches.

- a. Utility Schematic Diagrams - Provide a one line schematic diagram for each utility system such as power, water, wastewater, and gas/fuel. Schematic diagram must show from the point where the utility line is connected to the mainline up to the five-foot connection point to the facility. Indicate location or area designation for route of transmission or distribution lines; locations of duct banks, manholes/ handholes or poles; isolation units such as valves and switches; and utility facilities such as pump stations, lift stations, and substations.
- b. Enlarged Connection and Cutoff Plans - Provide enlarged floor plans that provide information between the five foot utility connection point and where utilities connect to facility distribution. Enlarge floor plans/ elevations of the rooms where the utility enters the building and indicate on these plans locations of the main interior and exterior connection and cutoff points for the utilities. Also enlarge floor plans / elevations of the rooms where equipment is located. Include enough information to enable someone unfamiliar with the facility to locate the connection and cutoff points. Indicate designations such as room number, panel number, circuit breaker, or valve number, of each utility and equipment connection and cutoff point, and what that connection and cutoff point controls.

### 2.2.2 Facility Information

Provide the following in Facility Information:

#### 2.2.2.1 General Facility and System Description

Describe the function of the facility. Detail the overall dimensions of the facility, number of floors, foundation type, expected number of occupants, and facility Category Code. List and generally describe all the facility systems and any special building features (for example, HVAC Controls, Sprinkler Systems, Cranes, Elevators, and Generators). Include photographs marked up and labeled to show key operating components and the overall facility appearance.

#### 2.2.2.2 Basis of Design

Include the Basis of Design that shows the basic design scope of work, assumptions and the original intentions of the Designer of Record (DOR). Identify the site utility design goals, objectives, design load limits, assumptions, and system features that are critical to the operation and maintenance of the systems.

#### 2.2.2.3 Floor Plans

Provide uncluttered, legible 11 by 17 inches floor plans. Include room numbers, type or function of spaces, and overall facility dimensions on the floor plans. Do not include items such as construction instructions, references, or frame numbers.

#### 2.2.2.4 Floor Coverings, Wall Surfaces, and Ceiling Surfaces

Provide a table that lists by room number (including hallways and common spaces), the type, and area of finish, manufacturer's product name, identifying number, and color. Include a facility summary of the total area for each type of space and floor, wall, or ceiling finish in the table.

#### 2.2.2.5 Windows

Provide a table that lists by room number (including hallways and common spaces), the type of window, window size, number of each size and type, special features, manufacturer's product name, identifying number, and color. The table must include a facility summary of the total number for each type and size of window.

#### 2.2.2.6 Roofing

Provide the total area of each type of roof surface and system. Provide the name of the roofing product and system; manufacturer's, supplier's, and installer's names, addresses, and phone numbers; manufacturer's product name, identifying number, and color. For each type of roof, provide a recommended inspection, maintenance and repair schedule that details checkpoints, frequencies, and prohibited practices. List roof structural load limits.

#### 2.2.2.7 HVAC Filters

Provide a table that lists the quantity, type, size, and location of each HVAC filter, manufacturer's product name, and identifying number.

#### 2.2.2.8 Plumbing Fixtures

Provide a table that lists by room number, the number and type of plumbing and bathroom plumbing fixtures (for example, sinks,

water closets, urinals, showers and drinking fountains).

#### 2.2.2.9 Lighting Fixtures

Provide a table that lists by room number (including hallways and common spaces), the type of lighting fixture, ballast, number of lighting fixtures, type of lamps and number of lamps, and the manufacturer's product name and the identifying number. The table must include a facility summary of the total number of fixtures of each type and number of lamps of each type.

#### 2.2.2.10 Equipment Listing

Provide a table that lists the major equipment shown on the design equipment schedules. Show the item descriptions, locations, model numbers; and the names, addresses, and telephone numbers of the manufacturers, suppliers, contractors, and subcontractors.

#### 2.2.2.11 System Flow Diagrams

Provide a flow diagram indicating system liquid, air or gas flow during normal operations. Integrate the system components into the diagram. A compilation of non-integrated, flow diagrams for the individual system components are not acceptable.

#### 2.2.2.12 Valve List

Provide a list of all valves associated with the system. Show valve type, identification number, function, location and normal operating position.

#### 2.2.2.13 Riser Diagrams

Provide riser diagrams and settings of equipment.

### 2.3 eOMSI FACILITY DATA WORKBOOK

Download the eOMSI Facility Data Workbook at the following location: <http://www.wbdg.org/FFC/NAVGRAPH/graphdoc.pdf>. Complete the KTR Facility Data File tab based on the selection of Mastersystems, Systems, and Subsystems installed. The following tabs are included in the eOMSI Facility Data File Workbook and serve the purpose stated:

- a. Instructions Tab: Instructions for completing Model & Facility Data Matrix Tab and KTR Facility Data File Tab. If a discrepancy exists between what is required in this section and the Workbook, the instructions within the workbook take precedence.
- b. Model & Facility Data Matrix Tab: - The Matrix lists Required Facility Asset Fields for each SYSTEM and SUBSYSTEM. The Designer of Record selects SYSTEMS and SUBSYSTEMS that are within the project scope, which the Contractor needs to include and populate in KTR Facility Data File tab. The "Required Facility Asset Field Position Numbers," one through seventeen, are pre-populated, and are not editable.
- c. Required Facility Asset Fields Tab: Defines the 17 Required Facility Asset Field Position Numbers used in Model and Facility Data Matrix and KTR Facility Data File tabs.
- d. KTR Sample Facility Data File Tab: Sample KTR eOMSI facility data

file. This tab provides an example of the mandatory fields of equipment installed by the Contractor, and populated in the KTR eOMSI Facility Data File Tab, along with their descriptions.

- e. KTR Facility Data File Tab: Required eOMSI facility data file deliverable provided to the Government. Provide a separate and unique new row for each facility component or piece of equipment installed.

## PART 3 EXECUTION

### 3.1 FIELD VERIFICATION

Field verify eOMSI Facility Data Workbook information with Contractor and Government personnel. Include the following personnel in this meeting: Contractor's eOMSI Manual and Facility Data Workbook Preparer and Quality Control Manager, and the Government's Contracting Officer's Representative and NAVFAC PW FMD. Request, and provide, an eOMSI Field Verification Meeting no sooner than 14 calendar days after submission of the Progress eOMSI submittal, and another, no sooner than 14 calendar days after submission of the Prefinal eOMSI submittal. During this meeting, the Government and Contractor will verify that the eOMSI Facility Data Workbook is complete and accurate.

Field verify that at least 5 Subsystems under each of the Mastersystems are accurate, for a total of 25 Subsystems. For each of these items, verify that the required facility asset field, as defined in the "Model & Facility Data Matrix" tab, contains the specified data and it is accurate (i.e. item description, manufacturer, model no., serial no.). 100 percent accuracy of eOMSI information is required for successful field verification. If data discrepancies are discovered amongst the 25 Subsystems verified, resubmit an updated eOMSI FDW, and request a make-up field verification meeting. At the make-up field verification meeting 25 new Subsystems and their associated required facility asset fields will be field verified; the 25 new Subsystems must be 100% accurate. Any discrepancies discovered must be corrected prior to next eOMSI Facility Data Workbook Submittal.

- (1) D10 - CONVEYING
- (2) D20 - PLUMBING
- (3) D30 - HVAC
- (4) D40 - FIRE PROTECTION
- (5) D50 - ELECTRICAL

### 3.2 eOMSI TRAINING

Provide training on eOMSI Manuals and Facility Data Workbook in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

-- End of Section --

SECTION 01 78 30.00 22

GIS DATA DELIVERABLES

07/20

PART 1 GENERAL

1.1 OBJECTIVE

The primary objective of this section is to provide detailed specifications for collection and delivery of geospatial data commonly referred to as Geographic Information System (GIS) data. Additionally, this section shall provide guidance to ensure that all GIS data delivered is compatible and will add value to the Marine Corps Base (MCB) Camp Lejeune Installation Geospatial Information and Services (IGI&S) GEODatabase.

Failure to comply with the specifications outlined in this document will result in non-acceptance of data deliverables.

1.1.1 Point of Contact for MCB Camp Lejeune

The Points of Contact (POC) for assistance in preparation of GIS deliverables are:

Resident Officer In Charge Of Construction  
Construction Manager (CM)  
1005 Michael Drive  
Camp Lejeune, NC 28547-2521  
(910) 451-2581

Public Works Division  
GIS Data Manager  
1005 Michael Road  
Camp Lejeune, NC 28547-2521  
(910) 451-5507 ext 3264

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES:

SD-11 Closeout Submittals

GIS Data Deliverables; G

1.3 GOVERNMENT GEOSPATIAL DATA AND SCHEMA

1. The IGI&S repository model schema is based on the Spatial Data Standards for Facilities, Infrastructure and Environment (SDSFIE) GEOFidelis Data Model with recurring business driven modifications and or adaptations.
  - a. Data will be created and delivered by developing an ARCGIS Personal GEODatabase using ArcGIS 10.1 or higher if a higher version is being utilized by the Government at the time the deliverable is being developed.
  - b. Request the existing GIS Data, Schema and Domain Properties by means of a Data Request Package (DRP). Receipt of request will include Geospatial Database table structure, schema, Domain configuration, Attribute text format, i.e., case size as well as

Meta Data information.

- c. The DRP should be submitted prior to the start of data collection efforts and again every 6 months for the duration of the contract. Ensure that all GIS data has been created and delivered utilizing the most up to date IGI&S GEODatabase schema at the time of delivery. Please be on notice that the schema for the GIS deliverable may change prior to delivery.
  - d. In order to to comply with the above section, it is necessary to verify the schema, via the CM and the PWD GIS Office. All GIS DATA DELIVERABLES will be created in accordance with the current schema at the time of deliverable. Contractor redline drawings must be submitted in PDF format with the GIS Deliverable package.
2. Submit a request for a Geospatial DRP to the CM or the Project Manager.
    - a. Request to be completely filled out and include all the information as instructed on the data request form.
    - b. Request only GIS data and or schema for feature classes that are relevant to the contract and within the boundary of project area.
    - c. Attach Scope of Work, which is defined by this GIS DATA DELIVERABLES section for each project request.
    - d. Return the DRP to the CM or Project Manager for sponsorship and submittal to the Installation Geospatial Information & Services (IGI&S) Office.
    - e. Incomplete forms may delay receipt of the requested GIS data and Schema.

1.3.1 Global Positioning System (GPS) and Spatial Reference Properties

GPS data shall be completed in accordance with the GPS Data Collection and Documentation Standards, Version 4 (or higher version if available at the time of this project) as prepared by Geographic Information Coordinating Council (GICC) Statewide Mapping Advisory Committee (SMAC) and adopted by the North Carolina Geographic Information Coordinating Council.

1. Prior to GPS efforts, ALL underground utilities are to be located utilizing a utility locating service in order to verify and obtain accurate feature locations.
2. Only bench marks included in the North Carolina Geodetic Survey Base Station Network are to be used for GPS data collection.
3. Mission planning is essential. Utilize the best Position Dilution of Precision (PDOP) values for data accuracy.
4. Utility data, as identified in paragraph "ATTRIBUTE DATA COLLECTION AND GPS REQUIREMENTS FOR SPECIFIC FEATURES" will be collected utilizing Survey Grade GPS data collection methods.
5. Infrastructure data, as identified in paragraph "ATTRIBUTE DATA COLLECTION AND GPS REQUIREMENTS FOR SPECIFIC FEATURES" will be collected utilizing Sub-Foot or better GPS data collection methods.



- a. Spatial accuracy requirements for Survey and Sub-Foot grade data collection are as follows:
  - i. Sub-Foot requirements:
    - 1) All points shall be within + 12 inches
    - 2) 95 percent accuracy rate for all points.
  - ii. Survey Grade requirements:
    - 1) All points shall be within + 1 centimeter
    - 2) 98 percent accuracy rate for all points
6. Make every effort to capture feature locations without using offsets. All Offsets will be noted in the Final Report for each feature.
7. Excessive offsets included in the Final Data, which will be referenced in the Final Report, will be reviewed for quality control.
  - a. Resubmittal of data will be required if PDOP planning was not observed per this specification.

