



WORK ORDER NO. 1381030

CONSTRUCTION CONTRACT NO.

APPROPRIATION:

DEMOLISH BEQ BUILDING 801, 807 AND 811

At the

MARINE CORPS RESERVE CENTER (MCRC), NEW BURGH, NEW YORK

SUBMITTED BY:

NAVFAC MIDLANT
MARINE FORCES RESERVE, FACILITY SUPPORT TEAM
BUILDING 5, 520 DEWEY AVENUE
GREAT LAKES, IL 60088

Final RFP

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For Commander, NAVFAC MIDLANT:
Date: 5/18/2015

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SECTION 01 14 00.05 20

WORK RESTRICTIONS FOR DESIGN-BUILD
01/12

1 PART 1 GENERAL

1.1 SUBMITTALS

The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with Section 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

Completed Special Access Determination (NAVSEA 5510/15)

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Contractor regulations; G

Transportation of personnel, materials, and equipment; G

Purchase orders; G

Personnel List

Vehicle List

Statement of Acknowledgement Form SF 1413; G

1.2 SPECIAL SCHEDULING REQUIREMENTS

- a. Have materials, equipment, and personnel required to perform the work at the site prior to the commencement of the work.
- b. The project location 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.
- c. Permission to interrupt any Activity roads, and/or utility service shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption.
- d. 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.

e. NMCI Contractor Access: The NMCI 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 NMCI 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 NMCI are specified in Part 4, D50 ELECTRICAL and G40 SITE ELECTRICAL UTILITIES.

1.3 CONTRACTOR ACCESS AND USE OF PREMISES

1.3.1 Activity Regulations

Ensure that Contractor personnel employed on the Activity become familiar with and obey Activity regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. Wear hard hats in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. The Contractor's equipment shall be conspicuously marked for identification.

1.3.1.1 Subcontractors and Personnel Contacts

Furnish 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 Identification Badges

Application for and use of badges will be as directed. Obtain access to the installation by participating in the Navy Commercial Access Control System (NCACS) or by obtaining passes each day from the Base Pass and Identification Office. Costs for obtaining passes through the NCACS are the responsibility of the Contractor. One-day passes, issued through the Base Pass and Identification Office will be furnished without charge. Furnish a completed EMPLOYMENT ELIGIBILITY VERIFICATION (DHS FORM I-9) form for all personnel requesting badges. This form is available at <http://www.uscis.gov/portal/site/uscis> by searching or selecting Employment Verification (Form I-9). Immediately report instances of lost or stolen badges to the Contracting Officer.

a. NCACS Program: NCACS is a voluntary program in which Contractor personnel who enroll, and are approved, are subsequently granted access to the installation for a period up to one year, or the length of the contract, whichever is less, and are not required to obtain a new pass from the Base Pass and Identification Office for each visit. The Government performs background screening and credentialing. Throughout the year the Contractor employee must continue to meet background screening standards. Periodic background screenings are conducted to verify continued NCACS participation and installation access privileges. Under the NCACS program, no commercial vehicle inspection is required, other than for Random Anti-Terrorism Measures (RAM) or in the case of an elevation of Force Protection Conditions (FPCON). Information on costs and requirements to participate and enroll in NCACS is available at

<http://www.rapidgate.com/vendors/how-to-enroll> or by calling 1-877-727-4342. Contractors should be aware that the costs incurred to obtain NCACS credentials, or costs related to any means of access to a Navy Installation, are not reimbursable. Any time invested, or price(s) paid, for obtaining NCACS credentials will not be compensated in any way or approved as a direct cost of any contract with the Department of the Navy.

- b. One-Day Passes: Participation in the NCACS is not mandatory, and if the Contractor chooses not to participate, the Contractor's personnel will have to obtain daily passes, be subject to daily mandatory vehicle inspection, and will have limited access to the installation. The Government will not be responsible for any cost or lost time associated with obtaining daily passes or added vehicle inspections incurred by non-participants in the NCACS.

1.3.2 Working Hours

Regular working hours shall consist of an 8 1/2 hour period established by the Contracting Officer, between 7 a.m. and 3:30 p.m., Monday through Friday, excluding Government holidays.

1.3.3 Work Outside Regular Hours

Work outside regular working hours requires Contracting Officer approval. Make application 15 calendar days prior to such work to allow arrangements to be made by the Government, 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 shall be lighted in a manner approved by the Contracting Officer.

1.3.4 Occupied and Existing Building[s]

The Contractor shall be working in existing buildings and around existing buildings which are not occupied. Do not enter the building[s] without prior approval of the Contracting Officer.

Relocate movable furniture away from the Contractor's working area as required to perform the work, and protect the furniture upon completion of the work. Leave attached equipment in place, and protect it against damage, or temporarily disconnect, relocate, protect, and reinstall it at the completion of the work.

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, and shall be considered utility cutovers pursuant to the paragraph entitled "Work Outside Regular Hours." Such interruption shall be further limited to 12 hours. This time limit includes time for deactivation and reactivation.
- d. Operation of Station Utilities: The Contractor shall not operate nor disturb the setting of control devices in the station utilities system, including water, sewer, electrical, and steam services. The Government will operate the control devices as required for normal conduct of the work. The Contractor shall notify the Contracting Officer giving reasonable advance notice when such operation is required.

1.3.5.1 Location of Underground Utilities

Obtain digging permits prior to start of excavation by contacting the Contracting Officer 15 calendar days in advance. Scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground or paved surface where existing underground utilities or utilities encased in pier structures are discovered. Verify the elevations of existing piping, utilities, and any type of underground or encased obstruction not indicated to be specified or removed but indicated or discovered during scanning in locations to be traversed by piping, ducts, and other work to be conducted or installed.

Notification Prior to Excavation: Notify the Contracting Officer at least 15 days prior to starting excavation work. Contact Miss Utility 48 hours prior to excavating. Contractor is responsible for marking all utilities not marked by Miss Utility.

1.4 SECURITY REQUIREMENTS

Contract Clause "FAR 52.204-2, Security Requirements and Alternate II," "FAC 5252.236-9301, Special Working Conditions and Entry to Work Area."

1.4.1 Identification Badges

Comply the requirements specified in Section 01 30 00.05 20, ADMINISTRATIVE REQUIREMENTS FOR DESIGN-BUILD.

1.4.2 Display and Disposition of Badges

Contractors/subcontractors shall prominently display their badges on their person at all times. Upon completion/termination of this contract or an individual's employment, the Contractor shall collect and turn in to the Pass & ID Office all badges. If the Contractor fails to obtain the employee's badge, the Pass & ID Office shall be notified within 24 hours. During the contract performance period contractors will immediately report instances of lost or stolen badges to the issuing pass and identification office.

1.4.3 Contractor and Subcontractor Vehicle Requirements

Each vehicle to be used in contract performance shall show the Contractor's or subcontractor's name so that it is clearly visible and

shall always display a valid state license plate and safety inspection sticker.

- a. A valid form of Federal or state government I.D.
- b. If driving a motor vehicle, a valid driver's license, vehicle registration and proof of insurance.

Upon completion/termination of this contract or an individual's employment, the Contractor shall collect and turn in to Vehicle Registration all Government vehicle decals. If any are not collected, the Contractor shall notify the Vehicle Registration Office within 24 hours.

1.4.4 Security Checks

Contractor personnel and vehicles shall only be present in locations relevant to contract performance. All Contractor personnel entering the project site shall conform to all Government regulations and are subject to such checks as may be deemed necessary to ensure that violations do not occur. Employees shall not be permitted on base when such a check reveals that their presence would be detrimental to the security of the base. Subject to security regulations, the Government will allow access to an area for servicing equipment and/or performing required services. Upon request, the Contractor shall submit to the Contracting Officer questionnaires and other forms as may be required for security purposes.

2 PART 2 PRODUCTS

Not used.

3 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

(2009) 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. The following shall be submitted in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES and Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Schedule of Prices; G

1.3 SCHEDULE OF PRICES

1.3.1 Data Required

Within 15 calendar days of notice of award, prepare and deliver to the Contracting Officer a Schedule of Prices 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 Schedule of Prices has been submitted to and accepted by the Contracting Officer. For design phase progress payment(s), the Schedule of Prices or 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 Schedule of Prices or Earned Value Report shall be fully developed with detailed construction line items as design progresses. The complete design and construction Schedule of Prices or Earned Value Report shall be submitted and accepted prior to starting construction work.

For Fast-Tracked or Critical Path Submittals of construction projects, the Schedule of Prices 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 Schedule of Prices shall be separated as follows:

a. Primary Facility/s Cost Breakdown:

Defined as work on the primary facility/s out to the 1.5 m (5 foot) line. Work out to the 1.5 m (5 foot) line shall include construction encompassed within a theoretical line 1.5 m (5 foot) from the face of exterior walls and shall include attendant construction, such as pad mounted HVAC equipment, that may extend beyond the 1.5 m (5 foot) line.

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 Schedule of Prices at design complete and project closeout.

b. Supporting Facilities Cost Breakdown:

Defined as site work, including incidental work, outside the 1.5 m (5 foot) line.

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 Schedule of Prices at design complete and project closeout.

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 shall 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 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 shall include certification by Quality Control (QC) Manager as required by the contract.
- b. The [Estimate for Voucher/ Contract Performance Statement on NAVFAC Form 7300/31 furnished by the Government, showing in detail: the estimated cost, percentage of completion, and value of completed performance. Use

LANTNAVFACENCOM Form 4-330/110 (New 7/84) on NAVFAC Atlantic contracts when a Monthly Estimate for Voucher is required.

- c. Updated Project Schedule and reports required by the contract
- 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.
- i. Materials on Site.
- j. Solid Waste Disposal Report

1.5.2 Final Invoice

- a. A final invoice shall be accompanied by the certification required by DFARS 252.247.7023 TRANSPORTATION OF SUPPLIES BY SEA, and the Contractor's Final Release. If the Contractor is incorporated, the Final Release shall contain the corporate seal. An officer of the corporation shall sign and the corporate secretary shall certify the Final Release.
- b. For final invoices being submitted via WAWF, the original Contractor's Final Release Form and required certification of Transportation of Supplies by Sea must be provided directly to the respective Contracting Officer prior to submission of the final invoice. Once receipt of the original Final Release Form and required certification of Transportation of Supplies by Sea has been confirmed by the Contracting Officer, the Contractor shall then submit final invoice and attach a copy of the Final Release Form and required certification of Transportation of Supplies by Sea in WAWF.
- c. Final invoices not accompanied by the Contractor's Final Release and required certification of Transportation of Supplies by Sea will be considered incomplete and will be returned to the Contractor.

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."

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 Schedule of Prices 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.

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

1 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)

15 CFR 772 Definition of Terms

15 CFR 773 Special Licensing Procedures

1.2 SUBMITTALS

The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES and Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES.

SD-01 Preconstruction Submittals

Insurance

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.

Refer to Section 01 33 10.05 20, CONSTRUCTION SUBMITTAL PROCEDURES for typical preconstruction submittals similar to insurance.

1.4 CONTRACTOR PERSONNEL REQUIREMENTS

1.4.1 Subcontractor Special Requirements

1.4.1.1 Asbestos Containing Material

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

1.4.1.2 Qualified Testing Organization

All contract requirements of work required to be performed by a Qualified Testing Organization in PART 4, D50 ELECTRICAL and G40 SITE ELECTRICAL UTILITIES, shall be accomplished directly by a first tier subcontractor. No work to be performed by a Qualified Testing Organization, required by PART 4, D50 and G40 shall be accomplished by a second tier subcontractor.

1.5 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.

1.6 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.

2 PART 2 PRODUCTS

Not used.

3 PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 31 19.05 20

POST AWARD MEETINGS
05/14

PART 1 GENERAL

1.1 SUMMARY

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

1.2 SUBMITTALS

The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES.

SD-01 Preconstruction Submittals

Design Submittal Packaging Proposal; G

Project Schedule; G

Performance Assessment Plan (PAP); G

CDW Facilitator Experience Resume

CDW Cost Estimate; G

Concept Design Workshop Report; G

1.3 POST AWARD KICKOFF MEETING

The Post Award Kickoff (PAK) meeting is made up of Contract Administration, Concept Design Presentation/Design Development or Concept Design Workshop (CDW), Partnering, and Scheduling. If mutually beneficial to the Contractor and the Government, these four elements may be addressed in a single multi day meeting but most often multiple scheduled meetings are required. Schedule a separate meeting or a separate day of the multiday PAK, to accomplish the Design Presentation/Design Development Meeting or Concept Design Workshop(CDW).

1.3.1 PAK Meeting Schedule and Location

Within 35 calendar days after contract award, and prior to commencing work, meet with the Contracting Officer for the PAK meeting(s). The meeting shall be located at a specific time and place to be determined by the Contracting Officer.

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 and the User's functional requirements. Confirm the design is within the project budget.
- 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. Obtain an acceptable conceptual design including floor and site plans, signed by the client, Contractor and other key team members.
- f. Establish project design schedule, [design submittal packaging](#), and preliminary construction schedule in accordance with Section [01 32 17.05 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 clear expectations and schedules for facility turnover, providing DD Form 1354 asset management records, eOMSIS submittals, Guiding Principle Validation, and training of Government maintenance personnel.
- h. Establish procedure for design packages reviews, Contractor's resolution to comments, and Government's role in review of packages.

1.3.3 PAK Meeting Contractor Attendees

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

1.3.4 Contract Administration

Contract administration roles and responsibilities will be addressed.

1.3.5 [Design Presentation/Development](#) (DP/D)

The Contractor shall lead discussions to develop an understanding of the facility design that the accepted technical proposal represents with the Government users and maintainers of the facility. Develop site plans to conduct working sessions with the Government meeting attendees. The purpose of the DP/D Meeting is to confirm the appropriateness of the facility design and develop acceptable alternatives if changes are needed. The Contractor shall anticipate that Government Facility Users represented at the DP/D Meeting will provide additional functional information. Incorporate functional design changes into the facility design as required to meet the needs of the Users. At the end of the DP/D Meeting the Contractor shall provide either assurance that the updated design can be built within the budget or identify potential cost modification items and establish a follow-on DP/D Meeting to finalize a design that will include trade-offs to bring the project within the budget.

1.3.5.1 Design Presentation/Development Contractor Meetings Attendees

The following Contractor key personnel shall attend the Design Presentation: Project Manager, Project Scheduler, Cost Estimator, Lead Designer of Record, Design Staff responsible for each architectural/engineering discipline when facility design is discussed, Major Subcontractors, and DQC.

1.3.6 Concept Design Workshop (CDW)

Provide a CONCEPT DESIGN WORKSHOP that meets the following requirements;

1.3.6.1 CDW General Requirements

- a. Methodology. Concept a 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.
- b. Facilitator. Provide a Facilitator who is experienced in conducting Concept Design Workshops. Submit a [CDW Facilitator Experience Resume](#) to the Contracting Officer describing his experience. He or she will be responsible for leading the team in a timely manner, making sure that issues are pursued and resolved to the maximum extent possible, documenting meetings, organizing the design concept documents for on-site approval, and providing the Concept Design Workshop Report.
- c. 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.
- d. Concept Design Workshop Report. Produced almost entirely on-site, the Concept Design Workshop Report will summarize the final conceptual design.

1.3.6.2 CDW Procedures

a. Preliminary Work.

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

- (1) Review the contract documents and references explaining the project scope and history.
- (2) At the Post Award Kickoff meeting, the User(s) makes a presentation of their functional requirements.
- (3) Prepare and submit, at least 14 days in advance of the CDW, 15 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.

- (4) Make arrangements for and provide an appropriate conference room convenient to the project site and/or Users for use by the Design Team and government participants during the workshop.
- (5). Incorporate government comments in a revised Concept #1 and produce at least 20 copies of the revised Concept #1 documents for distribution at the workshop.
- (6). Facilitator conducts meeting with NAVFAC representatives before the CDW to review preparations, relationships, and the status of work to be accomplished.

b. On-Site Workshop.

The Design Team shall accomplish the following items during the on-site phase of the CDW. (Typically conducted in four to six working days, minimizing breaks so as to maintain momentum. The Design Team should expect longer than normal workdays.)

- (1) On the first day of the workshop, meet with the using activity, Station and other Government representatives. The Facilitator will describe the CDW process and review the workshop agenda. The user(s) will provide a functional presentation. This is to reiterate to all participants the User(s) needs and desires. The intent is to make the design solution and issue resolution function-oriented.
- (2) Present the revised Concept #1 and respond to questions.
- (3) 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.
- (4) Create a new concept design. Design concepts shall include drawings, sketches, and other graphics as necessary to fully describe the concept. Prepare at least 20 copies for distribution at all presentations.
- (5) Repeat applicable steps as necessary. Usually, three concepts are required. The final concept must be within the contract award amount.
- (6) The final concept shall include the following:
 - (a) 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.
 - (b) Cost Estimate: Provide a [CDW Cost Estimate](#) and statement that the concept presented can be constructed within the award amount.

- (c) Basis of Design: Describe the intent of the design by discipline. Address material quality, and life cycle costs.
- (7) 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.
- (8) 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:
- (a) Endorsements: Include a copy of the signature/endorsement sheet.
- (b) Comments: Include comments and resolutions concerning the final concept design.
- (c) Executive Summary: Summarize the workshop, including how the various concepts differed and were improved during the workshop.
- (d) Environmental Summary: Provide a summary of environmental issues, listing completed actions and items requiring further coordination, waivers or permits.
- (e) 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, function analysis work sheets, and economic and technical analyses if alternatives evaluated.
- (9) Except for final comments, responses and endorsements, the final report should be completed (electronically) on site, before the final presentation. If requested by the NAVFAC Project Manager, be prepared to present up to 10 hard copies of the report at the conclusion of the workshop.
- (10) 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.

1.3.6.3 Concept Design Workshop Report

Within 14 calendar days of completion of the on-site Concept Design Workshop, the Design Team shall submit to the NAVFAC Project Manager an electronic copy of the Concept Design Workshop Report as one file in .PDF format.

1.3.6.4 CDW Meeting Attendees

The following Contractor key personnel shall attend the CDW: Project Manager, Project Scheduler, Cost Estimator, Lead Designer of Record, Design Staff representing each architectural/engineering discipline and Major Subcontractors when facility design is discussed, Superintendent, QC Manager, and DQC.

1.3.7 Partnering

To most effectively accomplish this contract, the Government requires the formation of a cohesive partnership within the Project Team whose members are from the Government, Contractor and its Subcontractors. Key Personnel from the Supported Command, End User (who will occupy the facility), NAVFAC (Echelon III and/or IV), Navy Region/Installation, Contractor and Subcontractors and the Designer of Record will be invited to participate in the Partnering process. The Partnership will draw on the strength of each organization in an effort to achieve a project without any safety mishaps, conforming to the Contract, within budget and on schedule.

Information on the Partnering Process and a list of Key and Optional personnel who should attend the Partnering meeting are available from the Contracting Officer.

INFORMAL PARTNERING: The Contracting Officer shall organize the Partnering Sessions with key personnel of the project team, including Contractor's personnel and Government personnel.

The Initial Informal Partnering session should be a part of the DB Post Award Kickoff (PAK) . Partnering sessions should be held at a location agreed to by the Contracting Officer and the Contractor (typically a conference room provided by the PWD FEAD/ROICC office or the Contractor).

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

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

1.3.8 Performance Assessment Plan (PAP)

The Performance Assessment Plan (PAP) shall 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 projects meetings which discuss project performance. Submit an updated PAP on a monthly basis with the invoice for that period as a minimum.

1.3.9 Project Schedule

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

1.4 DESIGN QUALITY ASSURANCE MEETINGS

After Government Quality Assurance (QA) of each Design Submittal has been completed, meet with the Government for a one-day conference 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.

1.4.1 Design QA Meeting Attendees

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

1.4.2 Design QA Meeting Location

Meetings shall 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.

1.4.3 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.

1.5 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.

1.6 RECURRING MEETINGS

1.6.1 Quality Control and Production Meetings

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

1.6.2 Safety Meetings

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

1.7 FACILITY TURNOVER PLANNING MEETINGS

Key personnel will meet 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 and convene the Facility Turnover

Meetings once the project has reached approximately 75% completion or three to six months prior to Beneficial Occupancy Date (BOD), whichever comes first. The Contracting Officer's Representative will lead the meetings and guide the discussions based on an agenda provided by the Government. The Facility Turnover effort shall include the following:

a. PAK Meeting

1. Contracting Officer's Technical Representative (COTR) will provide the NRZ Checklist and the Contractor, Client, and NAVFAC Representatives will compare Contractor's schedule to NRZ Checklist to ensure all Contractor Checklist Items are included in the schedule and to discuss the scheduling impact of Client and NAVFAC Checklist Items.
2. Discuss the requirements of creating the Draft and finalizing the Interim DD Form 1354 to provide asset management records to the Government. Refer to Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES for requirements.

b. Facility Turnover Meetings

1. Fill in the NRZ Checklist including Contractor, Client, and NAVFAC Checklist Items and assigned a person responsible for each item and a due date. The Contracting Officer's Representative will facilitate the assignment of responsibilities and fill out the NRZ Checklist.
2. Review the Contractor's updated schedule. The Contractor shall develop a POAM for the completion of all Contractor, Client, and NAVFAC Checklist items.
3. Confirm that all NRZ Checklist items will be completed on time for the scheduled Facility Turnover.

1.7.1 Facility Turnover Meeting Attendees

The following key personnel shall attend the Facility Turnover Meetings: Contractor QC Manager, Design Quality Control Manager, Superintendent, Major Subcontractors, Designer-of-Record, Contracting Officer's Representative, Project Sponsor, Representative(s) of NAVFAC, 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 32 16.05 20

DESIGN AND CONSTRUCTION PROGRESS DOCUMENTATION
7/09

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. The following shall be submitted in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES, except as modified in this contract.

SD-01 Preconstruction Submittals

Design and Construction Schedule; G

1.2 ACCEPTANCE

Prior to the start of work, prepare and submit to the Contracting Officer for acceptance a [design and construction schedule](#) in the form of a Network Analysis Schedule (NAS) in accordance with the terms in Contract Clause "FAR 52.236-15, Schedules for Construction Contracts," except as modified in this contract. Acceptance of an error free Baseline Schedule and updates is a condition precedent to processing the Contractor's pay request.

1.3 SCHEDULE FORMAT

1.3.1 Network Analysis Schedule (NAS)

The Contractor shall use the critical path method (CPM) to schedule and control project activities. Project schedules shall be prepared and maintained using Primavera P3, Primavera SureTrak or current mandated scheduling program. Save files in Concentric P3 or current mandated scheduling program file format, compatible with the Governments version of the scheduling program. Importing data into P3/SureTrak/current mandated scheduling program using data conversion techniques or third party software will be cause for rejection of the submitted schedule. The schedule shall be built as follows:

The Project Schedule shall show design periods, submittals, government review periods, material/equipment delivery, utility outages, all on-site construction, inspection, testing, and closeout activities. Government and Contractor on-site work activities shall be driven by calendars that reflect Saturdays, Sundays and all Federal Holidays as non-work days.

With the exception of the Contract Award, Start Contract and End Contract milestone activities, no activities shall be open-ended; each activity shall have predecessor and successor ties.

Date/time constraint(s) and/or lags, other than those required by the contract, shall not be allowed unless accepted by the Contracting Officer. The Contractor shall include as the last activity in the contract schedule, a milestone activity named "Contract Completion Date". The "Contract

Completion Date" milestone shall have a "Mandatory Finish" constraint equal to the contract completion date.

Each activity shall be assigned its appropriate Responsibility Code indicating responsibility to accomplish the work indicated by the activity, Phase Code and Work Location Code.

1.3.1.1 NAS Submittals and Procedures

Submit all network analysis and updates in hard copy and on electronic media that is acceptable to the Contracting Officer. Submit an electronic back-up of the project schedule in an import format compatible with the governments scheduling program.

1.4 UPDATED SCHEDULES

Update the Design and Construction schedule at monthly intervals or when the schedule has been revised. The updated schedule shall be kept current, reflecting actual activity progress and plan for completing the remaining work. Submit copies of purchase orders and confirmation of delivery dates as directed.

1.5 THREE-WEEK LOOK AHEAD SCHEDULE

The Contractor shall prepare and issue a 3-Week Look Ahead schedule to provide a more detailed day-to-day plan of upcoming work identified on the Design and Construction Schedule. The work plans shall be keyed to activity numbers when a NAS is required and updated each week to show the planned work for the current and following two-week period. Additionally, include upcoming outages, closures, preparatory meetings, and initial meetings. Identify critical path activities on the Three-Week Look Ahead Schedule. The detail work plans are to be bar chart type schedules, maintained separately from the Design and Construction Schedule on an electronic spreadsheet program and printed on 8- $\frac{1}{2}$ by 11 sheets as directed by the Contracting Officer. Activities shall not exceed 5 working days in duration and have sufficient level of detail to assign crews, tools and equipment required to complete the work. Three hard copies and one electronic file of the 3-Week Look Ahead Schedule shall be delivered to the Contracting Officer no later than 8 a.m. each Monday and reviewed during the weekly CQC Coordination Meeting.

1.6 CORRESPONDENCE AND TEST REPORTS

All correspondence (e.g., letters, Requests for Information (RFIs), e-mails, meeting minute items, Production and QC Daily Reports, material delivery tickets, photographs, etc.) shall reference Schedule activities that are being addressed. All test reports (e.g., concrete, soil compaction, weld, pressure, etc.) shall reference schedule activities that are being addressed.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

DEMOLISH BEQ BUILDING 801, 807 AND 811
MCRC NEWBURGH, NY

WORK ORDER NUMBER 1381030

-- End of Section --

SECTION 01 32 17.05 20

COST-LOADED NETWORK ANALYSIS SCHEDULES (NAS) FOR DESIGN-BUILD
03/15

PART 1 GENERAL

1.1 DESCRIPTION

The Contractor is responsible for scheduling all design, procurement, Contractor quality control and construction, acceptance testing and training. A single schedule shall logically incorporate all design and construction for the entire project. 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, that review time shall be included in the schedule. The schedule shall also include times for procurement, Contractor quality control and construction, acceptance testing and training. Refer to Specification Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES to determine if any items require Government approval prior to construction. If any are required, include that submittal review time in the schedule.

The schedule is a tool to manage the project, both for Contractor and Government activities. It will also be used to report progress and evaluate time extensions. The Project NAS must be cost-loaded and will provide the basis for progress payments. Use the Critical Path Method (CPM) and the Precedence Diagram Method (PDM) to satisfy time and cost applications. For consistency, when scheduling software terminology is used in this specification, the terms in Primavera's scheduling programs are used.

1.2 SUBMITTALS

The use of a "G" following a submittal indicates that a Government approval action is required. 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

Qualifications; G

Design Baseline Network Analysis Schedule (NAS); G

Construction Baseline Network Analysis Schedule (NAS); G

SD-07 Certificates

Monthly Network Analysis Schedule Update; G

SD-11 Closeout Submittals

As-Built Schedule; G

1.3 SCHEDULE ACCEPTANCE PRIOR TO START OF WORK

The [Design Baseline Network Analysis Schedule](#)(NAS) shall be submitted and presented to the Government at the PAK Meeting. The acceptance of a Design Baseline NAS is a condition precedent to processing Contractor's pay request(s) for design activities/items of work. The most current updated design schedule shall accompany each design submittal.

The Contracting Officer and Contractor must participate in a preliminary meeting(s) to discuss the proposed schedule and requirements of this section prior to the Contractor preparing the Project Baseline Schedule. 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 Network Analysis Schedule (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.

Submittal of the [Construction Baseline Network Analysis Schedule](#), 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).

1.4 SOFTWARE

Prepare and maintain project schedules using Primavera P6. Importing data into P6 using data conversion techniques or third party software is cause for rejection of the submitted schedule.

A listing of Primavera P6 settings and parameters which must be used in preparing the Schedules are contained later in this specification section. Deviation from these settings and parameters, without prior consent of the Contracting Officer, is cause for rejection of schedule submission.

1.5 [QUALIFICATIONS](#)

The designated Scheduler for the project must have prepared and maintained at least 3 previous schedules of similar size and complexity of this contract using Primavera P3, Primavera SureTrak, or Primavera P6. At least one of the three must be in Primavera P6. Submit a resume outlining the qualifications of the Scheduler. Payment will not be processed until an acceptable Scheduler is provided.

1.6 NETWORK SYSTEM FORMAT

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

1.6.1 Diagrams

Provide Time-scaled Logic Diagram printed in color on ANSI D size sheets. The diagram must clearly show activities on the critical path. Include the following information for each activity:

- a. Activity ID
- b. Activity Description
- 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

1.6.2 Schedule Activity Properties and Level of Detail

The NAS must identify all Design, Government, Construction Quality Management (CQM), and Construction activities planned for the project and all other activities that could impact project completion if delayed. Create separate activities for each Phase, Area, Floor Level and Location the activity is occurring. Activity categories included in the schedule are specified below.

With the exception of the Contract Award and Contract Completion Date (CCD) milestone activities, no activity shall be open-ended; each activity must have predecessor and successor ties. No activity shall have open start or open finish (dangling) logic. Minimize redundant logic ties. 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. 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, it can be changed to a milestone. Document any such change in the milestone's "Notebook", including a date and explanation for the change. The ID number for a deleted activity must not be re-used for another activity. Within the Baseline Schedule no more than 20 percent of the activities may be critical or near critical. Critical is defined as having zero days of Total Float. "Near Critical" is defined as having Total Float of 1 to 14 days. Contractor activities must be driven by calendars that reflect Saturdays, Sundays and all Federal Holidays as non-work days.

1.6.2.1 Activity Categories

1.6.2.1.1 Design Activities

Design activities must include design decision points, design submittal packages, including any critical path submittals for Fast Tracked Phases. Review times for design development packages shall be included in the

schedule. Refer to Specification Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES FOR DESIGN-BUILD, for specific requirements.