The following GEODatabase Coordinate Systems and Spatial Reference Properties should be utilized for Camp Lejeune:

1. Transverse Mercator (UTM) Zone 18N
  - a. GRS 1980 spheroid
  - b. North American Datum 1983 (NAD83) horizontal datum
  - c. North American Vertical Datum 1988 (NAVD88) vertical datum.
2. Domain precision of 1000 which will result in a database accuracy of 1/1000 m

#### 1.3.2 Demolished and Abandoned in Place (AIP) Features

Reference all Demolished and or AIP features in the data delivered. Should the current feature data class attributes and or domains not reference AIP or demolished features, the Contractor will be responsible for appropriately delivering these features by creating an associated "Demolished" or AIP feature class for all point and polyline data, i.e., CLJN.CL.WastewaterUtilitySegment and CLJN.CL.WateUtilNode\_wHydrant, etc.

1. Utilize a blank schema for the associated feature class.
2. Rename associated feature class and add DEMO or AIP as a prefix, i.e., DEMO.CLJN.CL.WastewaterUtilitySegment, AIP.CLJN.CL.WastewaterUtilitySegment.
3. All demolished and or AIP features should provide existing spatial and non-spatial data which may be copied from existing data.
4. Update attributes appropriately to include the following:
  - a. Contract Number.

- b. Drawing Number.
- c. isDemolished.
- d. dateDemolished or dateAIP.
- e. Status.

#### 1.3.3 Creating a New Feature Class

Should a new feature class be required that is not readily available in the current GIS schema provided by the Government. Contact the CM or Project Manager for guidance and schema format.

#### 1.3.4 GIS Topology Rules

All data must be created using GIS topology rules for polygons, points and lines, such as, but not limited to the following examples:

1. Polygons, Polylines and points rules; please reference illustrating topology rules in ArcGIS at [www.esri.com](http://www.esri.com).
2. Polygons must not have slivers.
3. All utility or infrastructure system data, which is, but is not limited to, transportation system and electrical, water, steam distribution, and wastewater collection, etc., will be created using GIS spatial connectivity rules which specify that vertex, edge and endpoints be snapped to features within the system.
4. Features will be snapped to the appropriate item.
5. Data will be created to represent the real world, for example, water, sewer, and transportations systems, etc. will be drawn and or created in the direction of flow.
6. Utility and transportation systems will be created from source to sink, etc.
7. Abandoned In Place (AIP) utility lines will be located and updated in the current feature data set and identified as AIP in the attribute table or provide in a feature data set as specified in paragraph "Demolished and Abandoned in Place (AIP) Features" with CM approval.

#### 1.3.5 Creation of Geographic Data Documentation (METADATA)

For each digital file delivered containing geographic information, provide documentation consistent with the Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata (CSDGM).

Metadata generation tools included in the ArcGIS suite of software (or equivalent technology) will be used in the production of the required metadata in XML format. Regardless of the tools used for metadata creation, must ensure that the metadata is delivered in XML format and can be easily imported into the IGI&S GEODatabase.

(NOTE: The metadata should be formatted from the Government perspective, not the Contractor project perspective. Therefore such items as Point of

Contact (POC) should be the POC currently associated with the data and NOT the Contractor's Project Manager. Use language and format consistent with existing metadata.)

#### 1.3.6 GIS Submittals Guidelines

All GIS Submittals will be submitted to the CM or PM and then analyzed by Government GIS personnel prior to final approval. Failure to comply with the specifications outlined in this document will result in non-acceptance of data deliverables.

1. Prior to any database development, provide the Government with a technical approach document, in PDF format, for review and approval. The Technical Approach document will describe in detail the Contractor's technical approach to designing and developing the database.
2. All attributes will be populated in accordance with the "ATTRIBUTE DATA COLLECTION AND GPS REQUIREMENTS FOR SPECIFIC FEATURES" and will be obtained via contract specifications, plans and record drawings.
3. Reasearch may be required to be conducted to collect data and make copies of reports and studies as necessary to verify existing and/or record drawing data. Record drawing data and closed contracts can be located in the Technical Records Section in the Public Works Department which is located at 1005 Michael Street, MCB Camp Lejeune.
4. Raw GPS data and collection data files will be included with every phase of delivery.
5. Actual spatial and non-spatial conditions in the field always supersede drawings. Locate and field verify all features to ensure attribute data and location is correctly recorded.
6. Submit a preliminary review of data at 25 percent contract completion to ensure specifications compliance.
7. Deliver digital geographic maps, GPS collection files and related data. All working text and documents and personal geodatabase will be included for review in the draft and final delivery of data.
  - a. All maps of GIS DATA DELIVERABLES will be ANSI C size and include a project title, contract number, scale, legend, standard symbology, attributes, i.e., building numbers, road names, segment diameters, etc. Also provide a PDF copy of all maps.
8. When required, provide a technical consultant to meet on site.
9. Do not deliver blank unused schema or feature class data with no attributes. Deliver only data pertinent to the contract that adds value to the GEODatabase per this section.
10. When projects are constructed in phases, deliver GIS Data at the end of each phase for all Phased Projects and Construction projects.
11. It is the Contractor's responsibility to perform quality assurance for all data and related materials required in the section prior to submitting product to the Government.

12. The data will be analyzed for discrepancies in subject content, correct format in accordance with this statement of work, and compatibility with the existing GIS system as well as all other specifications in this section.

#### 1.3.7 Formats, Versions and Guidelines

All data deliverables will be in the following formats and/or versions.

1. GIS data will be provided in an ArcGIS 10.1 or higher if a higher version is being used by the Government at the time of this project. Verify the ArcGIS version, via the CM or PM at the commencement of this contract.
2. Microsoft Windows 10 operating system, unless otherwise approved by the Government.
3. All reports and maps will be delivered as a hard copy and in a searchable Adobe Portable Document Format (PDF).
4. All text, spreadsheet, database files, reports, and maps will be delivered on Digital Versatile Disc read - only memory (DVD-ROM).
5. Verify required version(s) of software and schema, via the CM or PM.
6. Map submittals will accompany each geospatial deliverable.
  - a. Include ANSI C map for each project/area.
  - b. Data should be labeled and attributed per specification.
  - c. All maps should include the date, a legend, scale, contract title, and number.
  - d. Each map should be exported on a .pdf and delivered electronically with the project.

#### 1.3.8 Final Report Requirements with additional Guidelines

Follow the following:

1. Specific procedures and list of equipment, software and versions that were utilized for the GPS data collection and creation of geospatial data.
2. Submit all GPS data files.
3. Provide the date(s) the IGI&S schema and geospatial data was received.
4. Provide details on any offsets to include justification as to why offsets were utilized and on which features and or points offsets were used.
5. Describe all modifications to the geodatabase to include the name of all new features classes, i.e., new, demolished or AIP.
6. Provide the source that was utilized for required attributes.
  - a. Include an ANSI C size copy of all design drawings that were

referenced in the attribute data. This information should be included in all phases of delivery to include draft and final reviews.

- b. Provide the overall utility site plan drawing(s) with each submittal.
  - c. Provide a separate map for communication which includes infrastructure in PDF format.
7. Specify Deliverable "Draft #" or "Final Submittal" when data is submitted to the CM or PM for review.
  8. Provide the name and contact information for the GIS Technical Point of Contact who can answer questions regarding the data deliverable.
  9. GIS DATA DELIVERABLES must be provided in a format that does not require translation or pre/post processing prior to being loaded into the IGI&S GEODatabase.
  10. Provide any miscellaneous information that is deemed significant.
  11. Provide the current version of the GIS DATA DELIVERABLES specification utilized for this contract submittal.

#### 1.3.9 Ownership

All digital files, final hardcopy products, GPS raw data, source data acquired for this project, and related materials, including that furnished by the Government, will become the property of the Government and will not be issued, posted, distributed, or published by the Contractor. All documentation will be delivered in the final delivery.

Note: No endorsement of software or hardware is implied.

#### 1.4 ATTRIBUTE DATA COLLECTION AND GPS REQUIREMENTS FOR SPECIFIC FEATURES

GPS and collect attribute data as specified for each feature listed with (GPS) accuracy as described in paragraph "Global Positioning System (GPS) and Spatial Reference Properties". Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

##### 1.4.1 CLJN.CL.Common

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System (GPS) and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table, or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

##### CLJN.CL.Sign

A structure that conveys directional, warning, or other information.

- a) numberOfSigns

- b) assemblyOffset
- c) SignText
- d) SignType - Directional, Standard Identifier, Safety Warnings, Regulatory, etc.
- e) SymbolCode - Utilize manual for Uniform Traffic Control Devices Code as issued by the Federal Highway Administration
- f) GisFeatureCollectionMethod - Survey Grade GPS, Digitized, etc.
- g) Contract Number
- h) SdsFeatureDescription
- i) signAssemblyType - Pedestal Pole, Wood 4x4, etc.

#### 1.4.2 CLJN.CL.EMERGENCY\_SERVICES

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System (GPS) and Spatial Reference Properties". Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table, or feature class. Domains must be utilized when populating the feature where required.

##### **CLJN.CL.RoadCenterline**

The center of the road area

- a) roadClass - Major Roads/Local Roads/etc.
- b) trackOrLaneCount
- c) speedLimit
- d) isPaved - YES / NO
- e) oneWayDirection
- f) fullStreetName
- g) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- h) contractNumber
- i) isTankTrail - YES / NO
- j) isLighted - Yes / No
- k) routeMinTravelledWayWidth
- l) routeMinTravelledWayWidthUOM
- m) routeTotalUsableWidth
- n) routeTotalUsableWidthUOM
- o) supportedByBridgeSpan - Yes / No

#### 1.4.3 CLJN.CL.REAL.PROPERTY

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System (GPS) and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

##### **CLJN.CL.AccessControl**

A structure manned or unmanned intended to control access to an area

- a) controlType - gate, barricade, tire shedder, etc.
- b) contractNumber

- c) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- d) isRangeAccess - YES / NO
- e) gateType -
- f) Facility Number
- g) sdsFeatureDescription - Location

**CLJN.CL.AlternativeEnergyPoint**

Locations used for the production of alternative energy sources, such as wind turbines, photovoltaic, etc.

- a) alternativeEnergyType - Photovoltaic, Natural Gas, etc.
- b) contractNumber
- c) designDrawingNumber
- d) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- e) isPortable - YES / NO
- f) wattage
- g) operationalStatus - inservice, abandoned, etc.
- h) panelType
- i) sdsFeatureName
- j) sdsFeatureDescription
- k) wattage - Total per unit
- l) hasInverter - YES / NO
- m) isPartOfElectricalNetwork - YES / NO
- n) photovoltaicPanelInstallation

**CLJN.CL.AlternativeEnergyArea**

Locations used for the production of alternative energy sources

- a) operationalStatus - inservice, abandoned, etc.
- b) isPortable - YES / NO
- c) panelType
- d) wattage - total for area
- e) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) sdsFeatureName - Facility Number
- h) hasInverter - YES / NO
- i) isPartOfElectricalNetwork - YES / NO

**CLJN.CL.BoatRamp**

A partially submerged hard surfaced structure on a shoreline for launching or retrieving vessels or vehicles

- a) boatRampIDPK - Facility Number
- b) dateConstructed
- c) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- d) contractNumber
- e) sdsFeatureName
- f) sdsFeatureDescription - Location
- g) numberOfLaunchLanes

**CLJN.CL.Bridge**

A structure used by vehicles that allows passage over or under an obstacle such as a river, chasm, mountain, road or railroad

- a) isFixed - YES / NO
- b) TransportationSystemType - Pedestrian, Road, Railway, etc.
- c) FacilityNumber
- d) verticalConstructionMaterial - Brick, Concrete, etc.
- e) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) sdsFeatureDescription - Road Name if applicable
- h) OperationalStatus - closed, operational, etc.

#### **CLJN.CL.Building**

A roofed, floored and walled structure that is completely enclosed

- a) facilityNumber
- b) builtDate
- c) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- d) contractNumber
- e) sdsFeatureDescription - General Description of Building's Purpose
- f) floorCount
- g) material - Exterior material such as Brick, Concrete, etc.
- h) operationalStatus - inService, abandoned, etc.

#### **CLJN.CL.BuildingFloorPlan**

A linear representation of floor plans for buildings, provided in one feature per floor

- a) buildingFloorLevel
- b) buildingIDFK - Structure Number
- c) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- d) contractNumber
- e) sdsFeatureDescription Renovation Date

#### **CLJN.CL.Disposal\_RealProperty**

Real property demolished structures

- a) sdsFeatureDescription
- b) sdsFeatureName
- c) facilityNumber
- d) contractNumber
- e) disposalDate

#### **CLJN.CL.DocksAndWharfs**

A manmade water-land interface structure often for access to boats or ships

- a) PurposeType - Fishing, Mooring, etc.
- b) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- c) contractNumber
- d) Facility Number - Structure Number
- e) sdsFeatureDescription - Pier, boat ramp, dock, etc.
- f) natureOfConstruction - concrete, earthen, steel

#### **CLJN.CL.Fence**



A freestanding structure designed to restrict or prevent movement across a boundary

- a) facilityIDFK - Structure Number
- b) fenceType - metal, wood, etc.
- c) fenceUse - agriculture, boundary, etc.
- d) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- e) contractNumber
- f) sdsFeatureName - Fence or Gate
- g) sdsFeatureDescription

#### **CLJN.CL.Marina**

Any facility or area for the exchange of people or materials from land to water such as a port, harbor, marina, launch area or small craft facility

- a) marinaIDPK - Structure Number
- b) marinaType
- c) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- d) contractNumber
- e) sdsFeatureName
- f) createdDate - Construction Date
- g) categoryOfCraftFacility - boat launch or landed, etc.

#### **CLJN.CL.NavigationalAid**

A visual or electronic device, on the ground or airborne, which provides point-to-point guidance information or position data to aircraft in flight

- a) navigationalAidIDPK - Structure Number
- b) navaidType - TACAN, Radar station, Beacon, etc.
- c) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- d) contractNumber
- e) sdsFeatureName - Type of navigational aid

#### **CLJN.CL.PavementSectionAirfield**

A pavement section is a portion of a pavement branch that differs in some aspect from other sections such that further segmentation is required to uniquely identify that section)

- a) pavementSectionType - apron, roadway, etc.
- b) isLighted - YES / NO
- c) operationalStatus - inService, abandoned, etc.
- d) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- e) builtDate
- f) contractNumber
- g) runwayClassification - class A, class B, rotatory, etc.
- h) sdsFeatureName
- i) sdsFeatureDescription - MCBCL, MCASNR, Geiger, Stone Bay, etc.

#### **CLJN.CL.PavementSectionParkingArea**

A vehicle parking area is an area used for parking vehicles not including residential streets and driveways.

- a) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- b) operationalStatus - inService, abandoned, etc.
- c) pavementSectionType - parking, slab, driveway, etc.
- d) sdsFeatureDescription - Dumpster, Driveway, Transformer, Parking, etc.
- e) sdsFeatureName - Pad, Slab, Parking, etc.
- f) facilityNumber
- g) builtDate
- h) contractNumber
- i) isLighted

**CLJN.CL.PavementSectionRoadway**

The surface area that comprise a road area, upon which vehicles drive and park.

- a) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- b) operationalStatus - inService, abandoned, etc.
- c) pavementSectionType - curb, roadway, etc.
- d) facCode - Surfaced or Unsurfaced
- e) divided - Yes / No
- f) featureCode
- g) oneWay - Yes / No
- h) routeSurfaceComposition - concrete, asphalt, etc.
- i) builtDate
- j) contractNumber
- k) isLighted - Yes / No
- l) isTankTrail - Yes / No

**CLJN.CL.PavementSectionSidewalk**

The paved pedestrian walkway prepared to facilitate travel on foot. It may or may not be adjacent to a street/road.

- a) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- b) operationalStatus - inService, abandoned, etc.
- c) pavementSectionType - Sidewalks
- d) sdsFeatureDescription - Named Area
- e) routeSurfaceComposition - Concrete, Asphalt, etc.
- f) builtDate
- g) contractNumber
- h) installationCode - M67001
- i) isLighted - Yes / No

**CLJN.CL.RailTrack**

A track is the main designation for describing a physical linear portion of the network

- a) contractNumber
- b) facilityNumber
- c) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- d) NetworkSubtype - railroadTrack, craneTrack
- e) operationalStatus - inservice, abandoned, etc.
- f) sdsFeatureName - Start & finish Points
- g) sdsFeatureDescription - Provide Street Name Cross cover

**CLJN.CL.RecreationArea**

An area defined for recreational purposes

- a) facilityNumber
- b) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- c) contractNumber
- d) sdsFeatureName - Type of recreation field
- e) sdsFeatureDescription - Type of recreation feature
- f) areaType - biking, boating, picnic, Hunting, etc.

**CLJN.CL.RecreationTrail**

A location providing physical activities which are mentally relaxing, such as running/walking, biking, or hiking

- a) recreationTrailIDPK - Facility or Structure Number
- b) trailType - Multi-use, horse riding, etc.
- c) isPaved - YES / NO
- d) dateConstructed
- e) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) sdsFeatureName - Trail Name
- h) sdsFeatureDescription - Area, Location or parallel street

**CLJN.CL.StructureArea**

A facility classified as other than a building or linear asset

- a) facilityNumber - Structure Number
- b) builtDate
- c) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- d) contractNumber
- e) sdsFeatureName - Name of structure according to contract
- f) sdsFeatureDescription - Description of item
- g) heightAboveSurfaceLevel
- h) heightAboveSurfaceLevelUOM - foot, inch, meter, etc.

**CLJN.CL.StructurePoint**

Example: Flag poles; Point of Information Signs (POI) etc

- a) facilityNumber - Structure Number
- b) builtDate
- c) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- d) contractNumber
- e) sdsFeatureName - POI, Sign, Flagpole, bleacher, etc.
- f) sdsFeatureDescription - Specific type of feature

**CLJN.CL.Tower**

A vertical projection, higher than its diameter, generally used for observation, storage, or electronic transmission

- a) towerUseType - communication, observation, etc.
- b) heightMax
- c) heightUOM - foot, inch, meter, etc.

- d) contractNumber
- e) towerType - Observation Tower, Guard Tower, etc.
- f) facilityNumber - Structure number
- g) sdsFeatureDescription
- h) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- i) towerMaterial - wood, concrete, steel, etc.

#### **CLJN.CL.TrafficControlLight**

A feature used to represent traffic lights

- a) contractNumber
- b) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- c) sdsFeatureName - Traffic Control Light, Traffic Signal control box, etc.
- d) sdsFeatureDescription - Location such as streets that intersect

#### **CLJN.CL.Wall**

A linear feature used for separation of facilities, ornamental decoration, or structural reinforcement (retaining wall)

- a) wallType - brick, timber, stone, concrete, etc.
- b) wallHeight
- c) wallHeightUOM - foot, inch, meter, etc.
- d) dateConstructed
- e) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) sdsFeatureName
- h) sdsFeatureDescription - Dumpster enclosure, Utility Enclosure, Blast Protection, etc.

#### **1.4.4 CLJN.CL.REAL\_PROPERTY\_RESTRICTED**

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System (GPS) and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

#### **CLJN.CL.Well**

A shaft dug or drilled into the Earth for the purpose of extracting fluids from the subsurface, collecting environmental samples, injecting fluids into the subsurface or extracting contamination or other impurities from the subsurface

- a) facilityNumber - Structure Number
- b) wellPurpose - extraction, injection, etc.
- c) wellResource - WATER
- d) operationalStatus - inservice, abandoned, etc.
- e) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- f) contractNumber

- g) sdsFeatureName - potable or nonpotable
- h) sdsFeatureDescription - operational status source
- i) ProjectID - Name of Plant this well services
- j) wellType - artesian, drilled, etc.
- k) operationalStatus - inservice, abandoned, removed, etc

#### 1.4.5 CLJN.CL.COMMUNICATIONS\_RESTRICTED

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System GPS and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

##### **CLJN.CL.CommCartographicFeatureArea**

Graphic features that aid in visually associating CommAnnotation features to the appropriate communication infrastructure feature.

- a) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- b) sdsFeatureName
- c) sdsFeatureDescription
- d) commProjectName - Contract Number
- e) operationalStatus - In service, Removed, Abandon in Place, etc.

##### **CLJN.CL.CommCartographicFeatureLine**

Graphic features that aid in visually associating CommAnnotation features to the appropriate communication infrastructure feature.

- a) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- b) sdsFeatureName
- c) sdsFeatureDescription
- d) commProjectName - Contract Number
- e) operationalStatus - In service, Removed, Abandon in Place, etc.

##### **CLJN.CL.CommCartographicFeaturePoint**

Graphic features that aid in visually associating CommAnnotation features to the appropriate communication infrastructure feature.

- a) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- b) sdsFeatureName
- c) sdsFeatureDescription
- d) commProjectName - Contract Number
- e) operationalStatus - In service, Removed, Abandon in Place, etc.

##### **CLJN.CL.CommUtilityNode**

A subdivision of a communications network, particularly an asset that participates in the transmission of a signal but that is not a cable.

- a) commUtilityNodeIDPK - Structure Number

- b) commNodeType - connection or two or more sheaths, Devise Used to detect & measure various environmental conditions, Devise converts electrical signal in to sound, etc.
- c) operatingSpectrum
- d) transmissionPower
- e) powerUOM
- f) operationalStatus - In service, Removed, Abandon in Place, etc.
- g) commProjectName - Contract Number
- h) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- i) sdsFeatureName - MNS - Big Voice, MNS - Little Voice, MSN - Control Station, etc.
- j) sdsFeatureDescription - MNS - Big Voice, Field Antenna, Antenna Communication, etc.

**CLJN.CL.CommUtilitySegment**

A subdivision of a communications network, particularly a cable for the transmission of a signal.

- a) cableMaterial - Fiber Optical, PB, CU, Steel, ABS, etc.
- b) cableSheathing - PE, XLPE, Cross Ply, etc.
- c) availableFibers -
- d) usedFibers
- e) numberOfMultiModeFibers
- f) numberOfPairs
- g) numberOfSingleModeFibers
- h) installationTypeCode - Underground, above ground, etc.
- i) operationalStatus - In service, Removed, Abandon in Place, etc.
- j) cableInstaller -
- k) cableRoute -
- l) cableCount -
- m) numberOfStrands -
- n) wireGauge -
- o) commProjectName - Contract Number
- p) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- q) sdsFeatureName - Non-direct Buried Lines, Direct Buried Lines, etc.
- r) sdsFeatureDescription - communications line, etc.

**CLJN.CL.UtilityFeature\_cDuctBank**

One or more ducts routed in parallel between two nodes.

- a) networkType - A network used for the transmission of a signal.
- b) networkSubType - The communication network subtype.
- c) utilityFeatureType - One or more ducts routed in parallel between two nodes. (L), etc.
- d) diameter
- e) diameterUOM - Inches, Feet, meters, etc.
- f) ductDepth
- g) ductDepthUOM - Inches, Feet, meters, etc.
- h) interDuctDiameter
- i) interDuctDiameterUOM - Inches, Feet, meters, etc.
- j) isEncased - Yes or No
- k) numberOfDucts
- l) numberOfInserts

- m) operationalStatus - In service, Removed, Abandon in Place, etc.
- n) commProjectName - Contract Number
- o) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.

**CLJN.CL.UtilityFeature\_cManhole**

An enclosed structure (manhole, or handhole)

- a) utilityFeatureIDPK - MH Number - See project Manager
- b) networkType - Network used for transmission of signal,
- c) networkSubType - Communication network subtype
- d) utilityFeatureType - Manhole, hand hole, etc.
- e) cManholeType - T, R2A, L, j4, JC9C, etc.
- f) cManholeMaterial - steel, plastic, aluminum, fiberglass, etc.
- g) isHandhole - Yes or No
- h) widthValue
- i) widthUOM - Inches, Feet, meters, etc.
- j) lengthValue
- k) lengthUOM - Inches, Feet, meters, etc.
- l) heightValue
- m) heightUOM - Inches, Feet, meters, etc.
- n) diameter
- o) diameterUOM - Inches, Feet, meters, etc.
- p) cManholeDepth
- q) cManholeDepthUOM - Inches, Feet, meters, etc.
- r) operationalStatus - In service, Removed, Abandon in Place, etc.
- s) commProjectName - Contract Number
- t) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.

**CLJN.CL.UtilityFeature\_cPedestal**

An above-ground enclosed structure that provides access to buried plant and a place to house splices, terminals, etc.

- a) networkType - A network used for the transmission of a signal.
- b) networkSubType - The communication network subtype.
- c) utilityFeatureType - above-ground enclosed structure that provides access to buried plant and a place to house splices, terminal, etc.
- d) pedestalType - rectangular box type, etc.
- e) operationalStatus - In service, Removed, Abandon in Place, etc.
- f) commProjectName - Add Contract Number
- g) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- h) sdsFeatureDescription

**CLJN.CL.UtilityFeature\_cVault**

An enclosed structure in a facility used for cable entrance.

- a) utilityFeatureType
- b) networkType - A network used for the transmission of a signal.
- c) networkSubType - The communication network subtype.
- d) heightValue
- e) heightUOM - Inches, Feet, meters, etc.