1.6.2.1.2 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 will 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.

1.6.2.1.3 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.

1.6.2.1.4 Quality Management (QM) Activities

The Preparatory Phase and Initial Phase for each Definable Feature of Work identified in the Contractor's Quality Control Plan must be added to each Three-Week Look Ahead Schedule referenced in the paragraph THREE-WEEK LOOK AHEAD SCHEDULE. The Follow-up Phase will be represented by the Construction Activities in the Baseline Schedule and in the schedule updates.

1.6.2.1.5 Construction Activities

No on-site construction activity must 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. Government availability for construction submittal review, meeting attendance, performance verification testing, acceptance inspections, etc, will be extremely limited between Christmas and New Years Day.

1.6.2.1.6 Turnover and Closeout Activities

Include activities with all items on the NAVFAC Red Zone Checklist/POAM that are applicable to this project. The checklist will be provided at the PAK meeting. As a minimum, include all testing, specialized inspection activities, Pre-Final Inspection, Punch List Completion, Final Inspection and Acceptance. Add a milestone for the Facility Turnover Planning Meeting at approximately 75 percent construction contract completion or three to six months prior to Contract Completion Date (CCD), whichever is sooner.

1.6.2.2 Contract Milestones and Constraints

1.6.2.2.1 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.

1.6.2.2.2 Facility Turnover Planning Meeting Milestones

See paragraph ACTIVITY CATEGORIES above.

1.6.2.2.3 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).

1.6.2.2.4 Projected Completion Milestone

Include an unconstrained finish milestone on the schedule titled "Projected Completion". Projected Completion is defined as the point in time the Government would consider the project complete. This milestone must have the Contract Completion (CCD) milestone as its only successor.

1.6.2.2.5 Contract Completion Date (CCD) Milestone

Include as the last activity on the schedule a finish milestone titled "Contract Completion (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 will be calculated on the longest path and 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.

1.6.2.3 Work Breakdown Structure & Activity Code

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

1.6.2.3.1 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

b. Pre-Construction Phase:

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

- 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. Commissioning & Testing:
 - (1) Specific area/locations of commissioning
 - (2) Final Testing
 - (3) Training
- e. Project Closeout: Include activity items such as Punchlist, Demobilization, O&M, As-built Drawings, and As-built NAS.
- f. Modifications: Create multiple sub-sections as the project progresses identified by modifications issued.

1.6.2.3.2 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.

1.6.2.4 Anticipated Weather Lost Work Days

Use the National Oceanic and Atmospheric Administration's (NOAA) historical monthly averages for days with precipitation, using a nominal 30-year, greater than 2.5 mm (0.10 inch) 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.

1.6.2.5 Cost Loading

1.6.2.5.1 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. The value of commissioning, testing and closeout WBS section must 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.

1.6.2.5.2 Quantities and Units of Measure

Each cost loaded activity must have a detailed quantity breakdown and unit of measure. Lump sum costing is not acceptable.

1.6.3 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 Baseline 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".
 - (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 "Total Float is less than or equal to" and add "0d".

(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.

1.6.4 Required Tabular Reports

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

a. Log Report: Listing of all changes made between the previous schedule and current updated schedule.

b. Narrative Report: Identify and justify:

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

(2) Critical Path;

- (3) Date/time constraint(s), other than those required by the contract
- (4) Changes in the following; added or deleted activities, original and remaining durations for activities that have not started, logic, milestones, planned sequence of operations, critical path, 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 future schedule problem areas.

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

- c. Earned Value Report: 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.

1.7 SUBMISSION AND ACCEPTANCE

1.7.1 Design Baseline NAS

The Design Baseline NAS shall 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-Tracked or allows Early Start of construction, the Design Baseline Project Schedule shall include all fast-tracked design construction phases, etc., including the required or proposed critical path design submittals within each phase that shall occur during the duration of the project.

The Contractor shall 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 will be Fast-Tracked, each construction stage shall 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.

1.7.2 Monthly Network Analysis Updates

Contractor and Government representatives must meet 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 agree on percentage of payment for each activity progressed during the update period.

Provide the following with each Schedule submittal:

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

1.7.3 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.

1.8 CONTRACT MODIFICATION

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

- a. Each TIA must be in both narrative and schedule form. The narrative must define the scope and conditions of the change; provide start and finish dates of impact, successor and predecessor activity to impact period, responsible party; describe how it originated, and how it impacts the schedule. 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. If the impact has not occurred within 30 calendar days, TIA procedure must be reduced to the most basic level possible to still reflect a reasonable assessment of the result of a delay, representing actual conditions as they occurred.
- c. All TIAs must include any mitigation, and must determine the apportionment of the overall delay assignable to each individual delay. The associated narrative must clearly describe the findings in a chronological listing beginning with the earliest delay event.
 - (1) Identify types of delays as follows:
 - (a) Excusable Delay: Force-Majeure (e.g. weather) - Contractor may receive time extension, but time will not be compensable.
 - (b) Inexcusable Delay: Contractor Responsibility - Contractor must not receive time extension.
 - (c) Compensable Delay: Government Responsibility - Contractor may receive compensable time extension.
 - (2) If a combination of delay types occurs, it is considered Concurrent Delay, which is defined in the following combinations:
 - (a) Excusable Delay and Compensable Delay results in Excusable Delay
 - (b) Excusable Delay and Inexcusable Delay results in Inexcusable Delay
 - (c) Compensable Delay and Inexcusable Delay results in Excusable Delay
- d. Submit Data disks containing the narrative and native schedule files.
- e. Unless the Contracting Officer requests otherwise, only add conformed contract modifications into the Project NAS.

1.8.1 No Reservation of Rights

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

1.9 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 must 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.

1.10 THREE-WEEK LOOK AHEAD SCHEDULE

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. Key the work plans to NAS activity numbers and update each week to show the planned work for the current and following two-week period. Additionally, include upcoming outages, closures, field evaluation tests, preparatory meetings, and initial meetings. Identify critical path activities on the Three-Week Look Ahead Schedule. 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 216 by 279 mm (8-1/2 by 11 inch) sheets as directed by the Contracting Officer. Activities must not exceed 5 working days in duration and have sufficient level of detail to assign crews, tools and equipment required to complete the work. Deliver three hard copies and one electronic file of the 3-Week Look Ahead Schedule must be delivered to the Contracting Officer no later than 8 a.m. each Monday and reviewed during the weekly CQC Coordination and/or Production Meeting.

1.11 CORRESPONDENCE AND TEST REPORTS

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

1.12 ADDITIONAL SCHEDULING REQUIREMENTS

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

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- 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 SUBMITTAL DESCRIPTIONS (SD)

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

SD-01 Preconstruction Submittals

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction Progress Schedule.
- Submittal register.
- Schedule of values.
- Health and safety plan.
- Work plan.
- Quality control plan.
- Environmental protection plan.

SD-02 Shop Drawings

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

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

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

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical

appearance and other characteristics of materials or equipment for some portion of the work.

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

Manufacturer's data certifying and demonstrating that specific product, process, and/or conditions complies with applicable Guiding Principle GP) [or Third Party Certification (TPC)] criteria.

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, Guiding Principles Validation or Sustainability Third Party Certification (TPC), Sustainability Notebook (including all of components) and eOMSI submittals. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

1.3 SUBMITTALS

The use of a "G" following a submittal indicates that an approval action is required, either by the Government or by the Contractor's Designer of Record (DOR) or QC Specialist.

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

SD-01 Preconstruction Submittals

Submittal Register Format; G

1.3.1 Submittal Register

The submittal register will 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 DQC in preparing the submittal register by determining all project submittals that require DOR approval. The Contractor proposed submittal register format must include all types of information pertinent to the submittal process and be approved by the Contracting Officer prior to the first submission.

1.4 CONSTRUCTION QUALITY CONTROL

1.4.1 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. Unless specified otherwise in this section, the Contractor's DOR is the approving authority for submittals listed in these specifications with a "G" designation, unless the DOR delegates to Contractor Quality Control approval. RFP Part 4 PTS sections also include submittals identified for DOR approval that are not denoted with a "G" designation, these submittals cannot be delegated for Contractor Quality Control approval.

If RFP PART 5 PRESCRIPTIVE SPECIFICATIONS are utilized in this RFP, the Contractor's DOR is the approving authority for submittals listed with a "G" designation, unless the DOR delegates to Contractor Quality Control approval.

DOR shall approve construction submittals that are incorporated in the design submittal prior to being submitted to the Government for design submittal approval. Indicate approval of these construction submittals on the accompanying submittal transmittal forms and the submittal register for each design submittal package. In addition, the DOR professional stamp on the final design submittal indicates approval of construction submittals combined with the design submittal.

Submittal items identified in RFP PARTS 2, 4, and 5 that are not identified with a "G" designation or not designated for DOR approval (in RFP Part 4) are for Contractor Quality Control approval.

Construction submittals that are approved by the DOR or certified by the QC are not required to be submitted to the Government for surveillance, except when the RFP requires the design and construction submittals to be combined in Section 01 33 10.05 20, DESIGN SUBMITTAL PROCEDURES or where specified in the paragraph entitled, SUBMITTALS RESERVED FOR GOVERNMENT SURVEILLANCE of this section.

1.4.2 Submittals Reserved for Government Surveillance

Surveillance submittals are approved by the Contractor in accordance with paragraph CONTRACTOR REVIEWING, CERTIFYING, AND APPROVING AUTHORITY, but provide the Government the opportunity to oversee critical project issues.

If during the Government surveillance of construction submittals, items are brought to the Contractor's attention as non-compliant, the Contractor shall correct the submittal and construction to comply with the requirements of the RFP. Stamp surveillance submittals "APPROVED" by the DOR or QC Specialist and "FOR SURVEILLANCE ONLY."

1.4.3 Submittals Reserved for Government Approval

The Government is the approving authority for submittals with a "G" designation in RFP Part 2 GENERAL REQUIREMENTS specification sections. Comply with additional Government approval requirements for Environmental submittals, as specified in RFP Part 2, Section 01 57 19.00 20 TEMPORARY ENVIRONMENTAL CONTROLS FOR DESIGN-BUILD and Section 01 57 19.01 20, SUPPLEMENTARY TEMPORARY ENVIRONMENTAL CONTROLS.

1.4.4 Constraints

- a. Submittals shall be complete for each definable feature of work; submit components of definable feature interrelated as a system at the same time.
- b. Approval of a separate material, product, or component does not imply approval of assembly in which item functions.

1.4.5 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.

1.4.5.1 Design Changes

Design changes must meet the minimum requirements of the solicitation and the accepted proposal. Any changes to the design from what was previously reviewed by the Government during any phase of the design process prior to Government approval of the Final Design must be approved by the DOR and Government before the design change may be incorporated into the design documents. Design changes shall be requested in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES.

1.4.5.2 Variations

Variations from contract requirements including the solicitation, the accepted proposal, and the final design, require Government approval. Variations must be approved by the DOR prior to submitting written request to the Government for approval.

1.4.6 Contractor's Responsibilities

Ensure no work has begun until submittals for that work have been "approved" or "approved as noted."

1.4.7 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. When approving authority is Contracting Officer, 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.

RFP Part Two Submittals:

Certified by QC Manager _____, Date _____
(QC Manager)

RFP Part Four and Part Five Submittals:

Certified by DOR _____, Date _____

Certified by QC Manager _____, Date _____"

- (1) Sign certifying statement or approval statement. The person signing certifying statements shall be QC organization member designated in the approved QC plan. The signatures shall be in original ink. Stamped signatures are not acceptable.
- (2) 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.
- (3) Retain a copy of approved submittals at project site, including Contractor's copy of approved samples.

b. When the Approving Authority is the Designer of Record, the DOR shall approve, professionally stamp, sign, and date submittals. DOR stamp on construction submittals or submission of design documents that include construction submittals indicates DOR approval for construction. 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 requirements, can be installed in the allocated spaces, and is submitted for DOR approval.

RFP Part Four and Part Five Submittals:

Approved by DOR _____, Date _____

Certified by QC Manager _____, Date _____"

- (1) Sign certifying statement or approval statement. The person signing certifying statements shall be QC organization member designated in the approved QC plan. The signatures shall be in original ink. Stamped signatures are not acceptable.
- (2) 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.
- (3) Send copies of final DOR or QC Specialist approved and signed submittals that are identified in this section for Government surveillance to the Contracting Officer. Stamp copies "For Surveillance Only."

1.4.8 Government's Responsibilities

When approving authority is the Contracting Officer, 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.

1.4.8.1 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. A submittal marked "not reviewed" will be returned with an explanation of the reason it was not reviewed.
- c. Submittals marked "approved as noted" or "approval except as noted; resubmission not required" authorize Contractor to proceed with work as noted provided Contractor takes no exception to the notations.
- d. 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 shall be resubmitted with appropriate changes. No work shall proceed for this item until resubmittal is approved.
- e. Submittals required for surveillance will be returned only if corrective actions are required.

1.5 FORMAT OF SUBMITTALS

1.5.1 Transmittal Form

Transmit submittals with transmittal form prescribed by Contracting Officer and standard for the project.

1.5.1.1 Combined Design and Construction Submittal Notification

Indicate on the design submissions transmittal form, which construction submittals have been combined with the design documents. Coordinate transmittal form list of combined design and construction submittals with submittal register to indicate DOR approval of all combined submittals.

1.6 QUANTITY OF SUBMITTALS

1.6.1 Quantity of Submittals Reserved for Government Approval

Submit four copies of submittals of shop drawings requiring review and approval by Contracting Officer.

1.6.2 Quantity of Submittals Reserved for Government Surveillance

Submit three copies of submittals specified for surveillance to the Contracting Officer. Submit two additional copies of elevator submittals directly to the NAVFAC Elevator Specialist responsible for the NAVFAC elevator certification of the project.

1.6.3 Electronic Submittals

Where practicable, in lieu of hard copy copies, construction submittals may be transmitted electronically with approval from the Contracting Officer.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 33 10.05 20

DESIGN SUBMITTAL PROCEDURES
09/14

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 award shall be used.

U.S. DEPARTMENT OF DEFENSE (DOD)

FC 1-300-09N	(2014) Navy and Marine Corps Design Procedures
UFC 1-200-01	(2013) General Building Requirements
UFC 1-300-08	(2009, with Change 2) Criteria for Transfer and Acceptance of DoD Real Property

1.3 UFC 1-200-02

UFC 1-200-01 requires compliance with UFC 1-200-02, "High Performance and Sustainable Building Requirements". UFC 1-200-02 replaces and cancels UFC 4-030-01, Sustainable Development and UFC 3-400-01, Energy Conservation.

1.4 UFC 3-600-10N AND UFC 3-800-10N

UFC 3-600-10N and UFC 3-800-10N are only available on the NAVFAC Design-Build Website under the Design Guidance link: http://www.wbdg.org/ndbm/design_guidance.php. These Draft UFCs are applicable as final documents for Navy projects.

1.5 GENERAL DESIGN REQUIREMENTS

Contractor-originated design documents shall 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.

1.6 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.

The use of an "S" following a submittal indicates separate submittal is required as part of federally mandated sustainability requirements. Refer to Section 01 33 29.05 20 SUSTAINABILITY REPORTING FOR DESIGN-BUILD for "S" submittal requirements.

SD-01 Preconstruction Submittals

Submittal Register; G

SD-05 Design Data

Design Drawings; G

Specifications; G

Design Analysis; G

Design Submittals; G

1.7 DESIGN QUALITY CONTROL

1.7.1 Contractor Reviewing and Certifying Authority

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

1.7.2 Government Approving Authority

The Contracting Officer is the approving authority for design submittals.

1.7.3 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.

1.7.4 Contractor Construction Actions

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

1.7.4.1 Exception to Contractor Construction Actions

The Government will approve the following final submittals before the Contractor shall 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.

1.7.5 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 shall coordinate all design segments of the project to assure consistency of design between design disciplines.
- b. With the Designer or 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 "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.

1.7.6 QC Organization Responsibilities

- a. Both the CA and the 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 shall 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 Design Quality Control (DQC) Manager
_____, Date _____

Certified by QC Manager _____,
Date _____"

- c. Sign certifying statement. The persons signing certifying statements shall be the QC organization members designated in the approved QC plan. The signatures shall 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.

1.7.7 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.

1.7.7.1 Actions Possible

Submittals will be returned with one of the following notations:

- a. Submittals may be marked "approved."
- b. Submittals marked "not reviewed" will indicate submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and certified by Contractor, or is not complete. Submittal 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.
- 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 shall be resubmitted with appropriate changes. If work has been started on the unacceptable portion of the design submittal, the Contractor shall propose corrective action. No further work shall proceed until the issue is resolved in a manner satisfactory to the Government.

1.8 DESIGN DOCUMENTS

Provide design documents that include design analysis, design drawings, and design specifications, reports, and submittal register in accordance with [FC 1-300-09N](#), Submittal 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, manufactures 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.

Refer to [01 33 00.05 20](#), CONSTRUCTION SUBMITTAL PROCEDURES for requirements pertaining to Contractor proposed design changes or variations.

1.9 DESIGN DRAWINGS

Prepare, organize, and present design drawings in accordance with the requirements of [FC 1-300-09N](#), Design Procedures.

Submit all CADD files for the final drawings on CD-ROM or DVD disks in AutoCAD 2010 format. Drawing files shall be full files, uncompressed and unzipped.

1.9.1 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](#), Design Procedures.

1.9.2 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 shall comply with the same drawing requirements such as drawing form, sheet size, layering, lettering, and title block used in design drawings.

1.9.3 Identification of Design Drawings Used as Shop Drawings

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

1.9.4 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.

1.9.5 Seals and Signatures on Documents

All final Contractor-originated design drawings shall 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 shall 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 shall electronically sign and date final drawings and cover sheet, in accordance with [FC 1-300-09N](#). The design drawing coversheets shall 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.

1.9.6 Units of Measure

Utilize [English Inch-Pound](#) units of measure on the design documents.

1.10 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 shall be used to construct the project. UFGS sections contained in RFP Part 2 shall become a part of the Contractor-originated Division 01 specification without modification. Specification Sections contained in RFP Part 5 shall become a part of the Contractor-originated specification without modification. All project specifications shall be selected from the latest version of Unified Facilities Guide Specifications (UFGS). The complete list of UFGS sections is located on the Whole Building Design Guide at

http://www.wbdg.org/ccb/browse_org.php?o=70 .

The specification coversheet shall be prepared, 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 specification coversheet of each design submittal.

1.10.1 Specifications Components and Format

The Contractor shall 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™ unless the Contracting Officer requires a Unifomat organization. Navy's use of system specifications takes precedence over CSI Masterformat component breakdown and related component specifications. Provide project specifications to include the following:

- a. Provide the specification cover sheet with the professional seal and signature of the lead licensed architect or engineer of the project design team. Indicate the Contractor's company name and address on the specification coversheet.
- b. 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 Part 4, PTS Section Z-10, Design Submittals.
- d. If proprietary information is provided or required, include a coversheets for the product, material, or system information that is being proprietarily specified. This information is to follow the related UFGS specification.
- e. If proprietary information is provided or required, include highlighted and annotated Catalog Cuts, Manufacturer's Product Data, Tests, Certificates, Manufactures information and letters for each product, material, or system that is being proprietary specified.

- f. 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 shall 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. Submittal register to include separate but simultaneous delivery and approval of design or data required to fulfill sustainability requirements by Section 01 33 29.05 20 SUSTAINABILITY REPORTING FOR DESIGN-BUILD.

1.10.2 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 (available at this website: http://www.wbdg.org/references/pa_dod.php) and give priority to the Unified Tri-Service UFGS sections (no spec number suffix) and UFGS that are prepared by NAVFAC (.00 20 suffix). Only use a UFGS section prepared by another DoD Component (.00 10, and .00 30 suffix), if an applicable NAVFAC prepared specification section does not exist. Do not use Army (.00 10 suffix) and NASA (.00 40 suffix) electrical and mechanical specifications. If no applicable UFGS technical specification exists to meet your project requirements, consult with the NAVFAC Component for guidance and create a new UFGS specification in accordance with UFC 1-300-02, Unified Facilities Guide Specifications (UFGS) Format Standard.

1.10.3 Specification Software

Submit the final specification source files in either MS Word or SpecsIntact.

1.11 DESIGN ANALYSIS

Prepare, organize, and present design analysis in accordance with the requirements of FC 1-300-09N. The design analysis shall 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 shall be used for recording permits.]

- b. Code and criteria search shall 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.

1.11.1 Basis of Design Format

The basis of design for each design discipline shall 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.

1.11.2 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.

1.12 FACILITY RECOGNITION PLAQUE

Provide a facility recognition plaque for this facility in accordance with FC 1-300-09N, Design Procedures.

1.13 RECORD DOCUMENTS

1.13.1 Record Drawings

The as-built modifications shall be accomplished by electronic drafting methods on the Contractor-originated .DWG design drawings to create a complete set of record drawings.

- a. For each record drawing, provide CADD drawing identical to signed Contractor-originated.PDF drawings, 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 CADD.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 CADD.DWG files, produce a PDF file of each individual record drawing in conformance with FC 1-300-09N. Electronic signatures are not required on record drawings.

1.13.2 Source Documents

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

PART 2 PRODUCTS

2.1 CONSOLIDATED RFP DOCUMENTS

Within four weeks after contract award, provide three electronic and hard copies of consolidated RFP documents incorporating the Contractor's Proposal and all RFP amendments and revisions that are contained in the contract award. Identify the changes to the RFP with the "Red-lining" or "Track Changes" feature of SpecsIntact or MS Word to highlight the pre-award modifications to the contract. Identify the amendment source at each addition and deletion by annotation, such as footnote or reference in parenthesis.

2.2 DESIGN SUBMITTALS

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

Refer to Section 01 33 29.05 20, SUSTAINABILITY REPORTING FOR DESIGN-BUILD for sustainable design submittals.

2.2.1 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 Critical Path Design Submittals are acceptable if they are substantiated as having an impact to the critical path in the Government approved Network Analysis Schedule. A Critical Path submittal shall include all design analyses, drawings, specifications and product data required to fully describe the project element for Government review.

Examples of project elements that may be submitted as Critical Path Design Submittal Packages are: Master Plan Design, Demolition Design, Foundation Design, Structural Design, Building Enclosure Design, Remaining Work Design, Furniture/Equipment Design, long lead items, or any other construction activity or project element that can be organized into a submittal package that can be reviewed and approved by the Government without being contingent upon subsequent design submittals.

2.2.1.1 Site Design

The Site Design typically includes the following components:

- a. Demolition
- b. Site work including Environmental

2.2.2 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.

2.2.3 Review Copies of Design Submittal Packages

- a. Provide bound copies of each design submittal package for review to the following reviewers. Addresses for mailing will be furnished at the PAK meeting.

5 paper copies to the NAVFAC component and 1 electronic copies of the Final submittals.

- b. Provide the same quantities of copies for resubmittals, as required for each design submittal.

2.2.4 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:

1. Submittals received after noon will be logged in on the following business day.
2. Federal holidays, including the period between Christmas and New Years Day, will be considered non-working days for Government personnel in reviewing design submittals and attending design related meetings.
3. Postpone delivery if Government personnel to receive the submittal are unavailable. Assure in advance of the submittal delivery it can be received.
4. Postpone delivery when heightened security restricts access to the Base. Coordinate heightened security requirements in advance with the CM.
5. Period of review for a resubmittal is the same as the initial submittal. Review time for resubmittals caused by non-conformance, do not result in a change in contract duration or cost.

2.2.5 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. Two electronic and two hard copy(s) to the Project Manager.

2.3 IDENTIFICATION OF DESIGN SUBMITTALS

Provide a title sheet to clearly identify each submittal, the completion status, and the date. The title sheet shall use the standard format indicated in the FC 1-300-09N for title sheets. The title sheet shall be

unique to a particular design submittal. Submit the project title sheet with design status and date for the design submittals.

2.3.1 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.

PART 3 EXECUTION

3.1 CONTRACTOR'S RESOLUTION OF COMMENTS

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

3.2 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.

3.3 THE CONTRACT AND ORDER OF PRECEDENCE

3.3.1 Contract Components

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

3.3.2 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 shall 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).

3.3.2.1 Government Review or Approval

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

-- End of Section --

SECTION 01 35 26.05 20

GOVERNMENT SAFETY REQUIREMENTS FOR DESIGN-BUILD
04/13

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

- ASSE/SAFE A10.32 (2012) Fall Protection
- ASSE/SAFE A10.34 (2001; R 2012) Protection of the Public on or Adjacent to Construction Sites
- ASSE/SAFE A1264.1 (2007) Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace, Floor, Wall and Roof Openings; Stairs and Guardrails Systems
- ASSE/SAFE Z359.1 (2007) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

ASME INTERNATIONAL (ASME)

- ASME B30.22 (2010) Articulating Boom Cranes
- ASME B30.3 (2012) Tower Cranes
- ASME B30.5 (2011) Mobile and Locomotive Cranes
- ASME B30.8 (2010) Floating Cranes and Floating Derricks

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 1 (2015) Fire Code
- NFPA 10 (2013) Standard for Portable Fire Extinguishers
- NFPA 241 (2013) Standard for Safeguarding Construction, Alteration, and Demolition Operations
- NFPA 306 (2014) Standard for Control of Gas Hazards on Vessels
- NFPA 51B (2014) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

NFPA 70 (2014; AMD 1 2013; Errata 1 2013; AMD 2 2013; Errata 2 2013; AMD 3 2014; Errata 3-4 2014; AMD 4-6 2014) National Electrical Code

NFPA 70E (2015) Standard for Electrical Safety in the Workplace

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2008; Errata 2011) Safety and Health Requirements Manual

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

10 CFR 20 Standards for Protection Against Radiation

29 CFR 1910 Occupational Safety and Health Standards

29 CFR 1910.146 Permit-required Confined Spaces

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

29 CFR 1915 Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment

29 CFR 1919 Gear Certification

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 1926.21 Safety Training and Education

29 CFR 1926.450 Scaffolds

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 (2009; Change 1 Mar 2011; Change 2 Aug 2011) Management of Weight Handling Equipment

1.2 SUBMITTALS

The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES and Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES.

SD-01 Preconstruction Submittals

Accident Prevention Plan - Pre-Construction Submittal; G

Activity Hazard Analysis (AHA); G

Crane Critical Lift Plan; G

Proof of Qualifications for Crane Operators; G

SD-06 Test Reports

Accident Notifications

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

Accident Reports

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

Crane Reports

Monthly Exposure Report

SD-07 Certificates

Confined Space Entry Permit

Hot Work Permit

License Certificates

Contractor Safety Self-Evaluation Checklist; G
(Obtain copy from Contracting Officer)

1.3 DEFINITIONS

- a. Competent Person for Fall Protection. A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as their application and use with related equipment, and has the authority to take prompt corrective measures to eliminate the hazards of falling.
- b. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.
- c. Medical Treatment. 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 through provided by a physician or registered personnel.
- d. Operating Envelope. The area surrounding any crane. Inside this "envelope" is the crane, the operator, riggers and crane walkers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

- e. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:
 - (1) Death, regardless of the time between the injury and death, or the length of the illness;
 - (2) Days away from work (any time lost after day of injury/illness onset);
 - (3) Restricted work;
 - (4) Transfer to another job;
 - (5) Medical treatment beyond first aid;
 - (6) Loss of consciousness; or
 - (7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.
- f. "USACE" property and equipment specified in [EM 385-1-1](#) should be interpreted as Government property and equipment.
- g. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the sixeight 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; and/or collision, including unplanned contact between the load, crane, and/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, roll over, etc.) Document any mishap meeting the criteria described above in both the Contractor Significant Incident Report (CSIR) and using the NAVFAC prescribed Navy Crane Center (NCC) form submitted within five days both as provided by the Contracting Officer. Comply with additional requirements and procedures for accidents in accordance with [NAVFAC P-307](#), Section 12.

1.4 [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. Additionally, 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. The Contracting

Officer will submit a copy of the Contractor Safety Self-Evaluation and Monthly Exposure Report to the local safety and occupational health office.

1.5 REGULATORY REQUIREMENTS

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

1.6 SITE QUALIFICATIONS, DUTIES, PLAN, AND MEETINGS

1.6.1 Personnel Qualifications and Training Requirements

1.6.1.1 Site Safety and Health Officer (SSHO)

The SSHO must meet the requirements of EM 385-1-1 section 1 and 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 Safety and Health Officer (SSHO). The SSHO or an equally-qualified Designated Representative/alternate 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's training, experience, and qualifications must be as required by EM 385-1-1 paragraph 01.A.17, entitled SITE SAFETY AND HEALTH OFFICER (SSHO), and all associated sub-paragraphs.

A Competent Person must 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 must be on-site at all times when the work that presents the hazards associated with their professional expertise is being performed. Provide the credentials of the Competent Persons(s) to the Contracting Officer for acceptance in consultation with the Safety Office.

The Contractor Quality Control Person cannot be the SSHO on this project.

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

The SSHO must have completed the "40 Hour Construction Safety Hazard Awareness Training Course".

The training requirements for the SSHO must include the successful completion of the course entitled "40 Hour Construction Safety Hazard Awareness Training Course for Contractors". If the SSHO does not have a current certification, they must obtain the course certification within sixty (60) calendar days from award.

1.6.1.2.1 Construction Safety Hazard Awareness Training Course

The training requirements for the SSHO must include the successful completion of the course entitled "40 Hour Construction Safety Hazard Awareness Training Course for Contractors". If the SSHO does not have a

current certification, they must obtain the course certification within sixty (60) calendar days from award.