- f) widthValue
- g) widthUOM - Inches, Feet, meters, etc.
- h) vaultDepth
- i) vaultDepthUOM - Inches, Feet, meters, etc.
- j) diameter
- k) diameterUOM - Inches, Feet, meters, etc.
- l) operationalStatus - In service, Removed, Abandon in Place, etc.
- m) commProjectName - Contract Number
- n) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- o) sdsFeatureDescription

#### 1.4.6 CLJN.CL.UTILITIES\_ELECTRICAL

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System (GPS) and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

##### **CLJN.CL.ElecUtilNode\_eExteriorLight**

Exterior lighting is supplied by local distribution systems and is generally the only service for which the electric utility installs, operates and maintains utilization equipment

- a) electricalUtilityNodeIDPK
- b) exteriorLightType - streetLight, parkingLotLight, etc.
- c) electricalNodeType - eExteriorLight
- d) operationalStatus - inservice, abandoned, etc.
- e) bulbType LED, INCA, etc.
- f) circuitID - This available from CM or PM
- g) hasSensor - YES / NO
- h) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- i) contractNumber
- j) dateInService
- k) sdsFeatureName
- l) Voltage
- m) Wattage

##### **CLJN.CL.ElecUtilNode\_eGenerator**

Generator is a power source for providing electricity. Generators may be primary or standby power sources

- a) FacilityNumber - structure number
- b) electricalNodeType - eGenerator
- c) operationalStatus - inservice, abandoned, etc.
- d) voltage
- e) kvaRate
- f) circuitID - List is available from CM or PM
- g) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- h) contractNumber
- i) dateInService
- j) sdsFeatureName - Manufacturer



- k) generatorType - Primary, backup, emergency, etc.

#### **CLJN.CL.ElecUtilNode\_eMeterPoint**

A electrical meter point represents the location of the metering device

- a) electricalNodeType - Description
- b) operationalStatus - inservice, abandoned, etc.
- c) circuitID - List is available from CM or PM
- d) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- e) contractNumber
- f) dateInService
- g) sdsFeatureName
- h) sdsFeatureDescription -
- i) mountingType
- j) utilityOwner
- k) voltage - 208Y-120V, 480Y-277V, etc.

#### **CLJN.CL.ElecUtilNode\_eSwitch**

Electrical Switches are installed at strategic locations throughout distribution feeder circuits

- a) electricalNodeType
- b) switchPosition - closed, open, etc.
- c) operationalStatus - inservice, abandoned, etc.
- d) electricalSwitchType - switches
- e) circuitID - List is available from CM or PM
- f) numberOfPhases single, three, two
- g) switchPosition - Open, closed, etc.
- h) voltage - 208Y-120V, 480Y-277V, etc.
- i) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- j) contractNumber

#### **CLJN.CL.ElecUtilNode\_eTransformer**

The Transformer feature class captures information about distribution and power transformers

- a) electricalNodeType - Transformer
- b) transformerType - stepdown, step up, etc.
- c) mountingType - pool or pad
- d) numberOfPhases - 1, 2, 3, etc.
- e) primaryVoltage - 208Y-120V, 480Y-277V, etc.
- f) secondaryVoltage - 208Y-120V, 480Y-277V, etc.
- g) totalKVA
- h) circuitID - List is available from CM or PM
- i) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- j) contractNumber
- k) sdsFeatureName - Manufacturer
- l) operationalStatus - inservice, abandoned, etc.

#### **CLJN.CL.ElecUtilNode\_eVoltageRegulator**

Voltage regulators vary the ac supply or source voltage to the customer to maintain the voltage within desired limits

- a) electricalNodeType - VoltageRegulator
- b) operationalStatus - inservice, abandoned, etc.

- c) primaryVoltage - 208Y-120V, 480Y-277V, etc.
- d) secondaryVoltage - 208Y-120V, 480Y-277V, etc.
- e) numberOfPhases - 1, 2, 3,
- f) circuitID - This available from CM or PM
- g) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- h) contractNumber

#### **CLJN.CL.UtilFeat\_eSupportStructure**

A structure that supports electric devices

- a) utilityFeatureType - Utility, Guy, Poles, etc.
- b) networkType - electrical
- c) heightValue -
- d) heightUOM - foot, inch, meter, etc.
- e) utilityOwner
- f) operationalStatus - inservice, abandoned, etc.
- g) cableCircuitName - List is available from CM or PM
- h) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- i) contractNumber
- j) sdsFeatureName - Utility Pole, etc
- k) sdsFeatureDescription - Number of circuits attached to pole

#### **CLJN.CL.UtilFeat\_eUndergroundStructure**

Underground Structure is a simple junction feature that includes vaults and manholes that house and protect electrical equipment

- a) utilityFeatureIDPK - Structure Number
- b) utilityFeatureType - Underground, surface structure, etc
- c) networkType - electrical
- d) operationalStatus - inservice, abandoned, etc.
- e) electricalJunctionType - Manhole, Junction Box, Handhole, etc.
- f) numberOfCables -
- g) rimElevation -
- h) rimElevationUOM - foot, inch, meter, etc.
- i) cableCircuitName - List is available from CM or PM
- j) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- k) contractNumber

#### **CLJN.CL.ElecUtilSegment**

A subdivision of an electrical distribution network, particularly a line for the transmission of electricity

- a) electricalSegmentType - OH Primary, UG Primary, OH Secondary, UG Secondary, etc.
- b) cableMaterial - AL, copper, etc.
- c) location - aboveground, underground, etc.
- e) voltage - 208Y-120V, 480Y-277V, etc.
- f) utilityOwner -
- g) operationalStatus - inservice, abandoned, etc.
- h) insulationMaterial - polyCross, none, etc.
- i) conductorSize -
- j) neutralSize -
- k) numberOfConduct -
- l) numberOfNeutral -
- m) numberOfPhases - 1, 2, 3, etc.

- n) circuitID - List is available from CM or PM
- o) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- p) contractNumber -
- q) dateInService -
- r) sdsFeatureName - Electrical Distribution, exterior lighting, etc.
- s) sdsFeatureDescription - Armless mount, cross arm, etc.

**CLJN.CL.UtilFeat\_eElecFacilitySite**

Polygon feature class to define boundaries of electrical facility stations

- a) utilityFeatureType - Electrical Facility station
- b) operationalStatus - inservice, abandoned, etc.
- c) numberOfCircuits
- d) numberOfSpareBays
- e) numberOfTransformers
- f) voltageIn - 208Y-120V, 480Y-277V, etc.
- g) utilityOwner
- h) gisFeatureCollectionMethod - - CAD, Survey Grade GPS, etc.
- i) contractNumber
- j) equipmentInstallationDate
- k) sdsFeatureDescription - Location of substation
- l) facilityIDFK - structure number

**1.4.7 CLJN.CL.UTILITIES\_POL**

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System GPS and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

**CLJN.CL.POLUtilNode\_oDispenser**

A fuel dispenser is a machine at a fueling station that is used to pump fuel into vehicles or AGE equipment

- a) polNodeType - Fuel dispenser
- b) networkSubType - automotive\_diesel, jpts, etc.
- c) operationalStatus - inservice, abandoned, etc.
- d) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- e) contractNumber
- f) dateInService
- g) sdsFeatureName - Fuel Dispenser
- h) sdsFeatureDescription - Type of fuel, unleaded, ethanol, diesel, etc.

**CLJN.CL.UtilFeat\_oPumpingFacility**

A structure, typically a building, containing pumps, filters, and controls as part of a larger fuel handling system

- a) utilityFeatureIDPK
- b) utilityFeatureType - off-loading pumping facility
- c) networkSubType automotive\_diesel, jpts, etc.

- d) operationalStatus - inservice, abandoned, etc.
- e) gisFeatureCollectionMethod - - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) equipmentInstallationDate
- h) sdsFeatureDescription -

#### 1.4.8 CLJN.CL.UTILITIES\_STORMWATER

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System GPS and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

##### **CLJN.CL.Impoundment\_Stormwater**

An accumulation of storm water that is impounded by a dam or weir

- a) permitID - Permit Number
- b) impoundmentType - minimumPool, topOfFloodControl, etc.
- c) waterSurfaceElevation
- d) waterSurfaceElevationUOM - foot, inch, meter, etc.
- e) dateConstructed
- f) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- g) contractNumber
- h) operationalStatus - inservice, abandoned, etc.
- i) stormwaterTreatmentType - Infiltration Basin, Constructed Wetlands, etc.
- j) utilityOwner

##### **CLJN.CL.StormwaterUtilityNode\_swInlet**

The location at which stormwater is collected/received into the stormwater network

- a) stormwaterUtilityNodeIDPK - Structure ID
- b) stormwaterNodeType - swInlet description
- c) networkSubType - stormWater
- d) stormwaterInletType - Inlet, Headwall, etc.
- e) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) equipmentInstallationDate
- h) sdsFeatureDescription -
- i) operationalStatus inservice, abandoned, etc.

##### **CLJN.CL.StormwaterUtilitySegment**

A subdivision of a stormwater network, particularly a pipeline or drainage ditch for the transport of stormwater, between the source, holding facilities, and/or treatment facilities

- a) diameter
- b) diameterUOM - inch
- c) pipeMaterial - cement, plastic, etc.
- d) isLined - YES / NO
- e) downstreamInvertElevation

- f) upstreamInvertElevation
- g) gisFeatureCollectionMethod - - CAD, Survey Grade GPS, etc.
- h) contractNumber
- i) equipmentInstallationDate
- j) sdsFeatureName - Stormwater pipe, Open Ditch, etc.
- k) sdsFeatureDescription
- l) operationalStatus - inservice, abandoned, etc.
- m) stormwaterPipeStyle
- n) stormwaterSegmentType - open ditch, closed under other feature type, etc.

#### **CLJN.CL.StorUtilNode\_swManhole**

A storm water manhole is an underground concrete structure with a top opening used for collecting and routing storm water runoff through underground pipes

- a) stormwaterNodeType
- b) stormwaterUtilityNodeIDPK - Structure Number
- c) numberOfPipes
- d) operationalStatus - inservice, abandoned, etc.
- e) stormwaterBasinIDFK - Basin id
- f) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- g) contractNumber
- h) equipmentInstallationDate
- i) sdsFeatureName
- j) sdsFeatureDescription

#### **1.4.9 CLJN.CL.UTILITIES\_THERMAL**

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System GPS and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

#### **CLJN.CL.GeothermalWell**

A geothermal well is part of a central heating and/or cooling system that pumps heat to or from the ground

- a) geothermalWellIDPK - Well ID
- b) pipeMaterial - AL, stainless\_steel, etc.
- c) geothermalWellCasingMaterial
- d) thermalInsulationMaterial - MINERAL\_FIBER, ARMAFLEX, etc.
- e) geothermalWellDepth
- f) geothermalWellDepthUOM - foot, inch, meter, etc.
- g) downholePipeDiameter
- h) downholePipeDiameterUOM - foot, inch, meter, etc.
- i) hasBentoniteSeal - YES / NO
- j) hasPump - YES / NO
- k) operationalStatus - inservice, abandoned, etc.
- l) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- m) contractNumber
- n) designDrawingNumber
- o) equipmentInstallationDate

- p) sdsFeatureDescription - Associated Building Number
- q) geothermalPipeType
- r) xLocation
- s) xLocationUOM - foot, inch, meter, etc.
- t) yLocation
- u) yLocationUOM - foot, inch, meter, etc.

#### **CLJN.CL.TherUtilNode**

The Thermal Fitting Type bend, cap, tee, etc. subclass represents the joint between two lines

- a) thermalUtilityNodeIDPK
- b) thermalNodeType - tFittingType bend, cap, tee, etc.
- c) diameter
- d) diameterUOM - foot, inch, meter, etc.
- e) operationalStatus - inservice, abandoned, etc.
- f) fittingType - bend, cap, tee, etc.
- g) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- h) contractNumber
- i) dateInService
- j) sdsFeatureName
- k) sdsFeatureDescription
- l) depth
- m) depthUOM - foot, inch, meter, etc.
- n) facilityNumber
- o) fittingType - bend, cap, tee, etc.
- p) projectID
- q) utilityOwner

#### **CLJN.CL.TherUtilSegment**

A subdivision of a thermal distribution network, particularly a pipeline for the transmission of chilled water, refrigerant, hot water, or steam

- a) thermalSegmentType - tMainLine, tServiceLine
- b) networkSubType
- c) operationalStatus - inservice, abandoned, etc.
- d) material - AL, stainless\_steel, etc.
- e) pipeLocation - aboveground, underground, etc.
- f) diameter
- g) diameterUOM - foot, inch, meter, etc.
- h) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- i) contractNumber
- j) dateInService
- k) sdsFeatureName
- l) sdsFeatureDescription
- m) cathodicProtection - YES / NO
- n) depth
- o) depthUOM - foot, inch, meter, etc.
- p) facilityNumber
- q) pipeType - circular, box, etc.
- r) projectID
- s) utilityOwner

#### **CLJN.CL.TherUtilNode\_tProdStruc**

Thermal production structures are facilities which produce steam,

high-temperature water, low-temperature water, dual-temperature water  
or chilled water

- a) thermalNodeType - facility which produce steam, etc.
- b) Capacity
- c) CapacityUOM - foot, inch, meter, etc.
- d) operationalStatus - inservice, abandoned, etc.
- e) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) dateInService
- h) sdsFeatureName
- i) sdsFeatureDescription
- j) facilityNumber
- k) utilityOwner

**CLJN.CL.TherUtilNode\_tSystemValve**

A thermal system valve is a device installed in a pipeline to isolate  
flow

- a) thermalNodeType
- b) systemValveType - gate, ball, etc.
- c) diameter
- d) diameterUOM - foot, inch, meter, etc.
- e) operationalStatus - inservice, abandoned, etc.
- f) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- g) contractNumber
- h) dateInService
- i) depth
- j) depthUOM - foot, inch, meter, etc.
- k) utilityOwner
- l) valveMaterial - AL, stainless\_steel, etc.