1.6.1.2.2 Qualified Trainer for Construction Safety Hazard Awareness Training Course

Qualified Trainer Requirements for 40 Hour Construction Safety Hazard Awareness Training Course for Contractors and 16 hours of classroom training on the requirements of the latest version of the EM 385-1-1: Completed the following courses:

- a. OSHA 510, Occupational Safety and Health Standards for Construction
- b. OSHA 500, Trainer Course in OSHA Standards for Construction
- c. OSHA 3095, Electrical Standards
- d. OSHA 7115, Lockout/Tagout
- e. OSHA 3110, Fall Arrest Systems
- f. OSHA 2264, Permit-Required Confined Space Entry
- g. OSHA 3010, Excavation, Trenching and Soil Mechanics
- h. Scaffolds in accordance with 29 CFR 1926.450, Subpart L
- i. NAVFAC 40-hour Construction Safety Hazard Awareness Training

Responsibilities of Authorized Trainers:

- a. Prepare class presentations that cover construction-related safety requirements and includes topics covered in the NAVFAC Construction Safety Hazard Awareness Course for Contractors.
- b. Ensure that all attendees attend all sessions by using a class roster signed daily by each attendee. Maintain copies of the roster for at least five (5) years. This is a certification class and must be attended 100 percent. In cases of emergency where an attendee cannot make it to a session, the attendee can make it up in another class session for the same subject.
- c. Update training course materials whenever an update of the EM 385-1-1 becomes available.
- d. Provide a written exam of at least 50 questions. Students must be required to answer 80 percent correctly to pass. Copies of test and student answers must be retained for five (5) years and will be made available for inspection by the NAVFAC Pacific, Site Safety and Health Manager upon request.

1.6.1.3 NAVFAC MARIANAS Additional Requirements

Comply with the additional QC and Contractor Jobsite Personnel requirements for NAVFC Marianas projects.

1.6.1.3.1 Contractor Quality Control (QC) Personnel

The Contractor Quality Control (QC) person cannot be the SSHO on this project, although the QC has safety inspection responsibilities as part of the QC duties.

The Project Superintendent or other Contractor personnel may act on behalf of the SSHO for a period of no more than thirty (30) days annually, provided that the individual meets the same competency level of the SSHOs, demonstrates the proficiency required, and is approved by the Contracting Officer in consultation with the NAVFAC MARIANAS Site Safety and Health Manager.

1.6.1.3.2 Requirements for Contractor Jobsite Personnel Holding H-1B or H-2B Visas

All Contractor jobsite workers holding an H-1B or H-2B visa must complete a minimum 16 hours of classroom training on the requirements of the latest version of the U.S. Army Corps of Engineers Safety & Health Requirements Manual (EM 385-1-1) prior to their first day on the jobsite to include but not limited to the following topics: Sanitation; Medical and First Aid Requirements; Temporary Facilities; Personal Protective Equipment; Electrical; Hand and Power Tools; Material Handling and Storage; Motor Vehicles; Fall Protection; Work Platforms and Scaffoldings; Demolition; Safe Access, Ladders, Floor & Wall Openings, Stairs and Railing Systems; Excavations and Trenching; and Confined Spaces, prior to reporting to the jobsite.

The Contractor must submit a list of workers who have completed the training to the Contracting Officer prior to them reporting to the jobsite. Update the list as additional workers are added. Maintain the updated list at the jobsite for review by the government's designated authority. Include the qualifications of qualified trainer(s) that provided the training. Personnel who have taken the 40 Hour Construction Safety Hazard Awareness Training Course for Contractors are not required to take the 16 hours of classroom training on the requirements of the latest version of the EM 385-1-1. The 16 hours classroom training may be provided by the Guam Contractors Association Trades Academy (GCA Trades Academy) or other qualified trainers as outlined in the subpart titled "Qualified Trainer Requirements".

1.6.1.4 Crane Operators

Meet the crane operator's requirements in EM 385-1-1. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacities of 50,000 pounds or greater, designate crane operators as 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 must 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.

1.6.1.5 Competent Person for Confined Space Entry

Provide a competent person for confined space meeting the definition and requirements of EM 385-1-1. If work involves marine operations that handle combustible or hazardous materials, this person must have the ability to

understand and follow through on the air sampling, PPE, and instructions of a Marine Chemist, Coast Guard authorized persons, or Certified Industrial Hygienist. All confined and enclosed space work must comply with [NFPA 306, 29 CFR 1915](#), Subpart B, "Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment" or as applicable, [29 CFR 1910.147](#) for general industry.

1.6.2 Personnel Duties

1.6.2.1 Site Safety and Health Officer (SSHO)

Collect and maintain certified EMR ratings and DART rates for all subcontractors on the project and make them available to the Government at the Government's request.

In addition to duties required in [EM 385-1-1](#), perform the following duties:

- 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][quality control] report.
- b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.
- c. Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.
- d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
- e. Implement and enforce accepted APPS and AHAs.
- f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. Post a list of unresolved safety and health deficiencies on the safety bulletin board.
- g. Ensure sub-contractor compliance with safety and health requirements. Failure to perform the above duties will result in dismissal of the superintendent, QC Manager, and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.
- h. Maintain a list of hazardous chemicals on site and their material safety data sheets.
- i. Within one calendar day 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, must 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:

(1) Confined space entry permit.

(2) Hot work permit.

1.6.3 Safety Plans and Submissions

1.6.3.1 Accident Prevention Plan - 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, Sections 10 & 11 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, and/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, Miss Utilities scanning and third party/subcontractor scanning, potholing, and/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

1.6.3.2 Accident Prevention Plan - Pre-Construction Submittal

Use a qualified person to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan". Specific requirements for some of the APP elements are described below. 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. Include any portions of the Contractor's overall safety and health program referenced in the APP in the applicable APP element and made site-specific. 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 the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer, the Contractor Quality control Manager, and any designated CSP and/or CIH.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the Pework conference for acceptance. Work cannot proceed without an

accepted APP. Once 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 will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSO and quality control manager. 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/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.

Copies of the accepted plan will be maintained at the Contracting Officer's office and at the job site. Continuously review and amend the APP, as necessary, throughout the life of the contract. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered.

In addition to the requirements outlined in EM 385-1-1, the following is required:

- a. Names and qualifications (resumes including education, training, experience and certifications) of all 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, STSs, 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.
- c. Confined Space Entry Plan. Develop a confined and/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, 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.)
- d. Fall Protection and Prevention (FP&P) Program Documentation. The program documentation must 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 1.8 m (6 feet). A qualified person for fall protection must prepare and sign the program

documentation. Include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Revise the Fall Protection and Prevention Program documentation 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 Program documentation at the job site for the duration of the project. Include the Fall Protection and Prevention Program documentation in the Accident Prevention Plan.

- e. **Weight Handling Equipment Certificate of Compliance.** Provide a Certificate of Compliance for each crane when 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 **EM 385-1-1**). Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. For cranes at DOD activities in foreign countries, certify that the crane and rigging gear conform to the appropriate host country safety standards. 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.
- f. **Crane Critical Lift Plan.** Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist (or lifts over 50 percent of the capacity of a barge mounted mobile crane's hoists) at any radius of lift; lifts involving more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. Submit 15 calendar days prior to on-site work and include the requirements of **EM 385-1-1**, and the following:
 - (1) For lifts of personnel, demonstrate compliance with the requirements of **29 CFR 1926.1400**.
 - (2) For barge mounted mobile cranes, barge stability calculations identifying barge list and trim based on anticipated loading; and load charts based on calculated list and trim. The amount of list and trim must be within the crane manufacturer's requirements. **Third Party Certification of Barge-Mounted Mobile Cranes** Certify barge-mounted mobile cranes in accordance with **29 CFR 1919** by an OSHA accredited person.
- g. **Severe Storm Plan.** In the event of a severe storm warning, the Contractor must:
 - (1) Secure outside equipment and materials and place materials that could be damaged in protected areas.
 - (2) Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.

- (3) Ensure that temporary erosion controls are adequate.
- i. Lead Compliance Plan. The safety and health aspects of lead work, prepared in accordance with Section 02 83 13.00 20 LEAD IN CONSTRUCTION.
- j. Asbestos Hazard Abatement Plan. The safety and health aspects of asbestos work, prepared in accordance with Section 02 82 16.00 20 ENGINEERING CONTROL OF ASBESTOS CONTAINING MATERIALS.
- k. Site Safety and Health Plan. The safety and health aspects prepared in accordance with Section 01 35 29.13 HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES FOR CONTAMINATED SITES.
- m. Site Demolition Plan. The safety and health aspects prepared in accordance with Section 02 41 00 DEMOLITION AND DECONSTRUCTION and referenced sources. Include engineering survey as applicable.
- n. Excavation Plan. The safety and health aspects prepared in accordance with Section 31 00 00 EARTHWORK.

1.6.3.3 Activity Hazard Analysis (AHA)

The Activity Hazard Analysis (AHA) format must be in accordance with EM 385-1-1 and as provided by the Contracting Officer at the pre work meeting. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls and reviewed with all employees involved in the work. The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change. Develop the activity hazard analyses using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. Competent persons required for phases involving such things as fall protection, excavations, scaffold, and electrical work must be identified. AHAs should be developed by the contractor, supplier, or subcontractor performing the work and provided to the prime contractor for review and submitted to the Contracting Officer for acceptance after prime contractor approval.

1.6.4 Meetings

1.6.4.1 Pework Conference

- a. Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the Pework conference. This includes the project superintendent, site safety and health officer (SSHO), quality control supervisor, 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, programs, 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. At a minimum all definable features of work are to have an AHA developed. 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 and the Contractor must revise the plan to correct deficiencies and re-submit for acceptance. Do not begin work until there is an accepted APP. A returned APP should be corrected prior to scheduling the Pework meeting.

1.6.4.2 Safety Meetings for Employees

Conduct and document meetings as required by EM 385-1-1, except daily meetings must be conducted on the project location for all workers by supervisors or foremen when activities taking place that day have an overall AHA risk assessment that is high risk or extremely high risk. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the Contractors' daily production report.

1.6.5 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

1.7 NOTIFICATIONS AND REPORTS

1.7.1 Accident Notifications

- a. Notify the Contracting Officer as soon as practical, but no more than four hours after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than \$2,000, or any weight handling equipment accident. 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 (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

1.7.2 Accident Reports

- a. Conduct an accident investigation for recordable injuries and illnesses, as defined in "Article - Definitions" property damage accidents resulting in at least \$20,000 in damages, and near misses as defined in "Article - Definitions" 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 (ESAMS) The Contracting Officer will provide copies of any required or special forms.

- b. Near Misses: Require the completion of the applicable 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.

1.7.3 Crane Reports

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix I and as specified herein with Daily Reports of Inspections.

1.8 HOT WORK

Prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, a written permit must be requested from the Fire Division. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. It is mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch must be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit.

1.10 FACILITY OCCUPANCY CLOSURE

Do not close or obstruct streets, walks, and other facilities occupied and used by the Government without written permission from the Contracting Officer.

1.11 CONFINED SPACE ENTRY REQUIREMENTS

Contractors entering and working in confined spaces performing shipyard industry work are required to follow the requirements of 29 CFR 1915. Contractors entering and working in confined spaces performing general industry work are required to follow the requirements of 29 CFR 1926 and comply with the requirements in Section 34 of EM 385-1-1, 29 CFR 1910, and 29 CFR 1910.146.

PART 2 PRODUCTS

2.1 CONFINED SPACE SIGNAGE

Provide permanent signs integral to or securely attached to access covers for permit-required confined spaces provided by this contract with wording: "DANGER--PERMIT-REQUIRED CONFINED SPACE - DO NOT ENTER -" in bold letters a minimum of 25 mm (one inch) in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" must be red and readable from 1.52 m (5 feet).

PART 3 EXECUTION

3.1 CONSTRUCTION, DESIGN, AND OTHER WORK

Comply with EM 385-1-1, NFPA 1, NFPA 70, NFPA 70E, NFPA 241, 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 governed in all areas by the nature of the work the employee is performing. Use personal hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks. Safety glasses must be carried/available on each person.

Mandatory PPE includes:

- a. Hard Hat
- b. Appropriate Safety Shoes
- c. Reflective Vests

3.1.1 Hazardous Material Use

Hazardous material cannot bring onto the job site or prior to any other use in connection with this contract.

3.1.2 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If additional material, not indicated, that may be hazardous to human health upon disturbance during operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will validate 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

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage, and any necessary sketches. 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 unless proof is provided that no other means exist. 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 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

Establish a fall protection and prevention 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.

3.3.1 Training

Institute a fall protection training program. As part of the Fall Hazard 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.B.

3.3.2 Fall Protection Equipment and Systems

Enforce use of the 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. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with EM 385-1-1, Paragraphs 21.N through 21.N.04. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with 29 CFR 1926.500, Subpart M, EM 385-1-1 and ASSE/SAFE A10.32.

3.3.3 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components must meet ASSE/SAFE Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). 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. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes must be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment must not exceed 1.8 m (6 feet). The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall must always be taken into consideration when attaching a person to a fall arrest system.

3.3.4 Horizontal Lifelines

Design, install, certify and use under the supervision of a qualified person horizontal lifelines for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500).

3.3.5 Guardrails and Safety Nets

Design, install and use guardrails and safety nets in accordance with [EM 385-1-1](#) and [29 CFR 1926 Subpart M](#).

3.3.6 Rescue and Evacuation Procedures

When personal fall arrest systems are used, the Contractor must ensure 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; 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).

3.3.7 Scaffold

Provide employees with a safe means of access to scaffold platforms. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access scaffold platforms greater than 6 m (20 feet) maximum in height by use of a scaffold stair system. Do not use vertical ladders commonly provided by scaffold system manufacturers for accessing scaffold platforms greater than 6 m (20 feet) maximum in height. The use of an adequate gate is required. Ensure that employees are qualified to perform scaffold erection and dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Give special care to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material are prohibited. Provide the first tie-in at a minimum height equal to 4 times the width of the smallest dimension of the scaffold base. Place work platforms on mud sills. Provide fall protection for scaffold or work platform erectors during the erection and dismantling of scaffolding or work platforms that are elevated more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection Program and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

3.3.8 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 Standards](#) and [ASSE/SAFE Z359.0](#), [ASSE/SAFE Z359.1](#), [ASSE/SAFE Z359.2](#), [ASSE/SAFE Z359.3](#), [ASSE/SAFE Z359.4](#) and [ASSE/SAFE A1264.1](#), [NFPA 1](#).

3.4 EQUIPMENT

3.4.1 Material Handling and Applicable Mechanized Equipment

- a. Do not modify material handling equipment such as forklifts with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions. 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. Keep proof of qualifications for operators on the project site and address this as part of the AHA.
- d. Keep manufacturer's specifications or owners manuals for the equipment on-site and review for additional safety precautions or requirements that are sometimes not identified by OSHA or EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.
- e. Machinery & Mechanized Equipment are subject to additional Navy proof of certification. A certification form for acceptance by the Contracting Officer prior to being placed into use may be required.

3.4.2 Weight Handling Equipment

- a. Equip cranes and derricks as specified in EM 385-1-1, section 16.
- b. Notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated. Contractor's operator must remain with the crane during the spot check.
- 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, and ASME B30.8 for floating cranes and floating derricks.
- e. Under no circumstance shall 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 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.

- 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. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected must always be available for review by Contracting Officer personnel.
- n. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane must be available for review by Contracting Officer personnel.
- 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. Prior to conducting lifting operations set a maximum wind speed at which a crane can be safely operated based on the equipment being used, the load being lifted, experience of operators and riggers, and hazards on the work site. Include this maximum wind speed determination as part of the activity hazard analysis plan for that operation.

3.5 EXCAVATIONS

Soil classification must be performed by a competent person in accordance with 29 CFR 1926 and EM 385-1-1.

3.5.1 Utility Locations

All underground utilities in the work area must be positively identified by a third party, independent, private utility locating company in addition to any station locating service and coordinated with the station utility department.

3.5.2 Utility Location Verification

The Contractor must 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.

3.5.3 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.

3.6 ELECTRICAL

3.6.1 Conduct of Electrical Work

As delineated in [EM 385-1-1](#) electrical work is to be conducted in a de-energized state unless there is no alternative method for accomplishing the work. In those cases obtain an energized work permit from the Contracting Officer. The energized work permit application must be accompanied by the AHA and a summary of why the equipment/circuit needs to be worked energized. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Attach temporary grounds in accordance with [ASTM F855](#) and [IEEE 1048](#). 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 shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the [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. Ensure that each employee is familiar with and complies with these procedures and [29 CFR 1910.147](#).

3.6.2 Portable Extension Cords

Size portable extension cords in accordance with manufacturer ratings for the tool to be powered and protected from damage. Immediately removed from service all damaged extension cords. Portable extension cords must meet the requirements of [NFPA 70E](#) and OSHA electrical standards.

3.7 WORK IN CONFINED SPACES

In addition to applicable sections of EM 385-1-1, 29 CFR 1910.146, CPL 2.100 and 29 CFR 1926.21 comply with the following. Any potential for a hazard in the confined space requires a permit system to be used.

- a. 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. (See Section 06.I.06 of EM 385-1-1 for entry procedures.) Review all hazards pertaining to the space with each employee during review of the AHA.
- b. 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 regardless of classification.
- c. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection in addition to continuous forced air ventilation regardless of space classification.

3.8 USE OF EXPLOSIVES

Do not use explosives on or bring explosives 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. Keep these facilities locked at all times except for inspection, delivery, and withdrawal of explosives.

3.9 ERGONOMICS CONSIDERATIONS DURING DESIGN PHASE

Design Facilities, processes, job tasks, tools and materials to reduce or eliminate work-related musculoskeletal (WMSD) injuries and risk factors in the workplace. Ensure that 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 must incorporate the requirements of MIL-STD-1472, DoD-HDBK 743 and ANSI/HFES 100.

-- End of Section --

SECTION 01 45 00.05 20

DESIGN AND CONSTRUCTION QUALITY CONTROL
05/14

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM E329 (2014a) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2008; Errata 2011) Safety and Health Requirements Manual

1.2 SUBMITTALS

The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES and Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES.

The use of an "S" following a submittal indicates separate submittal is required as part of federally mandated sustainability requirements. Refer to Section 01 33 29.05 20 SUSTAINABILITY REPORTING FOR DESIGN-BUILD for "S" submittal requirements.

SD-01 Preconstruction Submittals

Design Quality Control (DQC) Plan; G

Construction Quality Control (CQC) Plan; G

SD-05 Design Data

Design Quality Control Documentation; G

1.3 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 shall cover on-site and off-site work. No construction work or testing may be performed unless the QC Manager is on the work site.

1.3.1 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).

1.3.2 Mutual Understanding Meeting

The purpose of this meeting is to develop a mutual understanding of the QC Plans, including documentation, administration, requirements & procedures, coordination of activities to be performed, and the coordination of the contractor's management, production and QC personnel. At the meeting, explain in detail how the three phases of quality control will be implemented for each DFOW.

1.3.3 Design and Construction Quality Control Plans

Provide a project specific [Design Quality Control \(DQC\) Plan](#) and [Construction Quality Control \(CQC\) Plan](#), for review and approval by the Contracting Officer. Submit a DQC Plan prior to the Post Award Kickoff Meeting. Perform no design until the DQC Plan is approved. Submit a Construction QC Plan prior to start of construction. Perform no construction until the CQC Plan is approved. Include the following:

- a. The QC organization for this contract, including member resumes.
- b. A letter from an officer of the company designating the QC Manager, Alternate QC Manager, DQC Manager, and their authority.
- c. QC Manager qualifications in resume format.
- d. DQC Manager qualifications in resume format.
- e. List of 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.
- f. For the CQC Plan, a plan to implement the "Three Phases of Control" for each DFOW.
- g. 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.

- h. Submittal Register including design submittals, listing personnel who will review submittals and noting submittals for Contracting Officer review.
- i. Procedures for submitting and reviewing design changes/ variations prior to submission to the Contracting Officer.
- j. 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.
- k. 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. Exhibit in the QC review documentation a checking process of the design documents for completeness, accuracy, and constructability.
- l. For the DQC Plan, a list of design subcontractors and the scope of the work which each firm will accomplish.

1.4 QC ORGANIZATION

The QC Manager must manage the QC organization and report to an officer of the firm and not be subordinate to the Project Superintendent or the Project Manager.

1.4.1 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 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.

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 DFOV and notify the Contracting Officer at least 2 working 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.
- j. Hold weekly QC meetings with the DQC Manager, DOR (or representative), Superintendent and the Contracting Officer; ensure participation suitable for the phase of work. Distribute minutes of these meetings.
- k. 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.
- l. Update As-built drawings daily, maintaining up-to-date set on site.
- m. 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.
- n. Maintain rework log on site, noting dates deficiency identified, and date corrected.
- o. Certify and sign statement on each invoice that all work to be paid under the invoice has been completed in accordance with contract requirements.
- p. 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.
- q. 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.

- r. Assure that all applicable tests, special inspections, and observations required by the contract are performed.
- s. Coordinate all factory and on-site testing, Testing Laboratory personnel, QC Specialists, and any other inspection and testing personnel required by this Contract.
- t. Notify the Contracting Officer of any proposed changes to the QC plan.
- u. Retain a copy of approved submittals at project site, including Contractor's copy of approved samples.
- v. Update the Performance Assessment Plan as described in Section 01 31 19.05 20, POST AWARD MEETINGS and discuss monthly at a QC meeting.

1.4.2 DQC Manager

Provide DQC Manager that is a member of the QC organization, that coordinates actions with the QC Manager, and that is not subordinate to the Project Superintendent or the Project Manager.

DQC Manager qualifications:

- a. A minimum of 5 years of 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 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.
- 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 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 prefinal 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 the eOMSI Preparer.

1.5 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 DFOV.

1.5.1 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 DFOV. The DQC Manager shall also attend if required by structural tests and special inspections, as outlined in Chapter 17 of the IBC and the DQC Plan. When the DFOV 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 Preparatory Phase Checklist. Perform the following prior to beginning work on each DFOV:

- 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. 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 DFOW; 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.

1.5.2 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 DFOW, conduct the initial phase with the Project Superintendent, QC Specialists, and the foreman responsible for that DFOW. The DQC Manager shall also attend if required by structural tests and special inspections, as outlined in Chapter 17 of the IBC and the DQC Plan. Observe the initial segment of the DFOW to ensure that the work complies with Contract requirements. Document the results of the initial phase in the [daily CQC Report and in] 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 DFOW:

- 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.

1.5.3 Follow-Up Phase

Perform the following for on-going work daily, or more frequently as necessary, until the completion of each DFOW 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.

1.5.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same DFOW if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a DFOW is resumed after substantial period of inactivity, or if other problems develop.

1.5.5 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.

1.6 COMPLETION INSPECTIONS

Perform the necessary punchout, prefinal, and final inspections, compile punchlists, and correct deficiencies.

1.6.1 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 CxA 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".

1.6.2 Pre-Final Inspection

The Government and QC Manager must perform this inspection to verify that the facility is complete and ready to be occupied. A Government "Pre-Final Punch List" must be documented by the QC Manager as a result of this inspection. The QC Manager must ensure that all items on this list are corrected prior to notifying the Government that a "Final" inspection with the Client can be scheduled. Any items noted on the "Pre-Final" inspection must be corrected in a timely manner and be accomplished before the contract completion date for the work or any particular increment thereof, if the project is divided into increments by separate completion dates.

1.6.3 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 FEAD/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."

1.7 DOCUMENTATION

Maintain current and complete records of on-site and off-site QC program operations and activities.

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

1 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 (2007) Standard for 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) Standard for Safeguarding
Construction, Alteration, and Demolition
Operations

NFPA 70 (2014; AMD 1 2013; Errata 1 2013; AMD 2 2013;
Errata 2 2013) National Electrical Code

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD (2009) 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

The use of a "G" following a submittal indicates that a Government approval action is required. Submit the following in accordance with Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES and Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES.

SD-01 Preconstruction Submittals

Construction site plan; G

SD-03 Product Data

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 CONSTRUCTION SITE PLAN

Prior to the start of work, submit a site plan showing the locations of temporary facilities (including layouts and details, equipment and material storage area (onsite and offsite), and access and haul routes used for this contract. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

1.5 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 will not be acceptable.

1.5.1 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.

1.6 TEMPORARY UTILITIES

Reasonable amounts of the following utilities will be made available to the Contractor without charge.

Potable Water

The point at which the Government will deliver such utilities or services and the quantity available shall be coordinated with the Contracting Officer. The Contractor shall pay all costs incurred in connecting, converting, and transferring the utilities to the work. The Contractor shall make connections, including providing backflow-preventing devices on connections to domestic water lines; and make disconnections. Under no circumstances will taps to base fire hydrants be allowed for obtaining domestic water.

1.6.1 Contractor Utilities

The Contractor shall provide his own utilities.

1.7 WEATHER PROTECTION

1.7.1 Building and Site Storm Protection

When a warning of gale force winds is issued, take precautions to minimize danger to persons, and protect the work and nearby Government property. Precautions shall 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.

1.8 STORAGE AREAS

Contractor shall be responsible for security of his property. The Contract Clause entitled "FAR 52.236-10, Operations and Storage Areas".

1.9 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.

1.10 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. Storage of material/debris under such facilities is prohibited. Contractor shall be responsible for the security of the stored property.

1.10.1 Quality Control Manager Records and Field Office

Provide on the jobsite an office with approximately 100 (square feet) of useful floor area for the exclusive use of the QC Manager. Provide a weathertight structure with adequate heating and cooling, toilet facilities, lighting, ventilation, a 4 by 8 foot plan table, a standard size office desk and chair, computer station, and working communications facilities. Provide a door with a cylinder lock and windows with locking hardware. Make utility connections. 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.

2 PART 2 PRODUCTS

2.1 BACKFLOW PREVENTERS

Reduced pressure principle type conforming to the applicable requirements [AWWA C511](#). Provide backflow preventers complete with 150 pound flanged cast iron mounted gate valve and strainer, 304 stainless steel or bronze, internal parts. 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](#).

3 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

Fencing shall be provided 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.

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 shall 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 monthly 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.

3.4 GRASS CUTTING

Cut grass (or annual weeds) within the construction and storage sites to a maximum 4 inch height at least once a week during the growing season unless the grass area is not visible to the public. Trim the grass around fences at time of grass cutting.

-- End of Section --

SECTION 01 57 19.00 20

TEMPORARY ENVIRONMENTAL CONTROLS

11/11

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.

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

- EPA 530/F-93/004 (1993; Rev O; Updates I, II, IIA, IIB, and III) Test Methods for Evaluating Solid Waste (Vol IA, IB, IC, and II) (SW-846)
- EPA 833-R-060-04 (2007) Developing Your Storm Water Pollution Prevention Plan, a Guide for Construction Sites

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

- 29 CFR 1910 Occupational Safety and Health Standards
- 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
- 40 CFR 112 Oil Pollution Prevention
- 40 CFR 112.7 General Requirements for Spill Prevention, Control, and Countermeasure Plans
- 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 262 Standards Applicable to Generators of Hazardous Waste
- 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste

40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 270	EPA Administered Permit Programs: The Hazardous Waste Permit Program
40 CFR 271	Requirements for Authorization of State Hazardous Waste Programs
40 CFR 272	Approved State Hazardous Waste Management Programs
40 CFR 273	Standards For Universal Waste Management
40 CFR 279	Standards for the Management of Used Oil
40 CFR 280	Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 355	Emergency Planning and Notification
40 CFR 372-SUBPART D	Specific Toxic Chemical Listings
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 63	National Emission Standards for Hazardous Air Pollutants for Source Categories
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
40 CFR 82	Protection of Stratospheric Ozone
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 Sediment

Soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.2 Solid Waste

Garbage, refuse, debris, sludge, or other discharged material, including solid, liquid, semisolid, or contained gaseous materials resulting from domestic, industrial, commercial, mining, or agricultural operations. Types of solid waste typically generated at construction sites may include:

- a. Green waste: 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.
- b. Surplus soil: 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.
- c. Debris: Non-hazardous solid material generated during the construction, demolition, or renovation of a structure which exceeds 60 mm (2.5 inch) particle size that is: a manufactured object; plant or animal matter; or natural geologic material (e.g. 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.
- d. Wood: Dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated and/or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included.
- e. Scrap metal: 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.
- f. Paint cans: Metal cans that are empty of paints, solvents, thinners and adhesives. If permitted by the paint can label, a thin dry film may remain in the can.
- g. Recyclables: Materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors

that are recovered and sold as recyclable. 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 may be included as recyclable if sold to a scrap metal company.

- h. Hazardous Waste: By definition, to be a hazardous waste a material must first meet the definition of a solid waste. Hazardous waste and hazardous debris are special cases of solid waste. They have additional regulatory controls and must be handled separately. They are thus defined separately in this document.

Material not regulated as solid waste are: 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.

1.2.3 Hazardous Debris

As defined in Solid Waste paragraph, debris that contains listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) per 40 CFR 261; or debris that exhibits a characteristic of hazardous waste per 40 CFR 261.

1.2.4 Chemical Wastes

This includes salts, acids, alkalizes, herbicides, pesticides, and organic chemicals.

1.2.5 Garbage

Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.2.6 Hazardous Waste

Any discarded material, liquid, solid, or gas, which meets the definition of hazardous material or is designated hazardous waste by the Environmental Protection Agency or State Hazardous Control Authority as defined in 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, 40 CFR 268, 40 CFR 270, 40 CFR 271, 40 CFR 272, 40 CFR 273, 40 CFR 279, and 40 CFR 280.

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:

- a. Is regulated as a hazardous material per 49 CFR 173, or
- b. Requires a Material Safety Data Sheet (MSDS) per 29 CFR 1910.120, or
- c. During end use, treatment, handling, packaging, storage, transpiration, 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 instructions or directives, does not eliminate the need for adherence to that hazard-specific guidance which takes precedence over this instruction for "control" purposes. Such material include 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). Nonetheless, the exposure may occur incident to manufacture, storage, use and demilitarization of these items.

1.2.8 Waste Hazardous Material (WHM)

Any waste material which because of its quantity, concentration, or physical, chemical, or infectious characteristics may pose a substantial hazard to human health or the environment and which has been so designated. Used oil not containing any hazardous waste, as defined above, falls under this definition.

1.2.9 Oily Waste

Those materials which are, or were, mixed with used oil and have become separated from that used oil. 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, used oil 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:

- a. It is not prohibited in other State regulations or local ordinances
- b. The amount generated is "de minimus" (a small amount)
- c. It is the result of minor leaks or spills resulting from normal process operations
- d. All free-flowing oil has been removed to the practical 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, a hazardous waste determination must be performed 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.

1.2.10 Regulated Waste

Those solid wastes that have specific additional Federal, state, or local controls for handling, storage, or disposal.

1.2.11 Class I and II Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act and includes the following chemicals:

chlorofluorocarbon-11 (CFC-11)
chlorofluorocarbon-12 (CFC-12)
chlorofluorocarbon-13 (CFC-13)
chlorofluorocarbon-111 (CFC-111)
chlorofluorocarbon-112 (CFC-112)
chlorofluorocarbon-113 (CFC-113)
chlorofluorocarbon-114 (CFC-114)
chlorofluorocarbon-115 (CFC-115)
chlorofluorocarbon-211 (CFC-211)
chlorofluorocarbon-212 (CFC-212)
chlorofluorocarbon-213 (CFC-213)
chlorofluorocarbon-214 (CFC-214)
chlorofluorocarbon-215 (CFC-215)
chlorofluorocarbon-216 (CFC-216)
chlorofluorocarbon-217 (CFC-217)
chlorofluorocarbon-500 (CFC-500)
chlorofluorocarbon-502 (CFC-502)
chlorofluorocarbon-503 (CFC-503)
halon-1211
halon-1301
halon-2402
carbon tetrachloride
methyl bromide
methyl chloroform

Class II ODS is defined in Section 602(s) of The Clean Air Act and includes the following chemicals:

hydrochlorofluorocarbon-21 (HCFC-21)
hydrochlorofluorocarbon-22 (HCFC-22)
hydrochlorofluorocarbon-31 (HCFC-31)
hydrochlorofluorocarbon-121 (HCFC-121)
hydrochlorofluorocarbon-122 (HCFC-122)
hydrochlorofluorocarbon-123 (HCFC-123)
hydrochlorofluorocarbon-124 (HCFC-124)
hydrochlorofluorocarbon-131 (HCFC-131)
hydrochlorofluorocarbon-132 (HCFC-132)
hydrochlorofluorocarbon-133 (HCFC-133)
hydrochlorofluorocarbon-141 (HCFC-141)
hydrochlorofluorocarbon-142 (HCFC-142)
hydrochlorofluorocarbon-221 (HCFC-221)
hydrochlorofluorocarbon-222 (HCFC-222)
hydrochlorofluorocarbon-223 (HCFC-223)
hydrochlorofluorocarbon-224 (HCFC-224)
hydrochlorofluorocarbon-225 (HCFC-225)
hydrochlorofluorocarbon-226 (HCFC-226)
hydrochlorofluorocarbon-231 (HCFC-231)
hydrochlorofluorocarbon-232 (HCFC-232)
hydrochlorofluorocarbon-233 (HCFC-233)
hydrochlorofluorocarbon-234 (HCFC-234)
hydrochlorofluorocarbon-235 (HCFC-235)
hydrochlorofluorocarbon-251 (HCFC-251)
hydrochlorofluorocarbon-252 (HCFC-252)

hydrochlorofluorocarbon-253 (HCFC-253)
hydrochlorofluorocarbon-261 (HCFC-261)
hydrochlorofluorocarbon-262 (HCFC-262)
hydrochlorofluorocarbon-271 (HCFC-271)

1.2.12 Universal Waste

The universal waste regulations streamline collection requirements for certain hazardous wastes in the following categories: batteries, pesticides, mercury-containing equipment (e.g., thermostats) and lamps (e.g., fluorescent bulbs). The rule is designed to reduce hazardous waste in the municipal solid waste (MSW) stream by making it easier for universal waste handlers to collect these items and send them for recycling or proper disposal. These regulations can be found at [40 CFR 273](#).

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. 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 Section [01 33 00](#) SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Preconstruction Survey; G,

Solid Waste Management Plan and Permit; G,

Regulatory Notifications; G,

Environmental Protection Plan; G,

Storm Water Pollution Prevention Plan; G,

Storm Water Notice of Intent (for NPDES coverage under the general permit for construction activities); G,

Dirt and Dust Control Plan

Contractor Hazardous Material Inventory Log; G,

SD-06 Test Reports

Laboratory Analysis

Disposal Requirements

Erosion and Sediment Control Inspection Reports

Storm Water Inspection Reports for General Permit

Solid Waste Management Report; G,

SD-07 Certificates

Contractor 40 CFR employee training records; G,

ECATTS certificate of completion

SD-11 Closeout Submittals

Some of the records listed below are also required as part of other submittals. For the "Records" submittal, maintain on-site a separate three-ring Environmental Records binder and submit at the completion of the project. Make separate parts to the binder corresponding to each of the applicable sub items listed below.

Storm Water Pollution Prevention Plan compliance notebook; G,

Waste Determination Documentation

Disposal Documentation for Hazardous and Regulated Waste

Contractor 40 CFR Employee Training Records

Solid Waste Management Permit

Solid Waste Management Report

Contractor Hazardous Material Inventory Log; G,

Hazardous Waste/Debris Management

Regulatory Notifications

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 normal 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. 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.

The Contractor may be required to promptly conduct tests and procedures for the purpose of assessing whether construction operations are in compliance with Applicable Environmental Laws. Analytical work shall be done by qualified laboratories; and where required by law, the laboratories shall be certified.

1.4.1 Environmental Compliance Assessment Training and Tracking System (ECATTS)

The QC Manager is responsible for environmental compliance on projects unless an Environmental Manager is named. The QC Manager (and alternative QC Manager) or Environmental Manager must complete ECATTS training 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 ECATTS training within 14 days of assignment to the project

Submit an [ECATTS certificate of completion](#) for personnel who have completed the required "Environmental Compliance Assessment Training and Tracking System (ECATTS)" training. This training is web-based and can be accessed from any computer with Internet access using the following instructions.

Register for NAVFAC Environmental Compliance Training and Tracking System, by logging on to <http://navfac.ecatts.com/>. Obtain the password for registration from the Contracting Officer.

This training has been structured to allow contractor personnel to receive credit under this contract and also to carry forward credit to future contracts. Contractors shall ensure that the QC Manager (and alternate QC Manager) or 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 re-take modules tailored to the state where the contract work is being performed.

ECATTS is available for use by all contractor and subcontractor personnel associated with this project. These other personnel are encouraged (but not required) to take the training and may do so at their discretion.

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, environmental programs and operational controls identified by the EMS. 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/or preventative actions. In addition, ensure that employees are aware of their roles and responsibilities under the EMS and how these EMS roles and responsibilities affect work performed under the contract.

Ensure that employees receive applicable environmental and occupational health and safety training, and keep up to date on regulatory required specific training for the type of work to be conducted onsite. All on-site Contractor personnel, and their subcontractor personnel, performing tasks that have the potential to cause a significant environmental impact shall be competent on the basis of appropriate education, training or experience. Upon contract award, the Contracting Officer's Representative will notify the installation's EMS coordinator to arrange EMS training. The installation's EMS coordinator will 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 EMS coordinator must retain associated records.

1.5 QUALITY ASSURANCE

1.5.1 Preconstruction Survey

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.

1.5.2 Regulatory Notifications

The Contractor is responsible for all regulatory notification requirements in accordance with Federal, State and local regulations. In cases where the Navy must also provide public notification (such as stormwater permitting), coordinate with the Contracting Officer. Submit copies of all regulatory notifications to the Contracting Officer 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, remediation of controlled substances (asbestos, hazardous waste, lead paint).

1.5.3 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 activity; 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 activity environmental staff to discuss the proposed Environmental Protection Plan. Develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural resources, required reports, required permits, permit requirements, and other measures to be taken.

1.5.4 Environmental Manager

Appoint in writing an Environmental Manager for the project site. The Environmental Manager will be directly responsible for coordinating contractor compliance with Federal, State, local, and station requirements. The Environmental Manager will ensure compliance with Hazardous Waste Program requirements (including hazardous waste handling, storage, manifesting, and disposal); implement the Environmental Protection Plan; ensure that all environmental permits are obtained, maintained, and closed out; ensure compliance with Storm Water Program Management requirements; ensure compliance with Hazardous Materials (storage, handling, and reporting) requirements; and coordinate any remediation of regulated substances (lead, asbestos, PCB transformers). This can be a collateral position; however the person in this position must be trained to adequately accomplish the following duties: ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure all 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.

1.5.5 Contractor 40 CFR Employee Training Records

Prepare and maintain employee training records throughout the term of the contract meeting applicable 40 CFR requirements. [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 training records to the Contracting Officer at the conclusion of the project, unless otherwise directed.

1.6 ENVIRONMENTAL PROTECTION PLAN (EPP)

Prior to initiating any work on site, meet with the Contracting Officer to discuss the proposed Environmental Protection Plan and develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural resources, required reports, and other measures to be taken. The Environmental Protection Plan must incorporate construction related objectives and targets from the installation's Environmental Management System. Submit the Environmental Protection Plan in the following format and include the elements specified below.

a. Description of the Environmental Protection Plan

(1) General overview and purpose

(a) A brief description of each specific plan required by environmental permit or elsewhere in this contract.

(b) The duties and level of authority assigned to the person(s) on the job site that oversee environmental compliance.

(c) 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.

(d) Communication and training procedures that will be used to convey environmental management requirements to contractor employees and subcontractors.

(e) Emergency contact information contact information (office phone number, cell phone number, and e-mail address).

(2) General site information

(3) A letter signed by an officer of the firm appointing the Environmental Manager and stating that he/she 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.

b. Management of Natural Resources

- (1) Land resources
- (2) Tree protection
- (3) Replacement of damaged landscape features
- (4) Temporary construction
- (5) Stream crossings
- (6) Fish and wildlife resources
- (7) Wetland areas

c. Protection of Historical and Archaeological Resources

- (1) Objectives
- (2) Methods

d. Storm Water Management and Control

- (1) Ground cover
- (2) Erodible soils
- (3) Temporary measures
 - (a) Mechanical retardation and control of runoff
 - (b) Vegetation and mulch
- (4) Effective selection, implementation and maintenance of Best Management Practices (BMPs).

e. Protection of the Environment from Waste Derived from Contractor Operations

- (1) Control and disposal of solid and sanitary waste. If Section 01 74 19 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT is included in the contract, submit the plan required by that section as part of the Environmental Protection Plan.
- (2) Control and disposal of hazardous waste (Hazardous Waste Management Section)

This item will consist of the management procedures for all hazardous waste to be generated. The elements of those procedures will coincide with the Activity Hazardous Waste Management Plan. A copy of the Activity Hazardous Waste Management Plan will be provided by the Contracting Officer. As a minimum, include the following:

- (a) Procedures to be employed to ensure a written waste determination is made for appropriate wastes which are to be generated;
- (b) Sampling/analysis plan;
- (c) Methods of hazardous waste accumulation/storage (i.e., in tanks and/or containers);
- (d) Management procedures for storage, labeling, transportation, and disposal of waste (treatment of waste is not allowed unless specifically noted);
- (e) Management procedures and regulatory documentation ensuring disposal of hazardous waste complies with Land Disposal Restrictions (40 CFR 268);
- (f) Management procedures for recyclable hazardous materials such as lead-acid batteries, used oil, and the like;
- (g) Used oil management procedures in accordance with 40 CFR 279;
- (h) Pollution prevention\hazardous waste minimization procedures;
- (i) Plans for the disposal of hazardous waste by permitted facilities;
- (j) Procedures to be employed to ensure all required employee training records are maintained.

f. Prevention of Releases to the Environment

- (1) Procedures to prevent releases to the environment
- (2) Notifications in the event of a release to the environment

g. Regulatory Notification and Permits

List what notifications and permit applications must be made. Some permits require up to 90 days to obtain. Demonstrate that those permits have been obtained or applied for by including copies of all applicable, environmental permits. The Plan will not be approved until all permits have been obtained.

1.6.1 Environmental Protection Plan Review

Within thirty days after the Contract award date, submit the proposed Environmental Protection Plan for review and approval. Commencement of work will not begin until the environmental protection plan has been approved.

1.6.2 Licenses and Permits

Obtain licenses and permits pursuant to the "Permits and Responsibilities" FAR Clause 52.236-7.

For permits obtained by the Contracting Officer, whether or not required by the permit, the Contractor is responsible for conforming to all permit requirements and performing all quality control inspections of the work in progress, and to submit notifications and certifications to the applicable regulatory agency via the Contracting Officer.

Where required by the State regulatory authority, the inspections and certifications will be provided through the services of a Professional Engineer (PE), registered in the State where the work is being performed. [Where a PE is not required, the individual must be otherwise qualified by other current State licensure, specific training and prior experience (minimum 5 years).]As a part of the quality control plan, which is required by Section 01 45 00.00 20 QUALITY CONTROL, provide a sub item containing the name, appropriate professional registration or license number, address, and telephone number of the professionals or other qualified persons who will be performing the inspections and certifications for each permit.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 PROTECTION OF NATURAL RESOURCES

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. Confine construction activities to within the limits of the work indicated or specified. If the work is near streams, lakes, or other waterways, conform to the national permitting requirements of the Clean Water Act.

Do not disturb fish and wildlife. 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 indicated or specified.

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 will be responsible for any resultant damage.

Protect existing trees which are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. By approved excavation, remove trees with 30 percent or more of their root systems destroyed. Remove trees and other landscape features scarred or damaged by equipment operations, and replace with equivalent, undamaged trees and landscape features. Obtain Contracting Officer's approval before replacement.

The Contracting Officer's approval is required before any equipment will be permitted to ford live streams. In areas where frequent crossings are required, install temporary culverts or bridges. Obtain Contracting Officer's approval prior to installation. Remove temporary culverts or

bridges upon completion of work, and repair the area to its original condition unless otherwise required by the Contracting Officer.

3.1.1 Erosion and Sediment Control Measures

3.1.1.1 Burnoff

Burnoff of the ground cover is not permitted.

3.1.1.2 Protection of Erodible Soils

Immediately finish the earthwork brought to a final grade, as indicated or specified. Immediately protect the side slopes and back slopes upon completion of rough grading. Plan and conduct earthwork to minimize the duration of exposure of unprotected soils.

3.1.1.3 Temporary Protection of Erodible Soils

Use the following methods to prevent erosion and control sedimentation:

a. Mechanical Retardation and Control of Runoff

Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, berms, and use of silt fences and straw bales to retard and divert runoff to protected drainage courses.

b. Vegetation and Mulch

- (1) Provide temporary protection on sides and back slopes as soon as rough grading is completed or sufficient soil is exposed to require erosion protection. Protect slopes by accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Stabilize slopes by hydroseeding, anchoring mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.

- (2) Seeding: Provide new seeding where ground is disturbed. Include topsoil or nutriment during the seeding operation necessary to establish or reestablish a suitable stand of grass.

3.1.2 Erosion and Sediment Control Inspection Reports

Submit "[Erosion and Sediment Control Inspection Reports](#)" (E&S) (form provided at the pre-construction conference) to the Contracting Officer once every 7 calendar days and within 24 hours of a storm event that produces **12 mm (0.5 inch)** or more of rain.

Note erosion control inspection reports may be compiled as part of a stormwater pollution prevention plan inspection reports if applicable.

3.1.2.1 Storm Water Notice of Intent for Construction Activities and Storm Water Pollution Prevention Plan

Submit a [Storm Water Notice of Intent \(for NPDES coverage under the general permit for construction activities\)](#) and a [Storm Water Pollution Prevention Plan \(SWPPP\)](#) for the project to the Contracting Officer prior and gain

approval prior to the commencement of work. The SWPPP must meet the requirements of the EPA or State general permit for storm water discharges from construction sites. Submit the SWPPP along with any required Notice of Intents, Notice of Termination, and appropriate permit fees, via the Contracting Officer, to the appropriate Federal or State agency for approval, a minimum of 14 calendar days prior to the start of any land disturbing activities. Maintain an approved copy of the SWPPP at the construction on-site office, and continually update as regulations require, reflecting current site conditions.

Coverage under this permit requires the contractor prepare a Storm Water Pollution Prevention Plan (SWPPP), prepare and submit a Registration Statement as a co-permittee with the Construction Officer, and provide the permit fee to the responsible state agency before any land disturbing activities begin. File for permit coverage on behalf of both the Construction Officer and themselves, and file a Notice of Termination once construction is complete and the site is stabilized with a final sustainable cover.

Under the terms and conditions of the permit, the Contractor may be required to install, inspect, maintain best management practices (BMPs), and submit stormwater BMP inspection reports and stormwater pollution prevention plan inspection reports. Ensure construction operations and management are constantly in compliance with the terms and conditions of the general permit for storm water discharges from construction activities.

a. The SWPPP shall:

- (1) Identify potential sources of pollution which may be reasonably expected to affect the quality of storm water discharge from the site.
- (2) Describe and ensure implementation of practices which will be used to reduce the pollutants in storm water discharge from the site.
- (3) Ensure compliance with terms of the EPA or State general permit for storm water discharge.
- (4) Select applicable best management practices from EPA 833-R-060-04.
- (5) Include a completed copy of the Registration Statement, BMP Inspection Report Template and Notice of Termination except for the effective date.
- (6) Storm Water Pollution Prevention Measures and Notice of Intent 40 CFR 122.26, EPA 833-R-060-04. Provide a "Storm Water Pollution Prevention Plan" (SWPPP) for the project. The SWPPP will meet the requirements of the EPA or State general permit for storm water discharges from construction sites. Submit the SWPPP along with any required Notice of Intents, Notice of Termination, and appropriate permit fees, via the Contracting Officer, to the appropriate Federal or State agency for approval, a minimum of 14 calendar days prior to the start of construction. A copy of the approved SWPPP will be kept at the construction on-site office, and

continually updated as regulations require reflecting current site conditions.

3.1.2.2 Storm Water Pollution Prevention Plan Compliance Notebook

Create and maintain a three ring binder of documents that demonstrate compliance with the Stormwater Construction Activity permit. The binder shall include a copy of the permit Registration Statement, proof of permit fee payment, SWPPP and SWPPP update amendments, inspection reports, copies of correspondence with the [list agency that issued the permit i.e. Virginia DCR] and a copy of the permit Notice of Termination. At the completion of the project the notebook shall become the property of the Government. Provide the compliance notebook to Contracting Officer. Provide an advance copy of the Registration Statement to the Contracting Officer immediately after the form is presented to the permitting agency.

3.1.3 Stormwater Drainage and Construction Dewatering

There will be no discharge of excavation ground water to the sanitary sewer, storm drains, or to the river without prior specific authorization of the Environmental Division in writing. Discharge of hazardous substances will not be permitted under any circumstances.

Construction site runoff will be prevented from entering any storm drain or the river directly by the use of straw bales or other method suitable to the Environmental Division. Contractor will provide erosion protection of the surrounding soils.

Construction Dewatering shall not be discharged to the sanitary sewer. 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. Authorization for any contaminated groundwater release shall be obtained in advance from the base Environmental Officer. Discharge of hazardous substances will not be permitted under any circumstances.

3.2 SOLID WASTE MANAGEMENT PLAN AND PERMIT

Provide to the contracting officer written notification of the quantity of solid waste/debris that is anticipated 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 or as applicable, submit one copy of a State and local [Solid Waste Management Permit](#) or license showing such agency's approval of the disposal plan before transporting wastes off Government property.

3.2.1 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.

Include copies of the waste handling facilities' weight tickets, receipts, bills of sale, and other sales documentation. In lieu of sales documentation, the Contractor may submit a statement indicating the disposal location for the solid waste which is signed by an officer of the Contractor

firm authorized to legally obligate or bind the firm. The sales documentation or Contractor certification will 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 by the Contractor for his own use, the Contractor will submit on the solid waste disposal report the information previously described in this paragraph. Prices paid or received will not be reported to the Contracting Officer unless required by other provisions or specifications of this Contract or public law.

3.2.2 Control and Management of Solid Wastes

Pick up solid wastes, and place in covered containers which 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. Recycling is encouraged and can be coordinated with the Contracting Officer and the activity recycling coordinator. Remove all solid waste (including non-hazardous debris) from Government property and dispose off-site at an approved landfill. Solid waste disposal off-site must comply with most stringent local, State, and Federal requirements including 40 CFR 241, 40 CFR 243, and 40 CFR 258.

Manage spent hazardous material used in construction, including but not limited to, aerosol cans, waste paint, cleaning solvents, contaminated brushes, and used rags, as per environmental law.

3.2.2.1 Disposal Documentation for Hazardous and Regulated Waste

Manifest, pack, ship and dispose of hazardous or toxic waste and universal waste that is generated as a result of construction in accordance with the generating facilities generator status under the Resource Conservation and Recovery Act. 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 manifest must be reviewed, signed, and approved by the Navy before the Contractor may ship waste. To obtain specific disposal instructions coordinate with the Activity Environmental office.

3.2.2.2 Dumpsters

Equip dumpsters with a secure cover and paint the standard base color. Keep cover closed at all times, except when being loaded with trash and debris. Locate dumpsters behind the construction fence or out of the public view. Empty site dumpsters at least once a week or as needed to keep the site free of debris and trash. If necessary, provide 208 liter (55 gallon) trash containers painted the darker base color to collect debris in the construction site area. Locate the trash containers behind the construction fence or out of the public view. Empty trash containers at least once a day. For large demolitions, large dumpsters without lids are acceptable but should not have debris higher than the sides before emptying.

3.3 WASTE DETERMINATION DOCUMENTATION

Complete a Waste Determination form (provided at the pre-construction conference) for all contractor derived wastes to be generated. Base the waste determination upon either a constituent listing from the manufacturer used in conjunction with consideration of the process by which the waste was generated, EPA approved analytical data, or laboratory analysis (Material Safety Data Sheets (MSDS) by themselves are not adequate). Attach all support documentation to the Waste Determination form. As a minimum, a Waste Determination form must be provided for the following wastes (this listing is not all inclusive): oil and latex based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and all containers of the original materials.

3.4 POLLUTION PREVENTION/HAZARDOUS WASTE MINIMIZATION

Minimize the use of hazardous materials and the generation of hazardous waste. Include procedures for pollution prevention/ hazardous waste minimization in the Hazardous Waste Management Section of the Environmental Protection Plan. Consult with the activity Environmental Office for suggestions and to obtain a copy of the installation's pollution prevention/hazardous waste minimization plan for reference material when preparing this part of the plan. If no written plan exists, obtain information by contacting the Contracting Officer. Describe the types of the hazardous materials expected to be used in the construction when requesting information.

3.5 WASTE HAZARDOUS MATERIAL (WHM)/HAZARDOUS WASTE (HW) MATERIALS PROHIBITION

No waste hazardous material or hazardous waste shall be disposed of on government property. No hazardous material shall be brought onto government property that does not directly relate to requirements for the performance of this contract. The government is not responsible for disposal of Contractor's waste material brought on the job site and not required in the performance of this contract. The intent of this provision is to dispose of that waste identified as waste hazardous material/hazardous waste as defined herein that was generated as part of this contract and existed within the boundary of the Contract limits and not brought in from offsite by the Contractor. Incidental materials used to support the contract including, but not limited to aerosol cans, waste paint, cleaning solvents, contaminated brushes, rags, clothing, etc. are the responsibility of the Contractor. The list is illustrative rather than inclusive. The Contractor is not authorized to discharge any materials to sanitary sewer, storm drain, or to the river or conduct waste treatment or disposal on government property without written approval of the Contracting Officer.

3.6 HAZARDOUS MATERIAL MANAGEMENT

Include hazardous material control procedures in the Safety Plan. Address procedures and proper handling of hazardous materials, including the appropriate transportation requirements. No hazardous material shall be brought onto government property that does not directly relate to requirements for the performance of this contract. Submit a MSDS and estimated quantities to be used for each hazardous material to the Contracting Officer prior to bringing the material on base. Typical materials requiring MSDS and quantity reporting include, but are not limited to, oil and latex based painting and caulking products, solvents, adhesives, aerosol, and petroleum products. Ensure that hazardous materials are

utilized in a manner that will minimize the amount of hazardous waste that is generated. Ensure that all containers of hazardous materials have NFPA labels or their equivalent. Certify that all hazardous materials removed from the site are hazardous materials and do not meet the definition of hazardous waste per 40 CFR 261.

3.6.1 Contractor Hazardous Material Inventory Log

Submit the "Contractor Hazardous Material Inventory Log" (found at: <http://www.wbdg.org/ccb/NAVGRAPH/graphdoc.pdf>), which provides information required by (EPCRA Sections 312 and 313) along with corresponding Material Safety Data Sheets (MSDS), 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 MSDS for hazardous materials on site at all times. At the end of the project, provide the Contracting Officer with copies of all of these MSDS, 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.

Documentation for any spills/releases, environmental reports or off-site transfers may be requested by the Contracting Officer.

3.7 PETROLEUM PRODUCTS AND REFUELING

Conduct the fueling and lubricating of equipment and motor vehicles in a manner that protects against spills and evaporation. Manage all used oil generated on site in accordance with 40 CFR 279. Determine if any used oil generated while on-site exhibits a characteristic of hazardous waste. Used oil containing 1000 parts per million of solvents will be considered a hazardous waste and disposed of at Contractor's expense. Used oil mixed with a hazardous waste will also be considered a hazardous waste.

3.7.1 Oily and Hazardous Substances

Prevent oil or hazardous substances from entering the ground, drainage areas, or navigable waters. In accordance with 40 CFR 112, surround all temporary fuel oil or petroleum storage tanks with a temporary berm or containment of sufficient size and strength to contain the contents of the tanks, plus 10 percent freeboard for precipitation. The berm will be impervious to oil for 72 hours and be constructed so that any discharge will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs. Provide general secondary containment for oil transfer operations as required by 40 CFR 112.7.

3.7.2 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, the contractor shall immediately notify the contracting officer. The contractor shall not disturb this material until authorized by the contracting officer.

3.8 FUEL TANKS

Petroleum products and lubricants required to sustain up to 30 days of construction activity may be kept on site. Storage and refilling practices

shall comply with 40 CFR Part 112. Secondary containment shall be provided and be no less than 110 percent of the tank volume plus five inches of free-board. If a secondary berm is used for containment then the berm shall be impervious to oil for 72 hours and be constructed so that any discharge will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs. Drips pans are required and the tanks must be covered during inclement weather.

3.9 RELEASES/SPILLS OF OIL AND HAZARDOUS SUBSTANCES

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 by environmental law. 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 Base or Activity Fire Department, the activity's Command Duty Officer, and the Contracting Officer. If the contractor's response is inadequate, the Navy may respond. If this should occur, the contractor will be required to reimburse the government for spill response assistance and analysis.

The Contractor is responsible for verbal and written notifications as required by the federal 40 CFR 355, State, local regulations and Navy Instructions. Spill response will be in accordance with 40 CFR 300 and applicable State and local regulations. Contain and clean up these spills without cost to the Government. If Government assistance is requested or required, the Contractor will reimburse the Government for such assistance. Provide copies of the written notification and documentation that a verbal notification was made within 20 days.

Maintain spill cleanup equipment and materials at the work site. Clean up all hazardous and non-hazardous (WHM) waste spills. The Contractor shall reimburse the government for all material, equipment, and clothing generated during any spill cleanup. The Contractor shall reimburse the government for all costs incurred including sample analysis materials, equipment, and labor if the government must initiate its own spill cleanup procedures, for Contractor responsible spills, when:

- a. The Contractor has not begun spill cleanup procedure within one hour of spill discovery/occurrence, or
- b. If, in the government's judgment, the Contractor's spill cleanup is not adequately abating life threatening situation and/or is a threat to any body of water or environmentally sensitive areas.

3.10 CONTROL AND MANAGEMENT OF ASBESTOS CONTAINING MATERIAL (ACM)

Items, components, or materials disturbed by or included in work under this contract [do] [do not] involve asbestos. Other materials in the general area around where work will be performed may contain asbestos. All thermal insulation, in all work areas, should be considered to be asbestos unless positively identified by conspicuous tags or previous laboratory analysis certifying them as asbestos free.

Inadvertent discovery of non-disclosed asbestos that will result in an abatement action requires a change in scope before proceeding. Upon discovery of asbestos containing material not identified in the contract documents, the Contractor shall immediately stop all work that would generate further damage to the material, evacuate the asbestos exposed area, and notify the Contracting Officer for resolution of the situation prior to resuming normal work activities in the affected area. Do not remove or perform work on any asbestos containing materials without the prior approval of the Contracting Officer. Do not engage in any activity, which would remove or damage such materials or cause the generation of fibers from such materials.

Manage and dispose of asbestos containing waste in accordance with applicable environmental law. Asbestos containing waste shall be manifested and the manifest provided to the Contracting Officer.

3.11 CONTROL AND MANAGEMENT OF HAZARDOUS WASTES

3.11.1 Facility Hazardous Waste Generator Status

All work conducted within the boundaries of this activity must meet the regulatory requirements of this generator designation. Comply with all provisions of Federal, State and local regulatory requirements applicable to this generator status regarding training and storage, handling, and disposal of all construction derived wastes.

3.11.2 Hazardous Waste/Debris Management

Identify all construction activities which will generate hazardous waste/debris. Provide a documented waste determination for all resultant waste streams. Hazardous waste/debris will be identified, labeled, handled, stored, and disposed of in accordance with all 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.

Hazardous waste will also be managed in accordance with the approved Hazardous Waste Management Section of the Environmental Protection Plan. 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 will be identified as being generated by the Government.