**CLJN.CL.UtilFeat\_tUGEnclosureAccess**

A point feature class for locating the access point to a thermal  
manhole junction

- a) utilityFeatureType - SCADA, UGEnclosureAccess point, etc.
- b) networkSubType - steamSupply, steamReturn, etc.
- c) networktype -
- d) operationalStatus - inservice, abandoned, etc.
- e) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) diameter
- h) diameterUOM - inch, feet, meter, etc.
- i) sdsFeatureName - steam pit, etc.

**1.4.10 CLJN.CL.UTILITIES\_WASTEWATER**

GPS and collect attribute data as specified for each feature listed with  
GPS accuracy as described in paragraph "Global Positioning System GPS and  
Spatial Reference Properties." Attribute fields may be associated with  
Domains, which are utilized to constrain the values allowed in a particular  
field, attribute table or feature class. Domains must be utilized when  
populating the feature where required.

GPS and collect the following attributes:

**CLJN.CL.UtilFeat\_sPretreatmentDevice**

A wastewater pretreatment device is a piece of equipment that removes contaminants before they enter the waste system, etc.

- a) utilityFeatureIDPK - Structure Number
- b) utilityFeatureType - Pretreatment Device see existing data
- c) operationalStatus - inservice, abandoned, etc.
- d) pretreatmentDeviceType - OWS, Trap, etc.
- e) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) equipmentInstallationDate
- h) sdsFeatureDescription - detailed description

**CLJN.CL.UtilityFeature\_sPumpStation**

This is a collection of waste water Pump Station is a facility, which indications total capacity for the station

- a) utilityFeatureIDPK - Structure Number
- b) utilityFeatureType - Pump station, etc.
- c) networkType - wastewater network subtype....
- d) numberOfPumps -
- e) totalDesignCapacity -
- f) designCapacityUOM -
- g) totalRatedFlow
- h) ratedFlowUOM - GPM, CF\_SEC, etc.
- i) operationalStatus - inservice, abandoned, etc.
- j) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- k) contractNumber
- l) equipmentInstallationDate
- m) sdsFeatureName
- n) sdsFeatureDescription

**CLJN.CL.UtilityFeature\_sSCADASensor**

The SCADA sensor is a feature that is used to remotely measure the status of network components

- a) utilityFeatureIDPK - Structure Number
- b) utilityFeatureType - SCADA
- c) networkType - wastewater
- d) operationalStatus - inservice, abandoned, etc.
- e) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- f) contractNumber
- g) equipmentInstallationDate
- h) sdsFeatureName
- i) sdsFeatureDescription - Antenna Radio to Location

**CLJN.CL.UtilityFeature\_sSepticTank**

A wastewater septic tank is a small-scale anaerobic digester and leach field designed to treat wastewater from an individual facility, and is not connected to the wastewater collection system

- a) utilityFeatureIDPK - Structure Number
- b) utilityFeatureType - septic tank
- c) storageTankProduct - domestic wastewater
- d) volume



- e) volumeUOM - usGallon, cubicMeter, etc.
- f) isRegulated - YES / NO
- g) operationalStatus - inservice, abandoned, etc.
- h) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- i) contractNumber
- j) equipmentInstallationDate
- k) sdsFeatureName - Septic Tank
- l) sdsFeatureDescription - Location area name

**CLJN.CL.WastUtilNode\_sCleanOut**

A clean out is an access point in a lateral used for maintenance purposes

- a) wastewaterNodeType - Cleanout
- b) material - PVC, etc.
- c) diameter
- d) diameterUOM - inch, meter, etc.
- e) operationalStatus - inservice, abandoned, etc.
- f) mediaID - GIS Collection Method - - CAD, Survey Grade GPS, etc.
- g) contractNumber
- h) utilityOwner

**CLJN.CL.WastUtilNode\_sFitting**

The wastewater fitting that represents the join between two lines

- a) fittingType - Bend, Cap, Tee, etc.
- b) sdsFeatureDescription - Ben, Cap, Tee, Wye, etc.
- c) diameter
- d) diameterUOM - foot, inch, meter, etc.
- e) operationalStatus - inservice, abandoned, etc.
- f) material - PVC, precast, stainless steel, etc.
- g) mediaID - GIS Collection Method - - CAD, Survey Grade GPS, etc.
- h) contractNumber
- i) fittingType - bend, cap, tee, etc.
- j) utilityOwner

**CLJN.CL.WastUtilNode\_sManhole**

The wastewater manhole represents an access point between two or more lines

- a) wastewaterNodeType - sManhole
- b) operationalStatus - inservice, abandoned, etc.
- c) numberOfPipes
- d) pipeMaterial - precast brick, etc.
- e) diameter
- f) diameterUOM - inch, etc.
- g) rimElevation
- h) rimElevationUOM - foot, inch, meter, etc.
- i) mediaID - GIS Collection Method - - CAD, Survey Grade GPS, etc.
- j) contractNumber
- k) dateInService
- l) sdsFeatureName - Manhole, Valve box, etc.
- m) manholeMaterial - precast brick, etc.

n) utilityOwner

**CLJN.CL.WastUtilNode\_sPump**

A wastewater pump is a piece of equipment that adds energy to a fluid being conveyed through a pipe or other closed conduit

- a) facilityNumber
- b) numberOfPumps
- c) operationalStatus - inservice, abandoned, etc.
- d) wastewaterNodeType - sPump
- e) ratedFlow
- f) ratedFlowUOM - GPM, CF\_SEC, etc.
- g) pumpHorsepower
- h) contractNumber
- i) dateInService
- j) mediaID - GIS Collection Method - - CAD, Survey Grade GPS, etc.
- k) sdsFeatureName - Wastwater Pump, Lift Station, etc.
- l) utilityOwner

**CLJN.CL.WastUtilNode\_sSystemValve**

A system valve is a facility that is fitted to a pipeline or orifice in which the closure member is either rotated or moved transversely or longitudinally in the waterway so as to control or stop the flow

- a) wastewaterNodeType - sSystemValve
- b) valveMaterial - stainless\_steel, etc.
- c) diameter
- d) diameterUOM - inch, meter, etc.
- e) operationalStatus - inservice, abandoned, etc.
- f) valveType - gate, butterfly, check, etc.
- g) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- h) contractNumber
- i) dateInService
- j) utilityOwner

**CLJN.CL.WastUtilNode\_sTreatmentPlant**

A facility designed to treat wastewater using physical, chemical and/or biological processes prior to discharge into receiving waters

- a) wastewaterNodeType - facility designed to treat wastewater
- b) Capacity
- c) CapacityUOM - gallons, meter, etc.
- d) ContractNumber
- e) operationalStatus - inservice, abandoned, etc.
- f) facilityNumber - Structure Number
- g) mediaID - GIS Collection Method - - CAD, Survey Grade GPS, etc.
- h) dateInService
- i) sdsFeatureName

**CLJN.CL.WastUtilSegment**

Wastewater Line - A pipeline for the transport of sewage or industrial waste between the source, holding facilities, and/or treatment

facilities

- a) wastewaterSegmentType - Gravity, Force Main, Service etc.
- b) utilityOwner - CLJN / ONWASA
- c) operationalStatus - inservice, abandoned, etc.
- d) pipeMaterial - PVC, VC, etc.
- e) isLined - YES / NO
- f) diameter
- g) diameterUOM -foot, inch, meter, etc.
- h) mediaID - GIS Collection Method - - CAD, Survey Grade GPS, etc.
- i) contractNumber
- j) dateInService
- k) sdsFeatureName -
- l) invertElevationDownstream
- m) invertElevationUpstream
- n) invertElevationUOM - foot, inch, meter, etc.
- o) slope

1.4.11 **CLJN.CL.UTILITIES\_WATER**

GPS and collect attribute data as specified for each feature listed with GPS accuracy as described in paragraph "Global Positioning System (GPS) and Spatial Reference Properties." Attribute fields may be associated with Domains, which are utilized to constrain the values allowed in a particular field, attribute table or feature class. Domains must be utilized when populating the feature where required.

GPS and collect the following attributes:

**CLJN.CL.UtilFeat\_wUGEnclosureAccess**

A point feature class for locating the access point to a water manhole junction

- a) utilityFeatureIDPK - Manhole Number
- b) numberOfPipes
- c) groundElevation
- d) elevationUOM - inch, foot, meter, etc.
- e) operationalStatus - inservice, abandoned, etc.
- f) gisFeatureCollectionMethod - CAD, Survey Grade GPS, etc.
- g) contractNumber
- h) equipmentInstallationDate
- i) sdsFeatureName - Manhole
- j) utilityFeatureType - wUGEnclosureAccess
- k) waterServiceAreaIDFK - Holcomb, Hadnot Pt, Onslow Beach, etc.

**CLJN.CL.WaterUtilNode\_wFittingType bend, cap, tee, etc.**

The water fitting class represents the joint between two lines in the water network

- a) waterNodeType - fitting class represents transition between two lines
- b) diameter -
- c) diameterUOM - inch, meter, etc.
- d) operationalStatus -inservice, abandoned, etc.
- e) fittingType - reducer, bend, cap, tee, etc.
- f) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.

- g) contractNumber
- h) dateInService

**CLJN.CL.WaterUtilNode\_wHydrant**

A water distribution point that enables fire fighters to attach fire hoses

- a) waterNodeType - wHydrant
- b) networkSubType - fireProtectionwater
- c) operationalStatus - inservice, abandoned, etc.
- d) connectionType - fireconnect, firehydrant
- e) facilityNumber - Structure number if connection is to structure
- f) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- g) contractNumber
- h) dateInService

**CLJN.CL.WaterUtilNode\_wMeterPoint**

A water meter point represents the location of the metering device

- a) waterNodeType - meterPoint
- b) operationalStatus - inservice, abandoned, etc.
- c) projectID - area name
- d) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- e) contractNumber
- f) diameter
- g) diameterUOM - foot, inch, meter, etc.
- h) dateInService

**CLJN.CL.WaterUtilNode\_wReliefValve**

A valve used to relieve pressure

- a) operationalStatus
- b) sdsFeatureDescription
- c) sdsFeatureName - Air Release Valve
- d) contractNumber
- e) dateInService
- f) diameter
- g) diameterUOM
- h) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- i) projectID
- j) utilityOwner

**CLJN.CL.WaterUtilNode\_wSystemValve**

A valve used to regulate pressure, isolate, throttle flow, prevent backflow

- a) waterNodeType - wSystemValve
- b) diameter
- c) diameterUOM - foot, inch, meter, etc.
- d) operationalStatus - inservice, abandoned, etc.
- e) valveType - gate, ball, etc.
- f) projectID - MCASNR, MCBCLJN, Geiger, etc
- g) mediaID - GIS Collection Method -- CAD, Survey Grade GPS, etc.

- h) contractNumber
- i) dateInService
- j) valveType - Gate Valve, Post Indicator Valve, etc.