Prior to removal of any hazardous waste from Government property, all hazardous waste manifests must be signed by activity personnel from the Station Environmental Office. No hazardous waste must be brought onto Government property. Provide to the Contracting Officer 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. For hazardous wastes spills, verbally notify the Contracting Officer immediately.

3.11.2.1 Regulated Waste Storage/Satellite Accumulation/90 Day Storage Areas

If the work requires the temporary storage/collection of regulated or hazardous wastes, the Contractor will request the establishment of a Regulated Waste Storage Area, a Satellite Accumulation Area, or a 90 Day Storage Area at the point of generation. The Contractor must submit a

request in writing to the Contracting Officer providing the following information:

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 Site Plan to the Request)

Attach a waste determination form. Allow ten working days for processing this request. The designated area where waste is being stored shall be barricaded and a sign identifying as follows:

"DANGER - UNAUTHORIZED PERSONNEL KEEP OUT"

3.11.2.2 Sampling and Analysis of Hazardous Waste (HW)

a. Waste Sampling

Sample waste in accordance with EPA 530/F-93/004. Each sampled drum or container will be clearly marked with the Contractor's identification number and cross referenced to the chemical analysis performed.

b. Laboratory Analysis

Follow the analytical procedure and methods in accordance with the 40 CFR 261. The Contractor will provide all analytical results and reports performed to the Contracting Officer

c. Analysis Type

Identify waste hazardous material/hazardous waste by analyzing for the following properties as a minimum: ignitability, corrosiveness, total chlorides, BTU value, PCBs, TCLP for heavy metals, and cyanide.

3.11.2.3 Hazardous Waste Disposal

No hazardous, toxic, or universal waste shall be disposed or hazardous material abandoned on government property. And unless otherwise noted in

this contract, the government is not responsible for disposal of Contractor generated waste material. The disposal of incidental materials used to accomplish the work including, but not limited to aerosol cans, waste paint, cleaning solvents, contaminated brushes, rags, clothing, etc. are the responsibility of the Contractor. The list is illustrative rather than inclusive.

The Contractor is not authorized to discharge any materials to sanitary sewer, storm drain, or water way or conduct waste treatment or disposal on government property without written approval of the Contracting Officer.

Control of stored waste, packaging, sampling, analysis, and disposal will be determined by the details in the contract. The requirements for jobs in the following paragraphs will be used as the guidelines for disposal of any hazardous waste generated.

a. Responsibilities for Contractor's Disposal

Contractor responsibilities include any generation of WHM/HW requiring Contractor disposal of solid waste or liquid.

(1) Provide all service necessary for the final treatment/disposal of the hazardous material/waste in accordance with all local, State and Federal laws and regulations, and the terms and conditions of the contract within sixty (60) days after the materials have been generated. These services will include all necessary personnel, labor, transportation, packaging, detailed analysis (if required for disposal, and/or transportation, including manifesting or completing waste profile sheets, equipment, and the compilation of all documentation is required).

(2) Contain all waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, 40 CFR 268, 40 CFR 270, 40 CFR 272, 40 CFR 273, 40 CFR 279, 40 CFR 280, and 40 CFR 761.

(3) Obtain a representative sample of the material generated for each job done to provide waste stream determination.

(4) Analyze each sample taken and providing analytical results to the Contracting Officer. Provide two copies of the results.

(5) Determine the DOT proper shipping names for all waste (each container requiring disposal) and will demonstrate how this determination is developed and supported by the sampling and analysis requirements contained herein to the Contracting Officer.

Contractor Disposal Turn-In Requirements

For any waste hazardous materials or hazardous waste generated which requires the Contractor to dispose of, the following conditions must be complied with in order to be acceptable for disposal:

(1) Drums compatible with waste contents and drums meet DOT requirements for 49 CFR 173 for transportation of materials.

(2) Drums banded to wooden pallets. No more than three (3) 55 gallon drums to a pallet, or two (2) 85 gallon over packs.

(3) Band using 1-1/4 inch minimum band on upper third of drum.

(4) Recovery materials label (provided by Code 106.321) located in middle of drum, filled out to indicate actual volume of material, name of material manufacturer, other vendor information as available.

(5) Always have three (3) to five (5) inches of empty space above volume of material. This space is called 'outage'.

3.11.2.4 Universal Waste/e-Waste Management

Universal waste including but not limited to some mercury containing building products such florescent lamps, mercury vapor lamps, high pressure sodium lamps, CRTs, batteries, aerosol paint containers, electrical equipment containing PCBs, and consumed electronic devices, shall be managed in accordance with applicable environmental law and installation instructions.

3.11.3 Class I ODS Prohibition

Class I ODS in pure or blended form as defined and identified herein must not be used in the performance of this contract, nor be provided as part of the equipment except for the use of servicing existing government owned equipment. This prohibition will be considered to prevail over any other provision, specification, drawing, or referenced documents.

3.11.3.1 Recycling Requirements

Recycle used refrigerants and ozone depleting substances generated during the performance of this contract to the maximum extent practicable to minimize used refrigerant and ozone depleting substance disposal as HW.

Test, collect, transfer, recycle, and/or arrange for shipping and proper disposal of used refrigerants and ozone depleting substances generated during the performance of work under this contract. The Contractor is responsible for all associated costs.

Any and all Class I ODS and R-22 recovered by the Contractor as part of this contract shall be packaged and turned over to the Government for recycling upon the completion of the work covered by this contract. The Contractor shall arrange for recycling of used refrigerants not turned over to the government, at a licensed refrigerant recycler approved by the Contracting Officer.

3.11.3.2 EPA Certification Requirements

Heating and air conditioning technicians must be certified through an EPA-approved program. Copies of certifications shall be maintained at the employees' place of business and be carried as a wallet card by the technician, as provided by environmental law. .

3.11.3.3 Accidental Venting of Refrigerant

Accidental venting of a refrigerant is a release and must be reported to the Contracting Officer

3.12 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.

3.12.1 Dirt and Dust Control Plan

Submit truck and material haul routes along with a plan for controlling dirt, debris, and dust on base 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.

3.13 ABRASIVE BLASTING

3.13.1 Blasting Operations

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 in accordance with the requirements specified. Perform work involving removal of hazardous material in accordance with 29 CFR 1910.

3.13.2 Disposal Requirements

Submit analytical results of the debris generated from abrasive blasting operations per Laboratory Analysis in paragraph SAMPLING AND ANALYSIS OF HW. Hazardous waste generated from blasting operations will be managed in accordance with paragraph CONTROL AND MANAGEMENT OF HAZARDOUS WASTE and with the approved HWMP. Disposal of non-hazardous abrasive blasting debris will be in accordance with paragraph CONTROL AND DISPOSAL OF SOLID WASTES.

3.14 NOISE

Make the maximum use of low-noise emission products, as certified by the EPA. Blasting or use of explosives will not be permitted without written permission from the Contracting Officer, and then only during the designated times. Confine pile-driving operations to the period between 8 a.m. and 4 p.m., Monday through Friday, exclusive of holidays, unless otherwise specified.

3.15 MERCURY MATERIALS

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. 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.

Cleanup of a mercury spill shall not be recycled and shall be managed as a hazardous waste for disposal.

-- 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

Military installations are required to direct at least 60 percent of their non-hazardous solid wastes (including waste from construction and demolition operations) from the waste stream. This guide specification requires the reduction of the amount of construction and demolition waste requiring landfill disposal or incineration, and to promote more efficient use of construction materials during construction.

1.2 SUBMITTALS

The use of a "G" following a submittal indicates that a Government approval action is required. Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29.05 20 SUSTAINABILITY REPORTING FOR DESIGN-BUILD. Submit the following in accordance with Section 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES.

SD-01 Preconstruction Submittals

Waste Management Plan; G

SD-11 Closeout Submittals

Records; S

1.3 DISPOSAL

Control accumulation of waste materials and trash. Recycle or dispose of collected materials off-site at intervals approved by the Contracting Officer and in compliance with waste management procedures. Except as otherwise specified in other sections of the specifications, disposal must be in accordance with the following:

1.3.1 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. Consider sale or donation of waste suitable for reuse.

1.3.2 Recycle

Recycle waste materials not suitable for reuse, but are recyclable.

1.3.3 Waste

Dispose of materials with no practical use or economic benefit to waste-to-energy plants where available. As the last choice, dispose of materials at a landfill or incinerator.

1.3.4 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 preconstruction 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 help 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 and/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.
- n. Identification of base, 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.

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.

-- End of Section --

PART THREE - PROJECT PROGRAM

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Part 3 contains the project description, functional and performance requirements, scope items, and expected quality levels that exceed Part 4. Part 4 identifies design criteria, verification requirements, and performance and quality requirements of products.

1.0 PROJECT DESCRIPTION

The work involves demolition of existing Building 801, 807 and 811 and its related facilities at the Marine Corps Reserve Center (MCRC) Newburgh NY. Demolition of the facility includes the removal of all foundations to full depth. All demolition area will be filled and provided with new landscaping. Landscaping work includes re-grading the demo site areas to ensure proper drainage to match the existing site, and provide topsoil and seed. Hazardous materials, such as asbestos and lead paint, will be abated and disposed prior to building demolition work, in accordance with all the environmental requirements. Cut and cap all the existing utility systems for the demolished buildings.

The Design/Build Contractor shall be responsible for the entire design including providing basis of design, calculations, equipment selections, specifications, and drawings for this project. The facility will be designed and constructed in accordance with *Unified Facilities Criteria, (UFC) 1-200-01 Design: General Building Requirements, Unified Facilities Criteria, (UFC) 4-010-01 DoD Minimum Antiterrorism Standards for Buildings*, and all other applicable Unified Facilities Criteria (UFC) in Whole Building Design Guide http://www.wbdg.org/ccb/browse_cat.php?o=29&c=4. The replacement materials shall be the same or matching the existing materials that had been installed.

2.0 PROJECT OBJECTIVES

2.1 Mission Statement

The mission of these facilities was a barrack for the U.S. Marine Corps Reserve personnel. The role of the reserve forces is to supplement the active duty military. The reserve forces must be ready to assume active duty missions immediately upon activation. Their ability to train personnel is critical to the overall readiness of the U.S. military.

2.2 Facility Function

These facilities were MCRC dorm rooms, general storage and miscellaneous support functions. The primary objectives of the work under this project are demolishing the existing facilities and repairing the existing site for future development. The other buildings at MCRC Newburgh will remain operational during the work and will require work sequencing. Contractor shall work with NAVFAC Construction Manager to determine material lay down area. This area shall be in existing parking lot and shall be placed in an area as to use the least amount of parking stalls and shall be out of the way of movement through the spaces. Occupants will remain in other buildings and the contractor shall coordinate work activities to minimize disruptions to occupants work activities.

2.3 Project Specific Priorities

This package of technical requirements includes three sources of information. The sources include this project program, the performance technical specifications, and reference material such as drawings and survey. In order to provide a complete proposal, compliance with all parts of this package is required. The reference drawings are intended as a general guide to existing conditions only. The contractor shall be responsible for comprehensive investigation, design development, working drawings, demolition and site repair required for a complete, functional and finished project.

2.3.1 Sustainable Design

Not used.

2.3.2 Storm Water Management

Provide low impact development strategies for compliance with DoD Policy on Implementing Section 438 of the Energy Independence and Security Act (EISA), dated 19 January, 2010 and Penn Memo/NAVY Low Impact Development (LID) Policy, dated 16 November, 2007. Comply with UFC 3-210-10N "INTERIM TECHNICAL GUIDANCE: LOW IMPACT DEVELOPMENT". These policies are in addition to State or Local storm water management program permit requirements. The DOR shall balance all requirements, Federal, State, Local, and the above stated policies, and acquire required regulatory permits when managing storm water generated.

2.4 Appropriate Design

The appropriate design shall be based on the coordination of the site to provide new landscaping. New landscaping and site finishes shall match the existing.

2.5 Workflow Process

The other buildings around the project site remain occupied during the work. The work on the demolition of the existing buildings can be performed at any time during the project, provided the construction activities do not interfere with the continued operations and work activities of the MCRC. The work on the project site will be divided into several working areas. The division of the buildings into several working areas will be coordinated by the contractor. More specific and detailed planning will be required to minimize the interruption to facility operations. All building occupants will vacate from the work area prior to the contractor beginning demolition activities.

2.5.1 Hours of Operation

The normal hours of operation are 0700 to 1600, Monday through Friday. The design shall address specific issues related to the work and the hours of operation of the facility. Interruptions to utilities, traffic flow, and facility operations, as a result of the work, shall be addressed in the design.

2.5.2 Staffing/Occupancy

Type of Occupancy	No. of Persons	Description of Activity
Marine in all buildings	45-50/building	When fully occupied

2.6 Special Design Challenges

As stated, the continuous occupancy and uninterrupted operations at the MCRC area are critical. The design shall address the issues related to minimizing interruptions to utilities.

3.0 SITE ANALYSIS

3.1 Existing Site Conditions

The existing buildings of MCRC Newburgh are located at 921 Raz Ave. New Windsor, NY. 12553. The Marine barrack buildings were constructed in 1942. The project site is located just west of the Newburgh city limits on the southern end the Stewart International Airport.

3.2 Site Development Requirements

The site work for this project is minimal. Specific site related work items are addressed in paragraph 4 "PROJECT REQUIREMENTS" of this project program.

4.0 PROJECT REQUIREMENTS

All work is related to the demolition and performance of repairing the demolition site.

Reference drawings are provided in Part 6 to illustrate the existing construction. The contractor is responsible for site verification of existing conditions, the extent of work, quantities to be provided and additional work required to provide a complete, operable, and finished facilities.

4.1 Demolition Requirements

The Contractor shall furnish all labor, supplies, supervision, tools, materials, equipment, and transportation necessary to obtain demolition and removal of Building 801, 807 and 811 at MCRC Newburgh, NY. The existing buildings are approximately 30'-6"x91'-0" each with 2-stories and basement. The demolition site shall be filled, graded and have sod applied.

The demolition includes Building 801, 807, and 811 all foundation walls and footings, and sidewalk in accordance with the specifications contained herein. The buildings include, but are not limited to concrete foundation structure, brick masonry exterior wall, wood joist floor deck, wood deck slope membrane shingles roofing, metal doors and windows, sewer and water lines, electrical equipment, and HVAC systems. Cut and cap gas, electrical, water service and sewer line to these buildings.

Buildings 801, 807 and 811 contain Asbestos Containing Materials (ACM) in the flue putty, pipe fitting, insulation, various types of floor tiles, mastic associated with floor tiles, concrete interior wall and ceiling board, roof flashing, and all caulking. Provide a new, independent Asbestos-Containing Material and Lead Based Paint Pre-demolition Survey Report for these buildings to identify and verify the extent of hazardous materials. The removal of demolition debris from Government property along with the abatement/removal and disposal of asbestos and lead based paint, are also included as services to be provided in accordance with this specification. Abate, and dispose of asbestos and lead paint as per UFGS requirements and in accordance with State and Federal regulations.

Contractor shall install around demolition site 6'-0" high galvanized cyclone construction fence with green color screening. Contractor storage shall be within demolition site.

Cut and cap water service, gas and sewer line at source of these buildings. Remove all abandoned utility lines. Demolish the existing electrical distribution and lighting systems in the building. Cut and cap electrical service entrance cable. The demolition included the entire electrical power and lighting equipment and devices. All conduit and wiring shall be removed. All demolition shall be in accordance with the latest edition of National Electrical Code (NEC) and other applicable government regulations. Contractor must follow all government environmental regulations in demolition, handling, transporting and disposing of any electrical hazardous materials.

After demolition and removal, the disturbed area shall be filled and re-graded. Apply topsoil and sod for landscaping repair.

4.2 Architecture Requirements

A. The existing security camera which is mounted on the north-east exterior corner of Building 801 will be protected and reinstalled with a new pole. Provide new pole for the existing camera with concrete foundation and aluminum pole. The height of the camera shall be installed as the same as the existing. Provide new data and power wiring from Building 921 and test to insure this security camera is functioning before the demolition project starts. Insure the existing Security System consisting of the existing control system is compatible with the central monitoring station in Building 921 and monitored within the secure/protected area and at the central monitoring station.

B. Relocate the existing Marine Corps Martial Arts Program (MCMAP) training pit, currently located between Building 801 and 807, to the new location which is the south side of the Building 710. The exact location for the MCMAP will be as directed by the NAVFAC Construction Manager. Disassemble the MCMAP and protect all the existing reusable materials and reassemble it in the new location. Existing foundation/footers structure will be removed, filled, graded and have sod applied. Provide new structure foundation for the MCMAP and redesign and construct new foundation/footers. The function and appearance of the MCMAP at the new location shall be the same as the existing. Provide any necessary material for MCMAP new construction to match the existing. Contractor shall verify all the existing underground utility lines before new construction.

5.0 ROOM REQUIREMENTS

No new buildings or additions are to be provided under the scope of work for this project. All work is related to the renovation and construction of existing spaces and facilities. Section 4, "PROJECT REQUIREMENTS," of this Project Program defines the work required in the existing space.

6.0 ENGINEERING SYSTEM REQUIREMENTS

A10 FOUNDATIONS

SYSTEM DESCRIPTION

Provide the new foundation system in accordance with UFC 3-301-01, *Structural Engineering*. Foundation shall be designed to suit subsurface conditions, and shall be capable of transmitting all loads to the ground.

Importance Factors

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

Wind Exposure

Wind design shall be based on Exposure C.

A10 GENERAL

GOVERNMENT PROVIDED GEOTECHNICAL INFORMATION

Subsurface soil information, including a geotechnical report from projects immediately adjacent to the project site are not included in other portions of this RFP.

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

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

Minor variations in subsurface conditions between borings should be anticipated. The Contractor shall bear all costs associated with the site preparation, ground improvement and foundations except as allowed by Contract Clause FAR 52.236-2, "Differing Site Conditions". The Contractor's Geotechnical Engineer shall perform additional subsurface investigation/testing as required to adequately determine all applicable geotechnical factors including the type and capacity of the project foundations. The Contractor's Geotechnical Engineer shall consider the provided information and any additional information obtained and prepare a report as described in other portions of this RFP. The minimum requirements for the subsurface investigation and report are as required by FC 1-300-09N with associated references.

SEISMIC DESIGN

A site-specific seismic ground motion study is not required. Seismic Site Classification shall be determined in accordance with UFC 3-301-01, *Structural Engineering*, and the 2008 USGS Ground Acceleration Maps.

A1010 STANDARD FOUNDATIONS

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

A1020 SPECIAL FOUNDATIONS

As determined by the Designer of Record to be applicable, provide a Special foundation. "Special Foundations" are any foundation that are not specifically "Standard Foundations", or a combination of Standard Foundations and a site improvement/ground modification system. Examples of site improvement/ground modification systems include surcharging, stone columns, rammed aggregate piers, impact densification, compaction grouting, vibroflotation, etc. As "Special Foundation" techniques or systems typically require the use of specialty contractors, a Professional Engineer shall

establish installation and acceptance criteria and supervise the installation. The Designer of Record shall submit justification for use, including acceptable evidence of previous successful installation in similar conditions, methods and equipment used in their installation, proposed testing and inspection to be used, supporting test data, calculations and any other information related to the structural properties and load capacity of such system. The allowable stresses for piles/piers shall not exceed those limitations specified in UFC 1-200-01.

A1040 STRUCTURALLY SUPPORTED SLAB

As determined by the Designer of Record to be applicable, provide a structurally supported slab. Provide for support of all utilities that may be adversely affected by soil consolidation or expansive soils. Provide stainless steel supports sized adequately to support the in-service utility. Where the structurally supported slab is below the existing adjacent exterior grade, provide water/damproofing and a perimeter drainage system to remove ground water from the area.

D50 ELECTRICAL

SYSTEM DESCRIPTION

The electrical work includes the design and construction for reconnection of the existing security camera to the Building 912 central monitoring station.

Provide an exterior electrical system consisting of Conduits, Wiring, Communications and Security Systems, including accessories and devices as necessary and required for a complete and usable system. Electrical system shall comply with performance technical specification D50, applicable United Facility Criteria (UFC), and all applicable codes. This section covers installations out to the building 5 foot line.

Demolish existing circuit from Building 801 to the existing camera and provide a new distribution circuit to refeed the existing camera branch circuit from building 912. All new wiring installation and grounding shall be in accordance with UFC 3-501-01, UFC 3-520-01 and per National Electrical Code (N.E.C.). All wiring shall be copper conductors and the size shall be matched the existing branch wiring.

GENERAL SYSTEM REQUIREMENTS

Provide the a System complete in place, tested and approved, as specified throughout this RFP, as needed for a complete, usable and proper installation. All equipment shall be installed per the criteria of PTS Section D50 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

D5010 ELECTRICAL SERVICE AND DISTRIBUTION

D501005 ENCLOSED CIRCUIT BREAKERS

Provide enclosed circuit breakers for all new electrical service.

D501090 OTHER SERVICE AND DISTRIBUTION

All feeder wiring shall be demolished and replaced with insulated conductors in new conduit.

D5030 COMMUNICATIONS AND SECURITY

The Project Requirements Section and FC 4-171-06N identify locations for communications and security systems and equipment, unless noted otherwise in the following sub-elements.

D503005 SECURITY SYSTEMS

An Electronic Security System (ESS) is the integrated electronic system that encompasses one or more of the following subsystems; access control system (ACS), intrusion detection system (IDS), and closed circuit television (CCTV) systems for assessment of alarm conditions.

The ESS for this project shall meet requirements of UFC 4-021-02, *Electronic Security Systems*, Intelligence Community Standard (ICS) Number 705-1 and SECNAV M-5510.36 Department of Navy Information Security Program and consist of an ACS and an IDS

Reinstall the existing security system including equipment and supporting infrastructure complete, tested, and operational. System shall be controlled by the Building 921's central monitoring system and monitored within the secure/protected area and at the Installation central monitoring station.

D5090 OTHER ELECTRICAL SERVICES

D509001 GENERAL CONSTRUCTION ITEMS (ELECTRICAL)

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

D509003 GROUNDING SYSTEMS

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

D509090 OTHER SPECIAL SYSTEMS AND DEVICES

Provide any additional wiring and connections for installation of new electrical service.

F20 SELECTIVE BUILDING DEMOLITION

GENERAL SYSTEMS REQUIREMENTS

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

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. The contractor shall submit complete the "Permits Record of Decision" (PROD) form with the first design submittal package. A blank PROD form is in the UFC 3-201-01, *Civil Engineering*. Contractor shall determine correct permit fees and pay said fees. Copies of all permits, permit applications, and the completed PROD form shall be forwarded to the NAVFAC Environmental Reviewer.

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

F2010 BUILDING ELEMENTS DEMOLITION

This project includes the complete demolition and removal of Building 801, 807 and 811. Each building is approximately 2,800 square feet three stories with concrete foundation wood-framed structure and masonry exterior walls.

F2010 1.1 GENERAL DEMOLITION

Remove all existing structure.

F2010 1.2 UTILITIES

Utility demolition must be coordinated with on-site personnel for planned outages.

F2010 1.3 DUST CONTROL

Prevent the spread of dust and debris to occupied portions of the building and avoid the creation of a nuisance or hazard in the surrounding area.

F2020 HAZARDOUS COMPONENT ABATEMENT

Contractor shall provide a report for each building of the following: asbestos, mercury containing switches, building maintenance and janitorial hazardous materials, PCB light ballasts, smoke detectors and exit signs, fluorescent light bulbs and lead based paint to support this project.

Remove and dispose of the following hazardous materials based on the contractor's report: asbestos, mercury containing switches, building maintenance and janitorial hazardous materials, PCB light ballasts, smoke detectors and exit signs, fluorescent light bulbs, fire extinguishers, and lead based paint.

Contractor must minimize land disturbance during construction. All saw cutting must be done so that dust is not released into the air. Any runoff from these activities and any other activities associated with this project must be routed so that all sediment is removed before the reaching any drains to the storm water system.

During construction if Contractor encounters materials presumed to contain lead or asbestos. Contractor must stop work in this area immediately. Contractor can only re-commence work once material has been determined (through testing) to be lead and asbestos free.

F2020 1.1 PRIVATE QUALIFIED PERSON (PQP)

The General Contractor is required to hire as a first tier subcontractor a PQP to ensure compliance with the approved work plans and perform independent inspections, testing and verification of the hazardous components work including: asbestos and lead containing paint.

F2020 1.3 ASBESTOS

Remove and dispose of all the asbestos-containing materials were indicated in the contractor's new environmental survey.

The Contractor may elect to leave Category I & II Non-Friable Asbestos-Containing Materials in place during demolition and dispose of the entire waste contents as Category I & II ACM. If the Contractor

elects to follow this method, all procedures, monitoring, waste disposal, dust control measures, and other work activities shall be addressed within the asbestos work plan. In addition, the Contractor will not be allowed to segregate/salvage waste materials, or compact debris for transport. The Contractor shall also submit certification that the landfill to be used for disposal has been notified and is willing to accept Category I & II ACM.

This project involves removal of asbestos materials. All federal, state and local regulations regarding asbestos related work must be followed. Perform asbestos work in accordance with AHERA, State of New York, and OSHA regulations.

F2020 1.4 LEAD BASED PAINT

This project involves disturbance of lead based paint. Contractor shall provide a new lead based paint environmental survey for more detailed information regarding concentrations and locations of lead based paint on each building.

F2020 1.6 MERCURY & LLR COMPONENTS

Remove all mercury vapor containing fluorescent light tubes and LLR components as discovered.

F2020 1.7 PCB'S

Remove all light ballasts, transformers, capacitors, without markings regarding PCB content ("NO PCB", "NON PCB") as PCB containing.

F2020 1.8 OZONE DEPLETING SUBSTANCES (ODS)

Remove the following equipment which contains ODS : air conditioning equipment.

F2020 1.11 DISPOSAL

All waste materials shall become the property of the Contractor and shall be transported, disposed of and recycled in accordance with Federal, State and local laws.

G10 SITE PREPARATION

SYSTEM DESCRIPTION

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

GENERAL SYSTEM REQUIREMENTS

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

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

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. Submit a complete "Permits Record of Decision" (PROD) form with the first design submittal package. A blank PROD form can be obtained at the Download Tab of Part 6 of the NAVFAC Design-Build website at the following link <http://ndbm.wbdg.org/system/html/6/453>.

Determine correct permit fees and pay said fees. Forward copies of all permits, permit applications, and the completed PROD form to the Government's Civil Reviewer and Environmental Reviewer. Perform work in accordance with the obtained permits.

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

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

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

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

Personnel under the supervision of a registered Professional Engineer shall provide inspection of excavations and soil/groundwater conditions throughout construction. The Engineer shall be responsible for performing pre-construction and periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the Contractor and the Contracting Officer, shall update the excavation, sheeting, shoring and dewatering plans as construction progresses to reflect actual site conditions and shall submit the updated plan and a written report (with professional stamp) at least monthly informing the Contractor and Contracting Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer shall be available to meet with the Contracting Officer at any time throughout the contract duration. The Contractor shall bear all costs of the Engineer.

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

G1010 SITE CLEARING

G101001 CLEARING

All timber on the project site noted for clearing shall become the property of the Contractor, and shall be removed from the project site and disposed of off station.

Burning will not be allowed.

G101006 DEBRIS DISPOSAL

All grubbing and clearing residue, demolished material, rubbish and debris generated by this project shall be hauled off-site and off station by the Contractor.

G1020 SITE DEMOLITION & RELOCATIONS

The items to be reused include exterior bricks.

G102001 BUILDING MASS DEMOLITION

Demolish the existing buildings as indicated in Project Requirements. Refer to Section F2020, "Hazardous Component Abatement" for requirements regarding removal of hazardous components.

G102003 UNDERGROUND SITE DEMOLITION

Demolish all the existing underground utilities of the Building 801, 807 and 811.

Abandonment of utility systems shall be done in a manner that conforms to applicable codes and regulations, removes their presence from the ground surface and clearly indicates that they have been abandoned. Utilities shall not be abandoned in place underneath. Remove existing utility piping, conduits, and utility structures under the Building 801, 807 and 811.

Remove existing utility structures to 3 feet (900 mm) below existing or new adjacent grade, whichever is greater. Break up bases to permit drainage. Fill with clean sand.

G102005 UTILITY RELOCATION

Comply with the requirements of the utility provider concerning the utility relocation.

G102007 SITE CLEANUP

G102090 OTHER SITE DEMOLITION & RELOCATIONS

G1030 SITE EARTHWORK

G103004 FILL & BORROW

Borrow and select fill shall come from off-base sources. Fat clay is unacceptable as fill anywhere on site, all fill shall be low plasticity soil.

G103005 COMPACTION

G103006 SOIL STABILIZATION

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

G103008 SOIL TREATMENT

Treat the area around the entire foundation for termite control in accordance with manufacturer's instructions.

G1040 HAZARDOUS WASTE REMEDIATION

A contaminated soil/groundwater report is not provided to support this project.

Prior to starting work, conduct any additional testing that may be needed to provide a final design and comply with all applicable federal, regional, state and local regulations. Refer to UFC 3-800-10N, *Environmental Engineering for Facility Construction*, for additional requirements and criteria.

G1040 1.1 EXCAVATION

Perform excavation of contaminated material in accordance with Federal, State and Local laws and regulation.

Where excavation extends into groundwater levels, dewatering methods shall be employed on a localized basis to facilitate excavation operations. Water generated by dewatering during excavation shall be collected and tested in accordance with Federal, State and Local laws and regulation.

Non-contaminated water may be disposed of on-site.

G1040 1.3 CLEAN FILL

Soils that are determined as clean fill via testing shall be backfilled and compacted in accordance with the requirements listed in this section.

G1040 1.4 SPILLS

In the event of a spill or release of hazardous substances, pollutant, contaminant or oil, notify the Contracting Officer immediately. Containment/Control actions shall be taken immediately to minimize the effect of any spill or leak. Clean up shall be performed at the Contractor's expense in accordance with all Federal, State and Local laws and regulation.