**CLJN.CL.WaterUtilSegment**

A subdivision of a water distribution network, particularly a distribution pipeline

- a) networkSubType - potable water, raw water, Service, Fire etc.
- b) material - PVC, Ductile Iron, Cement, etc,
- c) diameter
- d) diameterUOM - inch
- e) utilityOwner - MBCCLJN, Onwasa, etc.
- f) operationalStatus -inservice, abandoned, etc.
- g) projectID
- h) mediaID - GIS Collection Method /- CAD, Survey Grade GPS, etc.
- i) contractNumber
- j) dateInService
- k) sdsFeatureName - Main, Service, Fire, AIP, Raw, etc.
- l) invertElevationDownstream
- m) invertElevationUpstream

**CLJN.CL.WateUtilNode\_wProdStructure**

Water production structures are facilities which produce raw or treated water

- a) waterNodeType - produce treated water, etc.
- b) facilityNumber - Structure Number
- c) capacity
- d) capacityUOM - gallons per day, etc
- e) operationalStatus - inservice, abandoned, etc.
- f) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- g) contractNumber
- h) dateInService
- i) sdsFeatureName - Water Treatment Plant, Location
- j) sdsFeatureDescription - Describe Plant purpose

**CLJN.CL.WateUtilNode\_wStorageStructure**

Water storage structures are facilities that store large volumes of water - Water Tank)

- a) facilityNumber - structure number
- b) waterNodeType - water Storage Structure
- c) storageTankProduct - treatedWater, rawWater, etc.
- d) volume
- e) volumeUOM - gallons, etc.
- f) tankType - Elevated, Under Ground, Above Ground, etc.
- g) operationalStatus - inservice, abandoned, etc.
- h) width
- i) widthUOM - foot, etc.
- j) groundElevation
- k) invertElevation
- l) overflowElevation
- m) surfaceElevation
- n) elevationUOM - foot, etc.

- o) projectID - Named Area of Location, Hadnot Point, etc.
- p) mediaID - GIS Collection Method - CAD, Survey Grade GPS, etc.
- q) contractNumber
- r) dateInService
- s) storageTypeProduct - Raw water or Potable Water

#### 1.4.12 Non-Compliance

Failure to follow the specification outlined in this document will result in non-acceptance of data deliverable.

Note: Geospatial data delivery does not replace record drawing requirements.

#### PART 2 PRODUCTS

Not Used.

#### PART 3 EXECUTION

Not Used.

-- End of Section --

SECTION 01 91 00.15

TOTAL BUILDING COMMISSIONING

02/19

PART 1 GENERAL

1.1 SUMMARY

Commission the building systems listed herein. Employ the services of an independent Commissioning Firm. The Commissioning Firm must be a 1st tier subcontractor of the General or Prime Contractor and must be financially and corporately independent of all other subcontractors. The Commissioning Firm must employ a Lead Commissioning Specialist that coordinates all aspects of the commissioning process. Conform to the commissioning procedures outlined in this specification.

1.2 UNIFIED FACILITIES GUIDE SPECIFICATION REFERENCES

This specification section is intended to work in conjunction with the requirements included in the Unified Facilities Guide Specifications (UFGS) referenced within this specification section. Comply with the requirements of the referenced UFGS to the extent specified herein. UFGS can be found at on the Whole Building Design Guide website at: <http://www.wbdg.org/>

1.3 SYSTEMS TO BE COMMISSIONED

Commission the following systems:

Heating, Ventilating, Air Conditioning, and Refrigeration Systems (HVAC)  
Building Automation System

1.4 REFERENCES

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

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

ASHRAE 202 (2013; Addenda B 2018) Commissioning  
Process for Buildings and Systems

ASSOCIATED AIR BALANCE COUNCIL (AABC)

ACG Commissioning Guideline (2005) Commissioning Guideline

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)

NEBB Commissioning Standard (2009) Procedural Standards for Whole  
Building Systems Commissioning of New  
Construction; 3rd Edition

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION  
(SMACNA)

SMACNA 1429 (1994) HVAC Systems Commissioning Manual,

1st Edition

1.5 COMMUNICATION WITH THE GOVERNMENT

The Lead Commissioning Specialist (CxC) must submit all plans, schedules, reports, and documentation directly to the Contracting Officer's Technical Representative concurrent with submission to the QC Manager. The Lead Commissioning Specialist must have direct communication with the Contracting Officer's Technical Representative regarding all elements of the commissioning process; however, the Government has no direct contract authority with the Lead Commissioning Specialist.

1.6 SEQUENCING AND SCHEDULING

1.6.1 Sequencing

Complete Functional Performance Tests of HVAC systems prior to Performance Verification Tests required by UFGS Section 23 09 23.13 BACnet DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC. Complete the following prior to starting Functional Performance Tests of mechanical systems:

- a. All equipment and systems have been completed, cleaned, flushed, disinfected, calibrated, tested, and operate in accordance with contract documents and construction plans and specifications.
- b. Testing, Adjusting, and Balancing has been completed and the Testing, Adjusting, and Balancing Report, and all TAB and DALT related submittals prerequisite to the TAB Report, have been submitted and approved in accordance with UFGS Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC.
- d. The Pre-Functional Checklists have been submitted and approved.
- e. The Certificate of Readiness for mechanical systems has been submitted and approved.

Complete the following prior to starting Functional Performance Tests of the electrical systems:

- a. All electrical, power generation, and lighting equipment and systems have been completed, calibrated, tested, and operate in accordance with contract documents and construction plans and specifications.
- b. The building envelope is enclosed according to contract documents with final construction completed.
- c. Ceiling tiles, floor coverings, and window coverings are in place.
- d. The Certificate of Readiness for electrical systems has been submitted and approved.

1.6.2 Project Schedule

Include the following tasks in the project schedule required by Section 01 32 17.00 20 COST-LOADED NETWORK ANALYSIS SCHEDULES (NAS). Ensure sufficient time is scheduled to accommodate the requirements of this specification section. The order of items listed below is not intended to imply a specified sequence:



- a. Submission and approval of the Commissioning Firm and Commissioning Specialist
- b. Submission and approval of the Testing, Adjusting, and Balancing (TAB) Firm and TAB Specialist specified in UFGS Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC
- c. Submission of the Design Review Report specified herein.
- d. Submission of the Design Review Report specified in UFGS Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC.
- e. Submission and approval of the Construction Phase Commissioning Plan
- f. Installation of permanent utilities (gas, water, electric)
- g. Drainage and Vent, Building Sewers, Water Supply Systems and Backflow Prevention Assembly Tests specified in UFGS 22 00 00 PLUMBING, GENERAL PURPOSE
- h. Factory Acceptance Testing for each of the systems to be commissioned as required by technical specifications
- i. Manufacturer's Equipment Start-Up for each of the systems to be commissioned.
- j. Potable Water System Flushing specified in UFGS Section 22 00 00 PLUMBING, GENERAL PURPOSE
- k. Operational Tests of the plumbing system specified in UFGS Section 22 00 00 PLUMBING, GENERAL PURPOSE.
- l. Potable Water System Disinfection specified in UFGS Section 22 00 00 PLUMBING, GENERAL PURPOSE
- m. Submission and approval of the TAB Schematic Drawings, Report Forms, and Procedures specified in UFGS Section 23 09 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC.
- n. Submission and approval of Duct Air Leakage Test Procedures specified in UFGS Section 23 95 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC
- o. Duct Air Leakage Test Execution specified in UFGS Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC
- p. Submission and approval of the Final Duct Air Leakage Test Report specified in UFGS Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC
- q. Testing, Adjusting, and Balancing (TAB) Field Work required by UFGS Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC
- r. Submission and approval of the TAB Report specified in UFGS Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC
- s. TAB Field Acceptance Testing required by UFGS Section 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC
- t. Submission and approval of the Start-Up Testing Report specified in

UFGS Section 23 09 23.13 BACnet DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC.

- u. Submission and approval of the Performance Verification Test Procedures specified in UFGS Section 23 09 23.13 BACnet DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC.
- v. Performance Verification Tests required by UFGS Section 23 09 23.13 BACnet DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC
- w. Performance Verification Test Report specified in UFGS Section 23 09 23.13 BACnet DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC
- x. Pre-Functional Checklist Submittal
- y. Functional Performance Testing for each system to be commissioned
  - a. Post-Test Deficiency Correction for each system to be commissioned
    - aa. Re-Testing
    - bb. Endurance Tests
  - cc. Training for each of the systems to be commissioned
  - dd. Systems Manual, submission and approval
  - ee. Submission and approval of the Commissioning Report
  - ff. Seasonal Testing
  - gg. Post-Construction Endurance Testing
  - hh. Post-Construction Site Visit

1.7 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Commissioning Firm; G

Lead Commissioning Specialist; G

Technical Commissioning Specialists; G

SD-05 Design Data

Design Phase Commissioning Plan; G

SD-06 Test Reports

Design Review Report; G

Interim Construction Phase Commissioning Plan; G

Final Construction Phase Commissioning Plan; G S

Pre-Functional Checklists; G

Issues Log

Commissioning Report; G

SD-07 Certificates

Certificate of Readiness; G

SD-10 Operation and Maintenance Data

Training Plan; G

Training Attendance Rosters; G

Systems Manual; G

SD-11 Closeout Submittals

Final Commissioning Report; S

#### 1.8 COMMISSIONING FIRM

Provide a Commissioning Firm that is certified in commissioning by one of the following: the AABC Commissioning Group (ACG); the National Environmental Balancing Bureau (NEBB); the International Certification Board/Testing, Adjusting, and Balancing Bureau (ICB/TABB), the Building Commissioning Association (BCA); the Association of Energy Engineers (AEE). The Commissioning Firm must be certified in all systems to be commissioned to the extent such certifications are available from the certifying body. Describe any lapses in certification or disciplinary action taken by the certifying body against the proposed Commissioning Firm or Lead Commissioning Specialist in detail. Any firm or commissioning professional that has been the subject of disciplinary action by the certifying body within the five years preceding contract award is not eligible to perform any duties related to commissioning.

- a. Submit the Commissioning Firm's certification of qualifications including the name of the firm and certifications no later than 60 calendar days after Notice to Proceed. Submit one hard copy and an electronic copy.
- b. The Commissioning Firm's and Commissioning Specialists' certifications must be maintained for the entire duration of the duties specified herein. If, for any reason, the firm or a specialist loses a certification during this period, immediately notify the [Contracting Officer's Technical Representative](#) and submit another Commissioning Firm or Commissioning Specialist for approval. All work specified in this specification section performed by the Commissioning Firm or associated Commissioning Specialists is invalid if the Commissioning Firm or Commissioning Specialist loses its certification prior to contract completion and must be performed by an approved successor.
- c. The Commissioning Firm must oversee and assist the General or Prime Contractor with the work specified herein.

#### 1.8.1 Lead Commissioning Specialist

The Commissioning Firm must provide a Lead Commissioning Specialist (CxC) that has a minimum of five years of commissioning experience, including two projects of similar size and complexity, and that is one of the following: a NEBB qualified Systems Commissioning Administrator (SCA); ACG Certified Commissioning Authority (CxA); ICB/TABB Certified Commissioning Supervisor; BCA Certified Commissioning Professional (CCP); AEE Certified Building Commissioning Professional (CBCP); University of Wisconsin-Madison Qualified Commissioning Process Provider (QCxP); ASHRAE Commissioning Process Management Professional (CPMP).

- a. Submit the Lead Commissioning Specialist's certification of qualifications including the name of the specialist and firm; certifications; years of experience; and a listing of representative projects of similar size and complexity no later than 60 calendar days after Notice to Proceed. Submit one hard copy and an electronic copy.
- b. The Lead Commissioning Specialists certifications must be maintained for the entire duration of the duties specified herein. If, for any reason, the specialist loses a certification during this period, immediately notify the Contracting Officer's Technical Representative and submit another Lead Commissioning Specialist for approval. All work specified in this specification section to be performed by the Lead Commissioning Specialist is invalid if the Lead Commissioning Specialist loses its certification prior to contract completion and must be performed by an approved successor.
- c. The Lead Commissioning Specialist must lead and oversee the commissioning work specified herein and be the primary point of contact for the Government regarding the commissioning work. One of the Technical Commissioning Specialists may be the Lead Commissioning Specialist provided that all of the qualification requirements are met.

#### 1.8.2 Technical Commissioning Specialists

Technical Commissioning Specialists, employed by the Commissioning Firm and that have the following qualifications, must perform the technical work specified herein associated with each system to be commissioned:

- a. Mechanical Technical Commissioning Specialist: The technical work associated with mechanical systems including Heating, Ventilating, Air Conditioning, and Refrigeration Systems; Building Automation System; ; Service Water Heating Systems; Plumbing Systems; Water Pumping and Mixing Systems; ; Compressed Air and Vacuum Systems; must be performed by a Commissioning Specialist certified by NEBB, ACG, ICB/TABB, AEE, University of Wisconsin-Madison, ASHRAE, or BCA in the commissioning of HVAC systems with five years of experience in the commissioning of HVAC systems.
- c. Submit the Technical Commissioning Specialist's certification of qualifications including the name of the specialist and firm; certifications; years of experience; and a listing of representative projects of similar size and complexity no later than 30 calendar days after Notice to Proceed. Submit one hard copy and an electronic copy.