G1040 1.5 DISPOSAL

All waste materials shall become the property of the Contractor and shall be transported, disposed of or recycled in accordance with all Federal, State and Local laws and regulation.

G20 SITE IMPROVEMENTS

SYSTEM DESCRIPTION

The site improvements system consists of pavements and pavement related features, landscaping and other exterior site development work related to this project. Provide a pavement design by a licensed Professional Engineer familiar with conditions local to the project site. Site design, including but not limited to design of parking and pedestrian circulation, will include coordination with the Civil Engineer and the Landscape Architect.

GENERAL SYSTEMS REQUIREMENTS

Provide site improvements as required to make a useable facility that meets functional and operational requirements, incorporates all applicable anti-terrorism, force protection and physical security requirements and blends into the existing environment.

Provide site improvements in conformance with applicable requirements of the Uniform Federal Accessibility Standards.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. Complete the "Permits Record of Decision" (PROD) form with the first design submittal package. A blank PROD form can be obtained at the Download Tab of Part 6 of the NAVFAC Design-Build website at the following link <http://ndbm.wbdg.org/system/html/6/453>. Determine correct permit fees and pay said fees. Forward copies of all permits, permit applications, and the completed PROD form to the Government's Civil Reviewer. Perform work in accordance with the obtained permits.

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

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

G2050 LANDSCAPING

Provide complete landscaping consisting of lawn, groundcover, perennials and ornamental grasses as required to provide a quality, cost-effective, functional and visually appealing landscape program that will enhance the development, while complying with all applicable anti-terrorism, force protection and physical security requirements.

Guarantee all landscaping for a period of one year after final acceptance of the project.

G205001 FINE GRADING AND SOIL PREPARATION

Provide 4" of topsoil for all grass areas and other pervious areas disturbed by Contractor operations.

G205002 EROSION CONTROL MEASURES

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

G205004 SEEDING SPRIGGING AND SODDING

Areas of the project site shall be sodded. Provide seed and fertilize existing grass areas disturbed by Contractor operations.

G40 SITE ELECTRICAL UTILITIES

SYSTEM DESCRIPTION

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

GENERAL SYSTEM REQUIREMENTS

Provide an Electrical System complete in place, tested and approved, as specified throughout this RFP, as needed for a complete, usable and proper installation. All equipment shall be installed per the criteria of PTS Section G40 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

G402004 POLES

Provide aluminum pole complete with concrete base.

G4030 SITE COMMUNICATION AND SECURITY

Reinstall the existing security camera system including all conduit and all wiring (data and power), underground structures, termination equipment, poles and structures, and grounding systems as required for a complete and usable system.

G403003 CABLES AND WIRING

Cables and wiring for site telecommunications and security systems shall be as indicated in their respective categories.

G403009 GROUNDING SYSTEMS

Provide a complete grounding system for the camera pole.

-- End of Part 3 Section --

PART FOUR - PERFORMANCE TECHNICAL SPECIFICATIONS

See attached documents. These are the Minimum Materials, Engineering and Construction Requirements for DOR who provides design for this project.

A10 FOUNDATIONS

D50 ELECTRICAL

F20 SELECTIVE BUILDING DEMOLITION

G10 SITE PREPARATIONS

G20 SITE IMPROVEMENTS

G40 SITE ELECTRICAL UTILITIES

Z10 GENERAL PERFORMANCE TECHNICAL SPECIFICATION

SECTION A10

FOUNDATIONS

12/13

A10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

A10 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

A10 1.1.1 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01 General Building Requirements (A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed in UFGS Section 01 33 10.05 20, which includes the following significant UFC(s): UFC 3-101-01, Architecture UFC 3-220-01, Geotechnical Engineering UFC 3-301-01, Structural Engineering)

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS Section 31 23 00.00 Excavation and Fill
20

A10 1.2 GENERAL REQUIREMENTS

A10 1.2.1 Earthwork

The Designer of Record shall prepare the following UFGS Specification as part of the project specification and shall include the prepared specification section in the design submittal for the project:

Section 31 23 00.00 20 *Excavation and Fill*

A10 1.2.2 Geotechnical Report

A10 1.2.2.1 Subsurface Soils Information

Any provided subsurface soil information is included for the contractor's information only, and is not guaranteed to fully represent all subsurface conditions. The data included in this

RFP is to assist in proposal preparation. Contractor shall perform, at his expense, such subsurface exploration, investigation, testing, and analysis as his Designer of Record deems necessary for the design and construction of the foundation system.

A10 1.2.2.2 Contractor-provided Geotechnical Engineer

The Contractor is required to retain a Geotechnical Engineer experienced and licensed in the geographic region of the project to interpret any provided data as related to his design concept and develop requirements for bidding. Requirements stated in Parts 3 and 4 of the RFP take precedence over any content of any included geotechnical report. Additional requirements for the geotechnical design of this project are provided elsewhere in this RFP.

All work by the Contractor-provided Geotechnical Engineer at the project location shall be coordinated with the Contracting Officer and shall not interfere with normal base operations. When providing the Foundation Work Design submittal, provide the Contractor's Geotechnical Report (an Adobe Acrobat PDF version on CD and two printed copies) for review and record keeping purposes. The report shall become the property of the Government. Provide the Geotechnical reports generated during construction, such as pile load tests or PDA results, pile driving results and analysis, to the Contracting Officer (an Adobe Acrobat PDF version and two printed copies) for record keeping purposes.

A10 1.2.2.3 Contractor-Provided Geotechnical Report

Submit a written Geotechnical report based upon Government-provided subsurface investigation data and all additional field and laboratory testing accomplished at the discretion of the Contractor's Geotechnical Engineer. The Geotechnical Report shall include the following:

- a. The project site description, vicinity map and site map indicating the location of borings and any other sampling locations. Provide 24 hour groundwater observations for at least 20% of the borings, minimum one boring. Provide notes explaining any abbreviations or symbols used and describing any special site preparation requirements.
- b. Results of all applicable field and laboratory testing, whether Government or Contractor-provided. Address existing subsurface conditions, selection and his design of the foundation and floor slab, all underground construction including utility installation and all other site-specific requirements (such as soil stabilization and slope stability).
- c. Engineering analysis, discussion and recommendations addressing:
 - 1) Settlement analysis. Settlement shall be limited as required in EM 1110-1-1904, *Settlement Analysis*
 - 2) Bearing Capacity Analysis.
 - 3) Foundation selection and construction considerations (shallow, deep, special); dimensions, and installation procedures.

- 4) Site preparation (earthwork procedures and equipment), compaction requirements, building slab preparation (as applicable), soil sensitivity to weather and equipment, groundwater influence on construction, mitigation of expansive soils or liquefaction potential, dewatering requirements, slope stability, and other necessary instructions.
- 5) Sheeting and shoring considerations, as applicable
- 6) Pavement design calculations with parameters defined, actual or assumed, and recommended thicknesses and materials, whether for design or for proposed modifications to the RFP provided pavement design
- 7) Haul routes and stockpile locations for earthwork, as applicable.
- 8) Calculations to support conclusions and recommendations.
- 9) Recommendations shall be presented on a structure-by-structure Basis.

The Geotechnical Report shall be signed by the Contractor-provided Geotechnical Engineer.

The submitted report shall be accompanied by a cover letter identifying any report recommendations of the report proposed to be adopted into the design which are interpreted by the Contractor as a change condition to the Geotechnical or Pavement related requirements of the RFP.

A10 1.2.2.4 Geotechnical Site Data required in Design Drawings

The Contractor's final design drawings shall include the Government-provided subsurface data presented in the RFP as noted below, as well as all additional borings and laboratory test data results performed by the Contractor. The data provided shall include:

- a. Logs of Borings and related summary of laboratory test results and groundwater observations. Provide 24-hour groundwater observations for at least 20% of the borings, minimum one boring. Provide notes explaining any abbreviations or symbols used and describing any special site preparation requirements.
- b. The locations of all borings shall be indicated on the drawings. The applicable design drawings shall be revised to reference the Contractor's Geotechnical Report as being a basis for design.

A10 1.2.3 Pile Driver Analyzer (PDA)

If deemed necessary by the Designer-of-Record's geotechnical engineer, the dynamic wave equation method of analysis, pile driver analyzer, shall be used to validate pile and pile hammer compatibility, establish pile driving criteria, establish terminal penetration resistance, or verify as-driven capacity of the pile. The PDA or static load test(s) shall be required for piles with required allowable design capacity equal to or greater than 40 tons.

A10 1.3 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Verification of satisfactory construction and system performance of the foundations shall be via Performance Verification Testing, and by field inspection, as detailed in this section of the RFP and in UFGS Section 01 45 00.05 20. Provide special tests and special inspections in accordance with UFGS Section 01 45 00.05 20, *Design and Construction Quality Control*.

A10 1.3.1 Earthwork

Perform quality assurance for earthwork in accordance with IBC Chapter 17 and UFGS Section 31 23 00.00 20. A competent person, as defined by COE EM 385-1-1, under supervision of a registered Professional Engineer is required to provide inspection of excavations and soil/groundwater conditions throughout construction. The Engineer shall be responsible for performing periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the contractor and the Contracting Officer, shall update the excavation, sheeting, shoring, and dewatering plans as construction progresses to reflect actual site conditions and shall submit the updated plan and a written report (with professional stamp) at least monthly informing the Contractor and the Contracting Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer shall be available to meet with the Contracting Officer at any time throughout the contract duration.

A10 1.3.2 Piles

If piles are required, perform quality assurance for pile construction in accordance with UFC 1-200-01, *General Building Requirements*. Pile installation procedures and installed piles shall be inspected and found to be in compliance with these specifications prior to acceptance of the work.

Install test piles as directed by the Contractor's Geotechnical Engineer. Pile load tests, if required, shall be performed in accordance with UFC 1-200-01. Test pile installation procedures shall be as directed by the Contractor's Geotechnical Engineer. Results of the pile test program and final pile installation criteria shall be submitted to the Contracting Officer prior to installation of the production piles. If deemed necessary by the Designer-of-Record's Geotechnical Engineer, the dynamic wave equation method of analysis, pile driver analyzer, shall be used to validate pile and pile hammer compatibility, establish pile driving criteria, establish terminal penetration resistance, or verify as-driven capacity of the pile. The PDA or static pile load test (ASTM D 1143) shall be required for piles with an allowable design capacity equal to or greater than 40 tons. When required, perform PDA on all indicator or test piles. Perform CAPWAP analysis on at least one test (indicator) pile to determine capacity with a minimum three day set-up and develop pile installation criteria.

A10 1.4 DESIGN SUBMITTALS

Design submittals shall be in accordance with Z10, *General Performance Technical Specifications*, UFGS section 01 33 10.05 20, *Design Submittal Procedures*, UFC 1-300-09N, *Design Procedures*, UFC 3-220-01, *Geotechnical Engineering*, and UFC 1-200-01, *General Building Requirements*.

UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. The DOR shall edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance

with the limitations stated in PTS section Z10, *General Performance Technical Specifications*.

UFGS Section 31 23 00.00 20 *Excavation and Fill*

A10 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) shall approve the following submittals as a minimum:

All structural elements necessary for construction

Contractor-provided geotechnical report

Controlled fill or backfill material tests

Test pile and production pile installation records

Pile load testing reports

As-Built drawings - Include a statement on the drawings indicating the method used to verify the allowable design capacity of the piles (load tests or PDA).

A1010 STANDARD FOUNDATIONS

A1010 1.1 SHEETING AND SHORING

Provide sheeting and shoring as required. Sheeting and shoring plans shall be signed by the Contractor's Geotechnical Engineer.

A1010 1.2 TERMITE CONTROL

A1010 1.2.1 Termite Control Barrier System

Formulate and apply termiticide in accordance with the manufacturer's label directions. The termiticide label shall bear evidence of registration by the U.S. Environmental Protection Agency or appropriate requirements of the host country.

Apply termiticide to the soil that will be covered by or lie immediately adjacent to the building(s) and structure(s), providing a protective barrier against subterranean termites.

Maintain the Pest Management Maintenance Record, DD Form 1532-1 and submit the Pest Management Report, DD Form 1532 as required.

Applicator(s) shall be licensed or certified by the Federal government or the state or the host country, as applicable.

A1010 1.2.2 Warranty

Furnish a 3 year written warranty against infestations or reinfestation by subterranean termites of the buildings or building additions constructed under this contract. Perform annual inspections of the building(s) or building addition(s). If live subterranean termite infestation or subterranean termite damage is discovered during the warranty period, and building conditions have

not been altered in the interim, the Contractor shall:

- a. Perform treatment as necessary for elimination of subterranean termite infestation;
- b. Repair damage caused by termite infestation;
- c. Reinspect the building approximately 180 calendar days after the repair.

A1010 1.2.3 Visual Inspection Guide

To maintain resistance to termites, complete the system and do not disturb, penetrate or damage during the remaining contract time period. Provide Manufacturer's Guidance for performing a visual assessment of the installed system to ensure the system provides the designed termite physical barrier.

A101001 WALL FOUNDATIONS

Provide foundation walls as required in accordance with the requirements of this section and other portions of this RFP.

A101002 COLUMN FOUNDATIONS AND PILE CAPS

Provide column foundations or pile caps and grade beams as required in accordance with the requirements of this section and other portions of this RFP.

A1020 SPECIAL FOUNDATIONS

A102001 PILE FOUNDATIONS

Where piles are required, design, install, and test piles (including sheet piles, as applicable) in accordance with UFC 1-200-01, except as noted otherwise. Provide piles in accordance with the requirements of the Contractor's Geotechnical Engineer, and the following paragraphs.

A102001 1.1 DRIVING EQUIPMENT

Install piles (including sheet piles, as applicable) to the required tip elevation and capacity with the appropriate equipment as recommended by the Contractor's Geotechnical Engineer. Pile hammer shall be of sufficient weight and energy to suitably install piles without damage.

Drive production piles with the same hammer, cap block, and cushion materials, and using the same operating conditions as test piles, including pre-augering and spudding.

Pile driving equipment shall match the equipment assumptions on which the pile driving formulae used to determine blow counts are based.

A102001 1.2 INSTALLATION TOLERANCES

Locate the center of pile butts not more than four horizontal inches from the location indicated at cutoff elevation. Manipulation of the piles is not permitted. In addition to the stated tolerances, the clear distance between the heads of piles and the edges of pile caps shall be a minimum of five inches.

Locate top of sheet piles at cutoff elevation within 1/2 inch horizontally and 2 inches vertical of the location indicated. Manipulation of the piles is not permitted.

A variation of not more than 2 percent from the vertical for plumb piles, or not more than 4 percent from the required angle for batter piles will be permitted.

A102001 1.3 MISLOCATED AND DAMAGED PILES

Remove and replace with new piles those piles that are damaged, mislocated, or installed out of alignment tolerance or provide additional piles, installed as directed by the Contractor's Geotechnical Engineer and approved by the Contracting Officer, at no additional cost to the Government.

A102001 1.4 PILE SPACING

For cast-in-place concrete or augercast piles, provide adequate distance, as determined by the Contractor's Geotechnical/Structural Engineer, between freshly placed concrete and other pile installation operations to avoid damage to concrete.

A102001 1.5 COATED PILES

Handle treated or coated piles so as to protect the treatment or the coating. Repair damage or defects to treatment or coating.

A102002 CAISSONS

If required, provide caissons as required in accordance with the requirements of this section and other portions of this RFP.

A102003 UNDERPINNING

If required, underpin existing construction as required in accordance with the requirements of this section and other portions of this RFP.

A102004 DEWATERING

Dewater site for foundation construction as required by soil conditions and local subsurface and surface water, including rainfall, and considering any potential adverse impact on adjacent facilities, including settlement. Dewatering requirements and methods shall be established by the Contractor's Geotechnical Engineer, based on his subsurface exploration and investigation.

A102005 RAFT FOUNDATIONS

If required, provide a raft foundation as required to achieve the requirements of this section and other portions of this RFP and as required by the Contractor's Geotechnical Engineer.

A102006 PRESSURE INJECTED GROUTING

If required, pressure inject grout as required in accordance with the requirements of this section and other portions of this RFP.

A1030 SLAB ON GRADE

A103001 STANDARD SLAB ON GRADE

If allowed by site conditions and recommended by the Contractor-provided Geotechnical Engineer, provide standard concrete slab on grade to meet the required loading requirement in accordance with the requirements of this section and other portions of this RFP.

Floor slab on grade shall be designed and constructed in accordance with EM 1110-1-1904, Settlement Analysis and so that any settlement of the floor slab shall not result in harmful distortion of the floor, nor vertical misalignment of the floor with other building components (such as doorways and trenches), building utilities or with pile-supported building elements. If these above conditions cannot be met, provide a pile supported slab.

A103003 TRENCHES

Trenches shall be constructed of reinforced concrete with water proof joints and seals to prevent ground water infiltration.

A103004 PITS AND BASES

Pits and bases shall be constructed of reinforced concrete with water proof joints and seals to prevent ground water infiltration.

A103005 FOUNDATION DRAINAGE

A103005 1.1 PERIMETER FOUNDATION DRAINAGE

Perimeter drainage system shall be provided to remove water away from the foundation of the facility and to be deposited in the storm sewerage system of the site. Pipe for the foundation drainage system shall be of the type specified, shall be perforated, and shall be of a size sufficient to remove water from the foundation successfully. Provide one, or a combination of more than one, of the following types of pipe:

- a. Corrugated Polyethylene (PE) Drainage Pipe: ASTM F 405, heavy duty, for pipe 3 to 6 inches in diameter inclusive; ASTM F 667 for pipe 8 to 24 inches in diameter. Fittings shall be manufacturer's standard type and shall conform to the indicated specification.
- b. Acrylonitrile-Butadiene-Styrene (ABS) Pipe: ASTM D 2751, with a maximum SDR of 35.
- c. Polyvinyl Chloride (PVC) Pipe: ASTM F 758, Type PS 46, ASTM D 3034, or ASTM F 949 with a minimum pipe stiffness of 46 psi.

Installation shall include wrapping the pipe with filter fabric sock and careful bedding of the pipe with appropriate fill material to ensure that the pipe does not become obstructed with the bedding material.

A103090 OTHER SLAB ON GRADE

A103090 1.1 BLOCK OR BOARD PERIMETER INSULATION

Provide only thermal insulating materials recommended by manufacturer for perimeter insulation. Provide one of the board or block thermal insulations listed below conforming to the following standards:

- a. Cellular Glass: ASTM C 552
- b. Extruded Preformed Cellular Polystyrene: ASTM C 578

The thickness of insulation and thermal resistance value shall be sufficient to meet the applicable building code and energy budget for the facility.

-- End of Section --

SECTION D50

ELECTRICAL
05/14

D50 GENERAL

RFP Part 3, including the Engineering System Requirements (ESR) provides project specific requirements. The RFP Part 4, Performance Technical Specifications (PTS), provides generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

D50 1.1 NARRATIVE

This section covers installations inside the facility and out to the five foot line. See PTS Section G40, *Site Electrical*, for continuation of systems beyond the five foot line.

D50 1.2 ELECTRICAL DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

When all product Quality Control information is included in the Unified Facility Criteria (UFC) and there are requirement options identified in the ESR, then the Unifomat Level 4 titles (and possible subtitles) are included without additional verbiage. One example of this is D501090, OTHER SERVICE AND DISTRIBUTION.

D50 1.2.1 Government Publications

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	General Building Requirements(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed in UFGS Section 01 33 10.05 20, which includes the following significant UFC(s):UFC 3-501-01, Electrical Engineering)
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UFC 1-200-02	High Performance and Sustainable Buildings
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UFC 3-580-10	Navy and Marine Corps Intranet (NMCI) Standard Construction Practices
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D50 1.3 QUALITY ASSURANCE

Qualifications, certifications, and Test Plans indicated herein shall be submitted 45 calendar days prior to the expected date of execution. Notify the Contracting Officer 14 calendar days prior to all testing. Submit test results within 7 calendar days of completion of testing.

The Designer of Record is responsible for approving the submittals listed below.

D50 1.3.1 Qualified Testing Organization

Contractor shall engage the services of a qualified testing organization to provide inspection, testing, calibration, and adjustment of the electrical distribution system and equipment listed in paragraph entitled "Acceptance Tests and Inspections" herein. Organization shall be independent of the supplier, manufacturer, and installer of the equipment. The organization shall be a first tier subcontractor.

Submit name and qualifications of organization. Organization shall have been regularly engaged in the testing of electrical materials, devices, installations, and systems for a minimum of 5 years. The organization shall have a calibration program, and test instruments used shall be calibrated in accordance with NETA ATS.

Submit name and qualifications of the lead engineering technician performing the required testing services. Include a list of three comparable jobs performed by the technician with specific names and telephone numbers for reference. Testing, inspection, calibration, and adjustments shall be performed by an engineering technician, certified by NETA or the National Institute for Certification in Engineering Technologies (NICET) with a minimum of 5 years' experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices.

D50 1.3.2 NEC Qualified Worker

Provide in accordance with NFPA 70. Qualified Workers shall be allowed to be assisted by helpers on a 1 to 1 ratio, provided such helpers are registered in recognized apprenticeship programs. Submit a certification confirming NEC Qualified Worker requirements.

D50 1.3.4 Qualified Telecommunications Worker

All installers assigned to the installation of telecommunications systems or any of its components shall be Building Industry Consulting Services International (BICSI) Registered Cabling Installation Technicians or have a minimum of 3 years experience in the installation of the specified copper and fiber optic cable and components. Include names and locations of two projects successfully completed using optical fiber and copper communications cabling systems. Include written certification from users that systems have performed satisfactorily for not less than 18 months. Include specific experience in installing and testing structured telecommunications distribution systems using optical fiber and Category 5e cabling systems.

D50 1.3.5 Material Standards

Ensure service support and provide manufacturer's nameplate in accordance with PTS Section Z10, *General Performance Technical Specification*.

D50 1.3.5.1 Warning Labels

Provide arc flash warning labels.

D50 1.3.5.2 Field-Required Nameplates

Provide laminated plastic nameplates for each switchboard, switchgear, panelboard, equipment enclosure, motor controller, relay, and switch. Each nameplate must identify the function and, when applicable, the position. Provide melamine plastic nameplates, 0.125 inch (3 mm) thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 1-inch by 2-1/2 inches (25 mm by 65 mm). Lettering shall be a minimum of 0.25 inch (6.35 mm) high normal block style.

D50 1.3.6 Factory Testing

The Government reserves the right to witness all factory testing. The manufacturer shall have a calibration program that assures that all applicable test instruments are maintained within rated accuracy.

D50 1.3.7 Electrical System Startup and Testing

Submit test plans for approval. The test plans shall be tailored to the systems provided.

The test plan shall list make and model and provide functional description of the test instruments and accessories and shall describe the setup of the tests to be conducted. Test instruments shall be capable of measuring and recording or displaying test data at a higher resolution and greater accuracy than specified for the equipment's performance.

D50 1.3.7.1 Factory Trained Engineer

Provide a factory trained engineer to supervise start-up and testing as required in referenced specifications.

D50 1.3.7.2 Performance Verification Testing

The Contractor shall show by demonstration in service that all circuits and devices are in operating condition. Tests shall be such that each item of control equipment will function not less than five times. The Contractor shall provide all necessary test equipment, tools, fuel, load banks, labor, and materials for testing. As a minimum, all systems shall be tested in accordance with manufacturer's recommendations. Additional testing requirements for the various systems are described with those systems, hereinafter. The Contractor shall assure that all applicable test instruments are maintained within rated accuracy. Dated calibration labels shall be visible on all test equipment.

Submit a separate electrical field test plan in accordance with manufacturer's recommendations and that conforms to NETA ATS for each piece of Electrical Distribution Equipment and System requiring Performance Verification Testing.

The following items identify specific test requirements. Additional test requirements are contained in the applicable UFGS.

- i. Community Antenna Television Systems - Confirm design and installation is in compliance with NCTA-02, 47 CFR 76.605 and in accordance with FCC proof of performance

requirements. Test plan shall define tests required to ensure that the system meets technical, operational, and performance specifications. Test plan shall include plan for testing for signal leakage.

- k. Grounding systems - Test the grounding system in accordance with NETA ATS.

D50 1.3.7.3 Acceptance Tests and Inspections

The Government reserves the right to witness all Acceptance Tests and Inspections, review data, and request other such additional inspections and repeat tests as necessary to ensure that the system and provided services conform to the stated requirements.

The Qualified Testing Organization shall provide the Acceptance Tests and Inspections test plan and perform the acceptance tests and inspections. Test methods, procedures, and test values shall be performed and evaluated in accordance with NETA ATS, the manufacturer's recommendations, and paragraph entitled "Field Quality Control" of each applicable specification section. Tests identified as optional in NETA ATS are not required unless otherwise specified. Equipment shall be placed in service only after completion of required tests and evaluations of the test results have been completed. Contractor shall supply to the testing organization complete sets of shop drawings, settings of adjustable devices, and other information necessary for an accurate test and inspection of the system prior to the performance of any final testing. Perform acceptance tests and inspections on Diesel-Electric Generators, Uninterruptible Power Supply (UPS) Systems, 400-Hertz Motor Generator Sets, 400-Hertz Solid State Frequency Converters, Automatic Transfer Switches, and Switchboards and Switchgear.

D50 1.4 DESIGN SUBMITTALS

Design Submittals shall be in accordance with PTS Section Z10, *General Performance Technical Specifications*, UFGS Section 01 33 10.05 20, *Design Submittal Procedures*, UFC 1-300-09N, *Design Procedures*, and UFC 3-501-01, *Electrical Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR shall edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS Section Z10, *General Performance Technical Specifications*.

D50 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the PTS Section Z10 requirements, the Designer of Record (DOR) shall approve the following construction submittals as a minimum:

Electrical Equipment, OMSI information for equipment, and Quality Assurance Submittals listed above.

Provide certification that all adjustable protective device settings have been set in accordance with the coordination study for the as-built equipment and configuration.

D5030 COMMUNICATIONS AND SECURITY

D503004 TELEVISION SYSTEMS

D503004 1.1 CLOSED CIRCUIT TELEVISION (CCTV) FOR VIDEO TRAINING

D503004 1.2 COMMUNITY ANTENNA SYSTEM (CATV)

D503005 SECURITY SYSTEMS

D503005 1.1 ELECTRONIC SECURITY SYSTEMS (ESS)

When an ESS system is required, the Designer of Record shall utilize UFGS Section 28 20 00.00 20 for the project specification and shall submit the edited specification section as a part of the design submittal for the project.

D503005 1.2 PROTECTED DISTRIBUTION SYSTEMS (PDS)

Protected Distribution Systems shall be in accordance with UFC 3-580-10 and IA PUB-5239-22, Information Assurance Protected Distribution System (PDS) Guide Book.

--End Of Section--

SECTION F20

SELECTIVE BUILDING DEMOLITION
05/14

F20 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

F20 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and government standards that are referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the [Construction Criteria Base \(CCB\)](#) at the [Whole Building Design Guide Website](#), are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the standard at the time of contract award.

F20 1.1.1 Industry Standards

Refer to UMRL for reference designation identification.

F20 1.1.2 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01 General Building Requirements (A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed in UFGS Section 01 33 10.05 20, which includes the following significant UFC(s):UFC 3-101-01, Architecture)

UFC 3-800-10N Environmental Engineering for Facility Construction

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS 01 57 19.00 20 Temporary Environmental Controls

UFGS 01 57 19.01 20 Supplementary Temporary Environmental Controls

UFGS 02 82 14.00 10 Asbestos Hazard Control Activities

UFGS 02 82 16.00 20 Engineering Control of Asbestos Containing Materials

UFGS 02 83 19.00 10 Lead Based Paint Hazard Abatement,
Target Housing and Child Occupied
Facilities

U.S. ARMY CORPS of ENGINEERS (USACE)

EM 385 -1-1 (2008) Safety -- Safety and Health
Requirements or latest edition
including changes

F20 1.2 QUALITY ASSURANCE

Materials and assemblies installed in the work shall be inspected and found to be in compliance with industry standards prior to acceptance of the work. Items found not to be in compliance shall be removed or corrective measures taken, to assure compliance with the referenced standard. Disposal of materials shall be as specified and performed in a manner to protect workers and existing structures to remain.

F20 1.3 PERFORMANCE VERIFICATION AND ACCEPTANCE CRITERIA

Compliance with the requirements will be determined by a review of the design and construction submittals and by field inspection. See UFGS Section 01 33 10.05 20, *Design Submittal Procedures*, and UFGS Section 01 33 00.05 20, *Construction Submittal Procedures*, for additional requirements.

F20 1.4 DESIGN SUBMITTALS

Design Submittals shall be in accordance with Z10, *General Performance Technical Specifications*, UFGS section 01 33 10.05 20, *Design Submittal Procedures*, UFC 1-300-09N, *Design Procedures*, and UFC 3-800-10N, *Environmental Engineering for Facility Construction*.

F20 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements and if applicable to this project, the Designer of Record (DOR) shall obtain governing body approval for the construction submittals contained in the following UFGS sections and USACE Safety Manual as a minimum:

UFGS 01 57 19.05 20, *Temporary Environmental Controls for Design-Build*

UFGS 01 57 19.01 20, *Supplementary Temporary Environmental Controls*

UFGS 02 82 14.00 10, *Asbestos Hazard Control Activities*

UFGS 02 82 14.00 20, *Engineering Control of Asbestos Containing Materials*

EM 385-1-1, *Safety and Health Requirements*, latest edition including changes

a. Engineering Safety Survey

b. Demolition Plan/ Deconstruction Plan

F2010 BUILDING ELEMENTS DEMOLITION

All demolition materials and appurtenances shall be properly disposed and in accordance with all applicable regulations. Maximize the use of deconstruction and recycling services. Before demolition can commence, any hazardous materials shall be abated in accordance with the requirements of the ESR and other parts of the RFP. Provide a Demolition Plan/ Deconstruction Plan that is based on a Registered Engineers Survey in accordance with EM 385-1-1 and has been approved by the DOR. The Contractor shall obtain approval from the Contracting Officer for the proposed demolition plan and work/outage schedule prior to demolition activities.