#### 1.8.3 Commissioning Standard

Comply with the requirements of the commissioning standard under which the

Commissioning Firm and Specialists qualifications are approved. When the firm and specialists are certified by BCA, AEE, ASHRAE, or the University of Wisconsin-Madison, comply with the requirements of one of the acceptable standards unless otherwise stated herein. The acceptable standards are ACG Commissioning Guideline, NEBB Commissioning Standard, SMACNA 1429, or ASHRAE 202. Comply with applicable NETA testing standards for electrical systems.

- a. Implement all recommendations and suggested practices contained in the Commissioning Standard and electrical test standards.
- b. Use the Commissioning Standard for all aspects of Commissioning, including calibration of instruments.
- c. Where the instrument manufacturer calibration recommendations are more stringent than those listed in the Commissioning Standard, adhere to the manufacturer calibration recommendations.
- d. All quality assurance provisions of the Commissioning Standard such as performance guarantees are part of this contract.
- e. The Commissioning Specialists must develop commissioning procedures for any systems or system components not covered in the Commissioning Standard.
- f. Use any new requirements, recommendations, and procedures published or adopted prior to contract solicitation by the body responsible for the Commissioning Standard.

#### 1.9 GOVERNMENT ACCEPTANCE ENGINEER

A Government Acceptance Engineer will perform many of the Government Quality Assurance functions for the project including review of select submittals, plans, procedures, and reports and inspection and testing of systems. The Government Acceptance Engineer will participate in TAB Field Acceptance Testing and Performance Verification Tests. Coordinate submittal transmission and testing schedules with the Contracting Officer's Technical Representative and the Government Acceptance Engineer.

#### 1.10 ISSUES LOG

The Lead Commissioning Specialist must develop and maintain an Issues Log for tracking and resolution of all deficiencies discovered through submittal reviews, inspection, and testing. Include the date of final resolution of issues as confirmed by the Commissioning Specialist. Submit the Issues Log to the Contracting Officer's Technical Representative on a monthly basis at a minimum, and provide an electronic copy to the Government Acceptance Engineer concurrently. At any point during construction, any commissioning team member finding deficiencies may communicate those deficiencies in writing to the Commissioning Specialist for inclusion into the Issues Log.

Track construction deficiencies identified in the Issues Log in accordance with the Quality Control Plan required by Specification Section 01 45 00.05 20 DESIGN AND CONSTRUCTION QUALITY CONTROL.

#### 1.11 CERTIFICATE OF READINESS

Prior to scheduling Functional Performance Tests for each system, issue a

Certificate of Readiness for the system certifying that the system is ready for Functional Performance Testing. The Certificate of Readiness must include, for each system to be commissioned, all equipment and system start-up reports; completed Pre-Functional Checklists; Testing, Adjusting, and Balancing (TAB) Report; HVAC Controls Start-Up Reports; and the Air Leakage Test Reports and Diagnostic Test Reports to the extent applicable to the system. The Contractor; the Lead Commissioning Specialist; the Contractor's Quality Control Representative; the Mechanical, Controls, and TAB subcontractor representatives must sign and date the Certificate of Readiness. Submit the Certificate of Readiness for each system no later than 14 calendar days prior to Functional Performance Tests of that system. Submit one hard copy and an electronic copy. Do not schedule Functional Performance Tests for a system until the Certificate of Readiness for that system receives approval by the Government.

## PART 2 PRODUCTS

Not used

## PART 3 EXECUTION

### 3.1 DESIGN PHASE

#### 3.1.1 Design Commissioning Coordination Meeting

The Lead Commissioning Specialist (CxC) must lead a meeting prior to the interim design submittal for any system required to be commissioned to discuss the commissioning process including project contract requirements, lines of communication, roles and responsibilities, schedules, and documentation requirements. The Contractor's Superintendent or Project Manager, the Contractor's Quality Control Representative, the Designers of Record for the commissioned systems, and the Government must attend this meeting. The User and a Public Works Division Representative, CBHF Engineers may attend this meeting.

#### 3.1.2 Design Phase Commissioning Plan

The Lead Commissioning Specialist (CxC) must prepare the Design Phase Commissioning Plan. Submit the Design Phase Commissioning Plan no later than 14 calendar days after approval of the Commissioning Specialists. Submit one hard copy and an electronic copy.

Outline the commissioning process, commissioning team members and responsibilities, lines of communication, and documentation requirements for the design phase of the project in the Design Phase Commissioning Plan. Identify the Commissioning Standard chosen for the project. In addition, include the following in the Design Phase Commissioning Plan:

- a. Plan purpose
- b. Commissioning scope
- c. Systems to be commissioned
- d. Examples and description of development of pre-functional and functional performance test checklists
- e. Building information

- f. Contact information for the Commissioning Specialists
- g. Criteria listing, including Unified Facilities Criteria and building codes and standards, identified by the design-build contract
- h. Roles and responsibilities
- i. Management plan
- j. Owner's Project Requirements Document
- k. Description of the Basis of Design
- l. Description of design reviews by the Commissioning Specialists
- m. Description of design review by Government Acceptance Engineer
- n. Description of site observation reports and the issues log
- o. Listing and description of required meetings
- p. Identification and sequence of commissioning and acceptance tasks for incorporation into the Project Schedule
- q. Listing of required submittals to Government, Government Acceptance Engineer, and Commissioning Specialists
- r. Description of execution of pre-functional checks and functional performance tests
- s. Description of Endurance Tests
- t. Acceptance testing of critical systems as identified in contract specifications
- u. Operation and maintenance manual requirements
- v. Description of training requirements
- w. Description of required Systems Manual
- x. Description of the Commissioning Report

### 3.1.3 Design Review

The Lead Commissioning Specialist and Technical Commissioning Specialists must review the design-build construction contract, Design Plans and Specifications, the Basis of Design, and the Owner's Project Requirements Document prior to 60 percent completion of the design. The Owner's Project Requirements Document is attached as Appendix A. The Owner's Project Requirements Document is not contract requirements and is provided for commissioning review purposes only. The Commissioning Specialists must assess the completeness and clarity of the Owner's Project Requirements, verify that the requirements stated in the design-build construction contract and the Owner's Project Requirements are addressed in the Basis of Design, and verify that the Design Plans and Specifications are prepared in accordance with the Basis of Design, the design-build construction contract, the Unified Facilities Criteria (UFC) referenced by the design-build construction contract, and the Owner's Project Requirements.

The Commissioning Specialists must also identify any deficiencies that would prevent the building systems from operating or performing effectively. The Commissioning Specialists must backcheck the reviewed documents at all subsequent design documentation submissions.

The Commissioning Specialists must provide a [Design Review Report](#) for each submittal identifying any discrepancies between the reviewed documents or deficiencies that would prevent the building systems and features from operating or performing effectively in accordance with the design-build construction contract and Owner's Project Requirements Document and from being adequately maintainable. Individually list each deficiency and the corresponding proposed corrective action necessary for proper system performance in the Design Review Report. Submit one hard copy and an electronic copy of the report with the corrected final design submission. The [Contracting Officer's Technical Representative](#), the Lead Commissioning Specialist, and the Designers of Record for the associated systems must meet, discuss, and resolve any outstanding items contained in the report no later than 14 calendar days after submission of the report.

### 3.2 CONSTRUCTION PHASE

#### 3.2.1 Construction Commissioning Coordination Meeting

The Lead Commissioning Specialist must lead a Construction Commissioning Coordination Meeting no later than [30 days following construction notice to proceed](#) to discuss the commissioning process including contract requirements, lines of communication, roles and responsibilities, schedules, documentation requirements, inspection and test procedures, and logistics as specified in this specification section. The Contractor's Superintendent or Project Manager, the Contractor's Quality Control Representative, and the Government must attend this meeting. Invite the User and a [Public Works Division Representative](#), CBHF engineers to attend this meeting.

#### 3.2.2 Construction Phase Commissioning Plan

##### 3.2.2.1 [Interim Construction Phase Commissioning Plan](#)

The Lead Commissioning Specialist (Cx) must prepare the Interim Construction Phase Commissioning Plan. Submit the Interim Construction Phase Commissioning Plan no later than 30 calendar days after the Construction Commissioning Coordination Meeting and no later than 14 days prior to the start of construction of the building envelope. Submit one hard copy and an electronic copy.

Identify the commissioning and testing standards and outline the overall commissioning process, the commissioning schedule, the commissioning team members and responsibilities, lines of communication, documentation requirements for the construction phase of the project in the Interim Construction Phase Commissioning Plan.

##### 3.2.2.1.1 Checklists

Download example Pre-Functional Checklists and Functional Performance Test Checklists for specification section [01 91 00.15](#) TOTAL BUILDING COMMISSIONING at the following location:

<http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/forms-graphics->

The checklists submitted in the Interim and Final Construction Phase Commissioning Plans must contain the same level of detail shown in the



examples. The submitted checklists are not required to match the format of the examples.

#### 3.2.2.1.2 Contents

In addition to the requirements listed above, include the information provided for the Design Phase Commissioning Plan, updated, and including the following:

- a. Listing of all equipment to be commissioned
- b. Contact information for the Government Acceptance Engineer, the Contracting Officer's Technical Representative, and the Commissioning Team listed in paragraph Commissioning Team.
- c. Basis of Design
- d. Templates for site observation reports and the issues log.

#### 3.2.2.2 Final Construction Phase Commissioning Plan

The Lead Commissioning Specialist (Cx/C) must prepare the Final Construction Phase Commissioning Plan. Submit the Final Construction Phase Commissioning Plan no later than 30 calendar days prior to the start of Pre-Functional Checks. Submit one hard copy and an electronic copy. Once approved, file the approved plan in the Sustainability eNotebook.

Include the information provided in the Interim Construction Phase Commissioning Plan. In addition, the Technical Commissioning Specialist must develop the Pre-Functional Checklists and Functional Performance Test Checklists for each building, for each system required to be commissioned, and for each component for inclusion in the Final Construction Phase Commissioning Plan.

##### 3.2.2.2.1 Pre-Functional Checklists

The Pre-Functional Checklists must include items for physical inspection or testing that demonstrate that installation and start-up of equipment and systems is complete. Refer to paragraph Pre-Functional Checks for more information.

##### 3.2.2.2.2 Functional Performance Test Checklists

Functional Performance Test Checklists must include procedures that explain, step-by-step, the actions and expected results that will demonstrate that the system performs in accordance with the contract. Refer to paragraph Functional Performance Tests for more information. Include the following sections and details appropriate to the systems being tested in the Functional Performance Test Checklists:

- a. Notable system features including information about **such attributes as system sizing and controls** to facilitate understanding of system operation
- b. Conclusions and recommendations **based on control system feature, point-to-point, actuator, and system operation observations**. Conclusions must clearly indicate if system does or does not perform in accordance with contract requirements. Recommendation must clearly indicate that the system should or should not be accepted by the

Government.

- c. Test conditions including date, beginning and ending time, and beginning and ending outdoor air conditions
- d. Attendees present throughout the entire system test
- e. Identification of the equipment involved in the test
- f. Control system feature identification including control point description, embedded/visible type, adjustable/monitoring type, actual value, and setpoint value/alarm range
- g. Point-to-point observations including demonstrating system flow meters and sensors have been calibrated and are correctly displayed on the Operator work station
- h. Actuator operation observations demonstrating actuator responses to commands from the control system
- i. System operation observations for system-based tests demonstrating each control algorithm, operation mode, and alarm condition resulting from control point(s) manipulation. System operation observations must contain the following:
  - (1) introduction identifying testing methodology
  - (2) as-found conditions prior to control point(s) manipulation
  - (3) clear list of test items (step numbers)
  - (4) control algorithm (design control sequence) segmented by unique functions
  - (5) intended test procedures following each segmented control algorithm identifying control point(s) required to be manipulated to initiate system response
  - (6) expected system response
  - (7) space for comments for each test item complete including resulting control signal such as 0-volts, 10-volts, active, or inactive
  - (8) pass or fail indication for each test item

### 3.2.3 Construction Submittals

Provide all submittals associated with the systems to be commissioned, including shop drawings; equipment submittals; test plans, procedures, and reports; and resubmittal's to the Commissioning Specialists. The Technical Commissioning Specialist must review the submittals to the extent necessary verify that the equipment and system installation will comply with the contract requirements, the Unified Facilities Criteria (UFC) referenced by the design-build contract, and the requirements of the Basis of Design and the Owner's Project Requirements Document.