F2010 1.1 GENERAL DEMOLITION

The work includes demolition, salvage of identified items and materials and removal of resulting rubbish and debris. Rubbish and debris shall be removed from Government property daily, unless otherwise directed. Materials that cannot be removed daily shall be stored in areas specified in the approved Demolition Plan as described in UFGS 01 57 19.00 20.

F2010 1.2 UTILITIES

Remove existing utilities and terminate in a manner conforming to the nationally recognized code covering the specific utility. Disturbance to utilities can not cause a failure to utilities to remain operational, unless a planned outage is approved by the FEAD/ROICC and coordinated with on-site personnel.

F2010 1.3 DUST CONTROL

Perform dust control activities in accordance with approved Dirt and Dust Control Plan as described in UFGS 01 57 19.00 20.

F2010 1.4 TRAFFIC CONTROL

Where pedestrian, vehicle, aircraft safety is endangered, use traffic barricades.

F2010 1.5 WEATHER PROTECTION

For portions of the building to remain, protect building interior, materials, and equipment from weather at all times.

F2010 1.6 BURNING

Perform burning operations in accordance with the ESR.

F201001 SUBSTRUCTURE & SUPERSTRUCTURE

Perform substructure or superstructure demolition work in accordance with the ESR.

F201002 EXTERIOR CLOSURE

Perform exterior closure demolition work in accordance with the ESR.

For occupied buildings ensure openings to the exterior are secured by the end of the work shift.

F201003 ROOFING

Perform roofing demolition work in accordance with the ESR.

F201004 INTERIOR CONSTRUCTION & FINISHES

Perform interior construction & finishes demolition in accordance with the ESR.

F201005 CONVEYING SYSTEMS

Perform conveying systems demolition in accordance with the ESR.

F201006 MECHANICAL SYSTEMS

Perform mechanical systems demolition in accordance with the ESR.

F201007 ELECTRICAL SYSTEMS

Perform electrical systems demolition in accordance with the ESR.

F201008 EQUIPMENT & FURNISHINGS

Perform special equipment and furnishing demolition in accordance with the ESR.

F201009 OTHER NON-HAZARDOUS SELECTIVE BUILDING DEMOLITION

Perform non-hazardous selective building demolition in accordance with the ESR.

F2020 HAZARDOUS COMPONENTS ABATEMENT

Prior to starting work, conduct any additional testing that may be needed to provide a final design and comply with all applicable Federal, regional, state and local regulations. Refer to UFC 3-800-10N, *Environmental Engineering for Facility Construction*, for restrictions and for additional requirements and criteria. Contractor shall provide an updated hazardous materials survey prior to the start of work.

F2020 1.1 PRIVATE QUALIFIED PERSON (PQP)

The PQP must perform independent inspections, testing and verification of the hazardous components work as indicated in the ESR and the approved work plans as described in UFGS 01 57 19.00 20. The PQP shall be appropriately licensed in the state in which the work will be performed.

F2020 1.2 FURNISHINGS

The government shall remove all uncontaminated furnishings and equipment from the work area prior to the start of the work.

F2020 1.3 ASBESTOS

Perform asbestos related work as indicated in the RFP, in accordance with the ESR, and the approved asbestos removal work plan as described in UFGS 01 57 19.00 20.

For asbestos work the Designer of Record shall UFGS 02 82 14.00 10, *Asbestos Hazard Control Activities*, as described in UFGS 01 57 19.00 20. The Designer of Record must be an EPA accredited Asbestos Project Designer. Perform asbestos related work in accordance with the approved edited UFGS 02 82 14.00 10.

F2020 1.4 LEAD BASED PAINT

Perform lead based paint related work as indicated in the RFP, in accordance with the ESR and the approved lead based paint removal work plan as described in UFGS 01 57 19.00 20.

All federal, state and local regulations regarding lead based paint within a child occupied facility must be followed. For lead based paint work performed in child occupied facilities the Designer of Record shall edit UFGS 02 83 19.00 10, *Lead Based Paint Hazard Abatement, Target Housing and Child Occupied Facilities*, as described in UFGS 01 57 19.00 20. The Designer of Record must be an EPA accredited Lead Project Designer. Perform lead based paint related work in child occupied facilities in accordance with the approved edited UFGS 02 82 14.00 10.

F2020 1.5 PAINT RELATED WORK

Perform paint related work as indicated in the RFP, in accordance with the ESR and the approved paint removal work plan as described in UFGS 01 57 19.00 20.

F2020 1.6 MERCURY & LLR COMPONENTS

Perform work as indicated in the RFP, in accordance with the ESR and the approved mercury & LLR components removal work plan as described in UFGS 01 57 19.00 20.

F2020 1.7 PCB'S

Perform PCB related work as indicated in the RFP, in accordance with the ESR and the approved PCB removal work plan as described in UFGS 01 57 19.00 20. Notify the contracting officer immediately on discovery of any equipment leaking PCB containing fluid. Take reasonable preventative measures to contain the leak and prevent movement of the PCB containing fluids.

F2020 1.8 ODS

Perform ODS related work as indicated in the RFP, in accordance with the ESR and the approved ODS removal work plan as described in UFGS 01 57 19.00 20.

F2020 1.10 MOLDS AND SPORES

Perform mold and spore related work as indicated in the RFP, in accordance with the ESR and the approved mold and spore work plan. The Designer of Record shall prepare UFGS Specification 02 85 00.00 20 MOLD REMEDIATION as part of the project specification and shall include the prepared specification section in the design submittal for the project. UFGS sections shall be edited in accordance with the limitations stated in PTS section Z10, General Performance Technical Specifications.

F2020 1.11 DISPOSAL

All waste materials shall become the property of the Contractor and shall be transported, disposed of and recycled in accordance with the approved disposal plan as described in UFGS 01 57 19.00 20.

- F202001 *SUBSTRUCTURE & SUPERSTRUCTURE*
- F202002 *EXTERIOR CLOSURE*
- F202003 *ROOFING*
- F202004 *INTERIOR CONSTRUCTION & FINISHES*
- F202005 *CONVEYING SYSTEMS*
- F202006 *MECHANICAL SYSTEMS*

F202007 *ELECTRICAL SYSTEMS*

F202008 *EQUIPMENT & FURNISHINGS*

F202009 *OTHER HAZARDOUS SELECTIVE BUILDING DEMOLITION*

Perform all other building components abatement work in accordance with the ESR.

-- End of Section --

SECTION G10

SITE PREPARATION
12/14

G10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

G10 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Construction Criteria Base (CCB) at the Whole Building Design Guide Website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the referenced standard at the time of contract award.

G10 1.1.1 Industry Standards and Codes

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

Refer to UMRL for reference designation identification.

G10 1.1.2 Government Standards

CORPS OF ENGINEERS (COE)

COE EM 385-1-1 Safety and Health Requirements Manual

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01 General Building Requirements (A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed in UFGS Section 01 33 10.05 20, which includes the following significant UFC(s): UFC 3-201-01, Civil Engineering UFC 3-220-01, Geotechnical Engineering)

UFC 3-800-10N Environmental Engineering for Facility Construction

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS 31 23 00.00 20 Excavation and Fill

G10 1.2 PERFORMANCE VERIFICATION AND ACCEPTABLE TESTING

Compliance with the requirements will be determined by a review of the design and construction submittals and by field inspection. See Section 01 33 10.05 20, *Design Submittal Procedures*, and Section 01 33 00.05 20, *Construction Submittal Procedures*, for additional requirements. Verify satisfactory earthwork performance via testing detailed in the paragraph, "Field Quality Control", in UFGS Specification Section 31 23 00.00 20, *Excavation and Fill*.

G10 1.3 DESIGN SUBMITTALS

Design Submittals must be in accordance with UFGS section 01 33 10.05 20, *Design Submittal Procedures*, UFC 1-300-09N, *Design Procedures*, UFC 3-201-01, *Civil Engineering*, and UFC 3-220-01, *Geotechnical Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR is required to edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS section Z10, *General Performance Technical Specifications*.

UFGS 31 23 00.00 20, *Excavation and Fill*

G10 1.4 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) is required to approve the following construction submittals as a minimum:

Submittals in UFGS 01 57 19.00 20, *Temporary Environmental Controls*.

Submittals in UFGS Specification Section 31 23 00.00 20, *Excavation and Fill*.

Waste Management Plan in accordance with Section 01 74 19.05 20, *Construction and Demolition Waste Management for Design-Build*.

G10 1.5 GEOTECHNICAL REPORT

G10 1.5.1 Subsurface Soils Information

Any provided subsurface soil information is included for the Contractor's information only, and is not guaranteed to fully represent all subsurface conditions. The data included in this RFP are intended for proposal preparation and preliminary design only. Perform, at the Contractor's expense, such subsurface exploration, investigation, testing, and analysis as the Designer of Record deems necessary for the design and construction of the site improvements.

G10 1.5.2 Contractor-provided Geotechnical Engineer

The Contractor-provided Geotechnical Engineer is required to be experienced with soil conditions in the region where the project site is located. The Geotechnical Engineer is required to evaluate the RFP data, obtain and evaluate all additional data as required to support the design and construction, and prepare a Geotechnical Report.

Coordinate all work, if required, by the Contractor-provided Geotechnical Engineer at the project location with the Contracting Officer so as not to interfere with normal base operations. A minimum of two weeks prior to the Foundation Work Design submittal, provide the Contractor's Geotechnical Report (a searchable Adobe Acrobat PDF version on CD and two printed copies) for review and record keeping purposes. The report will become the property of the Government. Provide the geotechnical reports generated during construction, such as pile driving results and analysis, to the Contracting Officer. In addition, provide a searchable Adobe Acrobat PDF version and two printed copies for record keeping purposes.

G10 1.5.3 Contractor-Provided Geotechnical Report

Submit a written Geotechnical report based upon Government-provided subsurface investigation data and all additional field and laboratory testing accomplished at the discretion of the Contractor's Geotechnical Engineer. Include the following in the Geotechnical Report:

- a. The project site description, vicinity map and site map indicating the location of borings and any other sampling locations. Provide 24 hour groundwater observations for at least 20% of the borings, minimum one boring. Provide notes explaining any abbreviations or symbols used and describing any special site preparation requirements.
- b. Results of all applicable field and laboratory testing, whether Government or Contractor-provided. Address existing subsurface conditions, selection and design of the foundation and floor slab, all underground construction including utility installation and all other site specific requirements (such as soil stabilization and slope stability).
- c. Engineering analysis, discussion and recommendations
Addressing:
 - 1) Settlement analysis - Limit settlement as required in UFC 3-220-01 *Geotechnical Engineering* and EM 1110-1-1904 "Settlement Analysis".
 - 2) Bearing Capacity analysis
 - 3) Foundation selection (shallow, deep, special) and construction considerations; dimensions, and installation procedures.
 - 4) Site preparation (earthwork procedures and equipment, compaction requirements, building slab preparation (as applicable), soil sensitivity to weather and equipment, groundwater influence on construction, mitigation of expansive soils or liquefaction potential, and dewatering requirements).
 - 5) Sheet piling and shoring considerations, as applicable.
 - 6) Pavement design calculations with parameters defined, actual or assumed, and recommended thicknesses and materials.
 - 7) Stormwater management facility(ies) and permitting requirements, as applicable.
 - 8) Haul routes and stockpile locations for earthwork, as applicable.
 - 9) Calculations to support conclusions and recommendations.

10) Present recommendations on a structure-by-structure basis.

A registered Geotechnical Engineer is required to sign the Geotechnical Report.

Accompany the submitted report with a cover letter identifying any report recommendations proposed to be adopted into the design which are interpreted by the Contractor as a changed condition to the Geotechnical or Pavement related requirements of the RFP.

G10 1.5.4 Geotechnical Site Data required in Design Drawings

The Contractor's final design drawings must include the Government-provided subsurface data presented in the RFP, as well as any additional borings and laboratory test result data performed by the Contractor. The data provided is required to include:

a. Logs of Borings and related summary of laboratory test results and groundwater observations. Provide 24 hour groundwater observations for at least 20% of the borings, minimum one boring. Provide notes explaining any abbreviations or symbols used and describing any special site preparation requirements.

b. Indicate the locations of all borings on the drawings. Revise the applicable design drawings to reference the Contractor's Geotechnical Report as being a basis for design.

G1010 SITE CLEARING

G1010 1.1 GENERAL

Clear and grub project site as required for project construction.

G1010 1.2 BURNING

Where burning is permitted, adhere to the applicable federal, state, and local regulations.

G101001 CLEARING

G101001 1.1 CLEARING

Clear all trees, shrubs, brush and vegetation necessary for construction of the project. Clearing includes the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared.

G101004 GRUBBING

Within the clearing limits, remove and dispose of all logs, shrubs, brush, matted roots, roots larger than 2 inches (50 mm) in diameter, and other debris to a depth of at least 18 inches (450 mm) below ground surface. Fill depressions made by grubbing with satisfactory material and compact to make the new surface conform to the adjacent surface of the ground.

G101006 DEBRIS DISPOSAL

Prevent spillage on pavements, streets, or adjacent areas. Dispose of all surplus and unsuitable material off of Government property.

G1020 SITE DEMOLITION & RELOCATIONS

G1020 1.1 GENERAL

Demolition work includes the demolition, removal and legal disposal of existing construction debris as required to accommodate the new construction. Take necessary precautions to prevent damages to existing utilities, construction and materials not scheduled for demolition, repair or replacement; repair damages to the construction and materials to the satisfaction of the Contracting Officer and at no additional cost to the Government.

G1020 1.2 AUTHORIZATION

Do not begin demolition until the Demolition Plan has been approved by and authorization is received from the Contracting Officer.

G1020 1.3 TITLE TO MATERIALS

Whenever possible, salvage or recycle all features demolished in lieu of being disposed of as waste in a landfill. Since existing features to be demolished which are not salvageable or reused will become the property of the Contractor, remove them from the project site. The Government will not be responsible for the condition, loss of, or damage to, such property after contract award. Materials and equipment cannot be viewed by prospective purchasers or sold on the site.

G1020 1.4 REUSE OF MATERIALS AND EQUIPMENT

Remove and store materials and equipment to be reused or relocated to prevent damage, and reinstall as the work progresses.

G1020 1.5 SALVAGED MATERIALS AND EQUIPMENT

Salvage materials and equipment that are to be removed by the Contractor and that are to remain the property of the Government, and deliver to a storage site on the station in accordance with instructions of the Contracting Officer.

G102001 BUILDING MASS DEMOLITION

Refer to Section F20 for additional information.

G102002 ABOVEGROUND SITE DEMOLITION

G102002 1.1 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris to occupied portions of a building or on pavements and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water for dust control if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Sweep pavements as often as necessary to control the spread of debris that may result in foreign object damage potential to aircraft.

G102002 1.2 PROTECTION

G102002 1.2.1 Traffic Control

Where pedestrian and driver safety is endangered in the area of removal work, provide traffic control per FHWA Manual on Uniform Traffic Control Devices (MUTCD).

G102002 1.2.2 Foreign Object Damage (FOD)

Remove potential FOD debris and waste materials on or adjacent to operational airfield pavements due to the Contractor's operations. If necessary, install a temporary barricade at the Contractor's expense. The barricade is required to include a fence covered with a fabric designed to stop the spread of debris. Anchor the fence and fabric to prevent displacement by winds or jet/prop blasts. Remove barricade when no longer required.

G102002 1.2.3 Existing Work

Protect existing work that is to remain in place, be reused, or remain the property of the Government. At no additional expense to the Government, repair all items that are damaged during performance of the work to their original condition, or replace with new. Do not overload pavements to remain.

G102002 1.3 PAVING AND SLABS

Remove concrete and asphaltic concrete paving and slabs as required for construction of project. Remove the existing aggregate base in areas to receive new pavement to the depth of the proposed pavement section below new finish grade. Remove the existing aggregate base in areas not to receive new pavement to a depth of 8 inches (200 mm) below existing adjacent grade and break remaining pavement (if any) to allow drainage. Provide neat sawcuts at limits of pavement removal; protect sawcuts so that new pavement will butt against the existing without feathering.

G102003 UNDERGROUND SITE DEMOLITION

G102003 1.1 UTILITY TERMINATION

Terminate utilities in accordance with state and local rules and regulations; the nationally recognized code; and the requirements of the utility provider covering the specific utility; UFC 3-201-01, *Civil Engineering*; and approved by the Contracting Officer.

G102003 1.2 PROTECTION OF EXISTING UTILITIES

Protect existing utilities to remain. Where removal of existing utilities and pavement is required, provide approved barricades, temporary covering of exposed areas, and temporary services or connections. Repair damage to existing utilities to remain at no additional expense to the government.

G102005 UTILITY RELOCATION

Repair relocated items that are damaged or replace damaged items with new undamaged items as approved by the Contracting Officer and at no additional expense to the government.

G102007 SITE CLEANUP

Remove rubbish and debris from the station daily; do not allow accumulations inside or outside the building(s) or on pavements. Store materials that cannot be removed daily in areas specified by the Contracting Officer.

G1030 SITE EARTHWORK

G1030 1.1 GENERAL

This section includes the design and construction requirements for earthwork and grading related to construction of the roadways, parking, paved areas and other related sitework. Refer to Section A10 for earthwork related to construction of structures, including building, footings, foundations, retaining walls, slabs, tanks, and utility appurtenances.

The Designer of Record is required to utilize UFGS Specification Section 31 23 00.00 20, *Excavation and Fill*, for the project specification, and to submit the edited specification section as a part of the design submittal for the project.

G103001 GRADING

G103001 1.1 ELEVATIONS

Establish finish floor elevations as required by UFC 3-201-01, *Civil Engineering*.

G103001 1.2 SITE GRADING

Preserve natural topographic features to minimize the impact on the existing drainage patterns at and adjacent to the site. Provide site grading in accordance with the requirements of the UFC 3-201-01, *Civil Engineering*.

G103001 1.3 FINISHED SURFACES

Provide finish grading with drainage towards new and existing drainage features and with no resulting low spots that hold water or that direct runoff towards new or existing facilities or site amenities. Provide finish grading in accordance with the requirements of the UFC 3-201-01, *Civil Engineering*.

G103002 COMMON EXCAVATION

Preserve natural topographic features to minimize cut and fill requirements. Since all unsuitable material and surplus excavation will become the property of the Contractor, dispose of it as indicated in the Project Program.

G103004 FILL & BORROW

G103004 1.1 SOURCES

Where sufficient topsoil and satisfactory materials are not available on the project site, provide suitable borrow materials.

G103004 1.2 UNSATISFACTORY SOIL MATERIALS

Remove unsatisfactory soil materials from the site in accordance with the Project Program and replace with satisfactory soil materials in accordance with UFGS Specification Section 31 23 00.00 20, *Excavation and Fill*.

G103004 1.3 TOPSOIL

Refer to Section G2050, "Landscaping". Remove unsatisfactory, existing topsoil from the site in accordance with the Project Program.

G103005 COMPACTION

Provide compaction in accordance with UFGS Specification Section 31 23 00.00 20, *Excavation and Fill*, and the recommendations of the Contractor's Geotechnical Engineer, whichever is greater.

G103006 SOIL STABILIZATION

Provide soil stabilization designed to function as required by site conditions in accordance with the State Highway specifications and standards in the state where the project is located. Apply and install geosynthetics in accordance with the manufacturer's written instructions.

G103007 SLOPE STABILIZATION

Provide slope stabilization methods in accordance with the State Highway specifications and standards in the state where the project is located. Design and install manufactured products, gabions, geogrids, rock anchors in accordance with the manufacturer's written instructions.

G103009 SHORING

Provide sheeting, shoring, bracing, cribbing and underpinning in accordance with the Army Corps of Engineer's Safety and Health Requirements Manual (COE EM 385-1-1), UFC 3-220-01, *Geotechnical Engineering*, UFC 3-301-01, *Structural Engineering*, and all other applicable Federal, State and local codes and requirements

Provide protection of existing structures.

G103010 TEMPORARY DEWATERING

The design of the temporary dewatering system is required to account for soil conditions, rainfall, fluctuations in the groundwater elevations and the potential settlement impact on adjacent facilities due to dewatering. Provide dewatering in accordance with UFGS Specification Section 31 23 00.00 20. While the excavation is open, maintain the water level continuously, at least 1.0 foot (0.30 m) below the working level.

French drains, sumps, ditches or trenches will not be permitted within 3 feet (0.9 m) of the foundation of any structure without written approval of the Government's Civil/Geotechnical Reviewer.

G103011 TEMPORARY EROSION & SEDIMENT CONTROL

G103011 1.1 TEMPORARY EROSION & SEDIMENT CONTROL

Develop and implement temporary erosion and sediment control measures and other Best Management Practices (BMPs) prior to or in conjunction with commencement of earthwork in accordance with the state Erosion and Sediment Control Laws and Regulations. Remove all non-permanent erosion control measures after vegetation is fully established.

G103011 1.2 MAINTENANCE

Maintain temporary erosion control measures in accordance with state Erosion and Sediment Control Laws and Regulations throughout the project until areas are fully stabilized.

G1040 HAZARDOUS WASTE REMEDIATION

G1040 1.1 EXCAVATION

Perform excavation of contaminated soil and groundwater as indicated in the RFP, in accordance with the ESR and the approved contaminated soil and groundwater removal work plan as described in Section 01 57 19.00 20, *Temporary Environmental Controls*. Excavate areas of contamination to the depth noted elsewhere in the RFP. Select methods and equipment to minimize

disturbance to areas beyond the limits of the excavation area. Remove and dispose of material that becomes contaminated as a result of the Contractor's operations at no additional cost to the Government. Where excavation extends into groundwater levels, employ dewatering methods on a localized basis to facilitate excavation operations. Collect water generated by dewatering during excavation and test in accordance with the ESR and the approved work plan.

Dispose of water that contains contaminants above the levels indicated in the ESR in accordance with the ESR and the approved work plan.

Non-contaminated water may be disposed of on-site.

G1040 1.2 STOCKPILED SOILS

Stockpile soils determined to be contaminated in accordance with the criteria in the ESR in accordance with the contaminated soil and groundwater removal work plan as described in Section 01 57 19.00 20, *Temporary Environmental Controls*, and dispose of them in accordance with the requirements of the ESR.

Soils that are determined to contain contaminants below the criteria listed in the ESR may be used as clean fill.

G1040 1.3 CLEAN FILL

Backfill and compact soils that are determined as clean fill via testing in accordance with the requirements listed in the ESR.

G1040 1.4 SPILLS

In the event of a spill or release of hazardous substances, pollutant, contaminant or oil, notify the Contracting Officer immediately. Containment actions must be taken immediately to minimize the effect of any spill or leak. Perform clean up at the Contractor's expense in accordance with the ESR and the approved spill work plan as described in Section 01 57 19.00 20, *Temporary Environmental Controls*.

G1040 1.5 DISPOSAL

Since all waste materials will become the property of the Contractor, transport and dispose of it in accordance with the criteria listed in the ESR and the approved disposal plan as described in Section 01 57 19.00 20, *Temporary Environmental Controls*.

-- End of Section --

SECTION G20

SITE IMPROVEMENTS

05/14

G20 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

G20 1.1 DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards referenced in the section text that are not found in the Unified Master Reference List (UMRL) in the Construction Criteria Base (CCB) at the Whole Building Design Guide Website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the referenced standard at the time of contract award.

G20 1.1.1 Industry Standards and Codes

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

AMERICAN SOD PRODUCERS ASSOCIATION (ASPA)

U.S CONSUMER PRODUCT SAFETY COMMISSION, PUBLICATION NO. 325

Refer to UMRL for reference designation identification.

G20 1.1.2 Government Standards

FACILITIES CRITERIA (UFC)

UFC 1-200-01 General Building Requirements (A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed in UFGS Section 01 33 10.05 20, which includes the following significant UFC(s):UFC 3-201-01, Civil Engineering; UFC 3-201-02, Landscape Architecture; UFC 3-220-01, Geotechnical Engineering

UFC 3-800-10N Environmental Engineering for Facility Construction

G20 1.2 QUALITY ASSURANCE

G20 1.2.2 Qualifications of New Landscape Contractor

Construction company must hold a landscape contractor's license in the state where the work is to be performed and have a minimum five years of landscape construction experience.

G20 1.3 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTING

Compliance with the requirements will be determined by a review of the design and construction submittals and by field inspection. See Section 01 33 10.05 20, *Design Submittal Procedures*, and Section 01 33 00.05 20, *Construction Submittal Procedures*, for additional requirements.

Verify satisfactory performance via Performance Verification, as detailed in this section of the RFP. Verify satisfactory performance also via testing as detailed in the paragraph, Field Quality Control, in applicable UFGS Specification Sections utilized.

G20 1.3.1 Subgrade Preparation Performance Verification

Perform subgrade preparation in accordance with PTS Section G10. If required by the Designer of Record, perform proof rolling. Perform proof rolling in the presence of the Contracting Officer. Rutting or pumping of material is required to be undercut as directed by the Contracting Officer and replaced with satisfactory soil materials as defined in Section G10, *Site Preparation*.

G20 1.3.2 Base Course Performance Verification

G20 1.3.2.1 Aggregate Base Course

- a. Sampling: ASTM D75/D75M.
- b. Gradation: ASTM C136.
- c. Thickness: Confirm in-place compacted thickness. Acceptable tolerances are plus or minus 0.5 inches (13 mm). One test for every 500 square yards (418 square meters); minimum 2 tests.
- d. Density: ASTM D1556 or ASTM D6938. One field test for every 1000 square yards (836 square meters); minimum 2 tests. ASTM D1557, Method A, B or C; one laboratory test for the project.
- e. Visual: Surface must be smooth with no ruts.

G20 1.3.2.2 Other Types of Base Courses

For other types of base courses, provide field testing in accordance with the SHS.

G20 1.3.6 Topsoil Performance Verification

Prior to planting design, provide a commercial soil analysis. Amend planting areas based on the soil test's interpretation, amendment type, and quantity recommendations (including soil nutrients and texture, with percentages shown). Use additional topsoil only in areas where soil analysis shows that the existing soil is inadequate for growth of plant materials.

G20 1.3.7 Final Inspection for Planting and Irrigation

Request the final inspection in writing at least 10 days prior to the

last day of the planting and irrigation Establishment Period. The Landscape Contractor must attend the inspection with the Contracting Officer and document the inspection. The Landscape Architect-of-Record must also attend the inspection and provide the Contracting Officer with a letter certifying that the planting and irrigation is installed per the plans and irrigation coverage is correct and appropriate for optimum plant survival. At the end of the Establishment Period, remove all stakes and guy cables.

G20 1.3.8 Landscape and Irrigation Establishment Period and Guarantee

Guarantee all transplanted trees, newly planted vegetation and irrigation systems for a period of one year after the Contracting Officer's final acceptance. This acceptance, and the submittal of irrigation as-builts and controller charts, begins the Establishment Period. Replace all trees, shrubs, and ground covers that die or have 20 percent or more of their crowns that die during planting operations or the guarantee period with healthy plants of the same species or variety during the appropriate planting season. The Landscape Architect-of-Record must, along with the Contracting Officer, attend, approve and document the start of the Establishment Period and document quarterly and final inspections. The Landscape Architect of Record must document quarterly and final inspections by submitting written reports with photographs to the Contracting Officer. During this period, perform tasks including, but not limited to: watering, mowing, overseeding, fertilizing, mulching, pruning, weeding, eradicating pests (rodents, rabbits, insects, mammals and fungus), restaking, adjusting guy wires, adjusting irrigation systems, maintaining erosion control materials, removing dead or broken branches by pruning in accordance with ANSI A300 Part 1, maintaining edging of planter beds, checking for girdling of trees, removal of trash and debris, and replenishing mulch to assure all plant material is in a healthy and thriving condition or replace plant material at Contractor's expense. Reseed broadcast seeded or hydro-seeded areas that do not achieve the 95-percent coverage by the end of the Establishment Period by the same method and maintain an additional 120 days to ensure coverage requirements are met. Maintain turf in a manner that promotes proper health, growth, rich natural green color, and a neat, uniform, manicured appearance, free of bare areas, ruts, holes, weeds, pests, dead vegetation, debris, and unwanted vegetation that present an unsightly appearance. Mow weekly during the growing season and remove excess clippings.

G20 1.4 DESIGN SUBMITTALS

Design Submittals must be in accordance with UFC 1-200-01, General Building Requirements, UFGS section 01 33 10.05 20, *Design Submittal Procedures*, UFC 1-300-09N, *Design Procedures*, and UFC 3-201-01, *Civil Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR is required to edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS section Z10, *General Performance Technical Specifications*.

G20 1.5 CONSTRUCTION SUBMITTALS

Submit a transplanting plan for all projects which include transplanting. Submit the plan showing existing and proposed locations of transplanted. Include in the plan delineate methods and times for digging, balling, removing, storing, transporting, and maintenance.

G20 1.6 ANTITERRORISM (AT) STANDARDS

Incorporate the minimum AT standards indicated in UFC 4-010-01, *DoD Minimum Antiterrorism Standard for Buildings*.

G20 1.7 PROJECT LIMITATIONS

Prior to the start of design, determine the exact limit-of-work line for the project periphery, considering items such as, but not limited to, utility work, landscape areas, and laydown areas. See PTS G2050 for limits of landscape areas.

G2050 LANDSCAPING

All site areas disturbed by construction must receive landscape improvements.

G2050 1.1 DESIGN

The design of landscaped areas must be in accordance with Presidential Executive Order 13148 of April 2000, with a goal to reduce fertilizers, pesticides, and water use. The intent is to achieve a base-wide ratio of 20 percent maximum non-native plants and 80 percent minimum locally or regionally native plants. Do not use plants deemed invasive by the project state or region's Exotic Pest Plant Council, State Department of Agriculture or local chapter of the American Society of Landscape Architects as a threat to ecosystems or agriculture. Select only plant species which require little or no supplemental irrigation after the initial establishment period. Only nursery-grown plants are acceptable. Cover all non-paved site areas disturbed by construction operations with plant material or inorganic mulch. Stabilized soil, decomposed granite, and organic mulch are not acceptable as ground covers. Provide landscape architectural work in accordance with UFC 3-201-02, *Landscape Architecture*. For all projects with planting and or irrigation areas, utilize the design services of a Landscape Architect licensed in the state of the project. The Landscape Architect of Record must visit the site at least once prior to design, twice during construction, and quarterly during the Establishment Period, including the Establishment Period start and completion. The Landscape Architect of Record must attend the kickoff partnering meeting and CDWs. Courtyards and plazas are to be designed by the Landscape Architect. For the CDW, provide a Site Analysis Plan to demonstrate the design thought process. It is the Contractor's responsibility to coordinate between disciplines including architecture, civil engineering, electrical engineering, mechanical engineering, fire protection, and landscape architecture. Coordinate location of utilities, structures, and equipment. For projects in dry climates (arid and semi-arid), eliminate or minimize the use of turf, except when needed for active or passive recreation.

G205001 FINE GRADING AND SOIL PREPARATION

See Section G10, Site Preparation. Provide 4 inches (102 mm) of topsoil with appropriate soil amendments, as recommended by a current soil composition test, for all areas to be planted with turf grass.

G205002 EROSION CONTROL MEASURES

See Section G10, Site Preparation.

G205003 TOP SOIL AND PLANTING BEDS

See paragraph titled, G205005 PLANTINGS.

G205004 SEEDING, SPRIGGING, AND SODDING

Hydroseed areas that are to be seeded and are larger than 1,000 square feet (92.90 square meters). Hydroseed mix composition must be appropriate for surrounding land use and compatible and consistent with local application rates, seed availability and established practice in the project area. If project dates are unknown, specify required planting dates or alternative species for different seasons. Apply seed at a time best suited for germination of the selected species. Seeded areas are required to achieve a 95-percent coverage of the selected species and be weed free at the end of the Establishment Period.

-- End of Section --

SECTION G40

SITE ELECTRICAL UTILITIES
05/14

G40 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

G40 1.1 NARRATIVE

This section covers installations exterior to the facility outside the five foot line. See PTS Section D50, *Electrical*, for continuation of systems inside the five foot line, into and inside the building.

G40 1.2 ELECTRICAL DESIGN GUIDANCE

Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

When all product Quality Control information is included in the Unified Facility Criteria (UFC) and there are requirement options identified in the ESR, then the Unifomat Level 4 titles (and possible subtitles) are included without repetition of requirements. One example of this is G401008, GROUNDING SYSTEMS.

G40 1.2.1 Government Standards

UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01	General Building Requirements(A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed in UFGS Section 01 33 10.05 20, which includes the following significant UFC(s):UFC 3-501-01, Electrical Engineering)
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UFC 3-570-02N	Electrical Engineering Cathodic Protection
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UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

UFGS 33 71 02.00 20	Underground Electrical Distribution
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UFGS 33 82 00	Telecommunications Outside Plant
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G40 1.3 QUALITY ASSURANCE

Qualifications, certifications, and Test Plans indicated herein shall be submitted 45 calendar days prior to the expected date of execution. Notify the Contracting Officer 14 calendar days prior to all testing. Submit test results within 7 calendar days of completion of testing.

The Designer of Record is responsible for approving the submittals listed below.

G40 1.3.1 Qualified Testing Organization

Contractor shall engage the services of a qualified testing organization to provide inspection, testing, calibration, and adjustment of the electrical distribution system and equipment listed in paragraph entitled "Acceptance Tests and Inspections" herein. Organization shall be independent of the supplier, manufacturer, and installer of the equipment. The organization shall be a first tier subcontractor.

- a. Submit name and qualifications of organization. Organization shall have been regularly engaged in the testing of electrical materials, devices, installations, and systems for a minimum of 5 years. The organization shall have a calibration program, and test instruments used shall be calibrated in accordance with NETA ATS.
- b. Submit name and qualifications of the lead engineering technician performing the required testing services. Include a list of three comparable jobs performed by the technician with specific names and telephone numbers for reference. Testing, inspection, calibration, and adjustments shall be performed by an engineering technician, certified by NETA or the National Institute for Certification in Engineering Technologies (NICET) with a minimum of 5 years' experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices.

G40 1.3.2 NEC Qualified Worker

Provide in accordance with NFPA 70. Qualified Workers shall be allowed to be assisted by helpers on a 1 to 1 ratio, provided such helpers are registered in recognized apprenticeship programs. Submit a certification confirming NEC Qualified Worker requirements.

G40 1.3.6 Qualified Cable Splicer (Telecommunications)

Certification shall include the training, and experience of the individual on specific type and classification of telecommunications cable to be provided under this contract.

G40 1.3.7 Qualified Cable Installer and Splicer (Fiber Optic Cable)

Certification shall include the training, and experience of the individual on specific type and classification of Fiber Optic media to be provided under this contract.

G40 1.3.8 Qualified Fiber Optic (FO) Cable Manufacturer

The FO media manufacturer shall have a minimum of 3 years experience in the manufacturing, assembly, and factory testing of FO media that

complies with RUS REA Bull 1753F-601 (PE-90). Manufacturer shall provide a list of customers with 3 years of maintenance logs documenting experience with government customers.

G40 1.3.9 Material Standards

Ensure service support and provide manufacturer's nameplate in accordance with PTS Section Z10, *General Performance Technical Specification*.

G40 1.3.9.1 Warning Labels

Each enclosure of electrical equipment, including substations, pad-mounted transformers, pad-mounted switches, pad-mounted sectionalizing termination cabinets, and switchgear, shall have a warning label identifying the enclosure as 1) containing energized electrical equipment and 2) an arc flash hazard.

G40 1.3.10 Factory Testing

The Government reserves the right to witness all factory testing. The manufacturer shall have a calibration program that assures that all applicable test instruments are maintained within rated accuracy.

G40 1.3.11 Electrical System Startup and Testing

Submit test plans for approval. The test plans shall be tailored to the systems provided.

The test plan shall list make and model and provide functional description of the test instruments and accessories and shall describe the setup of the tests to be conducted. Test instruments shall be capable of measuring and recording or displaying test data at a higher resolution and greater accuracy than specified for the equipment's performance.

G40 1.3.11.1 Factory Trained Engineer

Provide a factory trained engineer to supervise start-up and testing as required in referenced specifications.

G40 1.3.11.2 Performance Verification Testing

The Contractor shall show by demonstration in service that all circuits and devices are in operating condition. Tests shall be such that each item of control equipment will function not less than five times. The Contractor shall provide all necessary test equipment, tools, fuel, load banks, labor, and materials for testing. As a minimum, all systems shall be tested in accordance with manufacturer's recommendations. Additional testing requirements for the various systems are described with those systems, hereinafter. The Contractor shall assure that all applicable test instruments are maintained within rated accuracy. Dated calibration labels shall be visible on all test equipment.

Submit a separate electrical field test plan in accordance with manufacturer's recommendations and that conforms to NETA ATS for each piece of Electrical Distribution Equipment and System requiring Performance Verification Testing.

The following items identify specific test requirements.

Additional test requirements are contained in the applicable UFGS.

- a. Cable - Test cable in accordance with the manufacturer's recommendations and NETA ATS. Adhere to precautions and limits as specified in the applicable NEMA/ICEA Standard for the specific cable.
- b. Grounding - Test ground systems in accordance with the manufacturer's recommendations and NETA ATS.
- d. Telecommunications wiring - Test all cables in accordance with industry standards.

G40 1.3.11.3 Acceptance Tests and Inspections

The Qualified Testing Organization shall provide the Acceptance Tests and Inspections test plan and procedures and perform the acceptance tests and inspections. Test methods, procedures, and test values shall be performed and evaluated in accordance with NETA ATS, the manufacturer's recommendations, and paragraph entitled "Field Quality Control" of each applicable specification section. Tests identified as optional in NETA ATS are not required unless otherwise specified. Equipment shall be placed in service only after completion of required tests and evaluation of the test results have been completed. Contractor shall supply to the testing organization complete sets of shop drawings, settings of adjustable devices, and other information necessary for an accurate test and inspection of the system prior to the performance of any final testing.

Specific test requirements are contained in the UFGS for equipment.

G40 1.4 DESIGN SUBMITTALS

Design Submittals shall be in accordance with PTS Section Z10, *General Performance Technical Specifications*, UFGS Section 01 33 10.05 20, *Design Submittal Procedures*, UFC 1-300-09N, *Design Procedures*, and UFC 3-501-01, *Electrical Engineering*.

In addition, UFGS sections listed below or in the body of the PTS text are to be used by the Designer of Record (DOR) as a part of the design submittal. If the UFGS products or systems are applicable to the project, the DOR shall edit these referenced UFGS sections and submit them as a part of the design submittal specification. Edit the specification sections in accordance with the limitations stated in PTS Section Z10, *General Performance Technical Specifications*.

UFGS 33 71 02.00 20, *Underground Electrical Distribution*

UFGS 33 82 00, *Telecommunications Outside Plant*

G40 1.5 CONSTRUCTION SUBMITTALS

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the PTS Section Z10 requirements, the Designer of Record (DOR) shall approve the following construction submittals as a minimum:

OMSI Information for Electrical Equipment (if OMSI Manual for the entire project is not already required); all "G" item submittals listed in the submittals of the specifications sections identified in the Design Submittals paragraph above; and all "G" item submittals listed

in Government Surveillance UFGS Section 01 33 00.05 20, *Construction Submittal Procedures*.

Provide certification that all adjustable protective device settings have been set in accordance with the coordination study for the as-built equipment and configuration.

G4010 ELECTRICAL DISTRIBUTION

G401006 UNDERGROUND ELECTRIC CONDUCTORS

Route underground cables to minimize splices. Cable pulling tensions shall not exceed the maximum pulling tension recommended by the cable manufacturer. Medium voltage cable termination shall be suitable for the location installed and meet IEEE Std. 48 Class 1 requirements.

G401007 DUCTBANKS, MANHOLES, HANDHOLES AND RACEWAYS

Concrete manholes and handholes shall be standard type pre-cast concrete. Composite/Fiberglass handholes shall be polymer concrete reinforced with a heavy weave fiberglass reinforcing as indicated. Load ratings of manholes and handholes shall be suitable for the location installed.

G401008 GROUNDING SYSTEMS

G402004 LIGHTING POLES

Poles shall meet International Building Code for aluminum pole. Poles shall be direct set or anchor-base type designed for use with underground supply conductors.

G402005 UNDERGROUND ELECTRIC CONDUCTORS

Provide in accordance with Paragraph G401006.

G402006 DUCTBANKS, MANHOLES AND HANDHOLES

Handholes and underground conduits for site lighting shall be in accordance with Paragraph G401007.

G402007 GROUNDING SYSTEMS

G4030 SITE COMMUNICATION AND SECURITY

G403001 TELECOMMUNICATIONS SYSTEMS

G403002 CABLE TV SYSTEMS (CATV)

G403003 CABLES AND WIRING

Provide underground copper cable pair in accordance with RUS 345-67. Provide aerial cable in accordance with RUS 345-67 except that it shall be suitable for aerial installation and shall be Figure 8 distribution wire with 6,000 pound (26,700 N) Class A galvanized steel or 6,000 pound (26,700 N) aluminum-clad steel strand. Screen-compartmental core cable shall be filled cable meeting the requirements of RUS 345-67. Fiber optic media shall meet all performance requirements of EIA/TIA-568-A and the physical requirements of ICEA S 87-640 and EIA/TIA-598-A.

G403004 DUCTBANKS, MANHOLES AND HANDHOLES

Provide in accordance with paragraph G401007.

G403005 TOWERS, POLES AND STANDS

Provide in accordance with paragraph G401005.

G403006 TV CAMERAS AND MONITORS

G403008 OTHER COMMUNICATION AND ALARM

G403009 GROUNDING SYSTEMS

G4090 OTHER ELECTRICAL UTILITIES

-- End of Section --

SECTION Z10

GENERAL PERFORMANCE TECHNICAL SPECIFICATION 05/14

Z10 GENERAL

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

Z10 1.1 NARRATIVE

All Performance Technical Specification (PTS) sections must be used in conjunction with all parts of the Design Build (D/B) Request for Proposal (RFP) to determine the full requirements of this solicitation. This PTS section provides general requirements for the other PTS sections of this RFP and is used in conjunction with the other PTS sections.

Refer to UFGS section 01 33 10.05 20, *Design Submittal Procedures* for the Order of Precedence of the RFP Parts. Requirements listed in the Project Program take precedence over the PTS sections requirements; therefore, requirements identified in the Project Program eliminate options related to that requirement in the PTS sections.

Z10 1.2 DESIGN GUIDANCE

Provide work in compliance with the following design standards and codes, as a minimum. Government standards listed in this RFP take precedence over industry standards.

The PTS Sections reference published standards, the titles of which can be found in the *Unified Master Reference List (UMRL)* on the Whole Building Design Guide at the [Unified Facilities Guide Specification \(UFGS\) Website](#). The publications referenced form a part of this specification to the extent referenced. The publications are referred to in the section text by the basic designation only. Industry standards, codes, and Government standards referenced in the section text, and not found in the UMRL, are listed at the beginning of the PTS sections.

The advisory provisions of all referenced codes, standards, and specifications must be mandatory; substitute words such as "must", or "required" for words such as "should", "may", or "recommended," wherever they appear. The results of these wording substitutions incorporate these code and standard statements as requirements. Reference to the "authority having jurisdiction" for variance from criteria shall be interpreted to mean the "Chief Engineer, NAVFAC" and for contractual obligations on this project shall be interpreted to mean the "Contracting Officer". Comply with the required and advisory portions of the current edition of the standard at the time of contract award.

The following list of codes and standards is not comprehensive and is augmented by other codes and standards referenced and cross-referenced in the RFP.

Z10 1.2.1 INDUSTRY CODES

INTERNATIONAL BUILDING CODE (IBC) as modified by UFC 1-200-01. UFC

1-200-01 applies the IBC to the project and references other commercial standards and UFC criteria that become part of the contract.

Z10 1.2.2 INDUSTRY REQUIREMENTS

WHOLE BUILDING DESIGN GUIDE (WBDG)

WHOLE BUILDING DESIGN GUIDE, Ensure Occupant Safety and Health (Systems Safety Engineering) at http://www.wbdg.org/design/ensure_health.php

Z10 1.2.3 GOVERNMENT STANDARDS

Z10 1.2.3.1 UNIFIED FACILITIES CRITERIA (UFC)

UFC 1-200-01 General Building Requirements (UFC 1-200-01 is a hub document that provides general building requirements and references other critical UFCs. A reference to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs. A complete list of these Tri-Service Core UFCs is located in UFGS section 01 33 10.05 20)

UFC 1-200-02 High Performance and Sustainable Buildings

UFC 1-300-09N Design Procedures

Z10 1.2.3.2 FEDERAL STANDARDS

Architectural Barriers Act Accessibility Standard with DEPSECDEF Memorandum 31 Oct 2008, "Access for People with Disabilities"

Occupational Safety and Health Association (OSHA)

Z10 1.3 MATERIALS AND EQUIPMENT REQUIREMENTS IDENTIFICATION

Z10 1.3.1 MATERIALS STANDARD

Refer to the Project Program for identification of Government Furnished Equipment.

The equipment items shall be supported by service organizations that are convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

Materials, equipment, fixtures, and other appurtenances shall comply with applicable Underwriters Laboratories, (UL) Inc., American National Standards Institute, Inc., and National Electrical Manufacturer's Association standards or applicable standards of a similar independent testing organization. All materials shall be new, and shall bear the label of Underwriters Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency. All equipment provided shall be listed and labeled suitable for the specified purpose, environment,

and application and installed in accordance with manufacturer's recommendations. Insulation shall be asbestos free.

Z10 1.3.2 EQUIPMENT NAMEPLATE IDENTIFICATION

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

Z10 1.3.3 FIELD-APPLIED NAMEPLATES

Provide laminated plastic nameplates for each piece of equipment. Each nameplate must identify the function and, when applicable, the number designation of that piece of equipment as used in the design documents. Provide melamine plastic nameplates, 0.125 inch (3 mm) thick, white with black center core.

Z10 1.4 COMMISSIONING

Commission the building systems identified in the Project Program paragraph 2.2.3. Refer to UFGS section 01 45 00.05 20, *Design and Construction Quality Control* for commissioning requirements. Test reports must be certified by the Commissioning Authority (CA), that work is in compliance with requirements of the RFP.

Z10 1.5 PERFORMANCE VERIFICATION AND ACCEPTANCE TESTS

Verification of satisfactory construction and system performance shall be via Performance Verification Testing, Acceptance Tests, and submittal of test reports certified by the Designer of Record (DOR), that work is in compliance with requirements of the RFP. The Government reserves the right to witness all Performance Verification and Acceptance Tests, review data, and request other such additional inspections and repeat tests as necessary to ensure that the work and provided services conform to the stated requirements. Contractor shall pay the cost of all testing.

Refer to each PTS section to identify Performance Verification and Acceptance Testing required by the work specified in that PTS section.

Z10 1.6 SUBMITTALS

Contractor's design submittals that combines design and construction submittals, must jointly comply with UFGS sections 01 33 00.05 20, *Construction Submittal Procedures* and 01 33 10.05 20, *Design Submittal Procedures*. Contractor's construction submittals that submitted separate from the design submittals must comply with UFGS 01 33 00.05 20, *Construction Submittal Procedures*.

Refer to "Construction Quality Control" in UFGS 01 33 00.05 20, *Construction Submittal Procedures* and 01 45 00.05 20, *Design and Construction Quality Control* to define reviewing and approving Authority of design and construction submittals.

Utilize the same materials and equipment that are approved and provided for an initial facility design, on all follow-on facilities that use the same design with-in this contract. Once the initial facility design is approved by the Government, the Contractor must obtain Government approval to change materials and equipment when designing and constructing follow-on facilities utilizing the same design.

Z10 1.6.1 DESIGN SUBMITTALS

Design submittals shall be in accordance with Unified Facility Guide Specification (UFGS) section 01 33 10.05 20, *Design Submittal Procedures*, UFC 1-300-09N, *Design Procedures*, and other discipline-specific guidelines listed in the applicable PTS sections.

UFGS Section 01 33 10.05 20, *Design Submittal Procedures* and some PTS sections requires the use of UFGS sections in the development on the contractor originated specification. The Designer of Record (DOR) shall edit the UFGS sections for the project and submit the edited specification as a part of the design submittal. The DOR shall edit the UFGS as follows:

- (1) Prepare UFGS Specifications as part of the project specification,
- (2) Delete only portions of the UFGS specification that are not applicable to the project,
- (3) Edit only the bracketed choices that are within the UFGS specification text,
- (4) Edit blank bracketed options to include requirements that exercise prudence and adherence to acceptable industry standards,
- (5) Comply with the directions, directives, and requirements of all UFGS Criteria Notes. The UFGS Criteria Notes are typically bordered on the top and bottom by a line of asterisks to highlight their location.
- (6) If proprietary information is provided or required to streamline the construction submittal process, include proprietary information in the edited UFGS sections and added to the end of each UFGS section. Confirm that the proprietary products, materials, and systems listed in the specifications are in compliance with the requirements of the RFP.

Z10 1.6.2 CONSTRUCTION SUBMITTALS

Submit for approval to the Designer of Record (DOR), construction submittals, product data, manufacturer's information, shop drawings, and test reports on all materials and systems installed in the project, unless the DOR designates submittal for QC approval. Refer to each PTS section for further construction submittal requirements relating to the work identified in that particular PTS section. Some PTS sections reference UFGS sections that will require more construction submittals for DOR approval than is stated above. Refer to Section 01 33 00.05 20 for the list of construction submittals reserved for Government Approval and Government Surveillance.

--End of Section--

PART FIVE - PRESCRIPTIVE SPECIFICATIONS

-- NOT USED --

PART SIX - ATTACHMENTS

1. PROJECT REQUIREMENT DRAWING:

Following drawing are included as a part of the project work requirement.

C-101 DEMOLITION SITE PLAN

2. REFERENCE DRAWINGS PDF FILES:

Note:

All these reference information are provided for reference purposes and general information only. It may contain errors and/or discrepancies and should not be relied upon to be 100% accurate. These drawings are probably outdated and change may have occurred for use in conjunction with this project.

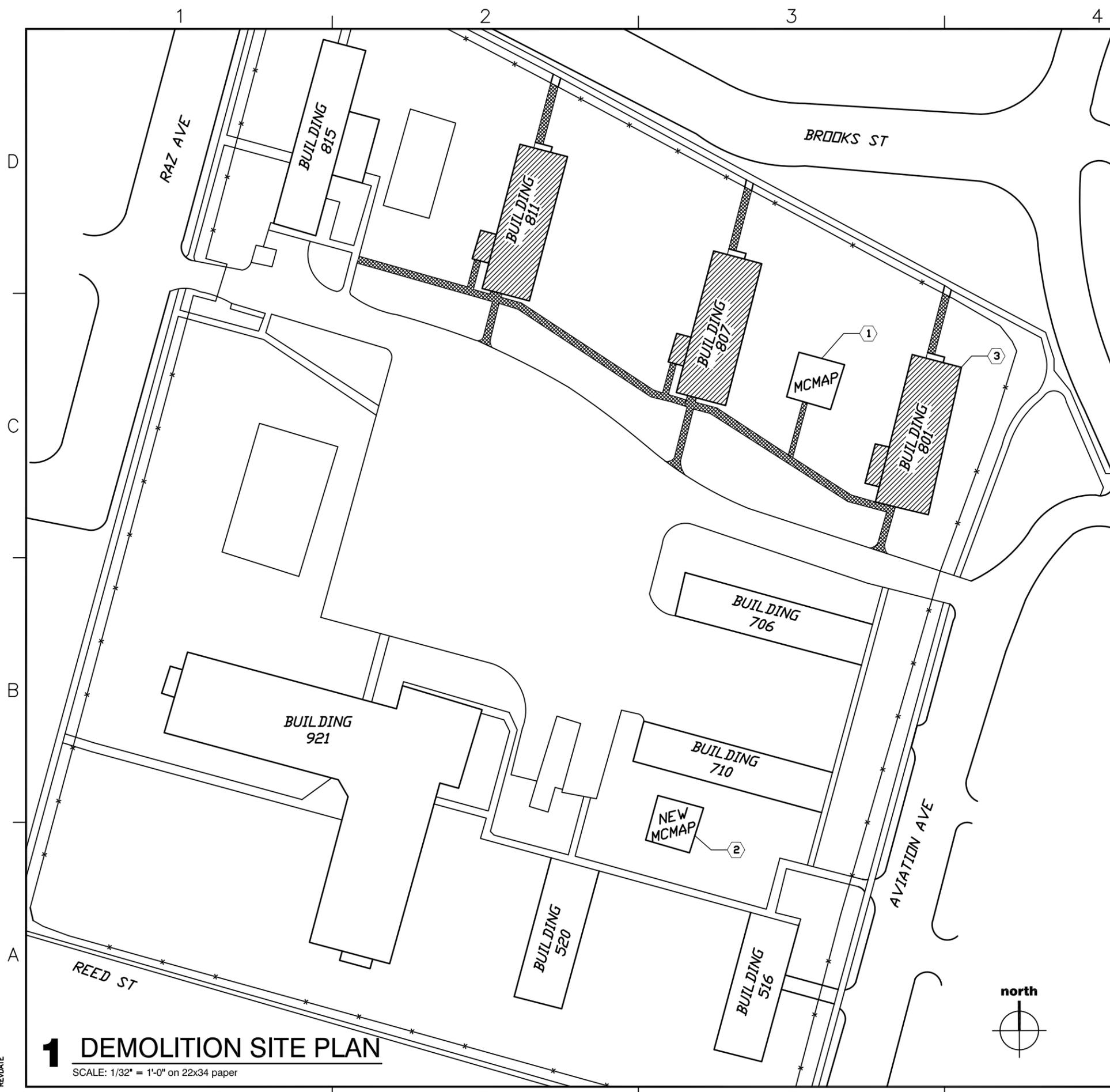
A.) ENCLAVE IMPROVEMENTS BUILDINGS 516, 807, 520 AND 811

(Drawings for Building 516 and 520 are not used in this project)

No.	Title
T-1	TITLE SHEET
A-1	ARCHITECTURAL NOTES, LEGEND AND ABBREVIATIONS
A-2	TYPICAL BASEMENT FLOOR PLAN AND BUILDING 807 FIRST FLOOR PLAN
A-3	TYPICAL FIRST FLOOR PLAN – BUILDING 811
A-4	TYPICAL SECOND FLOOR PLAN
A-6	TYPICAL BUILDING ELEVATIONS
A-9	STAIR PART PLANS AND SECTIONS
HM-5	BUILDING 807 – BASEMENT & FIRST FLOOR
HM-6	BUILDING 807 – SECOND FLOOR & ROOF
HM-7	BUILDING 811 – BASEMENT & FIRST FLOOR
HM-8	BUILDING 811 – SECOND FLOOR & ROOF
HM-10	BUILDING 807 & 811 – HAZARDOUS MATERIALS SAMPLE LOCATION PLANS

B.) MARINE CORPS MARTIAL ARTS PROGRAM (MCMAP) TRAINING PITS

No.	Title
G-001	COVER SHEET/DRAWING INDEX
S-001	GENERAL NOTES
S-101	FOUNDATION PLAN AND SECTIONS (28'X28')
A-001	ARCHITECTURAL LEGEND AND ABBREVIATIONS
A-101A	FLOOR PLAN (28'X28')
A-201A	ELEVATION AND SECTION (28'X28')
A-301A	ROOF PLAN (28'X28')
A-501	DETAILS
E-100A	FLOOR PLAN – LIGHTNING PROTECTION (28'X28')



GENERAL DEMOLITION NOTES

CONTRACTOR SHALL PROVIDE APPROVED FENCE, ETC. TO INSURE SAFETY OF THE PUBLIC. CONTRACTOR SHALL ALSO EXAMINE SITE CONDITIONS FOR DEMOLITION WORK REQUIRED. PROVIDE ALL NECESSARY DEMOLITION AND REMOVAL TO PERFORM NEW WORK AS INDICATED, PERFORM DEMOLITION IN A NEAT AND LIMITED FASHION IN COORDINATION WITH THE GOVERNMENT.

ITEMS TO BE RELOCATED OR TO REMAIN SHALL BE PROTECTED FROM DAMAGE AT ALL TIMES. REMOVE EXISTING WORK AS NECESSARY TO PROPERLY PREPARE FOR NEW FINISH MATERIALS.

VERIFY AND MARK ALL AFFECTED UNDERGROUND UTILITIES CONDITIONS AND LOCATION BEFORE DEMOLITION AND NEW CONSTRUCTION WORK. ALL NEW UTILITIES SHALL BE INSTALLED AS LOCAL GOVERNING AUTHORITY REQUIREMENTS.

DEMOLITION SHALL BE PERFORMED WITHOUT DAMAGE TO ADJACENT RETAINED WORK, WHERE SUCH DAMAGE OCCURS, PATCH, REPAIR OR OTHERWISE RESTORE TO ITS ORIGINAL CONDITION.

FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO START OF CONSTRUCTION. NOTIFY THE NAVFAC FACILITY ENGINEER IN WRITING OF DISCREPANCIES.

COMPLY WITH OSHA STANDARD CFR 1926 SUBPART T- DEMOLITION FOR ALL DEMOLITION OPERATIONS.

ALL DEMOLISHED MATERIAL OTHER THAN IDENTIFIED SALVAGE MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR AND DISPOSED OF OFF BASE. ALL "SPECIAL" WASTE SHALL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH SPECIFICATIONS AND ALL APPLICABLE GOVERNMENT REGULATIONS.

LEGEND

	DEMOLISH EXISTING BUILDINGS 801, 807 AND 811
	DEMOLISH EXISTING CONCRETE SIDE WALK AREA

- SPECIFIC CONSTRUCTION NOTES**
- 1 RELOCATE EXISTING MCMAP PIT.
 - 2 NEW LOCATION OF THE MCMAP PIT.
 - 3 EXISTING SECURITY CAMERA TO BE PROTECTED AND REINSTALLED.

	DATE
	APPR
	DESCRIPTION
	SYM
	
SUBMITTED BY _____	
FIRM MEMBER _____ DATE _____	
APPROVED _____	
ACTIVITY - SATISFACTORY TO _____ DATE _____	
APPROVED _____	
FOR COMMANDER NAUSIC _____ DATE _____	
DES	DR TL
CHK	QC
DESIGNER	XXX
REVIEWED BY _____	
QC _____	
PROJECT MANAGER _____	
FIRE PROTECTION _____	
BRANCH MANAGER _____	
DESIGN DIRECTOR XXXX _____	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVFAC MIDLANT MARINE FORCES RESERVE, FACILITY SUPPORT TEAM GREAT LAKES, IL NEWBURGH, NY MCRS DEMOLISH BEQ BUILDING 801, 807 AND 811 DEMOLITION SITE PLAN	
CODE ID. NO. 80091 SIZE D SCALE: AS NOTED AGENCY DWG. NO. STA. PROJ.# 1381030 SPEC. NO. CONSTR. CONTR. NO. NAVFAC DRAWING NO. SHEET 1 OF 1 C-101 <small>DRAWING REVISION: 15 MARCH 2004</small>	

1 DEMOLITION SITE PLAN
 SCALE: 1/32" = 1'-0" on 22x34 paper

REVDATE