### 3.2.4 Inspection and Testing

Demonstrate that all system components have been installed, that each

control device and item of equipment operates, and that the systems operate and perform, including interactive operation between systems, in accordance with contract documents and the Owner's Project Requirements. Requirements in related specification sections are independent from the requirements of this section and do not satisfy any of the requirements specified in this specification section. Provide all materials, services, and labor required to perform the Pre-Functional Checks and Functional Performance Tests.

#### 3.2.4.1 Commissioning Team

Provide a commissioning representative for each sub-contractor associated with the systems to be commissioned. Each commissioning representative is responsible for coordination of their respective sub-contractor's execution of the commissioning activities and participation in the inspection and testing required by this specification section. The designers listed below are the designers of record for their respective systems. Substitutes must be approved by the Contracting Officer's Technical Representative.

##### 3.2.4.1.1 Mechanical System Pre-Functional Checks Team

The following team members must participate in Pre-Functional checks of mechanical systems:

Designation	Function
CxM	Mechanical System Technical Commissioning Specialist
QAR	Contracting Officer's Quality Assurance Representative
CQC	Contractor's Quality Control Personnel
MC	Contractor's Mechanical Commissioning Representative
CC	Contractor's Controls Commissioning Representative
TABC	Contractor's TAB Commissioning Representative

##### 3.2.4.1.2 Mechanical Systems Test Team

The following team members must participate in Functional Performance, Seasonal, of mechanical systems:

Designation	Function
CxM	Mechanical System Technical Commissioning Specialist
QAR	Contracting Officer's Quality Assurance Representative
CQC	Contractor's Quality Control Personnel
MC	Contractor's Mechanical Commissioning Representative
CC	Contractor's Controls Commissioning Representative
TABC	Contractor's TAB Commissioning Representative

#### 3.2.4.1.3 Other Pre-Functional and Functional Performance Participants

The following may participate as team members during Pre-Functional Checks and Functional Performance Testing:

Designation	Function
DPW	Directorate of Public Works Representative
PWD	Public Works Division Representative
User	Using Agent's Representative

#### 3.2.4.2 Pre-Functional Checks

Pre-Functional Checklists from the approved Final Construction Phase Commissioning Plan must be completed by the commissioning team. Complete one Pre-Functional Checklist for each individual item of equipment or system for each system required to be commissioned including, but not limited to, ductwork, piping, equipment, fixtures (lighting and plumbing), and controls. Indicate commissioning team member inspection and acceptance of each Pre-Functional Checklist item by initials. Acceptance of each Pre-Functional Checklist item by each team member indicates that item conforms to the construction contract and accepted design requirements in their area of responsibility. Technical Commissioning Specialist acceptance of each Pre-Functional Checklist item indicates that each item has been installed correctly and in accordance with contract documents and the Owner's Project Requirements. Submit the completed and initialed Pre-Functional Checklists no later than 7 calendar days after completion of inspection of all checklists items for each system. Submit one hard copy and an electronic copy. Include manufacturer start-up checklists associated with equipment with the submission of the Pre-Functional Checklists.

#### 3.2.4.3 Tests

##### 3.2.4.3.1 Functional Performance Tests

Schedule Functional Performance Tests for each system only after the Certificate of Readiness has been approved by the Government for the system. Correct all deficiencies identified through any prior review, inspection, or test activity before the start of Functional Performance Tests.

- a. Technical Commissioning Specialists must lead and document all Functional Performance Tests for the systems to be commissioned with the Contractor and appropriate sub-contractors performing the Functional Performance Tests. The representatives listed in the paragraph Commissioning Team must attend the tests. Abort Functional Performance Tests when any required commissioning team member is not present for the test.

##### 3.2.4.3.1.1 Checklist

Use the Functional Performance Test Checklists from the approved Final Construction Phase Commissioning Plan to guide the Functional Performance Tests. Functional Performance Tests must be performed for each item of

equipment and each system required to be commissioned and verify all sensor calibrations, control responses, safeties, interlocks, operating modes, sequences of operation, capacities, lighting levels, and all other performance requirements comply with construction contract and accepted design requirements regardless of the specific items listed within the Functional Performance Test provided. Testing must progress from equipment or components to subsystems to systems to interlocks and connections between systems. The order of components and systems to be tested must be determined by the Technical Commissioning Specialists.

#### 3.2.4.3.1.2 Acceptance

Indicate acceptance of each item of equipment and systems tested by signature of each commissioning team member for each Functional Performance Test. The Contractor's Quality Control Representative and the Technical Commissioning Specialists must indicate acceptance after the equipment and systems are free of deficiencies.

#### 3.2.4.3.2 HVAC Test Methods

Perform Functional Performance Tests in accordance with the following:

##### 3.2.4.3.2.1 Prior to Testing

Prior to system testing, complete control system feature, point-to-point, and actuator observations.

##### 3.2.4.3.2.2 Simulating Conditions

Over-writing control input (actual) values through the controls system is not acceptable, unless approved by the Contracting Officer's Technical Representative. Identify proposed exceptions in a protocol submitted to the Contracting Officer's Technical Representative for approval. Before simulating conditions, overwriting values (if approved), or changing set-points, calibrate all sensors, transducers and devices. Below are several examples of exceptions that would be considered acceptable:

- a. When varying static pressures inside ductwork can not be simulated within the duct, and where a sensor signals the controls system to initiate sequences at various duct static pressures, it is acceptable to simulate the various pressures with a Pneumatic Squeeze-Bulb Type Signaling Device with gauge temporarily attached to the sensing tube leading to the transmitter. It is not acceptable to reset the various set-points, nor to simulate an electric analog signal (unless approved as noted above).
- b. Dirty filter pressure drops can be simulated using sheets of cardboard at filter face.
- c. Freeze-stat safeties can be simulated by packing portion of sensor with ice.
- d. High outside air temperatures can be simulated with a hair blower.
- e. High entering cooling coil temperatures can be used to simulate entering cooling coil conditions.
- f. Do not use signal generators to simulate sensor signals unless approved by the Contracting Officer's Technical Representative, as noted above,

for special cases.

- g. Control set points can be altered. For example, to see the air conditioning compressor lockout work at an outside air temperature below 55 degrees F, when the outside air temperature is above 55 degrees F, temporarily change the lockout set point to be 0 degrees F above the current outside air temperature. Caution: Set points are not to be raised or lowered to a point such that damage to the components, systems, or the building structure and/or contents will occur.
- h. Test duct mounted smoke detectors in accordance with the manufacturer's recommendations. Perform the tests with air system at minimum airflow condition in ductwork.
- i. Test current sensing relays used for fan and pump status signals to control system to indicate unit failure and run status by resetting the set point on the relay to simulate a lost belt or unit failure while the unit is running. Confirm that the failure alarm was generated and received at the control system. After the test is conducted, return the set point to its original set-point or a set-point as indicated by the Contracting Officer's Technical Representative.

#### 3.2.4.3.2.3 Setup

Perform each test under conditions that simulate actual conditions as close as is practically possible. Provide all necessary materials and system modifications to produce the necessary flows, pressures, temperatures, and other conditions necessary to execute the test according to the specified conditions. At completion of the test, return the affected building equipment and systems to their pre-test condition.

#### 3.2.4.3.3 Sample Strategy

Perform Functional Performance Tests for all equipment and systems. Prepare and complete a Functional Performance Test Checklist for each item of equipment or system. Test all HVAC central plant equipment and primary air handling units. Twenty percent sample testing is allowed for HVAC equipment with identical controllers typical of terminal control such as air terminal units and fan coil units.

#### 3.2.4.3.4 Endurance Test

Following successful completion of Functional Performance Tests for HVAC systems and prior to the Performance Verification Test, perform an Endurance Test of the HVAC systems in accordance with the paragraph Endurance Test in UFGS Section 23 09 23.13 BACnet DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC. Perform the test with all equipment and systems in full automatic mode. Restart the test if the equipment and systems or setpoints are overridden to manual mode at any time during the test. Poll all points shown in the project schedules with an alarm condition at 5 minute intervals. Poll all points shown in the Point Schedule required for trending, overrides, or graphical displays at 15 minute intervals. Provide an Endurance Test Report with the Commissioning Report that includes a graphical representation of all trends with all trend data clearly identified.

#### 3.2.4.3.5 Seasonal Tests

##### 3.2.4.3.5.1 Initial Functional Performance Tests

Perform Initial Functional Performance Tests as soon as all contract work is completed, regardless of the season. Develop and implement means of artificial loading to demonstrate, to a reasonable level of confidence, the ability of the HVAC systems to handle peak seasonal loads.

##### 3.2.4.3.5.2 Full-Load Conditions

In addition to the Initial Functional Performance Tests, perform Functional Performance Tests of HVAC systems under full-load conditions during peak heating and cooling seasons during outdoor air condition design extremes.

Schedule Seasonal Functional Performance Tests in coordination with the Government.

##### 3.2.4.3.5.3 System Acceptance

Systems may be partially accepted by the Government prior to seasonal testing if they comply with all construction contract and accepted design requirements that can be tested during initial Functional Performance Tests. All Functional Performance Test procedures must be completed prior to full systems acceptance.

##### 3.2.4.3.6 Re-Testing

###### 3.2.4.3.6.1 100 Percent Sample

Systems or equipment for which 100 percent sample size are tested fail if one or more of the test procedures results in discovery of a deficiency and the deficiency cannot be resolved within 5 minutes during the test.

Re-test to the extent necessary to confirm that the deficiencies have been corrected without negatively impacting the performance of the rest of the system.

###### 3.2.4.3.6.2 Less than 100 Percent Sample

For systems tests with a sample size less than 100 percent, if one or more of the test procedures for an item of equipment or a system results in discovery of a deficiency, regardless of whether the deficiency is corrected during the sample tests, the item of equipment or system fails the test.

- a. If the system failure rate is 5 percent or less, meaning that 5 percent or less of the equipment or systems had at least one deficiency, re-test only on the items which experienced the initial failures.
- b. If the system failure rate is higher than 5 percent, meaning that more than 5 percent of equipment or systems tested had at least one deficiency, re-test the items which experienced the initial failures to the extent necessary to confirm that the deficiencies have been corrected. In addition, test another random sample of the same size as the initial sample for the first time. If the second random sample set has any failures, re-test those failed items and all remaining equipment and systems to complete 100 percent testing of that system type.

### 3.2.5 Training Plan

The Technical Commissioning Specialists must develop training plans which identify all training required by specification sections associated with commissioned systems. Include a matrix listing each training requirement, content of the training, the trainer name, trainer contact information, and schedule and location of training. Submit one hard copy and an electronic copy of the Training Plan to the Commissioning Specialists and the Government no later than 30 calendar days prior to the associated training.

Document training attendance using training attendance rosters and provide completed attendance rosters to the Commissioning Specialists and the Government no later than 7 calendar days following the completion of training for each system to be commissioned. Submit one hard copy and an electronic copy..

### 3.2.6 Systems Manual

The Technical Commissioning Specialists must prepare and submit a Systems Manual including, for all commissioned systems, the Basis of Design, system single line diagrams, as-built sequences of operation and controls drawings, as-built control setpoints, recommended schedule for sensor and actuator calibration, recommended schedule of maintenance when not in the O&M manuals, recommended re-testing schedule with proposed testing forms, and full equipment warranty information. Update and resubmit the Systems Manual based on any corrective action taken during the warranty period.

Submit Systems Manual no later than 30 calendar days following completion of Functional Performance Tests. Submit three hard copies and an electronic copy.

## 3.3 COMMISSIONING REPORT

Following the completion of Functional Performance Tests, with the exception of Seasonal Tests, and following the Endurance Tests the Lead Commissioning Specialist must prepare a Commissioning Report.

- a. Include an executive summary describing the overall commissioning process, the results of the commissioning process, any outstanding deficiencies and recommended resolutions, and any seasonal testing that must be scheduled for a later date. Indicate, in the executive summary, whether the systems meet the requirements of the construction contract and accepted design and the Owner's Project Requirements.
- b. Detail any deficiencies discovered during the commissioning process and the corrective actions taken in the report. Include the completed Pre-Functional Checklists, Functional Performance Test Checklists, the Endurance Test Report, the Commissioning Plans, the Issues Log, Training Attendance Rosters, the Design Review Report, the final TAB Report.
- c. Submit the Commissioning Report no later than 14 calendar days following commissioning team acceptance of all Functional Performance Tests with the exception of Seasonal Tests and following completion of the Endurance Test. Submit three hard copies and an electronic copy.
- d. Following any Seasonal Tests or Post-Construction Activities, update the Final Commissioning Report to reflect any changes and resubmit.



File the approved, updated, Final Commissioning Report in the  
Sustainability eNotebook.

-- End of Section --